

ภาคผนวก ข-7

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ผลป่องระบายของโรงไฟฟ้าขนาดเล็ก (SPP)





## Analysis / Test Report

Client : Gulf TSC Co., Ltd.  
224 Moo 3, WHA Eastern Seaboard Industrial Estate 1, Tasek, Puaik Daeng, Rayong Thailand 21140  
P/O : 4600001500  
Project Name : Monitoring EIA  
Project Location : GT53  
Lot ID: 22435575  
Date Received : May 27, 2022  
Date Reported : Jun 06, 2022  
Report Number : 22435575

Sample Number : 22435575-1  
Sample Date : May 27, 2022  
Sample Description : Emission from Stationary Source  
Location : Yida HSE 11  
Parameter : O<sub>2</sub>

### Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual		Difference
		Start	Stop	CEMS (%)	RM (%)	
1	27 May 22	10:30	10:50	14.24	14.27	0.03
2	27 May 22	10:51	11:11	14.21	14.30	0.07
3	27 May 22	11:12	11:32	14.23	14.31	0.08
4 <sup>a</sup>	27 May 22	11:33	11:53	14.20	14.29	0.09
5 <sup>a</sup>	27 May 22	11:54	12:14	14.19	14.27	0.08
6 <sup>a</sup>	27 May 22	12:15	12:35	14.19	14.28	0.09
7	27 May 22	12:36	12:56	14.23	14.27	0.04
8	27 May 22	12:57	13:17	14.28	14.33	0.05
9	27 May 22	13:18	13:38	14.26	14.33	0.07
10	27 May 22	13:39	13:59	14.26	14.34	0.07
11	27 May 22	14:00	14:20	14.27	14.35	0.08
12	27 May 22	14:21	14:41	14.29	14.37	0.08
Average				14.25	14.32	0.06
Confidence Coefficient (CC)						
Relative Accuracy (Compared in Actual) (%)						
Relative Accuracy Criteria at (%)						
Reference Method : US EPA Method 3A						
Remarks : * Sample with <sup>a</sup> is rejected data						
* Relative Accuracy Criteria of O <sub>2</sub> is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 2 (PS-2)						
RA Result is within Criteria						

Sampled By : Sathaporn Thakay



## Analysis / Test Report

Client : Gulf TSC Co., Ltd.  
224 Moo 3, WHA Eastern Seaboard Industrial Estate 1, Tasek, Puaik Daeng, Rayong Thailand 21140  
P/O : 4600001500  
Project Name : Monitoring EIA  
Project Location : GT53  
Lot ID: 22435575  
Date Received : May 27, 2022  
Date Reported : Jun 13, 2022  
Report Number : 22435575

Sample Number : 22435575-1  
Sample Date : May 27, 2022  
Sample Description : Emission from Stationary Source  
Location : Yida HSE 11  
Parameter : Relative Response Audit

### Relative Response Audit Test Report

No Sample	Date	Time		CEMS Values		RM Values		Allowable Range		Criterion
		Start	Stop	(%Opacity)	(mg/m <sup>3</sup> )	(mg/m <sup>3</sup> )	(mg/m <sup>3</sup> )	Minimum	Maximum	
1	27-May-22	10:10	11:10	3.65	2.26	0.00	-4.74	-4.74	9.26	Pass
2	27-May-22	11:15	12:15	3.57	2.31	0.39	-4.75	-4.75	9.21	Pass
3	27-May-22	12:19	13:20	3.61	2.23	0.19	-4.77	-4.77	9.23	Pass
4	27-May-22	13:25	14:25	3.51	2.17	0.00	-4.83	-4.83	9.17	Pass
5	27-May-22	14:30	15:30	3.42	2.13	0.09	-4.88	-4.88	9.12	Pass

Remark: -Relative Response Audit is refer to 40 CFR Part 60 Appendix B : Performance Specification 11 : Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Source (PS-11)  
-Correlation Equation of Linear curve Y = 0.6125X + 0.0198  
-Emission limit 28 mg/m<sup>3</sup> from Environmental Impact Assessment Report of Gulf TSC Co., Ltd.

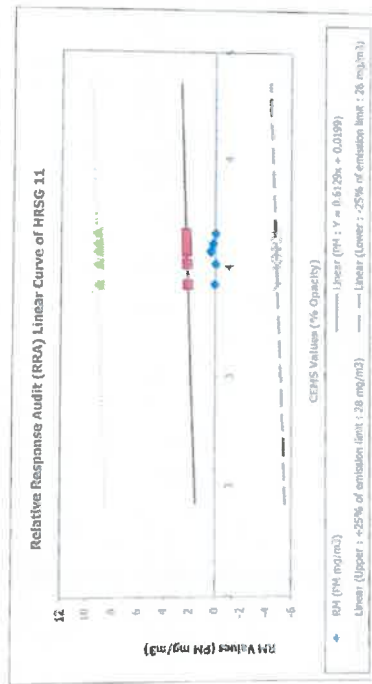


## Analysis / Test Report

Client : Gulf TSS Co., Ltd.  
224 Moo 3, WPA Eastern Seaboard Industrial Estate 1, Tase, Phat Deng, Rayong Thailand 21140  
P/O : 6590001500  
Project Name : Monitoring EIA  
Project Location : GTT  
Lot ID: 2243575  
Date Received: May 27, 2022  
Date Reported: Jun 13, 2022  
Report Number: 2243575-1

Page 2 of 2

Sample Number : 2243575-1  
Sampled Date : May 27, 2022  
Sample Description : Emission from Stationary Source  
Location : Ultra HRSG 11  
Parameter : Relative Response Audit



Sampled By: Thaipong Luadong

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## Analysis / Test Report

Client : Gulf TSS Co., Ltd.  
224 Moo 3, WPA Eastern Seaboard Industrial Estate 1, Tase, Phat Deng, Rayong Thailand 21140  
P/O : 6590001500  
Project Name : Monitoring EIA  
Project Location : GTT  
Lot ID: 2243575  
Date Received: May 30, 2022  
Date Reported: Jun 06, 2022  
Report Number: 2243575-1

Sample Number : 2243575-1  
Sampled Date : May 30, 2022  
Sample Description : Emission from Stationary Source  
Location : Ultra HRSG 12  
Parameter : RRA

### Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual O <sub>2</sub>		Corrected Value at 7% O <sub>2</sub>		Difference
		Start	Stop	CEHS (ppm)	RM (ppm)	CEHS (ppm)	RM (ppm)	
1	30 May 22	11:25	11:55	13.78	14.08	30.19	30.61	0.42
2	30 May 22	11:56	12:16	13.32	14.08	29.03	28.91	-0.12
3	30 May 22	12:17	12:37	13.13	13.83	28.68	28.46	-0.22
4	30 May 22	12:38	12:58	13.58	14.34	29.79	29.63	-0.16
5	30 May 22	12:59	13:19	14.22	14.92	31.33	31.02	-0.31
6	30 May 22	13:20	13:40	14.60	14.99	31.77	31.70	-0.07
7*	30 May 22	13:41	14:01	14.19	14.50	31.23	30.64	-0.59
8	30 May 22	14:02	14:22	13.50	13.96	29.44	28.77	-0.67
9	30 May 22	14:23	14:43	13.26	13.84	28.76	28.51	-0.25
10	30 May 22	14:44	15:04	13.12	13.56	28.63	27.87	-0.76
11*	30 May 22	15:05	15:25	12.92	13.30	27.91	27.13	-0.78
12*	30 May 22	15:26	15:46	13.14	13.91	28.45	27.26	-1.19
Average						29.34	28.44	-0.90
Confidence Coefficient (CC)								0.98
Relative Accuracy (Compared with Emission Standard : 60 ppm) (%)								0.87
Relative Accuracy Criteria U (Compared with Emission Standard)								± 10%

Reference Method : US EPA Method 7c

Remarks : \* Sample with \* is a rejected data

\* Relative Accuracy Criteria of RM is within 40-120% Part 50 Appendix 8 Performance Specification Test 2 (P5-2), compared with Emission Standard 60 ppm at 7%O<sub>2</sub>  
RA Result is within Criteria

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## Analysis / Test Report

Client: Gulf TSC Co., Ltd.  
224 Moo 3, Vitha Eastern Seaboard Industrial Estate 1, Tasee, Puket District, Rayong Thailand 21140  
P/O : 4600001500  
Project Name: Nonferrous EIA  
Project Location: CTS3  
Lot ID: 2243572  
Date Received: May 30, 2022  
Date Reported: Jun 06, 2022  
Report Number: 2281772-1

Page 2 of 3

Sample Number: 2243572-1  
Sample Date: May 30, 2022  
Sample Description: Emission from Stationary Source  
Location: Vitha HSG 11  
Parameter: SO2

### Relative Accuracy Test Audit Report

Run No.	Date	Raw Data at Actual		Corrected Values at 7% O2		Difference
		CEMs (ppm)	RM (ppm)	CEMs (ppm)	RM (ppm)	
1	30 May 22	0.47	0.49	1.04	1.02	-0.02
2	30 May 22	0.49	0.51	1.07	1.01	0.06
3	30 May 22	0.46	0.51	1.01	1.04	-0.03
4	30 May 22	0.44	0.49	0.97	1.01	-0.04
5	30 May 22	0.45	0.51	0.99	1.07	-0.08
6	30 May 22	0.44	0.50	0.98	1.05	-0.07
7	30 May 22	0.45	0.53	0.99	1.09	-0.10
8	30 May 22	0.42	0.52	0.93	1.07	-0.15
9	30 May 22	0.57	0.52	1.24	1.07	-0.17
10	30 May 22	0.60	0.52	1.30	1.08	-0.22
11	30 May 22	0.56	0.57	1.22	1.06	-0.16
12	30 May 22	0.56	0.53	1.21	1.06	-0.15
Average				1.02	1.05	0.03
Confidence Coefficient (CC)						0.06
Relative Accuracy (Compared with Emission Standard : 6 ppm) (%)						1.52
Relative Accuracy Criteria 1: (Compared with Emission Standard : 6 ppm)						≤ 10%

Reference Method : 1/2 EPA Method 6c  
Remarks : Sample with # 4 is rejected data  
v Relative Accuracy Criteria of SO2 is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 2 (PS-2) compared with Emission Standard 6 ppm at 7%O2  
2A Result is within Criteria



## Analysis / Test Report

Client: Gulf TSC Co., Ltd.  
224 Moo 3, Vitha Eastern Seaboard Industrial Estate 1, Tasee, Puket District, Rayong Thailand 21140  
P/O : 4600001500  
Project Name: Nonferrous EIA  
Project Location: CTS3  
Lot ID: 2243572  
Date Received: May 30, 2022  
Date Reported: Jun 06, 2022  
Report Number: 2281772-1

Page 3 of 3

Sample Number: 2243572-1  
Sample Date: May 30, 2022  
Sample Description: Emission from Stationary Source  
Location: Vitha HSG 11  
Parameter: O2

### Relative Accuracy Test Audit Report

Run No.	Date	Raw Data at Actual		Corrected Values at 7% O2		Difference
		CEMs (%)	RM (%)	CEMs (%)	RM (%)	
1	30 May 22	11.55	11.55	14.55	14.14	0.41
2	30 May 22	11.56	12.16	14.53	14.13	-0.39
3	30 May 22	12.17	12.37	14.53	14.15	-0.38
4	30 May 22	12.38	12.58	14.56	14.17	-0.39
5	30 May 22	12.59	12.79	14.59	14.21	-0.38
6	30 May 22	13.20	13.40	14.60	14.22	-0.38
7	30 May 22	13.41	14.01	14.58	14.21	-0.38
8	30 May 22	14.02	14.22	14.53	14.14	-0.38
9	30 May 22	14.23	14.43	14.50	14.15	-0.34
10	30 May 22	14.44	15.04	14.48	14.14	-0.34
11	30 May 22	15.05	15.25	14.47	14.09	-0.38
12	30 May 22	15.76	15.46	14.48	14.08	-0.40
Average				14.54	14.17	0.37
Confidence Coefficient (CC)						0.37
Relative Accuracy (Compared in Actual) (%)						≤ 1%
Relative Accuracy Criteria 1: (Compared in Actual)						≤ 1%

Reference Method : 1/2 EPA Method 4A  
Remarks : Sample with # 6 is rejected data  
v Relative Accuracy Criteria of O2 is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 3 (PS-3)  
4A Result is within Criteria

Sampled By: Sathaporn Thuanwong





## Analysis / Test Report

Client: Gulf TSI Co., Ltd.  
224 Moo 3, WPA Eastern Seaboard Industrial Estate 1, Tasek Pukia Deep, Rayong Thailand 21140  
P/O : 009090900-4602001500  
Project Name : Monitoring EIA  
Project Location : GT53

Sample Number	Sampled Date	Sample Description	Location	Parameter
22-3376-1	May 30, 2022	Emission from Stationary Source	Udoka HSGS 12	Relative Response Audit

## Relative Response Audit Test Report

No Sample	Date	Time	Step	CEMS Values (%Opacity)	RM Values (mg/m <sup>3</sup> )	Allowable Range Minimum Maximum	Criterion
1	30-May-22	10:50	11:58	1.60	0.45	-6.42 7.59	Pass
2	30-May-22	11:45	12:53	1.42	0.52	-6.48 7.52	Pass
3	30-May-22	12:40	13:26	1.21	0.55	-6.55 7.45	Pass
4	30-May-22	13:35	14:23	1.21	0.45	-6.45 7.45	Pass
5	30-May-22	14:30	15:16	1.44	0.53	-6.47 7.53	Pass

-Relative Response Audit is refer to: 60 CFR Part 60 Appendix B: Performance Specification 11: Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Source (PS-11)  
 -Correlation Equation of Linear curve  $y = 0.3333x + 0.0483$   
 -Emission limit 28 mg/Nm<sup>3</sup> from Environmental Impact Assessment Report of Gulf TCS Co., Ltd.

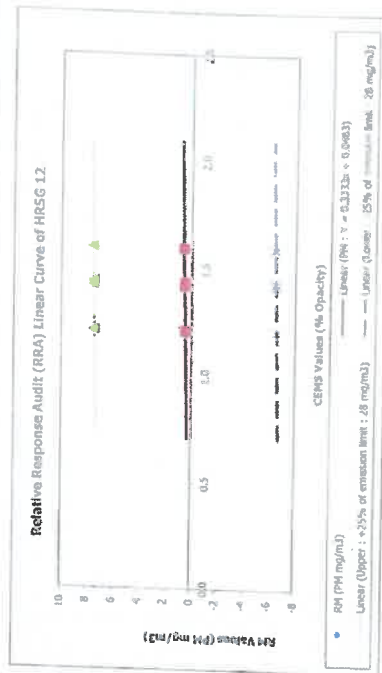
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K. M. Smith / *Quat. Int.* 253 (2011) 1–10

## Analysis / Test Report

Client: QW TSD Co., Ltd.  
224 Hwa 3, WIA Eastern Salsound Industrial Estate 1, Taichung District, Taichung City, Taiwan 41104  
P/O: Approved 400001500  
Project Name: Molding CIA  
Lot ID: 22435756  
Date Preheat: May 30, 2022  
Date Reported: Jun 13, 2022  
Report Number: 231509-1

Sample Number	Sampled Date	Sample Description	Location	Parameter
22-3536-1	May 30, 2022	Emission from Stationary Source	Unit HRSO 12	Relative Response Audit



Sampled By : Thiripong Suadsong

7-204-0-6113

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 Mathematisches Institut der Universität Bonn  
 Endenicher Allee 11  
 D-53115 Bonn  
 Germany  
 Tel.: +49 (0) 228 302-2211  
 Fax: +49 (0) 228 302-2212  
 E-mail: [math@math.uni-bonn.de](mailto:math@math.uni-bonn.de)  
 Web: [www.math.uni-bonn.de](http://www.math.uni-bonn.de)

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Page 1 of 2

Sample Number	2244120-1
Sampled Date	May 25, 2022
Sample Description	Emission from Stationary Source
Location	14456 HRSO 11
Parameter	Relative Response Audit

## Relative Response Audit Test Report

No Sample	Date	Time		CEAS Values		RAI Values (mg/m <sup>3</sup> )	Allowable Range		Criterion
		Start	Stop	%Opacity	(mg/m <sup>3</sup> )		Minimum	Maximum	
1	25-May-22	10:40	11:28	0.80	1.17	0.00	-5.43	8.17	Pass
2	25-May-22	11:40	12:28	0.46	0.67	0.10	-6.33	7.67	Pass
3	25-May-22	12:35	13:23	0.29	0.43	0.00	-6.57	7.43	Pass
4	25-May-22	13:30	14:18	0.28	0.43	0.40	-6.55	7.41	Pass
5	25-May-22	14:25	15:13	0.40	0.58	0.30	-6.42	7.58	Pass

Specifications and Test Procedures for Relative Response Audit is either 40 CFR Part 60 Appendix B, Performance Specification for Percutaneous Haze Continuous Emission Monitoring Systems at Transitory Source (PS-331) or K-Factor = 336. Emission limit: 28 mg/m<sup>3</sup> from Environmental Impact Assessment Report of Gulf T-54 Cell 104.

The above results are valid only for the univariate "mixed sample(s)" as indicated in this report. No part of this report or its recommendations may be reproduced in any form without the written permission of this Laboratory. ALS Laboratory Group (TPO) strongly recommends that this report is used in conjunction with an audit.

400 MISS 104 Phra Pradaeng Rd., A. Nong Phutthachulan, the Jais Lungs, Bangkok 10250 Thailand. FAX: +66 0 2760 3900 FAX: +66 0 2760 3199  
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Page 3 of 3

Sample Number	2244113-1
Sampled Date	May 25, 2022
Sample Description	Emission from Slabatory Source
Location	Unit 10 HRS 5 11
Parameter	O <sub>2</sub>

## Relative Accuracy Test Audit Report

[illegible]

Reference Method : US EPA Method 3A

Remark: \* Sample with \* is a rejected data

Relative Accuracy Criteria of  $\Omega_2$  is refer to 40 CFR Part 60 Appendix B : Performance Specification Test 3 (PS-3)

PA Result is within Criteria

Sampled By : Sathaporn Tinkarw

These results are valid only in the two-dimensional situation. It is well known that the two-dimensional case is the only one for which the Liouville theorem holds. In the three-dimensional case, the Liouville theorem is not valid. However, the Liouville theorem is valid in the two-dimensional case. In the three-dimensional case, the Liouville theorem is not valid. However, the Liouville theorem is valid in the two-dimensional case.

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[illegible]

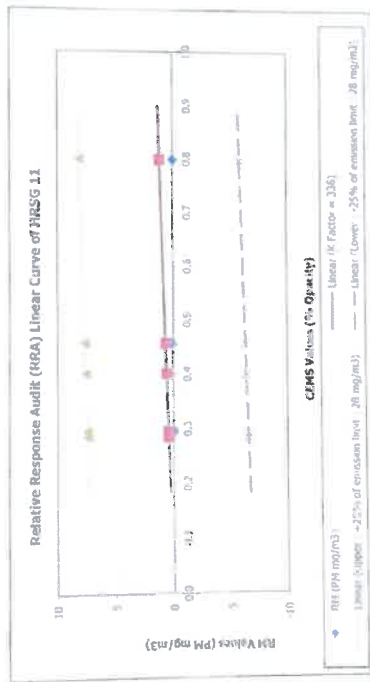


## Analysis / Test Report

Client: Gulf TSC Co., Ltd.  
225 Moo 3, WPA Eastern Seaboard Industrial Estate 1, Tasek, Prachin Buri, Rayong, Thailand 20140  
P/O: 8199494650001503  
Project Name: Wastewater EIA  
Project Location: GTS4  
Lot ID: 2244120  
Date Reported: May 26, 2022  
Report Number: 225093

Page 1 of 2

Sample Number: 2244120-1  
Sampled Date: May 25, 2022  
Sample Description: Emission from Stationary Source  
Location: WPA HSG 11  
Parameter: Relative Response Audit



Sampled By: Thitpong Bueadorn

This report is made on the basis of the information provided by the client. The client is responsible for the accuracy of the information provided. The report is not a guarantee of the results. The results are subject to the accuracy of the information provided and the accuracy of the test method used.

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Tel: 02-260 1000 Fax: 02-260 1001  
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Tel: 02-260 1000 Fax: 02-260 1001  
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## Analysis / Test Report

Client: Gulf TSC Co., Ltd.  
225 Moo 3, WPA Eastern Seaboard Industrial Estate 1, Tasek, Prachin Buri, Rayong, Thailand 20140  
P/O: 8199494650001503  
Project Name: Wastewater EIA  
Project Location: GTS4  
Lot ID: 2244116  
Date Reported: May 26, 2022  
Report Number: 225092

Page 1 of 2

Sample Number: 2244116-1  
Sampled Date: May 26, 2022  
Sample Description: Emission from Stationary Source  
Location: WPA HSG 12  
Parameter: HCl

### Relative Accuracy Test Audit Report

Run No.	Date	Time		Raw Data at Actual O <sub>2</sub>		Corrected Value at 7% O <sub>2</sub>		Difference
		Start	Stop	CFMS (ppm)	RRA (ppm)	CFMS (ppm)	RRA (ppm)	
1	26 May 22	10:40	11:00	20.91	21.35	44.01	44.20	0.19
2	26 May 22	11:01	11:21	20.62	20.91	43.54	43.55	0.01
3	26 May 22	11:22	11:42	20.61	20.76	43.43	43.50	0.07
4	26 May 22	11:41	12:03	20.49	20.74	43.32	43.31	-0.01
5	26 May 22	12:04	12:24	20.59	20.59	43.18	43.18	0.00
6	26 May 22	12:25	12:45	20.17	20.30	42.15	42.60	0.45
7*	26 May 22	12:46	13:06	20.63	20.68	43.38	43.37	-0.01
8	26 May 22	13:07	13:27	20.24	20.20	42.61	42.58	-0.03
9	26 May 22	13:28	13:48	11.03	11.03	14.40	14.41	0.01
10	26 May 22	13:49	14:10	10.46	10.37	13.13	13.11	-0.02
11*	26 May 22	14:10	14:30	20.54	20.79	43.40	43.71	0.31
12*	26 May 22	14:31	14:51	20.63	20.68	43.38	43.37	-0.01
Average				20.24	20.20	42.61	42.58	-0.03
Relative Accuracy (Compared with RRA) (%)								± 20%
Relative Accuracy Criteria (Compared with RRA)								± 20%

Reference Method: US EPA Method 21

Remarks: \* Sample with < 4 is rejected data

Relative Accuracy Criteria of HCl is refer to 40 CFR Part 60 Appendix B - Determination of Relative Accuracy (RRA) (%)

All Result is within Criteria

This report is made on the basis of the information provided by the client. The client is responsible for the accuracy of the information provided. The report is not a guarantee of the results. The results are subject to the accuracy of the information provided and the accuracy of the test method used.

188 Phatthanasirak Rd., Phatthanasirak, Bangkok 10110, Thailand  
Tel: 02-260 1000 Fax: 02-260 1001  
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2008

Relative Response Audit Test Report

No Sample	Time		CEN5 values		RM values	Allowable Range		Criterion	
	Start	Stop	(%Opacity)	(mg/m <sup>3</sup> )	(mg/m <sup>3</sup> )	Minimum	Maximum		
1	26-May-22	10:30	11:18	0.57	0.48	0.11	-8.52	7.46	Pass
2	26-May-22	11:25	12:13	0.53	0.49	0.11	-6.57	7.43	Pass
3	26-May-22	12:20	13:08	0.58	0.49	0.11	-6.51	7.49	Pass
4	26-May-22	13:15	14:03	0.55	0.46	0.14	-6.53	7.46	Pass
5	26-May-22	14:10	14:58	0.50	0.46	0.22	-6.66	7.34	Pass

REMARK: Relative Response Audit is refer to 40 CFR Part 60, Appendix B: Performance Specification 11: Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Source (PS-11)

156314 • J. Neurosci., July 26, 2006 • 26(30):7842–7852

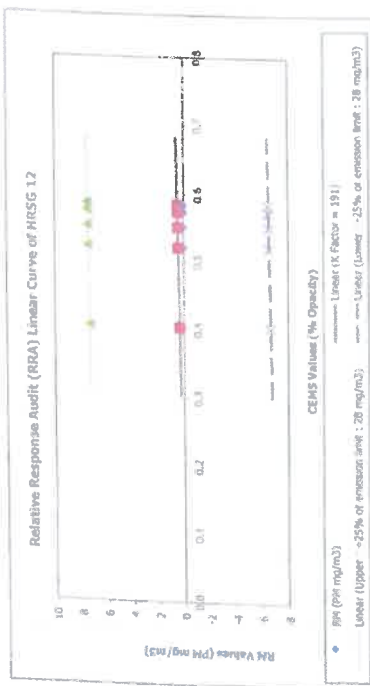
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## Analysis / Test Report

Source: U.S. Census Bureau, *Marriage, Divorce, Remarriage in the 1990s* (Washington, D.C.: U.S. Government Printing Office, 1996), p. 10.

Sample Number	2746123-1
Sampled Date	May 26, 2022
Sample Description	Emission from Stationary Source
Location	UNDA HRS# 12
Parameter	Relative Response Audit



Sampled By : Thitipong Budsawang

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บัญชีรายชื่อสารเคมีที่ใช้ในโรงงาน

บัญชีรายชื่อสารเคมีที่ใช้ในโรงงานที่ตั้งอยู่ นิคมฯ WHA ESIE1

ลำดับที่	ผู้ประกอบการ	แปลงที่ดิน	tank other 1	tank other 2	tank other 3	tank other 4	tank other 5
1	บ.คาซุม นาที (ทล) จำกัด	D45/1 D45/6					
2	บ.เคียวว่า คาลตั้ง (ปท) จำกัด	D21A	น้ำมันก๊าด 200 litre 3 tank use washing	lubricant oil 50 kg 4 tank and 200 litre 3 tank	graphace (TX-999F) 200 litre 1 tank oil clean	IPA ใช้แยกตะกอนการ ทดลองเคมีเบียม	
3	บ.แคชเรียน เอเซีย (ปท) จำกัด	FZ04A	lead cream 500 กรัม 10 กระป๋อง	lead ingot ตะกั่ว	lead ตะกั่ว lead	IPA solvent clean 40 kg 2 tank	nitrogen liquied 10,000 litre 1 tank
4	บ.โคมิจู เซอิชิ (ปท) จำกัด	B06, B07	nitrogen liquied 5,000 litre 1 tank	N5 clean 100 and liquied clear tank 200 litre			
5	บ.เจมแพค เอเชีย จำกัด	FZ12	argon 48 kg 2 tank				
6	บ.เจเอชอี สตีล กัลวาไนซิ่ง (ปท) จำกัด	D24	N2 nitrogen 33 ton 1 tank (42,000 litre)	H2O hydrogen 84 kg 36 tank ใช้ผสมกับ N2 ให้ความร้อนในเตา	hydrochloric acid 35 % HCL	sodium hydroxide 32%, 50% (NaOH) ใช้ค่าไฟ ต่าง 16 KG 10 tank use WWT	sodium acetate acid (CH3COONa) ตั้งโรง ปฏิบัติวิชา
7	บ.จังกิวแหลมจัน (ปท) จำกัด	FZ11					
8	บ.ซันโค โทเซ เทคโนโลยี (ปท) จำกัด	A04	โซเดียมไฮดรอกไซด์ ใช้ WWT	thinner 30 litre 10 tank	IPA solvent 30 litre 10 tank	สีพื้น (มีสารประกอบ สารพิษ)	
9	บ.จิงเคบเกิน (ปท) จำกัด	D30	nitrogen liquied 16,667 litre 1 tank	solvent IPA 50 litre 6 tank	epoxy 20 litre	flax	epoxy resin 50 litre 30 tank
10	บ.ชูกะ สนิล (ทล) จำกัด	B17/15 (RBF)	oil hydraulic 200 litre 3 tank	oxygen 48 kg 5 tank	CO2 48 kg 4 tank	argon 48 kg 4 tank	nitrogen 48 kg 4 tank
11	บ.ชูทิก มอเคอร์ (ปท) จำกัด	D19	HCL (wwt) 200 litre	thinner tank 50 kg, 25 kg 10 tank	อะเซทิลีน 48 kg	coolant oil clean 200 litre 10 tank	oil lubricant 200 litre
12	บ.โตเกียว นิชิคารา (ปท) จำกัด	A02A, A02B	thinner 200 litre				

หน้า 1/7

บัญชีรายชื่อสารเคมีที่ใช้ในโรงงานที่ตั้งอยู่ นิคมฯ WHA ESIE1

ลำดับที่	ผู้ประกอบการ	แปลงที่ดิน	tank other 1	tank other 2	tank other 3	tank other 4	tank other 5
13	บ.โตโย กลาส ไมล์ (ปท) จำกัด	FZ08B	coolant 200 litre 5 tank	oil hydraulic 200 litre 5 tank	argon gas 48 kg 8 tank	H2+argon 48 kg 8 tank	ACETYLENE อะเซทิลีน 48 kg 10 tank
14	บ.โตโย พิลิ่ง อินเดอร์เนชั่นแนล จำกัด	FZ08A, FZ09	gas ISO Pentane 10 ton 1 tank, 4.3 ton 2 tank	alcohol			
15	บ.ทอสเทม ไทย จำกัด	D38/1, D38/2, D39/1, D39/2	alcohol 0.5 litre 5 tank	oil hydraulic 26 kg 1 tank	oil lubricant 26 kg 1 tank		
16	บ.ทาคาฮาตะ พวชิชิน (ทล) จำกัด	D22B, D22C	argon 48 kg 3 tank				
17	บ.มาคาโบ (ทล) จำกัด	G02	oil hydraulic 200 litre 6 tank.	thinner 16 kg 5 tank	สี color	acetylene (C2H2) 48 kg 1 tank	oxygen 48 kg 1 tank
18	บ.ทีที แอสเซมบลี อิลท์ จำกัด	B04					
19	บ.ทีโอ ออโตโมทีฟ (ทล) จำกัด	C09B	argon 84 kg 4 tank				
20	บ.โทปุระ (ปท) จำกัด	B14	oil lubricant 200 litre 10 tank				
21	บ.ไทย โปเบลโก้ คอมสตรัคชั่น แมชีนเออร์ จำกัด	A05	thinner 200 litre				
22	บ.โทะ ปาร์เคอร์ โรจิง จำกัด	B08, B09, B09A	ammonia 1 tank 5 ton	HCL ไฮโดรคลอริก 1 tank 5 ton	เคมี coating 6 tank ละ 5 ton	nitrogen liquied 5 สบ. sl. 1 tank	oil quching 1 tank 5 ton
23	บ.ไทยธันวิท พิคเค บอรับเรชั่น จำกัด	UV2, UV3, UV4, UV5	UV2 20 m3 1 tank, 48 kg 10 tank	argon 10 m3 1 tank	N2 48 kg 10 tank	acetylene อะเซทิลีน 48 kg 2 tank	กรดไฮโดรคลอริก hydrochloric acid HCL 16 kg 30 tank
24	บ.ไทยซัมมิท แมจิส ฟอรัจจิง จำกัด	D15	oil lubricant 200 litre 3 tank	oil hydraulic 200 litre 3 tank	oil clean กันสนิม 200 litre 3 tank	coolant 20 litre 3 tank	carbondioxide CO2 48 kg 2 tank

หน้า 2/7

บัญชีรายชื่อสารเคมีที่ใช้ในโรงงานที่ตั้งอยู่ นิคมฯ WHA ESIE1

ลำดับที่	ผู้ประกอบการ	แปลงที่ดิน	tank other 1	tank other 2	tank other 3	tank other 4	tank other 5
25	บ.ไทยเคมีฯ ระบุของ โอโศฟาร์ อินดัสตรี จำกัด	D16, D17, D18	CO2 48 kg 20 tank	argon 48 kg 8 tank	thinner 20 kg 30 tank	colour 15 kg	
26	บ.ไทยเคมีฯ เอนจิเนียริง จำกัด	D14	CO2 48 kg				
27	บ.ไทยเคมีฯ ระบุของ โอโศฟาร์ อินดัสตรี จำกัด	D06, D07	sodium hypercolline ไฮเพอร์คอลไลน์ 20 kg 10 tank use chiller	scale inhibitor น้ำยา ป้องกันคราบน้ำมัน use chiller 20 kg 10 tank	oil coolant 200 litre 5 tank	จารบี 20 kg 2 tank	Epoxy resin powder ผง เคลือบผิวงานมอเตอร์
28	บ.ไทยโอภาว่า จำกัด	A03A, A03B					
29	บ.ไพโร-วอล แท็กเกรจิง (ไทย) จำกัด	B11	Borax decahydrate powder 20 kg 30 pack	โซดาไฟ tank 30 litre 10 tank (sodium hydroxide)	formalin (สารฆ่าเชื้อ) 25 kg 30 tank	hydrate PE-20 T (สาร กันน้ำ) 25 kg 30 tank	oil lubricant 200 litre 3 tank
30	บ.นาภาโป เอนจิเนียริง (ปท) จำกัด	B05	solvent speed 1 clean 20 kg 2 tank	thinner sol da 20 kg 2 tank clean	lubricant oil 20 kg 2 tank	coolant 20 kg 4 tank	
31	บ.นาภาโป (ปท) จำกัด	B15.1	thinner 30 litre 15 ปี๊บ				
32	บ.บีบีบีบี สมบูรณ์ ออโตโมทีฟ จำกัด	B03	chemical for WWT polymer, PAC, NaOH, H2SO4 tank 15 kg ละ 5 tank	ต่าง phosphate acid 15 kg 10 tank	fine cleanser 200 litre 5 tank	grease (lubricant 200 litre 5 tank	formerly solvent 15 kg 5 tank
33	บ.นิลสัน สเปจ (ปท) จำกัด	A08A	น้ำมันก๊าด 500 litre 1 tank, use boiler	clean 100 oil 200 litre 1 tank			
34	บ.นิลสันแอล (ปท) จำกัด	FZ30	เคมีใช้ปรับคุณภาพน้ำ cooling DOS-1, POSSA 6321 tank 20 kg 4 tank				

หน้า 3/7

บัญชีรายชื่อสารเคมีที่ใช้ในโรงงานที่ตั้งอยู่ นิคมฯ WHA ESIE1

ลำดับที่	ผู้ประกอบการ	แปลงที่ดิน	tank other 1	tank other 2	tank other 3	tank other 4	tank other 5
35	บ.เบเนลลิ จำกัด	B15-2, B15-3	oil lubricant 200 litre 5 tank	thinner 16 kg 20 tank, color	FOAM (poly urethane adhesive+ISO solvent) 200 litre ละ 4 tank	กาว (additive+hardenner 200 litre ละ 4 tank)	จารบี (GREASE) tank 16 litre 3 tank
36	บ.โบลวอสท์ โกลด์คิงส์ (ทล) จำกัด	B16-2	acetone tank 200 ลิตร	resin tank 200 ลิตร			
37	บ.พลีต เอลิเจอร์ สังกะสี (ปท) จำกัด	D12, D12A-1, D12A-2	oil lubricant	เคมีใช้ในการบำบัดน้ำเสีย	ฟอตเฟส	thinner 20 litre 50 tank	
38	บ.พิวเจอร์ส ออโตโมทีฟ (ปท) จำกัด	D31	CO2 48 kg	perfecto HT 5 turbine oil 2 tank 200 litre			
39	บ.ฟูเยรารี (ปท) จำกัด	B01	coolant oil 200 litre 4 tank	chemical for surface, plating chromic acid, nickel sulfate, nickel chloride, boric acid sulfuric acid 50%, hydrochloric acid 35%, E-28K, AC-55, E-223, CF-N 11A, CF-24, B2-K, 901B, 903B, AJ-4, ECR-300L tank 25 kg ละ 10 tank	wash oil กันสนิม tank 200 litre 3 tank	for WWT NaOH, H2SO4, FeCl3 tank 6 m <sup>3</sup> , NaHSO <sub>4</sub> , polymer, Ca(OH) <sub>2</sub> tank 200 litre	
40	บ.มิซูจิ (ปท) จำกัด	D26, D26A	coolant 200 litre 2 tank	oil cutting 200 litre 2 tank	lubricant 200 litre 2 tank		

หน้า 4/7

บัญชีรายชื่อสารเคมีที่ใช้ในโรงงานที่ตั้งอยู่ นิคมฯ WHA ESIE1

ลำดับที่	ผู้ประกอบการ	แปลงที่ดิน	tank other 1	tank other 2	tank other 3	tank other 4	tank other 5
41	บ.เมทัลชีท (ทส) จำกัด	FZ26	bonderite 1070 50 litre 5 tank	deoxylite 50 NC 50 litre 5 tank	parco cleaner 50 litre 5 tank	parcolene 6 50 litre 5 tank	calcium chloride 74% 50 litre 5 tank
42	บ.ยู-จีน (ปท) จำกัด	B12	daphe alpha cleaner M 50 litre				
43	บ.ยูไนเต็ดคอลลีเยชั่นเตอร์ จำกัด	D08	oil lubricant กันสนิม tank 200 litre				
44	บ.ยูโรเซวา (ปท) จำกัด	FZ27A	ethy alcohol (ETHANAL) 50 litre 10 tank	coolant 200 litre 5 tank	oil lubricant 200 litre 5 tank	oil cutting 200 litre 5 tank	Enamel (น้ำยาพินท์) 5,000 g 10 tank
45	บ.ไฮเพอร์เทค จำกัด	G01	toluene 200 litre 5 tank and tank 50 m3 1 tank	IPA (iso propane alcohol) 200 litre 5 tank and tank 50 m3 1 tank	heptane 200 litre 5 tank and tank 50 m3 1 tank	catalyst oil 200 litre 5 tank	crosslinker V88 200 litre 5 tank
46	บ.วอย-โอเจอร์ ออโตโมทีฟ (ปท) จำกัด	G03, G04	oil lubricant 200 litre 15 tank	CO2 18 ton 1 tank	argon 4.2 ton 1 tank		
47	บ.วีซี แพลสติกส์ (ปท) จำกัด	FZ21	siloplastic 75 ton(150 ลบ.ม.) 4 tank				
48	บ.วูเทค ไทย จำกัด	D27, D28					
49	บ.เอสซี อีลลารมอนด์ เซอร์วิส เซ็นเตอร์ จำกัด	D24A	oil lubricant 200 litre 10 tank	oil hydraulic 200 litre 10 tank	oil wash 200 litre 2 tank		
50	บ.สุหาธิ (ปท) จำกัด	D53, D54	น้ำยาเคมี มี tank ใหญ่ 2,000 litre 1 tank (Resin 200 litre 10 tank, hardener 25 kg 10 tank)	sodium hydroxide (NaOH) 25 kg 5 tank	nitrogen dioxide (NO2) 48 kg 3 tank	phosphoric trichloride (PCl3) 25 kg 5 tank	sodium silicate (เบรอนซิลิก) (monosilicate) (NaO3Si) 25 kg 10 tank

หน้าที่ 5/7

บัญชีรายชื่อสารเคมีที่ใช้ในโรงงานที่ตั้งอยู่ นิคมฯ WHA ESIE1

ลำดับที่	ผู้ประกอบการ	แปลงที่ดิน	tank other 1	tank other 2	tank other 3	tank other 4	tank other 5
51	บ.ออริจิ้น ออโตเมชั่น จำกัด	D44	oxygen 48 kg 5 tank	argon 48 kg 5 tank	acetylene 48 kg 5 tank	thinner 200 litre 3 tank	color
52	บ.อเมริกัน แมคคานิค แอนด์ แมนูแฟคเจอร์ริง (ปท) จำกัด	FZ16, FZ17	CO2 48 kg 30 tank	argon 1,700 litre 1 tank	coolant 200 litre 10 tank	สี water base 200 litre 10 tank	เคมีใช้ในการจับตะกอนสี polymer CR, 194 FLU520 20 kg 4 tank
53	บ.อาซาฮี พลาสติก จำกัด	D22A	thinner 15 kg 2 tank clean dies	chlorine คลอรีน 20 kg 10 tank use cooling water	argon 84 kg 1 tank		
54	บ.อาร์เมอโต้ จำกัด	FZ07A, FZ07B	nitric acid (HNO3) 12 ton 1 tank	mixe gas (Ar+H2) 84 KG 40 tank	argon (Ar) 48 kg 40 tank, 6,000 litre 1 tank	nitrogen (N2) 10,000 litre 1 tank	hydrogen (H) 48 kg 10 tank
55	บ.อีเคเค (ปท) จำกัด	B16-1	IPA solvent 20 litre 6 tank	adhesion (การ) 500 g 10 tank	silicone 50 litre 3 tank		
56	บ.อีมาอี เมทัล (ทส) จำกัด	D12B, D12C	coolant 200 litre 5 tank	oil hydraulic , lubricant 200 litre 5 tank	nitrogen 48 kg 3 tank	oxygen 48 kg 3 tank	
57	บ.ลูมูระคอร์ป (ทส) จำกัด	B16-4	CO2 48 kg 20 tank	CO2 tank 6.5 ton 1 tank	CO2 tank 48 kg 20 tank	thinner 20 litre 10 tank	
58	บ.เอเคเค พลาสติก (ปท) จำกัด	A09C2_B/A	จารบี 0.75 litre 12 tank	cleaner solvent 0.75 litre 12 tank	น้ำยาล้างสนิม 0.75 litre 6 tank		
59	บ.เอสเอไอซี มอเตอร์-ซีที จำกัด	A09C/1	oil lubricant 200 litre 10 tank	grease จารบี 15 kg 5 tank			
60	บ.เอ็มเอชเค สปริง (ปท) จำกัด	A06, A07A, A07B	เบรคิลวาว 200 litre 1 tank	การ 16 kg 5 tank			
61	บ.เอ็มไอเค พริ้นท์ คอมโพเนนท์ (ปท) จำกัด	D40, D41	nitrogen 25,105 litre 1 tank	Epoxy 30 cc 90 หลอด	solvent clean sotion for print 1 litre 40 ขวด	ink	cream lead free

หน้าที่ 6/7

บัญชีรายชื่อสารเคมีที่ใช้ในโรงงานที่ตั้งอยู่ นิคมฯ WHA ESIE1

ลำดับที่	ผู้ประกอบการ	แปลงที่ดิน	tank other 1	tank other 2	tank other 3	tank other 4	tank other 5
62	บ.เอ็นจีซี อีเล็กโทรเคมีคอล (ปท) จำกัด	C10	nitrogen 48 kg 10 tank ใช้ป้องกันกระแสไฟฟ้า ใน tank solvent	solvent MEK (methyl ethyl ketone) 40 m3 1 tank	solvent acetone 40 m3 1 tank (or name dimethyl ketone)	กรดไฮโดรคลอริก hydrochloric acid HCL 20 m3 1 tank	sodium hydroxide 50% (NaOH) โซดาไฟ ต่าง 20 m3 1 tank
63	บ.เอ็นเอชจี (ทล) จำกัด	D30A	CO2 84 kg 20 tank ใช้ ดับเพลิงในห้องพ่นสี	N2 nitrogen 84 kg 2 tank ใช้ป้องกันการเกิดไฟ ไหม้จากการผสมสี	sodium carbonate (soda ash) 25 kg 2 ถัง ใช้บำบัดน้ำเสียใน booth paint	polymer 16 kg 3 tank ใช้กับน้ำเค็ม booth paint	thinner 15 kg 5 tank
64	บ.เอ็นเอชจี (ปท) จำกัด	A09C2_B	solvent . color 0.75 litre 2 tank	alcohol 10 litre 5 tank	oil lubricant 200 litre 3 tank	oil coolant 200 litre 4 tank	solvent for wash
65	บ.เอสอาร์เอฟ อินดัสทรีส์ (ทล) จำกัด	D20	nitric acid 20 litre 10 tank	zinc metal	therminol oil boiler 200 litre 40 tank	petroleum ether	p-xylene
66	บ.เอสเอ็มอาร์ ออโตโมทีฟ ซิสเต็ม (ปท) จำกัด	FZ13	argon 48 kg 2 tank	toluene 16 kg 2 tank	polymer use DI water 30 litre 1 tank	O2 48 kg 1 tank	
67	บ.แอคซูเน็ท โรบอติกส์ (ปท) จำกัด	FZ04B	BUNA CB 1221, SB 1502, CB 1220	surlyn 8940 resin	zinc diacrylate	diamondkote W 3548C, 2C9-57B	POLYBUTADIENE POLYMER
68	บ.เมอร์ อินเตอร์เนชันแนล เทอร์มอล ซิสเต็มส์ (ปท) จำกัด	FZ10	CO2 48 kg 10 tank	nitrogen 17 ton 1 tank, 48 kg 10 tank	berium gas 48 kg 4 tank	O2 oxygen 48 kg 10 tank	flux 200 litre 4 tank
69	บ.เมอร์ อินเตอร์เนชันแนล เทอร์มอล ซิสเต็มส์ (ปท) จำกัด	B17/2, B17/4 (Ready Built Factory)					
70	บ.แอลแอลไอที (ปท) จำกัด	E01, E10, E10-1	kumho KBR01 (BR)	HML5 polyester tyre cord fabric	lanxess chlorobutyl 1240	styrene-butadiene rubber (SBR1502)	STEEL CORD
71	บ.ฮาลโก้-ซีที จำกัด	A09C/2 (R B F)	ถาว 20 kg 5 tank	จาระบี 0.75 litre 5 tank			



ภาคผนวก ข-9

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ผลการตรวจวิเคราะห์น้ำเสียรายโรงงาน

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
WHA ESIE 1	1	21149129-1	ACUSHNET TITLEIST (Thailand) Limited.	FZ-04B		1330
	2	21149088-1	AH BRAKE (THAILAND) CO., LTD.	B-03		1330
	3	21149092-1	AH BRAKE (THAILAND) CO.,LTD.	B-03/1		1330
	4	21149248-1	Air International Thermal Systems (Thailand) Ltd.	FZ-10		2405
	5	21149130-1	AKWEL RAYONG (THAILAND) Co.,Ltd.	FZ-08B		1330
	6	21149172-1	AKZO NOBEL PAINTS (THAILAND) LIMITED.	H.08,H.09,H.18		1330
	7	21149135-1	American Axle and Manufacturing (Thailand)Co.,Ltd.	FZ-16-FZ17		1330
	8	21149351-1	Ametai Company Limited.	FZ-07B		1985
	9	21149072-1	ASAMI PLUS Company Limited.	D-22A		9300
	10	21149218-1	ATLANTIC FOOD PRODUCTS Co.,Ltd.	H.07		1330
	11	21149126-1	Auto Alliance (Thailand) Co.,Ltd.	A-09AA-09B		1330
	12	21149195-1	BNL (Thailand) Limited.	FZ-28		1330
	13	21149109-1	Bolwell Holding (Thailand) Co.,Ltd.	B16-2		1330
	14	21149077-1	Chikuma (Thailand) Co.,Ltd.	G-08		9300
	15	21149128-1	Clarion Asia (Thailand) Co.,Ltd.	FZ04A		1330
	16	21149119-1	Dai-kyo Nishikawa (Thailand) Co.,Ltd.	A-02		1330
	17	21149220-1	Daya Kitchen Appliance Accessories (Thailand) Co.,Ltd	D.47		1330
	18	21149162-1	DAYOU WINIA (THAILAND) CO., LTD	G-01		1330
	19	21149198-1	DHL Supply Chain (Thailand) Limited.	WHALP.2B-02		1330
	20	21149199-1	DHL Supply Chain (Thailand) Limited.	WHALP.2B-04		1330
	21	21149142-1	DuPont Nutrition (Thailand) Ltd.	FZ-05		1330
	22	21149164-1	Epic International (Thailand) Co.,Ltd	G.05-G.06		1330
	23	21149194-1	EUP Electric Vehicle (Thailand) Co., Ltd.	FZ.27B		1330
	24	21149139-1	Eurokera Thailand Company Limited.	FZ-27A		1330
	25	21149078-1	Ford Motor Company (Thailand) Limited	D-42		9300
	26	21149056-1	Ford Motor Company (Thailand) Limited	D-42A		9300
	27	21149066-1	Ford Motor Company (Thailand) Limited	G-11,G-12		9300
	28	21149290-1	Fuserashi (Thailand) Co.,Ltd.	B-01		3010
	29	21149141-1	Gempack Asia Limited	FZ.11		1330
	30	21149132-1	Gempack Asia Limited	FZ-12		1330
	31	21149113-1	GKN Driveline (Thailand) Co.,Ltd.	C-09C		1330
	32	21149124-1	Golcha Chemintec Co.,Ltd.	A-08		1330
	33	21149210-1	Golden Egret Cement Carbide (Thailand) Co., Ltd.	D.38		1330
	34	21149211-1	Ground Effect (Thailand) Company Limited	D.45		1330
	35	21149317-1	Gulf SRC Company Limited.	E.09	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และอื่นๆ	1015
	36	21149345-1	Gulf SRC Company Limited.	E.09	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	4690
	37	21149292-1	Gulf TS3 Company Limited.	B18-1	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และอื่นๆ	1015
	38	21149336-1	Gulf TS3 Company Limited.	B18-1	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	4690
	39	21149316-1	Gulf TS4 Company Limited.	B18-2	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และอื่นๆ	1015
	40	21149344-1	Gulf TS4 Company Limited.	B18-2	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	4690

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	41	21149166-1	Harrington Industries (Thailand) Co.,Ltd.	G-10		1330
	42	21149134-1	HDMC (THAILAND) LTD.	FZ.14,FZ.15		1330
	43	21149144-1	Hellmann Worldwide Logistic Company Limited.	HLP2A.5		1330
	44	21149207-1	Hi-Tech Mould and Plastics (Thailand) Co., Ltd.	H.04		1330
	45	21149196-1	HSF Films (Thailand) Co., Ltd.	D.30		1330
	46	21149107-1	ITAKURA (Thailand) Co.,Ltd.	B16-1		1330
	47	21149159-1	JFE Steel Galvanizing (Thailand) Ltd.	D-24		1330
	48	21149204-1	Jiangshun Suitcase and Handbag Spare Parts (Thailand) Co., Ltd.	(DuplexBuildingB-17) C.15		1330
	49	21149097-1	K-99 Plastech Co.,Ltd.	B10-1,B10-2		1330
	50	21149102-1	KANEKA (THAILAND) CO., LTD	B-14		1330
	51	21149180-1	Katoen Natie (Thailand) Limited.	B-8WHALP3		1330
	52	21149167-1	Katoen Natie (Thailand) Limited.	D-45		1330
	53	21149168-1	Katoen Natie (Thailand) Limited.	HLP3 B2		1330
	54	21149169-1	Katoen Natie (Thailand) Limited.	HLP3 B4		1330
	55	21149100-1	KERRY Logistics (Thailand) Limited	B-13		1330
	56	21149122-1	KOBELCO CONSTRUCTION MACHINERY SOUTHEAST ASIA LTD.	A-05		1330
	57	21149095-1	Komatsu Selki (Thailand) Co.,Ltd.	B-06,B-07		1330
	58	21149069-1	KUSUMOTO CHEMICALS (THAILAND) Co.,Ltd.	D.51		9300
	59	21149156-1	Kyowa Casting (Thailand) Co.,Ltd.	D-21A		1330
	60	21149309-1	LINGYE INTELLIGENT (THAILAND) CO., LTD.	WHA PL2-B.14		1015
	61	21149308-1	LINGYE INTELLIGENT (THAILAND) CO.,LTD.	WHA PL2-B.16		1015
	62	21149170-1	LLIT (THAILAND) CO.,LTD	E.01,E.10		1330
	63	21149140-1	Lucy Switchgear Eastern Seaboard Limited.	FZ-29		1330
	64	21149146-1	M&K Precision (Thailand) Co.,Ltd.	D29		1330
	65	21149068-1	Mann and hummel (Thailand) Co.,Ltd.	D-49		9300
	66	21149127-1	MAX (Thailand) Co.,Ltd.	A09C2B		1330
	67	21149111-1	Merry Electronics (Thailand) Co.,Ltd.	C.09A		1330
	68	21149138-1	Metalsa (Thailand) Limited.	FZ-26		1330
	69	21149114-1	MGC Electrotechno (Thailand) Co.,Ltd.	C-10B		1330
	70	21149145-1	Mizuki (Thailand) Company Limited.	D26		1330
	71	21149094-1	NAGANO ENGINEERING (THAILAND) Co.,Ltd.	B-05		1330
	72	21149105-1	Narumi (Thailand) Co.,Ltd.	B.15-2		1330
	73	21149106-1	Narumi (Thailand) Co.,Ltd.	B.15-3		1330
	74	21149103-1	Narumi (Thailand) Co.,Ltd.	B-15-1		1330
	75	21149104-1	Narumi (Thailand) Co.,Ltd.	B-15-4		1330
	76	21149221-1	New Torch Technology (Thailand) Co.,Ltd.	D.39		1330
	77	21149123-1	NHK Spirring (Thailand) Co.,Ltd.	A06,A07A-A07B		1330
	78	21149174-1	Nippon Seiro (Thailand) Co.,Ltd	H.12		1330
	79	21149125-1	Nissan Spring (Thailand) Co.,Ltd.	A-08A		1330
	80	21149310-1	NOBO AUTOMOTIVE SYSTEM (THAILAND) CO.,LTD.	WHA PL2-B.10		1015

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	81	21149206-1	Off Road Accessories Limited.	FZ.C-2		1330
	82	21149115-1	OTC DAIHEN Asia Co.,Ltd	C-10(DuplexD17)		1330
	83	21149116-1	Pegasus Global Express (Thailand) Co.,Ltd.	C.5(B.17)		1330
	84	21149176-1	ROBERT BOSCH AUTOMOTIVE TECHNOLOGIES (THAILAND) CO., LTD.	D.01		1330
	85	21149203-1	Roehling Automotive Chonburi Company Limited.	H.13		1330
	86	21149205-1	Saffron Living Company Limited .	WHALP2A-7		1330
	87	21149181-1	Saffron Living Company Limited.	A09C-01		1330
	88	21149185-1	Saffron Living Company Limited.	A09C-02		1330
	89	21149182-1	Saffron Living Company Limited.	A09C-03		1330
	90	21149186-1	Saffron Living Company Limited.	A09C-04		1330
	91	21149184-1	Saffron Living Company Limited.	A09C-05		1330
	92	21149187-1	Saffron Living Company Limited.	A09C-06		1330
	93	21149188-1	Saffron Living Company Limited.	A09C-08		1330
	94	21149189-1	Saffron Living Company Limited.	A09C-10		1330
	95	21149190-1	Saffron Living Company Limited.	A09C-12		1330
	96	21149191-1	Saffron Living Company Limited.	A09C-14		1330
	97	21149192-1	Saffron Living Company Limited.	WHALP.2FZ.A1		1330
	98	21149193-1	Saffron Living Company Limited.	WHALP2FZ.A3		1330
	99	21149200-1	Saffron Living Company Limited.	WHALP2FZ.B-6		1330
	100	21149201-1	Saffron Living Company Limited.	WHALP2FZ.B-8		1330
	101	21149165-1	SCHUTZ (THAILAND) LIMITED	G.09		1330
	102	21149244-1	Siam Chuyo Co.,Ltd.	B-02		1810
	103	21149306-1	Skyline Precision Co.,Ltd.	D.46		1015
	104	21149173-1	SMC (THAILAND) LIMITED.	H-14,H-15,H-16		1330
	105	21149133-1	SMR Automotive System (Thailand) Ltd.	FZ-13		1330
	106	21149071-1	SRF Industries (Thailand) Limited.	D-20		9300
	107	21149158-1	Steel Alliance service center Co.,Ltd.	D-24A		1330
	108	21149118-1	SUMMIT KEYLEX (THAILAND) Co.,Ltd.	A-01		1330
	109	21149179-1	Sunnex Industrial Company Limited.	D.02A		1330
	110	21149149-1	SUPREME FELTOL (THAILAND) Co.,Ltd.	D-31	Point 1	1330
	111	21149070-1	SUTAI (Thailand) Company Limited.	D-54		9300
	112	21149261-1	Suzuki Motor (Thailand) Co.,Ltd.	D-19		1505
	113	21149163-1	Tadano (Thailand) Co.,Ltd.	G-02		1330
	114	21149074-1	Takahata Precision (Thailand) Co.,Ltd.	D-22B		9300
	115	21149076-1	TANATEX Chemicals (Thailand) Co.,Ltd.	G-07		9300
	116	21149318-1	THAI A TECH SOLUTION Co.,Ltd.	C.02/1		1015
	117	21149178-1	Thai JE Technology Co., Ltd.	D.02C		1330
	118	21149319-1	Thai Ming Lighting CO., LTD.	H.01A		1015
	119	21149303-1	Thai Ming Lighting CO., LTD.	H.01B		1015
	120	21149304-1	Thai Ming Lighting CO., LTD.	H.01C		1015

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	121	21149305-1	Thai Ming Lighting CO., LTD.	H.01D		1015
	122	21149120-1	Thai Okawa Co.,Ltd.	A-03		1330
	123	21149223-1	Thai Parkerizing Co.,Ltd.	B-08		3375
	124	21149153-1	Thai Summit Engineering Co.,Ltd.	D-14		1330
	125	21149154-1	Thai Summit Melji Forging Co.,Ltd.	D-15		1330
	126	21149151-1	Thai Summit Mitsuba Electric Manufacturing Co.,Ltd.	D-06,D-07		1330
	127	21149268-1	Thai Summit PK Corporation Ltd.	D-02		1810
	128	21149155-1	Thai Summit Rayong Autoparts Industry Co.,Ltd.	D-17,D-18		1330
	129	21149152-1	Thai Summit Roll Forming Technology Co.,Ltd.	D.12		1330
	130	21149143-1	Thai VMI Service Co.,Ltd.	HLP2A-11,A-09D		1330
	131	21149112-1	TI Automotive (Thailand) Ltd.	C-09B		1330
	132	21149307-1	Top Link Industrial (Thailand) Co.,Ltd.	WHA PL2-B.12		1015
	133	21149219-1	TOPLINK INDUSTRIAL (Thailand) Co.,Ltd.	FZ.25		1330
	134	21149131-1	Toyo Filling International Co.,Ltd.	FZ-09		1330
	135	21149171-1	Toyota Tsusho (Thailand) Co.,Ltd	E.11		1330
	136	21149117-1	Trigo Qualy Service (Thailand) Co.,Ltd.	C-7(DuplexBuilding)		1330
	137	21149264-1	Tri-Wall Packaging (Thailand) Co.,Ltd.	B-11		1810
	138	21149093-1	TT Assembly East Co.,Ltd.	B-04		1330
	139	21149110-1	Umemura Corp (Thailand) Limited.	B16-4		1330
	140	21149150-1	United Coil Center Limited.	D-08		1330
	141	21149099-1	U-Shin (Thailand) Co.,Ltd.	B-12		1330
	142	21149175-1	Vibracoustic (Thailand) Limited	H-03		1330
	143	21149067-1	Visteon Automotive Electronics (Thailand) Ltd.	D-48		9300
	144	21149136-1	Visy Packaging (Thailand) Limited.	FZ-21		1330
	145	21149202-1	Visy Packaging (Thailand) Limited.	WHALP2FZ.A-13		1330
	146	21149147-1	VUTEQ Thai Company Limited.	D27,D28		1330
	147	21149137-1	Wire & Steel Fencing (Thailand) Co.,Ltd.	FZ-23,24		1330
	148	21149208-1	Xianglong Manufacturing (Thailand) Co.,Ltd.	D.32		1330
	149	21149075-1	Y-Ogura Automotive (Thailand) Co.,Ltd.	G-03,04		9300

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
WHA ESTE 1	1	2220792-1	ACUSHNET TITLEIST (Thailand) Limited.	FZ-04B		1330
	2	2220751-1	AH BRAKE (THAILAND) CO., LTD.	B-03		1330
	3	2220753-1	AH BRAKE (THAILAND) CO.,LTD.	B-03/1		1330
	4	2220995-1	Air International Thermal Systems (Thailand) Ltd.	FZ-10		2405
	5	2220793-1	AKWEL RAYONG (THAILAND) Co.,Ltd.	FZ-08B		1330
	6	2220727-1	AKZO NOBEL PAINTS (THAILAND) LIMITED.	H.08,H.09,H.18		9300
	7	2220798-1	American Axle and Manufacturing (Thailand)Co.,Ltd.	FZ-16-FZ17		1330
	8	2220990-1	Ametai Company Limited.	FZ-07B		1985
	9	2220830-1	ASAHI PLUS Company Limited.	D-22A		1330
	10	2220739-1	ATLANTIC FOOD PRODUCTS Co.,Ltd.	H.07		9300
	11	2220787-1	Auto Alliance (Thailand) Co.,Ltd.	A-09AA-09B		1330
	12	2220869-1	BNL (Thailand) Limited.	FZ.28		1330
	13	2220766-1	Bolwell Holding (Thailand) Co.,Ltd.	B16-2		1330
	14	2220836-1	Chikuma (Thailand) Co.,Ltd.	G-08		1330
	15	2220791-1	Clarion Asia (Thailand) Co.,Ltd.	FZ04A		1330
	16	2220778-1	Dai-kyo Nishikawa (Thailand) Co.,Ltd.	A-02		1330
	17	2220737-1	Daya Kitchen Appliance Accessories (Thailand) Co.,Ltd	D.47		9300
	18	2220837-1	DAYOU WINIA (THAILAND) CO., LTD	G-01		1330
	19	2220873-1	DHL Supply Chain (Thailand) Limited.	WHALP.2B-02		1330
	20	2220874-1	DHL Supply Chain (Thailand) Limited.	WHALP.2B-04		1330
	21	2220805-1	DuPont Nutrition (Thailand) Ltd.	FZ-05		1330
	22	2220840-1	Epic International (Thailand) Co.,Ltd	G.05-G.06		1330
	23	2220868-1	EUP Electric Vehicle (Thailand) Co., Ltd.	FZ.27B		1330
	24	2220802-1	Eurokera Thailand Company Limited.	FZ-27A		1330
	25	2220997-1	Ford Motor Company (Thailand) Limited	D-42		1505
	26	2220823-1	Ford Motor Company (Thailand) Limited	D-42A		1330
	27	2220824-1	Ford Motor Company (Thailand) Limited	G-11,G-12		1330
	28	2221003-1	Fuserashi (Thailand) Co.,Ltd.	B-01		3010
	29	2220804-1	Gempack Asia Limited	FZ.11		1330
	30	2220795-1	Gempack Asia Limited	FZ-12		1330
	31	2220771-1	GKN Driveline (Thailand) Co.,Ltd.	C-09C		1330
	32	2220783-1	Golcha ChemIntec Co.,Ltd.	A-08		1330
	33	2220734-1	Golden Egret Cement Carbide (Thailand) Co., Ltd.	D.38		9300
	34	2220735-1	Ground Effect (Thailand) Company Limited	D.45		9300
	35	2221008-1	Gulf SRC Company Limited.	E.09	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และอื่นๆ	1015
	36	2220989-1	Gulf SRC Company Limited.	E.09	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	4690
	37	2221006-1	Gulf TS3 Company Limited.	B18-1	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และอื่นๆ	1015
	38	2220987-1	Gulf TS3 Company Limited.	B18-1	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	4690
	39	2221007-1	Gulf TS4 Company Limited.	B18-2	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และอื่นๆ	1015
	40	2220988-1	Gulf TS4 Company Limited.	B18-2	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	4690

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	41	2220843-1	Harrington Industries (Thailand) Co.,Ltd.	G-10		1330
	42	2220797-1	HDMC (THAILAND) LTD.	FZ.14,FZ.15		1330
	43	2220807-1	Hellmann Worldwide Logistic Company Limited.	HLP2A.5		1330
	44	2220732-1	Hi-Tech Mould and Plastics (Thailand) Co., Ltd.	H.04		9300
	45	2220871-1	HSF Films (Thailand) Co., Ltd.	D.30		1330
	46	2220765-1	ITAKURA (Thailand) Co.,Ltd.	B16-1		1330
	47	2220822-1	JFE Steel Galvanizing (Thailand) Ltd.	D-24		1330
	48	2220878-1	Jiangshun Suitcase and Handbag Spare Parts (Thailand) Co., Ltd.	(DuplexBuildingB-17) C.15		1330
	49	2220740-1	JONES TECH (THAILAND) CO.,LTD.	A-04		9300
	50	2220757-1	K-99 Plastech Co.,Ltd.	B10-1,B10-2		1330
	51	2220760-1	KANEKA (THAILAND) CO., LTD	B-14		1330
	52	2220853-1	Katoen Natie (Thailand) Limited.	B-8WHALP3		1330
	53	2220845-1	Katoen Natie (Thailand) Limited.	D-45		1330
	54	2220846-1	Katoen Natie (Thailand) Limited.	HLP3 B2		1330
	55	2220847-1	Katoen Natie (Thailand) Limited.	HLP3 B4		1330
	56	2220759-1	KERRY Logistics (Thailand) Limited	B-13		1330
	57	2220780-1	KOBELCO CONSTRUCTION MACHINERY SOUTHEAST ASIA LTD.	A-05		1330
	58	2220756-1	Komatsu Selki (Thailand) Co.,Ltd.	B-06,B-07		1330
	59	2220827-1	KUSUMOTO CHEMICALS (THAILAND) Co.,Ltd.	D.51		1330
	60	2220819-1	Kyowa Casting (Thailand) Co.,Ltd.	D-21A		1330
	61	2221017-1	LINGYE INTELLIGENT (THAILAND) CO., LTD.	WHA PL2-B.14		1015
	62	2221016-1	LINGYE INTELLIGENT (THAILAND) CO.,LTD.	WHA PL2-B.16		1015
	63	2220848-1	LIT (THAILAND) CO.,LTD	E.01,E.10		1330
	64	2220803-1	Lucy Switchgear Eastern Seaboard Limited.	FZ-29		1330
	65	2220809-1	M&K Precision (Thailand) Co.,Ltd.	D29		1330
	66	2220826-1	Mann and hummel (Thailand) Co.,Ltd.	D-49		1330
	67	2220790-1	MAX (Thailand) Co.,Ltd.	A09C2B		1330
	68	2220769-1	Merry Electronics (Thailand) Co.,Ltd.	C.09A		1330
	69	2220801-1	Metalsa (Thailand) Limited.	FZ-26		1330
	70	2220772-1	MGC Electrotechno (Thailand) Co.,Ltd.	C-10B		1330
	71	2220808-1	Mizuki (Thailand) Company Limited.	D26		1330
	72	2220755-1	NAGANO ENGINEERING (THAILAND) Co.,Ltd.	B-05		1330
	73	2220763-1	Narumi (Thailand) Co.,Ltd.	B.15-2		1330
	74	2220764-1	Narumi (Thailand) Co.,Ltd.	B.15-3		1330
	75	2220761-1	Narumi (Thailand) Co.,Ltd.	B-15-1		1330
	76	2220762-1	Narumi (Thailand) Co.,Ltd.	B-15-4		1330
	77	2220738-1	New Torch Technology (Thailand) Co.,Ltd.	D.39		9300
	78	2220782-1	NHK Spiring (Thailand) Co.,Ltd.	A06,A07A-A07B		1330
	79	2220729-1	Nippon Seiro (Thailand) Co.,Ltd	H.12		9300
	80	2220784-1	Nissan Spring (Thailand) Co.,Ltd.	A-08A		1330

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	81	2221018-1	NOBO AUTOMOTIVE SYSTEM (THAILAND) CO., LTD.	WHA PL2-B.10		1015
	82	2220880-1	OFF ROAD Accessories Limited.	FZ.C-2		1330
	83	2220773-1	OTC DAIHEN Asia Co.,Ltd	C-10(DuplexD17)		1330
	84	2220774-1	Pegasus Global Express (Thailand) Co.,Ltd.	C.5(B.17)		1330
	85	2220850-1	ROBERT BOSCH AUTOMOTIVE TECHNOLOGIES (THAILAND) CO., LT	D.01		1330
	86	2220731-1	Roehling Automotive Chonburi Company Limited.	H.13		9300
	87	2220879-1	Saffron Living Company Limited .	WHALP2A-7		1330
	88	2220854-1	Saffron Living Company Limited.	A09C-01		1330
	89	2220859-1	Saffron Living Company Limited.	A09C-02		1330
	90	2220856-1	Saffron Living Company Limited.	A09C-03		1330
	91	2220860-1	Saffron Living Company Limited.	A09C-04		1330
	92	2220858-1	Saffron Living Company Limited.	A09C-05		1330
	93	2220861-1	Saffron Living Company Limited.	A09C-06		1330
	94	2220862-1	Saffron Living Company Limited.	A09C-08		1330
	95	2220863-1	Saffron Living Company Limited.	A09C-10		1330
	96	2220864-1	Saffron Living Company Limited.	A09C-12		1330
	97	2220865-1	Saffron Living Company Limited.	A09C-14		1330
	98	2220866-1	Saffron Living Company Limited.	WHALP.2FZ.A1		1330
	99	2220867-1	Saffron Living Company Limited.	WHALP2FZ.A3		1330
	100	2220875-1	Saffron Living Company Limited.	WHALP2FZ.B-6		1330
	101	2220876-1	Saffron Living Company Limited.	WHALP2FZ.B-8		1330
	102	2220841-1	SCHUTZ (THAILAND) LIMITED	G.09		1330
	103	2220993-1	Siam Chuyo Co.,Ltd.	B-02		1810
	104	2221014-1	Skyline Precision Co.,Ltd.	D.46		1015
	105	2220728-1	SMC (THAILAND) LIMITED.	H-14,H-15,H-16		9300
	106	2220796-1	SMR Automotive System (Thailand) Ltd.	FZ-13		1330
	107	2220829-1	SRF Industries (Thailand) Limited.	D-20		1330
	108	2220821-1	Steel Alliance service center Co.,Ltd.	D-24A		1330
	109	2220777-1	SUMMIT KEYLEX (THAILAND) Co.,Ltd.	A-01		1330
	110	2220852-1	Sunnex Industrial Company Limited.	D.02A		1330
	111	2220811-1	SUPREME FELTOL (THAILAND) Co.,Ltd.	D-31	Point 1	1330
	112	2220828-1	SUTAI (Thailand) Company Limited.	D-54		1330
	113	2220736-1	Suzuki Motor (Thailand) Co.,Ltd.	D-19		9300
	114	2220838-1	Tadano (Thailand) Co.,Ltd.	G-02		1330
	115	2220831-1	Takahata Precision (Thailand) Co.,Ltd.	D-22B		1330
	116	2220834-1	TANATEX Chemicals (Thailand) Co.,Ltd.	G-07		1330
	117	2221009-1	THAI A TECH SOLUTION Co.,Ltd.	C.02/1		1015
	118	2220851-1	Thai JE Technology Co.,Ltd.	D.02C		1330
	119	2221010-1	Thai Ming Lighting CO., LTD.	H.01A		1015
	120	2221011-1	Thai Ming Lighting CO., LTD.	H.01B		1015

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	121	2221012-1	Thai Ming Lighting CO., LTD.	H.01C		1015
	122	2221013-1	Thai Ming Lighting CO., LTD.	H.01D		1015
	123	2220779-1	Thai Okawa Co.,Ltd.	A-03		1330
	124	2220992-1	Thai Parkerizing Co.,Ltd.	B-08		3375
	125	2220815-1	Thai Summit Engineering Co.,Ltd.	D-14		1330
	126	2220816-1	Thai Summit Meiji Forging Co.,Ltd.	D-15		1330
	127	2220813-1	Thai Summit Mitsuba Electric Manufacturing Co.,Ltd.	D-06,D-07		1330
	128	2221001-1	Thai Summit PK Corporation Ltd.	D-02		1810
	129	2220817-1	Thai Summit Rayong Autoparts Industry Co.,Ltd.	D-17,D-18		1330
	130	2220814-1	Thai Summit Roll Forming Technology Co.,Ltd.	D.12		1330
	131	2220806-1	Thai VMI Service Co.,Ltd.	HLP2A-11,A-09D		1330
	132	2220770-1	TI Automotive (Thailand) Ltd.	C-09B		1330
	133	2221015-1	Top Link Industrial (Thailand) Co.,Ltd.	WHA PL2-B.12		1015
	134	2220887-1	TOPLINK INDUSTRIAL (Thailand) Co.,Ltd.	FZ.25		1330
	135	2220794-1	Toyco Filling International Co.,Ltd.	FZ-09		1330
	136	2220849-1	Toyota Tsusho (Thailand) Co.,Ltd	E.11		1330
	137	2220775-1	Trigo Qualy Service (Thailand) Co.,Ltd.	C-7(DuplexBuilding)		1330
	138	2220998-1	Tri-Wall Packaging (Thailand) Co.,Ltd.	B-11		1810
	139	2220754-1	TT Assembly East Co.,Ltd.	B-04		1330
	140	2220768-1	Umemura Corp (Thailand) Limited.	B16-4		1330
	141	2220812-1	United Coil Center Limited.	D-08		1330
	142	2220758-1	U-Shin (Thailand) Co.,Ltd.	B-12		1330
	143	2220730-1	Vibracoustic (Thailand) Limited	H-03		9300
	144	2220825-1	Visteon Automotive Electronics (Thailand) Ltd.	D-48		1330
	145	2220799-1	Visy Packaging (Thailand) Limited.	FZ-21		1330
	146	2220877-1	Visy Packaging (Thailand) Limited.	WHALP2FZ.A-13		1330
	147	2220810-1	VUTEQ Thai Company Limited.	D27,D28		1330
	148	2220800-1	Wire & Steel Fencing (Thailand) Co.,Ltd.	FZ-23,24		1330
	149	2220733-1	Xianglong Manufacturing (Thailand) Co.,Ltd.	D.32		9300
	150	2220832-1	Y-Ogura Automotive (Thailand) Co.,Ltd.	G-03,04		1330



PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
WHA ESIE 1	1	2248277-1	ACUSHNET TITLEIST (Thailand) Limited.	FZ-04B		1330
	2	2248244-1	AH BRAKE (THAILAND) CO.,LTD.	B-03		1330
	3	2248245-1	AH BRAKE (THAILAND) CO.,LTD.	B-03/1		1330
	4	2248230-1	Alr International Thermal Systems (Thailand) Ltd.	FZ-10		9900
	5	2248278-1	AKWEL RAYONG (THAILAND) Co.,Ltd.	FZ-08B		1330
	6	2248328-1	AKZO NOBEL PAINTS (THAILAND) LIMITED.	H.08,H.09,H.18		1330
	7	2248283-1	American Axle and Manufacturing (Thailand) Co.,Ltd.	FZ-16-FZ17		1330
	8	2248366-1	Ametek Company Limited.	FZ-07B		1985
	9	2248313-1	ASAHI PLUS Company Limited.	D-22A		1330
	10	2248359-1	ATLANTIC FOOD PRODUCTS Co.,Ltd.	H.07		1330
	11	2248274-1	Auto Alliance (Thailand) Co.,Ltd.	A-09AA-09B		1330
	12	2248349-1	BNL (Thailand) Limited.	FZ.28		1330
	13	2248258-1	Bolwell Holding (Thailand) Co.,Ltd.	B16-2		1330
	14	2248317-1	Chikuma (Thailand) Co.,Ltd.	G-08		1330
	15	2248276-1	Clarion Asia (Thailand) Co.,Ltd.	FZ04A		1330
	16	2248268-1	Daikyo Nishikawa (Thailand) Co.,Ltd.	A-02		1330
	17	2248357-1	Daya Kitchen Appliance Accessories (Thailand) Co.,Ltd	D.47		1330
	18	2248318-1	DAYOU WINIA (THAILAND) CO.,LTD	G-01		1330
	19	2248223-1	DHL Supply Chain (Thailand) Limited.	WHALP.2B-02		9300
	20	2248224-1	DHL Supply Chain (Thailand) Limited.	WHALP.2B-04		9300
	21	2248290-1	DuPont Nutrition (Thailand) Ltd.	FZ-05		1330
	22	2248320-1	Epic International (Thailand) Co.,Ltd	G.05-G.06		1330
	23	2248348-1	EUP Electric Vehicle (Thailand) Co.,Ltd.	FZ.27B		1330
	24	2248287-1	Eurokera Thailand Company Limited.	FZ-27A		1330
	25	2248370-1	Ford Motor Company (Thailand) Limited	D-42		1505
	26	2248306-1	Ford Motor Company (Thailand) Limited	D-42A		1330
	27	2248307-1	Ford Motor Company (Thailand) Limited	G-11,G-12		1330
	28	2248373-1	Fuserashi (Thailand) Co.,Ltd.	B-01		3010
	29	2248289-1	Gempack Asia Limited	FZ.11		1330
	30	2248280-1	Gempack Asia Limited	FZ-12		1330
	31	2248262-1	GKN Driveline (Thailand) Co.,Ltd.	C-09C		1330
	32	2248272-1	Golcha Chemintec Co.,Ltd.	A-08		1330
	33	2248354-1	Golden Egret Cement Carbide (Thailand) Co.,Ltd.	D.38		1330
	34	2248355-1	Ground Effect (Thailand) Company Limited	D.45		1330
	35	2248374-1	Gulf SRC Company Limited.	E.09	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และสิ้นยา	1015
	36	2248365-1	Gulf SRC Company Limited.	E.09	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	4690
	37	2248231-1	Gulf TS3 Company Limited.	B18-1	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และสิ้นยา	9300
	38	2248242-1	Gulf TS3 Company Limited.	B18-1	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	12905
	39	2248232-1	Gulf TS4 Company Limited.	B18-2	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และสิ้นยา	9300
	40	2248243-1	Gulf TS4 Company Limited.	B18-2	จุดที่ 2 เก็บน้ำทิ้งจากหอหล่อเย็นโรงไฟฟ้า	12905

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	41	2248322-1	Harrington Industries (Thailand) Co.,Ltd.	G-10		1330
	42	2248282-1	HDMC (THAILAND) LTD.	FZ.14,FZ.15		1330
	43	2248292-1	Hellmann Worldwide Logistic Company Limited.	HLP2A.5		1330
	44	2248352-1	Hi-Tech Mould and Plastics (Thailand) Co.,Ltd.	H.04		1330
	45	2248222-1	HSF Films (Thailand) Co.,Ltd.	D.30		9300
	46	2248257-1	ITAKURA (Thailand) Co.,Ltd.	B18-1		1330
	47	2248305-1	JFE Steel Galvanizing (Thailand) Ltd.	D-24		1330
	48	2248351-1	Jiangshun Suitcase and Handbag Spare Parts (Thailand) Co.,Ltd.	(DuplexBuildingB-17) C.15		1330
	49	2248360-1	JONES TECH (THAILAND) CO.,LTD.	A-04		1330
	50	2248249-1	K-99 Plastech Co.,Ltd.	B10-1,B10-2		1330
	51	2248252-1	KANEKA (THAILAND) CO.,LTD	B-14		1330
	52	2248335-1	Katoen Natie (Thailand) Limited.	B-8WHALP3		1330
	53	2248323-1	Katoen Natie (Thailand) Limited.	D-45		1330
	54	2248324-1	Katoen Natie (Thailand) Limited.	HLP3 B2		1330
	55	2248325-1	Katoen Natie (Thailand) Limited.	HLP3 B4		1330
	56	2248251-1	KERRY Logistics (Thailand) Limited	B-13		1330
	57	2248270-1	KOBELCO CONSTRUCTION MACHINERY SOUTHEAST ASIA LTD.	A-05		1330
	58	2248248-1	Komatsu Seiki (Thailand) Co.,Ltd.	B-06,B-07		1330
	59	2248310-1	KUSUMOTO CHEMICALS (THAILAND) Co.,Ltd.	D.51		1330
	60	2254603-1	Kyowa Casting (Thailand) Co.,Ltd.	D.29		9300
	61	2248303-1	Kyowa Casting (Thailand) Co.,Ltd.	D-21A		1330
	62	2248241-1	LINGYE INTELLIGENT (THAILAND) CO., LTD.	WHA PL2-B.14		9300
	63	2248240-1	LINGYE INTELLIGENT (THAILAND) CO.,LTD.	WHA PL2-B.16		9300
	64	2248326-1	LLIT (THAILAND) CO.,LTD	E.01,E.10		1330
	65	2248288-1	Lucy Switchgear Eastern Seaboard Limited.	FZ-29		1330
	66	2248309-1	Mann and hummel (Thailand) Co.,Ltd.	D-49		1330
	67	2248275-1	MAX (Thailand) Co.,Ltd.	A09C2B		1330
	68	2248260-1	Merry Electronics (Thailand) Co.,Ltd.	C.09A		1330
	69	2248286-1	Metalsa (Thailand) Limited.	FZ-26		1330
	70	2248263-1	MGC Electrotechno (Thailand) Co.,Ltd.	C-10B		1330
	71	2248293-1	Mizuki (Thailand) Company Limited.	D26		1330
	72	2248247-1	NAGANO ENGINEERING (THAILAND) Co.,Ltd.	B-05		1330
	73	2248255-1	Narumi (Thailand) Co.,Ltd.	B.15-2		1330
	74	2248256-1	Narumi (Thailand) Co.,Ltd.	B.15-3		1330
	75	2248253-1	Narumi (Thailand) Co.,Ltd.	B-15-1		1330
	76	2248254-1	Narumi (Thailand) Co.,Ltd.	B-15-4		1330
	77	2248358-1	New Torch Technology (Thailand) Co.,Ltd.	D.39		1330
	78	2248271-1	NHK Splring (Thailand) Co.,Ltd.	A06,A07A-A07B		1330
	79	2248330-1	Nippon Sairo (Thailand) Co.,Ltd	H.12		1330
	80	2248273-1	Nissan Spring (Thailand) Co.,Ltd.	A-08A		1330



PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	81	2250253-1	NOBO AUTOMOTIVE SYSTEM (THAILAND) CO., LTD.	WHA PL2-B.10		1015
	82	2248229-1	OFF ROAD Accessories Limited.	FZ-C-2		9300
	83	2248264-1	OTC DAIHEN Asia Co.,Ltd	C-10(DuplexD17)		1330
	84	2248265-1	Pegasus Global Express (Thailand) Co.,Ltd.	C.5(B.17)		1330
	85	2248332-1	ROBERT BOSCH AUTOMOTIVE TECHNOLOGIES (THAILAND) CO., LTD.	D.01		1330
	86	2248350-1	Roehling Automotive Chonburi Company Limited.	H.13		1330
	87	2248228-1	Saffron Living Company Limited .	WHA/P2A-7		9300
	88	2248336-1	Saffron Living Company Limited.	A09C-01		1330
	89	2248339-1	Saffron Living Company Limited.	A09C-02		1330
	90	2248337-1	Saffron Living Company Limited.	A09C-03		1330
	91	2248340-1	Saffron Living Company Limited.	A09C-04		1330
	92	2248338-1	Saffron Living Company Limited.	A09C-05		1330
	93	2248341-1	Saffron Living Company Limited.	A09C-06		1330
	94	2248342-1	Saffron Living Company Limited.	A09C-08		1330
	95	2248343-1	Saffron Living Company Limited.	A09C-10		1330
	96	2248345-1	Saffron Living Company Limited.	A09C-14		1330
	97	2248346-1	Saffron Living Company Limited.	WHA/P.2FZA.1		1330
	98	2248347-1	Saffron Living Company Limited.	WHA/P2FZA.3		1330
	99	2248225-1	Saffron Living Company Limited.	WHA/P2FZA.6		9300
	100	2248226-1	Saffron Living Company Limited.	WHA/P2FZA.8		9300
	101	2248321-1	SCHUTZ (THAILAND) LIMITED	G.09		1330
	102	2248368-1	Siam Chuyo Co.,Ltd.	B-02		1810
	103	2248238-1	Skyline Precision Co.,Ltd.	D.46		9300
	104	2248329-1	SMC (THAILAND) LIMITED.	H-14,H-15,H-16		1330
	105	2248281-1	SMR Automotive System (Thailand) Ltd.	FZ-13		1330
	106	2248312-1	SRF Industries (Thailand) Limited.	D-20		1330
	107	2248304-1	Steel Alliance service center Co.,Ltd.	D-24A		1330
	108	2248267-1	SUMMIT KEYLEX (THAILAND) Co.,Ltd.	A-01		1330
	109	2248334-1	Sunnex Industrial Company Limited.	D.02A		1330
	110	2248296-1	SUPREME FELTOL (THAILAND) Co.,Ltd.	D-31	Point 1	1330
	111	2248311-1	SUTAI (Thailand) Company Limited.	D-54		1330
	112	2248369-1	Suzuki Motor (Thailand) Co.,Ltd.	D-19		1505
	113	2248319-1	Tadano (Thailand) Co.,Ltd.	G-02		1330
	114	2248314-1	Takahata Precision (Thailand) Co.,Ltd.	D-22B		1330
	115	2248316-1	TANATEX Chemicals (Thailand) Co.,Ltd.	G-07		1330
	116	2248233-1	THAI A TECH SOLUTION Co.,Ltd.	C.02/1		9300
	117	2248333-1	Thai JE Technology Co.,Ltd.	D.02C		1330
	118	2248234-1	Thai Ming Lighting CO.,LTD.	H.01A		9300
	119	2248235-1	Thai Ming Lighting CO.,LTD.	H.01B		9300
	120	2248236-1	Thai Ming Lighting CO.,LTD.	H.01C		9300

PROJECT/LOCATE	No	Lot	Customer Name	Plot No	Factory	Lab Fee
	121	2248237-1	Thai Ming Lighting CO.,LTD.	H.01D		9300
	122	2248269-1	Thai Okawa Co.,Ltd.	A-03		1330
	123	2248367-1	Thai Parkerizing Co.,Ltd.	B-08		3375
	124	2248300-1	Thai Summit Engineering Co.,Ltd.	D-14		1330
	125	2248301-1	Thai Summit Meiji Forging Co.,Ltd.	D-15		1330
	126	2248298-1	Thai Summit Mitsuba Electric Manufacturing Co.,Ltd.	D-06,D-07		1330
	127	2248372-1	Thai Summit PK Corporation Ltd.	D-02		1810
	128	2248302-1	Thai Summit Rayong Autoparts Industry Co.,Ltd.	D-17,D-18		1330
	129	2248299-1	Thai Summit Roll Forming Technology Co.,Ltd.	D.12		1330
	130	2248291-1	Thai VMI Service Co.,Ltd.	HLP2A-11,A-09D		1330
	131	2248261-1	TI Automotive (Thailand) Ltd.	C-09B		1330
	132	2248239-1	Top Link Industrial (Thailand) Co.,Ltd.	WHA PL2-B.12		9300
	133	2248356-1	TOPLINK INDUSTRIAL (Thailand) Co.,Ltd.	FZ.25		1330
	134	2248279-1	Toyo Filling International Co.,Ltd.	FZ-09		1330
	135	2248327-1	Toyota Tsusho (Thailand) Co.,Ltd	E.11		1330
	136	2248266-1	Trigo Quality Service (Thailand) Co.,Ltd.	C-7(DuplexBuilding)		1330
	137	2248371-1	Tri-Wall Packaging (Thailand) Co.,Ltd.	B-11		1810
	138	2248246-1	TT Assembly East Co.,Ltd.	B-04		1330
	139	2248259-1	Umemura Corp (Thailand) Limited.	B16-4		1330
	140	2248297-1	United Coll Center Limited.	D-08		1330
	141	2248250-1	U-Shin (Thailand) Co.,Ltd.	B-12		1330
	142	2248331-1	Vibracoustic (Thailand) Limited	H-03		1330
	143	2248308-1	Visteon Automotive Electronics (Thailand) Ltd.	D-48		1330
	144	2248284-1	VISY Packaging (Thailand) Limited.	FZ-21		1330
	145	2248227-1	VISY Packaging (Thailand) Limited.	WHA/P2FZA-13		9300
	146	2248295-1	VUTEQ Thai Company Limited.	D27,D28		1330
	147	2248285-1	Wire & Steel Fencing (Thailand) Co.,Ltd.	FZ-23,24		1330
	148	2248353-1	Xianglong Manufacturing (Thailand) Co.,Ltd.	D.32		1330
	149	2248315-1	Y-Ogura Automotive (Thailand) Co.,Ltd.	G-03,04		1330



## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 21149129**  
Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185168-1

Page 1 of 1

Sample Number	21149129-1
Sampled Date	Jan 07, 2022 3:35 PM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2553
Date Analysis Commenced	Jan 07, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	48	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	177	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	428	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	90	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pittaya Thongdaeng

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



## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220792**  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2235323-1

Page 1 of 1

Sample Number	2220792-1
Sampled Date	Mar 11, 2022 3:07 PM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2553
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	57	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	200	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	324	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	94	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chalmusorn Lertrantakunchai

**Remark :**  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248277

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2250083-1

Page 1 of 1

Sample Number	2248277-1
Sampled Date	May 11, 2022 10:30 AM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2553
Plot	FZ-04B
Site	ACUSHNET TITELIST (Thailand) Limited.
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	35	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	205	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	404	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	122	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149088

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185079-1

Page 1 of 1

Sample Number	21149088-1
Sampled Date	Jan 10, 2022 4:00 PM
Sample Description	Wastewater
Contract ID	L_HESIE_034_2556
Plot	B-03
Site	AH BRAKE (THAILAND) CO., LTD.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	19	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2180	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchaisaow

Remark :  
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TESTING  
No.0042

**Lot ID: 2220751**  
**Date Received : Mar 11, 2022**  
**Date Reported : Mar 17, 2022**  
**Report Number : 2235186-1**

Date Reported : Mar 17, 2022  
Report Number : 2235186-1

Page 1 of 1

Sample Number	2220751-1						
Sampled Date	Mar 11, 2022 1:59 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_034_2556	Plot	B-03	Site	AH BRAKE (THAILAND) CO., LTD.		
Date Analysis Commenced	Mar 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOG)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	9	S500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	27	S750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	S1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	S10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1800	S3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	S200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Chainusorn Lertranthakunchai

Remark :

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TESTING  
No. 0042

**Lot ID: 2248244**  
**Date Received : May 11, 2022**  
**Date Reported : May 18, 2022**  
**Report Number : 2295005-1**

Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number: 2295005-1

Page 1 of 1

Sample Number	2248244-1					Page 1 of 1
Sampled Date	May 11, 2022 3:15 PM					
Sample Description	Wastewater					
Contract ID	L_HSEIE_034_2556	Plot	B-03	Site	AH BRAKE (THAILAND) CO., LTD.	
Date Analysis Commenced	May 11, 2022					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
Physical Property	Yellow, a lot of odour, some solid and no turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B
COD	mg/L	1.5	5	19	≤750	APHA (2017), 5220 D
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	792	≤3000	APHA (2017), 2540 C
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant.

Remark :

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- \*  $\leq$  : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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**RESEARCH**

Paul Newman 611 PM 12.1.1992





## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149092

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 21185090-1

Page 1 of 1

Sample Number	21149092-1
Sampled Date	Jan 10, 2022 4:10 PM
Sample Description	Wastewater
Contract ID	L_HESIE_016_2557
Plot	B-03/1
Site	AH BRAKE (THAILAND) CO.,LTD.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	87	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	254	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	350	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	43	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchaisraw

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220753

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235193-1

Page 1 of 1

Sample Number	2220753-1
Sampled Date	Mar 11, 2022 1:50 PM
Sample Description	Wastewater
Contract ID	L_HESIE_016_2557
Plot	B-03/1
Site	AH BRAKE (THAILAND) CO.,LTD.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	158	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	303	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	424	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	50	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaimusorn Lertranthakunchai

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2249245

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295024-1

Page 1 of 1

Sample Number	2248245-1						
Sampled Date	May 11, 2022 3:05 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_016_2557	Plot	B-03/1	Site	AH BRAKE (THAILAND) CO.,LTD.		
Date Analysis Commenced	May 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	25	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	96	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	132	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	42	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat bhammasaro

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149248

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185534-1

Page 1 of 1

Sample Number	21149248-1						Page 1 of 1
Sampled Date	Jan 07, 2022 2:30 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_004_2551	Plot	FZ-10	Site	Air International Thermal Systems (Thailand) Ltd.		
Date Analysis Commenced	Jan 07, 2022						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	217	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	523	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	133	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	129	≤600	APHA (2017), 2120 F	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	16	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	464	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	85	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng , Thanassoun Namakunna

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149248  
Date Received : Jan 07, 2022  
Date Reported : Jan 14, 2022  
Report Number : 2185534-2

Page 1 of 1

Sample Number 21149248-1  
Sample Date Jan 07, 2022 2:30 PM  
Sample Description Wastewater  
Contract ID L\_HESIE\_004\_2551 Plot FZ-10 Site Air International Thermal Systems (Thailand) Ltd.  
Data Analysis Commenced Jan 10, 2022  
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.  
Physical Property (APHA / USEPA)  
Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Pithaya Thongtaeng , Thanassoun Namakunna

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149248  
Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185534-3

Page 1 of 1

Sample Number 21149248-1  
Sample Date Jan 07, 2022 2:30 PM  
Sample Description Wastewater  
Contract ID L\_HESIE\_004\_2551 Plot FZ-10 Site Air International Thermal Systems (Thailand) Ltd.  
Data Analysis Commenced Jan 08, 2022  
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.  
Physical Property (APHA / USEPA)  
Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Fluoride	mg/L	0.05	0.2	2.1	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Pithaya Thongtaeng , Thanassoun Namakunna

Remark :  
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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220995  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2236414-1

Page 1 of 1

Sample Number 2220995-1  
Sampled Date Mar 11, 2022 10:35 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_004\_2551 Plot FZ-10 Site Air International Thermal Systems (Thailand) Ltd.  
Date Analysis Commenced Mar 11, 2022  
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.  
Physical Property Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	165	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	309	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	129	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	126	≤600	APHA (2017), 2120 F	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	340	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	52	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalusorn Lertrantakunchai, Nantawat Sarin

Remark :

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- <L : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2220995  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2236414-2

Page 1 of 1

Sample Number 2220995-1  
Sampled Date Mar 11, 2022 10:35 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_004\_2551 Plot FZ-10 Site Air International Thermal Systems (Thailand) Ltd.  
Date Analysis Commenced Mar 14, 2022  
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.  
Physical Property Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalusorn Lertrantakunchai, Nantawat Sarin

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasi, Amphur Pluakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220995  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2236414-3

Page 1 of 1

Sample Number 2220995-1  
Sample Date Mar 11, 2022 10:35 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_004\_2551 Plot FZ-10 Site Air International Thermal Systems (Thailand) Ltd.  
Data Analysis Commenced Mar 11, 2022  
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.  
Physical Property (APHA / USEPA)  
Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Fluoride	mg/L	0.05	0.2	2.5	≤5	APHA (2017), 4500-F(C)	Rayong

Water Testing  
Fluoride

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Chainusorn Lertmanthakunchal , Nantawat Sarth

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasi, Amphur Pluakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248230  
Date Received : May 09, 2022  
Date Reported : May 16, 2022  
Report Number : 2294880-1

Page 1 of 1

Sample Number 2248230-1  
Sample Date May 09, 2022 2:45 PM  
Sample Description Wastewater  
Contract ID L\_HESIE\_004\_2551 Plot FZ-10 Site Air International Thermal Systems (Thailand) Ltd.  
Data Analysis Commenced May 09, 2022  
Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)  
Physical Property Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	275	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	518	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	211	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	208	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	Not Detected	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.44	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.6	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	432	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	78	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Chainusorn Lertmanthakunchal , Nantawat Sarth

Remark :  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0009**  
**Lot ID: 2248230**  
Date Received : May 09, 2022  
Date Reported : May 17, 2022  
Report Number : 2294980-2

Page 1 of 1

<b>Sample Number</b>	2248230-1
<b>Sampled Date</b>	May 09, 2022 2:45 PM
<b>Sample Description</b>	Wastewater
<b>Contract ID</b>	L_HESIE_004_2551
<b>Plot</b>	FZ-10
<b>Site</b>	Air International Thermal Systems (Thailand) Ltd.
<b>Date Analysis Commenced</b>	May 10, 2022
<b>Condition of Sample</b>	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
<b>Physical Property</b>	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.0006	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.06	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.04	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.007	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.14	≤5.0	Based on APHA (2017), 3125	Bangkok

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
**Sampled By :** Chaiusorn Lerthanakunchai , Nantawat Sarin

**Remark :**  
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248230**  
Date Received : May 09, 2022  
Date Reported : May 16, 2022  
Report Number : 2294980-3

Page 1 of 1

<b>Sample Number</b>	2248230-1
<b>Sampled Date</b>	May 09, 2022 2:45 PM
<b>Sample Description</b>	Wastewater
<b>Contract ID</b>	L_HESIE_004_2551
<b>Plot</b>	FZ-10
<b>Site</b>	Air International Thermal Systems (Thailand) Ltd.
<b>Date Analysis Commenced</b>	May 10, 2022
<b>Condition of Sample</b>	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
<b>Physical Property</b>	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.30	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	1.3	≤5	APHA (2017), 4500-F(C)	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
**Sampled By :** Chaiusorn Lerthanakunchai , Nantawat Sarin

**Remark :**  
- LOD : Limit of Detection  
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* if/are not included in scope of Accreditation ISO/IEC 17025.  
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co., Ltd. Bangkok Branch, DSS Accreditation No. 0009.





## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149130

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185172-1

Page 1 of 1

Sample Number	21149130-1						
Sampled Date	Jan 07, 2022 10:10 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_007_2560	Plot	FZ-088	Site	AKWEL RAYONG (THAILAND) Co.,Ltd.		
Date Analysis Commenced	Jan 07, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	828	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	2942	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	6.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	628	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitriya Thongdaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220793

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235327-1

Page 1 of 1

Sample Number	2220793-1						
Sampled Date	Mar 11, 2022 9:16 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_007_2560	Plot	FZ-088	Site	AKWEL RAYONG (THAILAND) Co.,Ltd.		
Date Analysis Commenced	Mar 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	45	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	304	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	80	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaimusorn Lerthanakulnuch

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248278

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295084-1

Page 1 of 1

Sample Number	2248278-1						
Sampled Date	May 11, 2022 11:05 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_007_2560	Plot	FZ-08B	Site	AKWIEL RAYONG (THAILAND) Co.,Ltd.		
Date Analysis Commenced	May 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Black, some odour, a lot of solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	870	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	2886	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1792	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	98	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thonglaeng

Remark :

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- <LOQ : Lower than LOQ (Limit of Quantification) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149172

Date Received : Jan 14, 2022

Date Reported : Jan 19, 2022

Report Number : 2185349-1

Page 1 of 1

Sample Number	21149172-1							Page 1 of 1
Sampled Date	Jan 14, 2022 11:55 AM							
Sample Description	Wastewater							
Contract ID	L_HESIE_003_2560	Plot	H.08.H.09.H.18	Site	AKZO NOBEL PAINTS (THAILAND) LIMITED.			
Date Analysis Commenced	Jan 14, 2022							
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
Water Testing								
BOD (5 days at 20 Degree C)	mg/L	-	2	41	≤500	APHA (2017), 5210 B	Rayong	
COD	mg/L	1.5	5	125	≤750	APHA (2017), 5220 D	Rayong	
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong	
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong	
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	200	≤3000	APHA (2017), 2540 C	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	19	≤200	APHA (2017), 2540 D	Rayong	

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Saitayakun

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phuekdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220727

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2234938-1

Page 1 of 1

Sample Number	2220727-1
Sample Date	Mar 09, 2022 3:52 PM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2560
Plot	H.08,H.09,H.18
Site	AKZO NOBEL PAINTS (THAILAND) LIMITED.
Date Analysis Commenced	Mar 09, 2022
Condition of Sample	Contained in one amber glass bottle, seven plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	91	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	288	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	217	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	213	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.04	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	29.9	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	550	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	41	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romnachai Moungma , Nantawat Sarh

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phuekdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2220727

Date Received : Mar 09, 2022

Date Reported : Mar 16, 2022

Report Number : 2234938-2

Page 1 of 1

Sample Number	2220727-1
Sample Date	Mar 09, 2022 3:52 PM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2560
Plot	H.08,H.09,H.18
Site	AKZO NOBEL PAINTS (THAILAND) LIMITED.
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle, seven plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.06	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.03	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.06	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.007	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	0.0005	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.26	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romnachai Moungma , Nantawat Sarh

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220727  
Date Received : Mar 09, 2022  
Date Reported : Mar 15, 2022  
Report Number : 2234938-3

Page 1 of 1

Sample Number : 2220727-1  
Sample Date : Mar 09, 2022 3:52 PM  
Sample Description : Wastewater  
Contract ID : L\_HESIE\_003\_2560 Plot : H.08/H.09/H.18 Site : AKZO NOBEL PAINTS (THAILAND) LIMITED.  
Date Analysis Commenced : Mar 10, 2022  
Condition of Sample : Contained in one amber glass bottle, seven plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)  
Physical Property : Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.30	≤10.0	Based on APHA (2017), 3125	Bangkok
<b>Water Testing</b>							
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nonnatchai Moungma , Nantawat Serin

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248328  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295260-1

Page 1 of 1

Sample Number : 2248328-1  
Sample Date : May 13, 2022 2:13 PM  
Sample Description : Wastewater  
Contract ID : L\_HESIE\_003\_2560 Plot : H.08/H.09/H.18 Site : AKZO NOBEL PAINTS (THAILAND) LIMITED.  
Date Analysis Commenced : May 13, 2022  
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)  
Physical Property : Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	141	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	257	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	440	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	125	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149135

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185196-1

Page 1 of 1

Sample Number	21149135-1
Sampled Date	Jan 07, 2022 11:35 AM
Sample Description	Wastewater
Contract ID	L_HESIE_002_2554
Plot	FZ-16-FZ17
Site	American Axle and Manufacturing (Thailand)Co.,Ltd.
Date Analysis Commenced	Jan 07, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

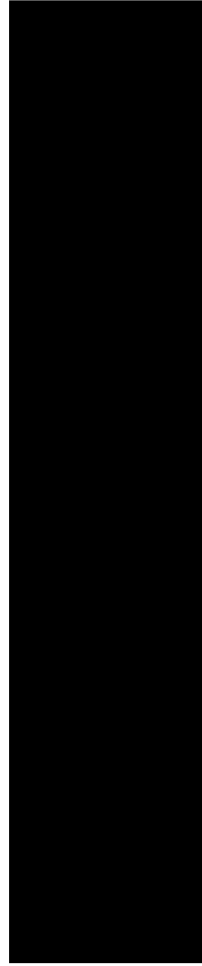
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	31	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	102	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	288	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	≤200	APHA (2017), 2540 D	Rayong

Guideline: Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220798

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235341-1

Page 1 of 1

Sample Number	2220798-1
Sampled Date	Mar 11, 2022 1:50 PM
Sample Description	Wastewater
Contract ID	L_HESIE_002_2554
Plot	FZ-16-FZ17
Site	American Axle and Manufacturing (Thailand)Co.,Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid

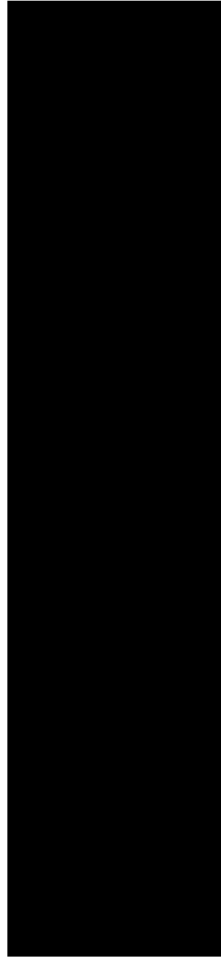
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	132	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	367	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2010	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	424	≤200	APHA (2017), 2540 D	Rayong

Guideline: Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Lerthanakunchai

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248283  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295090-1

Page 1 of 1

Sample Number	2248283-1										
Sampled Date	May 13, 2022 11:30 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_002_2554	Plot	FZ-16-FZ17	Site	American Axle and Manufacturing (Thailand) Co., Ltd.						
Date Analysis Commenced	May 13, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	33	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	104	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	360	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	31	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149351  
Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185749-1

Page 1 of 1

Sample Number	21149351-1										
Sampled Date	Jan 07, 2022 9:50 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_002_2553	Plot	FZ-07B	Site	Ametal Company Limited.						
Date Analysis Commenced	Jan 07, 2022										
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	50	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	114	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	321	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng , Thanassou Namakunna

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING

No.0009

Lot ID: 21149351

Date Received : Jan 07, 2022

Date Reported : Jan 14, 2022

Report Number : 2185749-2

Page 1 of 1

Sample Number 21149351-1  
Sampled Date Jan 07, 2022 9:50 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_002\_2553 Plot FZ-07B Site Amedal Company Limited.  
Date Analysis Commenced Jan 10, 2022  
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.  
Physical Property (APHA / USEPA)  
Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Nickel	mg/L	0.0003	0.0005	0.03	≤1.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thongtaeng , Thanassou Namakuma

Remark :

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

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING

No.0042

Lot ID: 21149351

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185749-3

Page 1 of 1

Sample Number 21149351-1  
Sampled Date Jan 07, 2022 9:50 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_002\_2553 Plot FZ-07B Site Amedal Company Limited.  
Date Analysis Commenced Jan 08, 2022  
Condition of Sample Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.  
Physical Property (APHA / USEPA)  
Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Fluoride	mg/L	0.05	0.2	1.3	≤5	APHA (2017), 4500-FC	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thongtaeng , Thanassou Namakuma

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220990**  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2236435-1

Page 1 of 1

Sample Number	2220990-1										
Sampled Date	Mar 11, 2022 9:01 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_002_2553	Plot	FZ-07B	Site	Anetel Company Limited.						
Date Analysis Commenced	Mar 11, 2022										
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid, and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	22	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	66	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	240	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	APHA (2017), 2540 D	Rayong				

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chaiusom Lettanthakunchal , Nantawat Sarin

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0009**  
**Lot ID: 2220990**  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2236435-2

Page 1 of 1

Sample Number	2220990-1	Sampled Date	Mar 11, 2022 9:01 AM	Sample Description	Wastewater	Contract ID	L_HESIE_002_2553	Plot	FZ-07B	Site	Anetel Company Limited.
Date Analysis Commenced	Mar 14, 2022										
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.										
Physical Property	Yellow, a lot of odour, some solid, and turbid										

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Nickel	mg/L	0.0003	0.0005	0.010	≤1.0	Based on APHA (2017), 3125	Bangkok

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chaiusom Lettanthakunchal , Nantawat Sarin

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220990

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2226435-3

Page 1 of 1

Sample Number	2220990-1
Sampled Date	Mar 11, 2022 9:01 AM
Sample Description	Wastewater
Contract ID	L_HESIE_002_2553
Plot	FZ-07B
Site	Amatel Company Limited.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, a lot of odour, some solid, and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Fluoride	mg/L	0.05	0.2	0.8	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalinsorn Lerthanakunchai, Nantawat Sarin

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248366

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295357-1

Page 1 of 1

Sample Number	2248366-1
Sampled Date	May 11, 2022 10:45 AM
Sample Description	Wastewater
Contract ID	L_HESIE_002_2553
Plot	FZ-07B
Site	Amatel Company Limited.
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	20	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	160	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thongdaeng, Nantawat Sarin

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0009

Lot ID: 2248366

Date Received : May 11, 2022

Date Reported : May 19, 2022

Report Number : 2295357-2

Page 1 of 1

Sample Number	2248366-1
Sampled Date	May 11, 2022 10:45 AM
Sample Description	Wastewater
Contract ID	L_HESIE_002_2553
Plot	FZ-07B
Site	Ametal Company Limited.
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Nickel	mg/L	0.0003	0.0005	0.01	≤1.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongdaeng , Nantawat Sarin

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

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P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2248366

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295357-3

Page 1 of 1

Sample Number	2248366-1
Sampled Date	May 11, 2022 10:45 AM
Sample Description	Wastewater
Contract ID	L_HESIE_002_2553
Plot	FZ-07B
Site	Ametal Company Limited.
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, some odour, solid and turbid

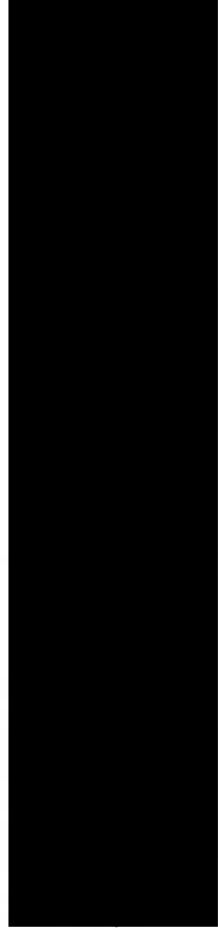
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Fluoride	mg/L	0.05	0.2	0.4	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongdaeng , Nantawat Sarin

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149072

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184244-1

Page 1 of 1

Sample Number	21149072-1
Sampled Date	Jan 10, 2022 10:54 AM
Sample Description	Wastewater
Contract ID	L_HESIE_015_2556 Plot D-22A
Site	ASAHT PLUS Company Limited.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

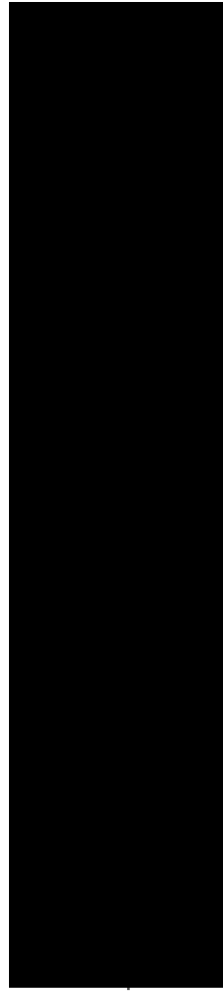
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	113	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	278	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMT	-	5	135	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMT	-	5	131	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.127	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.5	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	308	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	58	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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## Analysis / Test Report

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121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149072

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184244-2

Page 1 of 1

Sample Number	21149072-1
Sampled Date	Jan 10, 2022 10:54 AM
Sample Description	Wastewater
Contract ID	L_HESIE_015_2556 Plot D-22A
Site	ASAHT PLUS Company Limited.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

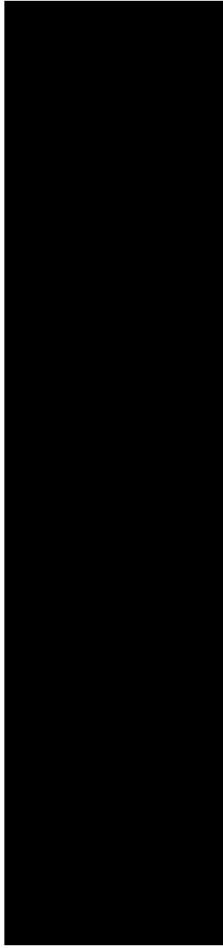
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.07	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.010	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.05	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.006	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	<0.0005	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.10	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149072  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2184244-3

Page 1 of 1

Sample Number 21149072-1  
Sampled Date Jan 10, 2022 10:54 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_015\_2556 Plot D-22A Site ASAHI PLUS Company Limited.  
Date Analysis Commenced Jan 11, 2022  
Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.29	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro , Panupong Manit

Remark :  
• LOD : Limit of Detection  
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• Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
• [A] Analysis conducted by ALS Laboratory Group (Thailand) Co., Ltd. Bangkok Branch, DSS Accreditation No. 0009.

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220830  
Date Received : Mar 10, 2022  
Date Reported : Mar 16, 2022  
Report Number : 2235461-1

Page 1 of 1

Sample Number 2220830-1  
Sampled Date Mar 10, 2022 10:29 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_015\_2556 Plot D-22A Site ASAHI PLUS Company Limited.  
Date Analysis Commenced Mar 10, 2022  
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	116	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	289	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	364	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	46	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romsachai Muangma

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number 2248313-1  
Sampled Date May 12, 2022 3:22 PM  
Sample Description Wastewater  
Contract ID L\_HESIE\_015\_2556 Plot D-22A Site ASAHI PLUS Company Limited.  
Date Analysis Commenced May 12, 2022  
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	87	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	202	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	336	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	62	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaihusorn Lerbvanthakundhal

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number 21149218-1  
Sampled Date Jan 11, 2022 2:50 PM  
Sample Description Wastewater  
Contract ID L\_WHA ESIE1\_001\_2564 Plot H-07 Site ATLANTIC FOOD PRODUCTS Co., Ltd.  
Date Analysis Commenced Jan 11, 2022  
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	121	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	284	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	456	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	52	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nannat thammassaro

Remark :  
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## Analysis / Test Report

TESTING  
No.0042

**Lot ID: 2220739**  
Date Received : Mar 04, 2022  
Date Reported : Mar 11, 2022  
Report Number : 2235080-1

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location :** WHA ESIE 1

Page 1 of 1

<b>Sample Number</b>	2220739-1
<b>Sampled Date</b>	Mar 04, 2022 2:00 PM
<b>Sample Description</b>	Wastewater
<b>Contract ID</b>	L.WHA ESTIE1_001_2564 Mar 04, 2022
<b>Date Analysis Commenced</b>	Mar 05, 2022
<b>Condition of Sample</b>	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
<b>Physical Property</b>	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	162	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	353	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	167	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	164	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	11	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.093	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.1	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	470	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	102	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pathompong Komseawat , Thanassou Namakuma

**Remark :**

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## Analysis / Test Report

TESTING  
No.0008

**Lot ID: 2220739**  
Date Received : Mar 04, 2022  
Date Reported : Mar 11, 2022  
Report Number : 2235080-2

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location :** WHA ESIE 1

Page 1 of 1

<b>Sample Number</b>	2220739-1
<b>Sampled Date</b>	Mar 04, 2022 2:00 PM
<b>Sample Description</b>	Wastewater
<b>Contract ID</b>	L.WHA ESTIE1_001_2564 Mar 05, 2022
<b>Date Analysis Commenced</b>	Mar 05, 2022
<b>Condition of Sample</b>	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
<b>Physical Property</b>	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.08	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.004	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.07	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.01	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	0.002	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.31	≤5.0	Based on APHA (2017), 3125	Bangkok

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pathompong Komseawat , Thanassou Namakuma

**Remark :**

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220739

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2235080-3

Page 1 of 1

Sample Number	2220739-1
Sampled Date	Mar 04, 2022 2:00 PM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_001_2564
Plot	H.07
Site	ATLANTIC FOOD PRODUCTS Co.,Ltd.
Date Analysis Commenced	Mar 05, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
(A) Iron	mg/L	0.003	0.005	0.58	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pethompong Kornsawat , Thanassou Namakurna

Remark :

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- (A) Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248359

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295372-1

Page 1 of 1

Sample Number	2248359-1
Sampled Date	May 12, 2022 2:27 PM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_001_2564
Plot	H.07
Site	ATLANTIC FOOD PRODUCTS Co.,Ltd.
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	81	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	187	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (9)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	328	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	44	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :

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## Analysis / Test Report

TESTING  
No.0042

Lot ID: 21149126

Date Received : Jan 14, 2022

Date Reported : Jan 19, 2022

Report Number : 2185157-1

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	21149126-1
Sampled Date	Jan 14, 2022 10:20 AM
Sample Description	Wastewater
Contract ID	L_HESIE_018_2555 Plot A-09A A-09B
Site	Auto Alliance (Thailand) Co., Ltd.
Date Analysis Commenced	Jan 14, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	18	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	202	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithompong Kornsaivat

Remark :

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## Analysis / Test Report

TESTING  
No.0042

Lot ID: 2220787

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235312-1

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	2220787-1
Sampled Date	Mar 11, 2022 2:09 PM
Sample Description	Wastewater
Contract ID	L_HESIE_018_2555 Plot A-09A A-09B
Site	Auto Alliance (Thailand) Co., Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	10	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	138	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalmusorn Letranthakunchai

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory | Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248274

Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295079-1

Page 1 of 1

Sample Number : 2248274-1  
Sampled Date : May 13, 2022 3:00 PM  
Sample Description : Wastewater  
Contract ID : L\_HESIE\_018\_2555 Plot : A-09A A-09B Site : Auto Alliance (Thailand) Co., Ltd.  
Date Analysis Commenced : May 13, 2022  
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)  
Physical Property : Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), S210 B	Rayong
COD	mg/L	1.5	5	<5	≤750	APHA (2017), S220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	B.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	104	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :

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

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory | Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149195

Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185421-1

Page 1 of 1

Sample Number : 21149195-1  
Sampled Date : Jan 07, 2022 10:35 AM  
Sample Description : Wastewater  
Contract ID : L\_WHA ESIE1\_020\_2562 Plot : FZ.28 Site : BNL (Thailand) Limited.  
Date Analysis Commenced : Jan 07, 2022  
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)  
Physical Property : Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	94	≤500	APHA (2017), S210 B	Rayong
COD	mg/L	1.5	5	323	≤750	APHA (2017), S220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	308	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	58	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :

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

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

**P/O :**  
**Project Name :** Factory | Monthly  
**Project Location :** WHA ESIE 1

TESTING  
No.0042

**No.0042**  
**Lot ID: 2248349**  
Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2295316-1

Page 1 of 1

Sample Number	2248349-1	Sample Date	May 11, 2022 2:30 PM	Sample Description	Wastewater	Contract ID	L_WHA ESIEL_020_2562	Plot	FZ.28	Site	BNL (Thailand) Limited.	Testing Location
Date Analysis Commenced	May 11, 2022	Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)									
Physical Property	Yellow, a lot of odour, some solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method						
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	54	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	144	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	372	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	16	≤200	APHA (2017), 2540 D	Rayong					

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
**Sampled By :** Pittaya Thongbaeng

Remark :  
 \* LOD : Limit of Detection  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149109

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185102-1

Page 1 of 1

Sample Number	21149109-1
Sampled Date	Jan 10, 2022 2:45 PM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2554
Plot	B16-2
Site	Bolwell Holding (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOG)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	65	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	193	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	158	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	90	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchalarnwong

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220766

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235241-1

Page 1 of 1

Sample Number	2220766-1
Sampled Date	Mar 09, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2554
Plot	B16-2
Site	Bolwell Holding (Thailand) Co.,Ltd.
Date Analysis Commenced	Mar 09, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOG)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	54	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	107	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	312	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	37	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248258

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number: 2250555-1

Page 1 of 1

Sample Number	2248258-1
Sampled Date	May 13, 2022 10:18 AM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2554
Plot	B16-2
Site	Bolwell Holding (Thailand) Co., Ltd.
Date Analysis Commenced	May 13, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	92	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	234	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	240	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	70	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149077

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number: 2184266-1

Page 1 of 1

Sample Number	21149077-1
Sampled Date	Jan 10, 2022 10:21 AM
Sample Description	Wastewater
Contract ID	L_HESIE_020_2557
Plot	G-08
Site	Chikuma (Thailand) Co., Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid, and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	3	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	20	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	21	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	21	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.017	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	28.8	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	226	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nannat Chaimasaro , Panupong Manit

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149077

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184266-2

Page 1 of 1

Sample Number	21149077-1
Sample Date	Jan 10, 2022 10:21 AM
Sample Description	Wastewater
Contract ID	L_HESIE_020_2557
Plot	G-08
Site	Chikuma (Thailand) Co., Ltd.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid, and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.0008	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.07	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.004	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.02	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.005	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.15	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central

wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149077

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184266-3

Page 1 of 1

Sample Number	21149077-1
Sample Date	Jan 10, 2022 10:21 AM
Sample Description	Wastewater
Contract ID	L_HESIE_020_2557
Plot	G-08
Site	Chikuma (Thailand) Co., Ltd.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid, and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.17	≤10.0	Based on APHA (2017), 3125	Bangkok
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

- LOD : Limit of Detection

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220836**  
Date Received : Mar 10, 2022  
Date Reported : Mar 16, 2022  
Report Number : 2235575-1

Page 1 of 1

Sample Number	2220836-1						
Sampled Date	Mar 10, 2022 10:00 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_020_2557	Plot	G-08	Site	Chikuma (Thailand) Co.,Ltd.		
Date Analysis Commenced	Mar 10, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	19	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	109	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (3)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	220	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	16	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Ronnachai Moungma

**Remark :**  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248317**  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295188-1

Page 1 of 1

Sample Number	2248317-1							Page 1 of 1
Sampled Date	May 12, 2022 2:45 PM							
Sample Description	Wastewater							
Contract ID	L_HESIE_020_2557	Plot	G-08	Site	Chikuma (Thailand) Co.,Ltd.			
Date Analysis Commenced	May 12, 2022							
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property	Yellow, a lot of odour, some solid and turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
Water Testing								
BOD (5 days at 20 Degree C)	mg/L	-	2	18	≤500	APHA (2017), 5210 B	Rayong	
COD	mg/L	1.5	5	50	≤750	APHA (2017), 5220 D	Rayong	
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong	
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong	
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (8)	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	308	≤3000	APHA (2017), 2540 C	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	15	≤200	APHA (2017), 2540 D	Rayong	

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chaiusorn Lerttanbakhunchai

**Remark :**  
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TESTING  
No.0042

**Lot ID: 21149128**

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number: 2185165-1

Page 1 of 1

Sample Number	22207931-1					
Sampled Date	Mar 11, 2022 2:58 PM					
Sample Description	Wastewater					
Contract ID	L_HESIE_010_2555	Plot	FZ04A	Site	Clarion Asia (Thailand) Co.,Ltd.	
Data Analysis Commenced	Mar 11, 2022					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
Physical Property	Yellow, a lot of odour, some solid and turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
Water Testing						
BOD (5 days at:20 Degree C)	mg/L	-	2	65	≤500	APHA (2017), 5210 B
COD	mg/L	1.5	5	144	≤750	APHA (2017), 5220 D
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B
pH (on site) *		-	-	8.2	5.5-9.0	Based on APHA (2017), 4500-H (B)
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	260	≤3000	APHA (2017), 2540 C
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	37	≤200	APHA (2017), 2540 D

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By: Chainusom Lertanthakunchai**

emark:

- LOD : Limit of Detection

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

\* Analyst(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.



TESTING  
No. 0042

**Lot ID: 2220791**

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235320-1

Page 1 of 1

Sample Number	22207931-1					
Sampled Date	Mar 11, 2022 2:58 PM					
Sample Description	Wastewater					
Contract ID	L_HESIE_010_2555	Plot	FZ04A	Site	Clarion Asia (Thailand) Co.,Ltd.	
Data Analysis Commenced	Mar 11, 2022					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
Physical Property	Yellow, a lot of odour, some solid and turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
Water Testing						
BOD (5 days at:20 Degree C)	mg/L	-	2	65	≤500	APHA (2017), 5210 B
COD	mg/L	1.5	5	144	≤750	APHA (2017), 5220 D
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B
pH (on site) *		-	-	8.2	5.5-9.0	Based on APHA (2017), 4500-H (B)
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	260	≤3000	APHA (2017), 2540 C
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	37	≤200	APHA (2017), 2540 D

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By: Chainusom Lertanthakunchai**

**Remark:**

- LOD : Limit of Detection

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

\* Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248276  
Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2295081-1

Page 1 of 1

Sample Number	2248276-1										
Sampled Date	May 11, 2022 10:35 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_010_2555		Plot	FZ04A		Site	Clarion Asia (Thailand) Co.,Ltd.				
Date Analysis Commenced	May 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water-Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	58	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	175	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	292	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	49	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149119  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185137-1

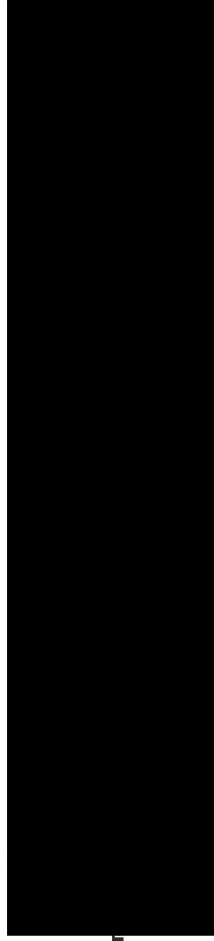
Page 1 of 1

Sample Number	21149119-1											Page 1 of 1
Sampled Date	Jan 10, 2022 10:10 AM											
Sample Description	Wastewater											
Contract ID	L_HESIE_007_2551		Plot	A-02		Site	Dalkyo Nishikawa (Thailand) Co.,Ltd.					
Date Analysis Commenced	Jan 10, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	130	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	299	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	308	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	76	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchaihaew

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory | Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220778

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235298-1

Page 1 of 1

Sample Number	2220778-1						
Sampled Date	Mar 11, 2022 9:14 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_007_2551	Plot	A-02	Site	Daijyo Nishikawa (Thailand) Co.,Ltd.		
Date Analysis Commenced	Mar 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	119	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	249	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1020	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	75	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaimusorn Letnathakunchai

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory | Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248268

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number : 2295070-1

Page 1 of 1

Sample Number	2248268-1						
Sampled Date	May 13, 2022 9:55 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_007_2551	Plot	A-02	Site	Daijyo Nishikawa (Thailand) Co.,Ltd.		
Date Analysis Commenced	May 13, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	87	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	300	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	400	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	124	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149220  
Date Received : Jan 11, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2186289-1

Page 1 of 1

Sample Number	21149220-1										
Sampled Date	Jan 11, 2022 10:56 AM										
Sample Description	Wastewater										
Contract ID	L-WHA ESIE1_008_2563 Jan 11, 2022										
Date Analysis Commenced	Jan 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)										
Physical Property	Yellow, a lot of odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	76	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	175	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	336	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	23	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220737  
Date Received : Mar 04, 2022  
Date Reported : Mar 11, 2022  
Report Number : 2235051-1

Page 1 of 1

Sample Number	2220737-1											
Sampled Date	Mar 04, 2022 9:20 AM											
Sample Description	Wastewater											
Contract ID	L-WHA ESIE1_008_2563			Plot		D.47		Site				Daya Kitchen Appliance Accessories (Thailand) Co.,Ltd
Date Analysis Commenced	Mar 04, 2022											
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, some solid and turbid											

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	71	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	157	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	135	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	130	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.101	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	29.2	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	368	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Kornasawat , Thanissoun Nannakuma

Remark :

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- \* "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2220737

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2235051-2

Page 1 of 1

Sample Number	2220737-1										
Sampled Date	Mar 04, 2022 9:20 AM										
Sample Description	Wastewater										
Contract ID	L.WHA	Plot	D.47	Site	Daya Kitchen Appliances Accessories (Thailand) Co.,Ltd						
	ESIEL 008_2563										
Date Analysis Commenced	Mar 05, 2022										
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Metals Testing											
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Based on APHA (2017), 3125	Bangkok				
Barium	mg/L	0.0003	0.0005	0.07	≤1.0	Based on APHA (2017), 3125	Bangkok				
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok				
Copper	mg/L	0.0003	0.0005	0.01	≤2.0	Based on APHA (2017), 3125	Bangkok				
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (6)	Bangkok				
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok				
Manganese	mg/L	0.0003	0.0005	0.05	≤5.0	Based on APHA (2017), 3125	Bangkok				
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Based on APHA (2017), 3112	Bangkok				
Nickel	mg/L	0.0003	0.0005	0.01	≤1.0	Based on APHA (2017), 3125	Bangkok				
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok				
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok				
Zinc	mg/L	0.003	0.005	0.57	≤5.0	Based on APHA (2017), 3125	Bangkok				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Kornsewat , Thansoun Namakuma

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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WHA UTILITIES 7-204-4709

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220737

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2235051-3

Page 1 of 1

Sample Number	2220737-1										
Sampled Date	Mar 04, 2022 9:20 AM										
Sample Description	Wastewater										
Contract ID	L.WHA	Plot	D.47	Site	Daya Kitchen Appliance Accessories (Thailand) Co.,Ltd						
Date Analysis Commenced	EST1_008_2563										
Condition of Sample	Mar 05, 2022										
Physical Property	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Metals Testing											
Iron	mg/L	0.003	0.005	0.29	≤10.0	Based on APHA (2017), 3125	Bangkok				
Water Testing											
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Kornsewat , Thansoun Namakuma

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co., Ltd. Bangkok Branch, DSS Accreditation No. 0009.

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248357  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295365-1

Page 1 of 2

Sample Number	2248357-1												
Sampled Date	May 12, 2022 11:10 AM												
Sample Description	Wastewater												
Contract ID	L_WHA ESTEL_008_2563												
Date Analysis Commenced	May 12, 2022												
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)												
Physical Property	Yellow, a lot of odour, solid and some turbid												
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location						
Water Testing													
BOD (5 days at 20 Degree C)	mg/L	-	2	41	≤500	APHA (2017), 5210 B	Rayong						
COD	mg/L	1.5	5	95	≤750	APHA (2017), 5220 D	Rayong						
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong						
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong						
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong						
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	268	≤3000	APHA (2017), 2540 C	Rayong						
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤200	APHA (2017), 2540 D	Rayong						

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Lerthanakulchul

Remark :  
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- "≤" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149162  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185293-1

Page 1 of 1

Sample Number	21149162-1													Page 1 of 1
Sampled Date	Jan 10, 2022 9:30 AM													
Sample Description	Wastewater													
Contract ID	L_HESIE_025_2556		Plot	G-01		Site	DAYOU WINNA (THAILAND) CO., LTD							
Date Analysis Commenced	Jan 10, 2022													
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)													
Physical Property	Yellow, a lot of odour, solid and some turbid													
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location							
Water Testing														
BOD (5 days at 20 Degree C)	mg/L	-	2	62	≤500	APHA (2017), 5210 B	Rayong							
COD	mg/L	1.5	5	178	≤750	APHA (2017), 5220 D	Rayong							
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong							
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 3520 B	Rayong							
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong							
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	352	≤3000	APHA (2017), 2540 C	Rayong							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	25	≤200	APHA (2017), 2540 D	Rayong							

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thannasaro

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220837

Date Received : Mar 10, 2022  
Date Reported : Mar 16, 2022  
Report Number : 2235579-1

Page 1 of 1

Sample Number : 2220837-1  
Sampled Date : Mar 10, 2022 9:15 AM  
Sample Description : Wastewater  
Contract ID : L\_HESIE\_025\_2556 Plot : G-01 Site : DAYOU WINIA (THAILAND) CO., LTD  
Date Analysis Commenced : Mar 10, 2022  
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property : Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	169	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	332	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	35	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Muangma

Remark :  
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- "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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โทรศัพท์ 0-323-99445

โทรศัพท์ 0-323-99442

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248318

Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295193-1

Page 1 of 1

Sample Number : 2248318-1  
Sampled Date : May 12, 2022 2:15 PM  
Sample Description : Wastewater  
Contract ID : L\_HESIE\_025\_2556 Plot : G-01 Site : DAYOU WINIA (THAILAND) CO., LTD  
Date Analysis Commenced : May 12, 2022  
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property : Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	155	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	314	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	408	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	67	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalnuorn Lertrantakulchai

Remark :  
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## Analysis / Test Report

**Client : WHA Utilities and Power Public Company Limited**  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

0/0

Project Name : Factory | Monthly

Project Location: WHA ECIE 1

## TESTING

No. 004  
Lat TD: 3330973

3/00777 ID 107  
Date Received: 11-07-2022

Date Received : Mar 07, 2022

Date Reported : Mar 14, 2022

Sample Number	2220873-1												Page 1 of 1
Sampled Date	Mar 07, 2022 2:12 PM												
Sample Description	Wastewater												
Contract ID	L_WHA	ESTEL 024_2562	Plot	WHA.P.2B-02	Site	DHL Supply Chain (Thailand) Limited.							
Date Analysis Commenced	Mar 07, 2022												
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)												
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid												
Analyse	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location						
Water Testing													
BOD (5 days at 20 Degree C)	mg/L	-	2	88	≤500	APHA (2017), 5210 B	Rayong						
COD	mg/L	1.5	5	253	≤750	APHA (2017), 5220 D	Rayong						
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong						
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong						
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong						
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	590	≤3000	APHA (2017), 2540 C	Rayong						
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	44	≤200	APHA (2017), 2540 D	Rayong						

**Guideline:** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Remark:

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**Abstract**

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248223

Date Received : May 09, 2022  
Date Reported : May 16, 2022  
Report Number : 2294972-1

Page 1 of 1

Sample Number	2248223-1
Sampled Date	May 09, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_024_2562 May 10, 2022
Date Analysis Commenced	May 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	92	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	269	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMC	-	5	172	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMC	-	5	168	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	Not Detected	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.14	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.6	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	484	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	54	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Letmanthakunchai , Nantawat Sarin

Remark :  
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2248223

Date Received : May 09, 2022  
Date Reported : May 17, 2022  
Report Number : 2294972-2

Page 1 of 1

Sample Number	2248223-1
Sampled Date	May 09, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_024_2562 May 10, 2022
Date Analysis Commenced	May 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.06	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.07	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.005	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.18	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Letmanthakunchai , Nantawat Sarin

Remark :  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248223**  
Date Received : May 09, 2022  
Date Reported : May 16, 2022  
Report Number : 2294972-3

Page 1 of 1

Sample Number	2248223-1
Sampled Date	May 09, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L_WHA ESIE1_024_2562 May 10, 2022
Date Analysis Commenced	
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
(A) Iron	mg/L	0.003	0.005	0.34	≤10.0	Based on APHA (2017), 3125	Bangkok
Fluoride	mg/L	0.05	0.2	0.3	≤5	APHA (2017), 4500-F(C)	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chainusorn Lertmanthakunchai , Nantawat Sarin

**Remark :**  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 21149142**  
Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185221-1

Page 1 of 1

Sample Number	21149142-1
Sampled Date	Jan 07, 2022 9:35 AM
Sample Description	Wastewater
Contract ID	L_HESIE_023_2557 Plot FZ-05
Date Analysis Commenced	Jan 07, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	12	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	131	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	980	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	36	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pittaya Thongtaeng

**Remark :**  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220805

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235379-1

Page 1 of 1

Sample Number	2220805-1
Sampled Date	Mar 11, 2022 3:08 PM
Sample Description	Wastewater
Contract ID	L_HESIE_023_2557
Plot	FZ-05
Site	DuPont Nutrition (Thailand) Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and no turbid

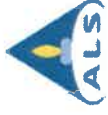
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	36	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	830	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chainusorn Lertnathakunchai

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248290

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number : 2295121-1

Page 1 of 1

Sample Number	2248290-1
Sampled Date	May 13, 2022 11:25 AM
Sample Description	Wastewater
Contract ID	L_HESIE_023_2557
Plot	FZ-05
Site	DuPont Nutrition (Thailand) Ltd.
Date Analysis Commenced	May 13, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	26	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	868	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thongdaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149164  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185297-1

Page 1 of 1

Sample Number	21149164-1		Jan 10, 2022 9:51 AM		Wastewater		L_HESIE_008_2558		Plot	G.05-G.06	Site	Epic International (Thailand) Co.,Ltd
Sample Description	Jan 10, 2022											
Contract ID	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)											
Date Analysis Commenced	Yellow, some odour, solid and no turbid											
Condition of Sample												
Physical Property												
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	6	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	188	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nattarat thammassaro

Remark :  
- LOD : Limit of Detection  
- "<" : lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220840  
Date Received : Mar 10, 2022  
Date Reported : Mar 16, 2022  
Report Number : 2235589-1

Page 1 of 1

Sample Number	2220840-1										
Sampled Date	Mar 10, 2022 9:38 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_008_2558	Plot	G.05-G.06	Site	Epic International (Thailand) Co.,Ltd						
Date Analysis Commenced	Mar 10, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	6	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	106	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Meungma

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory | Monthly  
Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248320  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2255198-1

Page 1 of 1

Sample Number	2248320-1										
Sampled Date	May 12, 2022 2:30 PM										
Sample Description	Wastewater										
Contract ID	L_HESIE_008_2558	Plot	G.05-G.06	Site	Epic International (Thailand) Co.,Ltd						
Date Analysis Commenced	May 12, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
<b>Water Testing</b>											
BOD (5 days at 20 Degree C)	mg/L	-	2	7	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	44	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	216	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	106	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chainusorn Lertvanthakunchal

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory | Monthly  
Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149194  
Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185420-1

Page 1 of 1

Sample Number	21149194-1										
Sampled Date	Jan 07, 2022 10:17 AM										
Sample Description	Wastewater										
Contract ID	L_WHA	Plot	FZ.27B	Site	EUP Electric Vehicle (Thailand) Co., Ltd.						
Date Analysis Commenced	ESIE1_018_2562										
Condition of Sample	Jan 07, 2022										
Physical Property	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA) Yellow, some odour, solid and no turbid										
Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	9	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	38	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (5)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	164	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at	mg/L	-	5	6	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phrakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042

Lot ID: 2220868

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 22235687-1

Page 1 of 1

Sample Number	2220868-1
Sampled Date	Mar 11, 2022 9:21 AM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_018_2562
Plot	FZ.278
Site	ELUP Electric Vehicle (Thailand) Co., Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	14	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	50	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	202	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chainusorn Letbrahankhunchai

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phrakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042

Lot ID: 2248348

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295313-1

Page 1 of 1

Sample Number	2248348-1
Sampled Date	May 11, 2022 11:10 AM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_018_2562
Plot	FZ.278
Site	ELUP Electric Vehicle (Thailand) Co., Ltd.
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	20	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	49	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	212	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :

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## Analysis / Test Report

TESTING  
No.0042

**Lot ID: 21149078**  
Date Received : Jan 12, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2184272-1

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	21149078-1
Sampled Date	Jan 12, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L_HESIE_005_2554
Plot	D-42
Site	Ford Motor Company (Thailand) Limited
Date Analysis Commenced	Jan 12, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	110	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	263	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADWL	-	5	130	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADWL	-	5	126	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.060	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	32.8	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	416	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	98	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Sattayakun , Panupong Manit

Remark :

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

TESTING  
No.0009

**Lot ID: 21149078**  
Date Received : Jan 12, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2184272-2

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	21149078-1
Sampled Date	Jan 12, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L_HESIE_005_2554
Plot	D-42
Site	Ford Motor Company (Thailand) Limited
Date Analysis Commenced	Jan 13, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.08	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.004	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.05	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.010	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.54	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Sattayakun , Panupong Manit

Remark :

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

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149078  
Date Received : Jan 12, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2184272-3

Page 1 of 1

Sample Number 21149078-1  
Sampled Date Jan 12, 2022 2:30 PM  
Sample Description Wastewater  
Contract ID L\_HESIE\_005\_2554 Plot D-42 Site Ford Motor Company (Thailand) Limited  
Date Analysis Commenced Jan 13, 2022  
Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.41	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	0.3	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Sitayakun , Perupong Manit

Remark :  
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- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co., Ltd. Bangkok branch, DSS Accreditation No. 0009.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220997  
Date Received : Mar 09, 2022  
Date Reported : Mar 15, 2022  
Report Number : 2236416-1

Page 1 of 1

Sample Number 2220997-1  
Sampled Date Mar 09, 2022 2:30 PM  
Sample Description Wastewater  
Contract ID L\_HESIE\_005\_2554 Plot D-42 Site Ford Motor Company (Thailand) Limited  
Date Analysis Commenced Mar 09, 2022  
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	89	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	273	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	436	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	60	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachal Moungma

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

P/O : 121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220997

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2236416-2

Page: 1 of 1

Sample Number	2220997-1
Sample Date	Mar 09, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L_HESIE_005_2554
Site	Ford Motor Company (Thailand) Limited
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Fluoride	mg/L	0.05	0.2	0.3	≤5	APHA (2017), 4500-RC	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Rontachai Moungma

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

P/O : 121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248370

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295342-1

Page: 1 of 1

Sample Number	2248370-1
Sample Date	May 12, 2022 3:10 PM
Sample Description	Wastewater
Contract ID	L_HESIE_005_2554
Plot	D-42
Site	Ford Motor Company (Thailand) Limited
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	75	≤500	APHA (2017), 5210 B	Rayong
COO	mg/L	1.5	5	238	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	460	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	85	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thonglaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING

No.0042

Lot ID: 2248370

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295342-2

Page 1 of 1

Sample Number	2248370-1
Sampled Date	May 12, 2022 3:10 PM
Sample Description	Wastewater
Contract ID	L_HESIE_005_2554
Plot	D-42
Site	Ford Motor Company (Thailand) Limited
Date Analysis Commenced	May 13, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Fluoride	mg/L	0.05	0.2	0.4	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING

No.0042

Lot ID: 21149290

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185549-1

Page 1 of 1

Sample Number	21149290-1
Sampled Date	Jan 10, 2022 4:22 PM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2552
Plot	B-01
Site	Fuserashi (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	12	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	42	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1800	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchaihaow , Mongkon Phalathip

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149290

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185549-2

Page 1 of 1

Sample Number	21149290-1				
Sampled Date	Jan 10, 2022	4:22 PM			
Sample Description	Wastewater				
Contract ID	L_HESIE_003_2552	Plot	B-01	Site	Fuenserahi (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 11, 2022				
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.				
Physical Property	(APHA / USEPA) Yellow, some odour, solid and no turbid				

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Based on APHA (2017), 3500-Cr (6)	Bangkok
Nickel	mg/L	0.0003	0.0005	0.24	≤1.0	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	0.22	≤0.75	Based on APHA (2017), Calculated	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchaisaow , Mongkion Phalaithip

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149290

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185549-3

Page 1 of 1

Sample Number	21149290-1				
Sampled Date	Jan 10, 2022	4:22 PM			
Sample Description	Wastewater				
Contract ID	L_HESIE_003_2552	Plot	B-01	Site	Fuenserahi (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 11, 2022				
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.				
Physical Property	(APHA / USEPA) Yellow, some odour, solid and no turbid				

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.38	≤10.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchaisaow , Mongkion Phalaithip

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESTE 1

**TESTING**  
**No.0042**  
**Lot ID: 2221003**  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2236422-1

Page 1 of 1

Sample Number	2221003-1						
Sampled Data	Mar 11, 2022 2:30 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_003_2552	Plot	B-01	Site	Fuensashi (Thailand) Co., Ltd.		
Date Analysis Commenced	Mar 11, 2022						
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	24	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	67	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1590	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	16	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chalmusorn Lertrantakunchai, Jakkarin Manwicha

**Remark :**  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESTE 1

**TESTING**  
**No.0009**  
**Lot ID: 2221003**  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2236422-2

Page 1 of 1

Sample Number	2221003-1						
Sampled Date	Mar 11, 2022 2:30 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_003_2552	Plot	B-01	Site	Fuaserashi (Thailand) Co.,Ltd.		
Date Analysis Commenced	Mar 14, 2022						
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Nickel	mg/L	0.0003	0.0005	0.19	≤1.0	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	0.17	≤0.75	Based on APHA (2017), Calculated	Bangkok

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chalmusorn Lertrantakunchai, Jakkarin Manwicha

**Remark :**  
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Page 1 of 1

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING

No.0009

Lot ID: 2248373

Date Received : May 11, 2022

Date Reported : May 19, 2022

Report Number : 2295355-2

Page 1 of 1

Sample Number	2248373-1
Sampled Date	May 11, 2022 3:55 PM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2552 Plot B-01
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Nickel	mg/L	0.0003	0.0005	0.05	≤1.0	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	0.03	≤0.75	Based on APHA (2017), Calculated	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro , Jakkarin Manwicha

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING

No.0009

Lot ID: 2248373

Date Received : May 11, 2022

Date Reported : May 19, 2022

Report Number : 2295355-3

Page 1 of 1

Sample Number	2248373-1
Sampled Date	May 11, 2022 3:55 PM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2552 Plot B-01
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.27	≤10.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro , Jakkarin Manwicha

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149141

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185219-1

Page 1 of 1

Sample Number	21149141-1	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Sampled Date	Jan 07, 2022 2:10 PM	mg/L	-	2	32	≤500	APHA (2017), 5210 B	Rayong
Sample Description	Wastewater	mg/L	1.5	5	155	≤750	APHA (2017), 5220 D	Rayong
Contract ID	L_HESIE_011_2558	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Date Analysis Commenced	Jan 07, 2022	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)	mg/L	-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Physical Property	Yellow, some odour, a lot of solid and some turbid	mg/L	-	5	304	≤3000	APHA (2017), 2540 C	Rayong
Analysis		mg/L	-	5	158	≤200	APHA (2017), 2540 D	Rayong
Water Testing								
BOD (5 days at 20 Degree C)								
COD								
Formaldehyde								
Oil & Grease								
pH (on site) *								
Total Dissolved Solids Dried at 180 degree C								
Total Suspended Solids Dried at 103-105 degree C								

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220804

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235374-1

Page 1 of 1

Sample Number	2220804-1	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Sampled Date	Mar 11, 2022 10:19 AM	mg/L	-	2	21	≤500	APHA (2017), 5210 B	Rayong
Sample Description	Wastewater	mg/L	1.5	5	67	≤750	APHA (2017), 5220 D	Rayong
Contract ID	L_HESIE_011_2558	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Date Analysis Commenced	Mar 11, 2022	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)	mg/L	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Physical Property	Yellow, a lot of odour, solid and some turbid	mg/L	-	5	320	≤3000	APHA (2017), 2540 C	Rayong
Analysis		mg/L	-	5	40	≤200	APHA (2017), 2540 D	Rayong
Water Testing								
BOD (5 days at 20 Degree C)								
COD								
Formaldehyde								
Oil & Grease								
pH (on site) *								
Total Dissolved Solids Dried at 180 degree C								
Total Suspended Solids Dried at 103-105 degree C								

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaitumsoom Lertrachakunchai

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248289**  
Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2295119-1

Page 1 of 1

Sample Number	2248289-1					
Sampled Date	May 11, 2022 3:10 PM					
Sample Description	Wastewater					
Contract ID	L_HESIE_011_2558	Plot	FZ.11	Silo	Gempack Asia Limited	
Date Analysis Commenced	May 11, 2022					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
Physical Property	Yellow, a lot of odour, solid and some turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
Water-Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2	15	≤500	APHA (2017), 5210 B
COD	mg/L	1.5	5	77	≤750	APHA (2017), 5220 D
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	300	≤3000	APHA (2017), 2540 C
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	70	≤200	APHA (2017), 2540 D

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pittaya Thongdaeng

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



## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 21149113**  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185117-1

Page 1 of 1

Sample Number	21149113-1					Page 1 of 1		
Sampled Date	Jan 10, 2022 3:14 PM							
Sample Description	Wastewater							
Contract ID	L_HESIE_039_2556	Plot	C-09C	Sika	GKN Driveline (Thailand) Co.,Ltd.			
Date Analysis Commenced	Jan 10, 2022							
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property	Yellow, a lot of odour, solid and turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification		Method	Testing Location
Water Testing								
BOD (5 days at 20 Degree C)	mg/L	-	2	144	≤500		APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	335	≤750	APHA (2017), 5220 D	Rayong	
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong	
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong	
pH (on site) *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	404	≤3000	APHA (2017), 2540 C	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	67	≤200	APHA (2017), 2540 D	Rayong	

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Narunat thammassaro

**Remark :**  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220771

Date Received : Mar 10, 2022

Date Reported : Mar 16, 2022

Report Number : 2235272-1

Page 1 of 1

Sample Number	2220771-1										
Sampled Date	Mar 10, 2022 11:30 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_039_2556	Plot	C-09C	Site	GKN Driveline (Thailand) Co.,Ltd.						
Date Analysis Commenced	Mar 10, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	113	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	278	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	360	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	35	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romachai Muangma

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248262

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number : 2295059-1

Page 1 of 1

Sample Number	2248262-1										
Sampled Date	May 13, 2022 9:00 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_039_2556	Plot	C-09C	Site	GKN Driveline (Thailand) Co.,Ltd.						
Date Analysis Commenced	May 13, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	179	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	311	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	436	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	48	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149124

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185148-1

Page 1 of 1

Sample Number	21149124-1
Sampled Date	Jan 07, 2022 9:55 AM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2552
Plot	A-08
Site	Golcha Chemintec Co., Ltd.
Date Analysis Commenced	Jan 07, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	51	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	134	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	6.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	368	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220783

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235308-1

Page 1 of 1

Sample Number	2220783-1
Sampled Date	Mar 11, 2022 10:08 AM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2552
Plot	A-08
Site	Golcha Chemintec Co., Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	78	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	172	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	276	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	41	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalmorn Lertrantakunchai

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248272

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295076-1

Page 1 of 1

Sample Number	2248272-1										
Sampled Date	May 11, 2022 10:10 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_001_2552	Plot	A-08	Site	Goldha Chemintec Co.,Ltd.						
Date Analysis Commenced	May 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	65	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	132	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	136	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	27	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thongdaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149210

Date Received : Jan 11, 2022

Date Reported : Jan 18, 2022

Report Number : 2185506-1

Page 1 of 1

Sample Number	21149210-1										
Sample Date	Jan 11, 2022 10:20 AM										
Sample Description	Wastewater										
Contract ID	L_WHA ESIE1_036_2562	Plot	D.38	Site	Golden Egret Cement Carbide (Thailand) Co., Ltd.						
Date Analysis Commenced	Jan 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	492	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	1002	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	36	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	456	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	172	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2220734

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2235015-1

Page 1 of 1

Sample Number	2220734-1						
Sample Date	Mar 04, 2022 10:00 AM						
Sample Description	Wastewater						
Contract ID	L_WHA	Plot	D.38	Site	Golden Egret Cement Carbide (Thailand) Co., Ltd.		
Date Analysis Commenced	ESTEL 036_2562 Mar 04, 2022						
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	376	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	929	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMT	-	5	217	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMT	-	5	212	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	18	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	6.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.187	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	29.0	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	588	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	76	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pattanapong Kornsawat, Thanassou Namakunna

Remark :

- LOD : Limit of Detection
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0009

Lot ID: 2220734

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2235015-2

Page 1 of 1

Sample Number	2220734-1						
Sampled Date	Mar 04, 2022 10:00 AM						
Sample Description	Wastewater						
Contract ID	L_WHA	Plot	D.38	Site	Golden Egret Cement Carbide (Thailand) Co., Ltd.		
Date Analysis Commenced	ESTEL 036_2562 Mar 05, 2022						
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.07	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.05	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.08	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.01	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	0.02	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.29	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pattanapong Kornsawat, Thanassou Namakunna

Remark :

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2220734

Date Received : Mar 04, 2022  
Date Reported : Mar 11, 2022  
Report Number : 2235015-3

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number : 2220734-1  
Sampled Date : Mar 04, 2022 10:00 AM  
Sample Description : Wastewater  
Contract ID : L.WHA ESIE1 036 2562  
Date Analysis Commenced : Mar 05, 2022  
Condition of Sample : Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)  
Physical Property : Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
(A) Iron	mg/L	0.003	0.005	0.42	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	0.7	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Pathompong Komsawat , Thanasorn Namakuma

Remark :  
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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2248354

Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295331-1

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number : 2248354-1  
Sampled Date : May 12, 2022 10:28 AM  
Sample Description : Wastewater  
Contract ID : L.WHA ESIE1 036 2562  
Date Analysis Commenced : May 12, 2022  
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)  
Physical Property : Brown, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	126	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	334	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	324	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	42	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Chaiusorn Lerthanakunchai

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149317  
Date Received : Jan 12, 2022  
Date Reported : Jan 19, 2022  
Report Number : 2186285-1

Page 1 of 1

Sample Number	21149317-1											
Sample Date	Jan 12, 2022 9:55 AM											
Sample Description	Wastewater											
Contract ID	L.WHA		Plot		E.09		Site		Gulf SRC Company Limited.			
Location	ESIE1_006_2563		จุด 1 ที่บ้านท่ากรังท่าเรือท่าเรือ และบ้าน									
Date Analysis Commenced	Jan 12, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, some odour, solid and no turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	3	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	21	≤750	APHA (2017), 5220 D	Rayong					
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	6.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Temperature *	Degree C	-	-	29.4	≤45	Based on APHA (2017), 2550 B	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	700	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Saitayakun

Remark :  
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- "c" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2221008  
Date Received : Mar 09, 2022  
Date Reported : Mar 15, 2022  
Report Number : 2236472-1

Page 1 of 1

Sample Number	2221008-1											
Sample Date	Mar 09, 2022 10:10 AM											
Sample Description	Wastewater											
Contract ID	L.WHA ESIE1_006_2563		Plot	E.09	Site	Gulf SRC Company Limited.						
Location	จุด 1 ที่บ้านท่ากรังท่าเรือท่าเรือ และบ้าน											
Date Analysis Commenced	Mar 09, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Colorless, odourless, no solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	<5	≤750	APHA (2017), 5220 D	Rayong					
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Temperature *	Degree C	-	-	31.0	≤45	Based on APHA (2017), 2550 B	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2200	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thonglaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248374

Date Received : May 11, 2022

Date Reported : May 17, 2022

Report Number : 2295359-1

Page 1 of 1

Sample Number	2248374-1
Sampled Date	May 11, 2022 10:05 AM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_006_2563
Location	Plot E.09 Site Gulf SRC Company Limited. พื้นที่ 1 เขตอุตสาหกรรมเทศบาลเมือง
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	19	≤750	APHA (2017), 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Temperature *	Degree C	-	-	30.5	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1688	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	6	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nannat thammassaro

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149345

Date Received : Jan 12, 2022

Date Reported : Jan 19, 2022

Report Number : 2186292-1

Page 1 of 1

Sample Number	21149345-1
Sampled Date	Jan 12, 2022 10:10 AM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_011_2563
Location	Plot E.09 Site Gulf SRC Company Limited. พื้นที่ 2 เขตอุตสาหกรรมเทศบาลเมือง
Date Analysis Commenced	Jan 12, 2022
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤20	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	56	≤120	APHA (2017), 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Temperature *	Degree C	-	-	28.3	≤34	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	604	≤1300	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤50	APHA (2017), 2540 D	Rayong

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

Note : Temperature and Total dissolved solids guideline set by Environmental Impact Assessment Report of Gulf SRC Co., Ltd.

Sampled By : Paramet Sattayakun , Thanasoun Namakunna

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0009**  
**Lot ID: 21149345**  
Date Received : Jan 12, 2022  
Date Reported : Jan 19, 2022  
Report Number : 2186292-2

Page 1 of 1

<b>Sample Number</b>	21149345-1
<b>Sampled Date</b>	Jan 12, 2022 10:10 AM
<b>Sample Description</b>	Wastewater
<b>Contract ID</b>	L.WHA ESIE1 011_2563
<b>Location</b>	Plot E.09 พื้นที่ 2 เขตโรงงานอุตสาหกรรม
<b>Site</b>	Gulf SRC Company Limited.
<b>Date Analysis Commenced</b>	Jan 12, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.
<b>Physical Property</b>	(APHA / USEPA) Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	82.5	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	12.4	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *	-	-	0.10	2.08	0 -10	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	76.7	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Chlorite *	mg/L	0.05	0.1	0.71	≤1	Based on US EPA, Method 300.1	Bangkok
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	863	No Standard	Based on APHA (2017), 2510 B	Rayong
Dissolved Oxygen *	mg/L	-	0.1	8.1	≥4	Based on APHA (2017), 4500-O(G)	Rayong

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

**Notes :** Dissolved Oxygen, Chlorite and SAR guideline set by Environmental Impact Assessment Report of Gulf SRC Co.,Ltd

**Sampled By :** Paramet Sattayakun , Thanassou Namakunna

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



## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220989**  
Date Received : Mar 09, 2022  
Date Reported : Mar 16, 2022  
Report Number : 2236477-1

Page 1 of 1

<b>Sample Number</b>	2220989-1
<b>Sampled Date</b>	Mar 09, 2022 10:25 AM
<b>Sample Description</b>	Wastewater
<b>Contract ID</b>	L.WHA ESIE1 011_2563
<b>Location</b>	Plot E.09 พื้นที่ 2 เขตโรงงานอุตสาหกรรม
<b>Site</b>	Gulf SRC Company Limited.
<b>Date Analysis Commenced</b>	Mar 09, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.
<b>Physical Property</b>	(APHA / USEPA) Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤20	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	50	≤120	APHA (2017), 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Temperature *	Degree C	-	-	30.6	≤34	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	888	≤1300	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	APHA (2017), 2540 D	Rayong

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

**Notes :** Temperature and Total dissolved solids guideline set by Environmental Impact Assessment Report of Gulf SRC Co., Ltd.

**Sampled By :** Pittaya Thongtaeng , Nantawat Sath

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2220989  
Date Received : Mar 09, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2236477-2

Page 1 of 1

Sample Number	2220989-1
Sample Date	Mar 09, 2022 10:25 AM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_011_2563
Location	Plot E.09 Site Gulf SRC Company Limited.
Date Analysis Commenced	Mar 09, 2022
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Calcium	mg/L	0.03	0.05	84.7	No Standard	Based on US EPA, Method 200.7, Revision 4.1	Bangkok
Magnesium	mg/L	0.03	0.05	15.3	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *		-	0.10	2.79	0 - 10	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	106	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Water Testing							
Chlorite *	mg/L	0.05	0.1	<0.10	≤1	Based on US EPA, Method 300.1	Bangkok
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	1060	No Standard	Based on APHA (2017), 2510 B	Rayong
Dissolved Oxygen *	mg/L	-	0.1	7.4	≥4	Based on APHA (2017), 4500-O(G)	Rayong

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

Note : Dissolved Oxygen, Chlorite and SAR guideline set by Environmental Impact Assessment Report of Gulf SRC Co., Ltd

Sampled By : Pittaya Thongdaeng , Nantawat Sorn

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248365  
Date Received : May 11, 2022  
Date Reported : May 19, 2022  
Report Number : 2295368-1

Page 1 of 1

Sample Number	2248365-1
Sample Date	May 11, 2022 10:15 AM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_011_2563
Location	Plot E.09 Site Gulf SRC Company Limited.
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤20	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	37	≤120	APHA (2017), 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Temperature *	Degree C	-	-	31.0	≤34	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	700	≤1300	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	APHA (2017), 2540 D	Rayong

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

Note : Temperature and Total dissolved solids guideline set by Environmental Impact Assessment Report of Gulf SRC Co., Ltd.

Sampled By : Narurat thammassaro , Jakkarin Manwicha

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2248365  
Date Received : May 11, 2022  
Date Reported : May 19, 2022  
Report Number : 2295368-2

Page 1 of 1

Sample Number	2248365-1
Sampled Date	May 11, 2022 10:15 AM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_011_2563
Location	จุดที่ 2 ฝั่งน้ำด้านท่าอากาศยานสุวรรณภูมิ
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and five plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Calcium	mg/L	0.03	0.05	75.4	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Magnesium	mg/L	0.03	0.05	11.5	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
SAR *	-	-	0.10	2.50	0 -10	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
Sodium	mg/L	0.03	0.05	88.2	No Standard	Based on US EPA, Method 200.7, Revision 4.4	Bangkok
<b>Water Testing</b>							
Chlorite *	mg/L	0.05	0.1	Not detected	≤1	Based on US EPA, Method 300.1	Bangkok
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	972	No Standard	Based on APHA (2017), 2510 B	Rayong
Dissolved Oxygen *	mg/L	-	0.1	7.7	≥4	Based on APHA (2017), 4500-O(G)	Rayong

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

Note : Dissolved Oxygen, Chlorite and SAR guideline set by Environmental Impact Assessment Report of Gulf SRC Co.,Ltd

Sampled By : Narunat thammassaro , Jakkarin Manwicha

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

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149292  
Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185705-1

Page 1 of 1

Sample Number	21149292-1
Sampled Date	Jan 07, 2022 10:00 AM
Sample Description	Wastewater
Contract ID	L.HESIE_010_2560
Location	จุดที่ 1 ฝั่งน้ำด้านท่าอากาศยานสุวรรณภูมิ
Date Analysis Commenced	Jan 07, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	11	≤750	APHA (2017), 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (9)	Rayong
Temperature *	Degree C	-	-	34.8	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	174	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro

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





## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2221006

Date Received : Mar 07, 2022

Date Reported : Mar 14, 2022

Report Number : 2236431-1

Page 1 of 1

Sample Number	2221006-1						
Sampled Date	Mar 07, 2022 10:25 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_010_2560	Plot	B18-1	Site	Gulf TSS Company Limited.		
Location	จุด 1 เก็บน้ำเสียจากกระบวนการผลิต แอลกอฮอล์						
Date Analysis Commenced	Mar 07, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, some odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	16	≤750	APHA (2017), 5220 D	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Temperature *	Degree C	-	-	37.3	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	298	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248231

Date Received : May 05, 2022

Date Reported : May 12, 2022

Report Number : 2294982-1

Page 1 of 1

Sample Number		2248231-1					
Sampled Date		May 05, 2022 10:25 AM					
Sample Description		Wastewater					
Contract ID		L_HESIE_010_2560					
Plot		B18-1					
Location		Site Gulf TSS Company Limited.					
Date Analysis Commenced		วันที่ 1 เก็บน้ำเสียจากกระบวนการผลิต แอลกอฮอล์					
Condition of Sample		May 05, 2022					
Physical Property		Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
		Yellow, some odour, a lot of solid and some turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	19	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	10	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	10	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *				7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.02	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	36.0	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	188	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Kornswat, Panupong Manit

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2248231  
Date Received : May 05, 2022  
Date Reported : May 12, 2022  
Report Number : 2294982-2

Page 1 of 1

Sample Number 2248231-1  
Sampled Date May 05, 2022 10:25 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_010\_2560 Plot B18-1 Site Gulf TSS Company Limited.  
Location ๑๑๙ 1 เฟสใหม่โครงการโรงงานผลิต แอสฟัลต์  
Date Analysis Commenced May 09, 2022  
Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	Not Detected	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.007	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	<0.0005	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.010	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	Not Detected	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.01	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Pethompong Kornsewat, Penupong Manit

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248231  
Date Received : May 05, 2022  
Date Reported : May 12, 2022  
Report Number : 2294982-3

Page 1 of 1

Sample Number 2248231-1  
Sampled Date May 05, 2022 10:25 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_010\_2560 Plot B18-1 Site Gulf TSS Company Limited.  
Location ๑๑๙ 1 เฟสใหม่โครงการโรงงานผลิต แอสฟัลต์  
Date Analysis Commenced May 06, 2022  
Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.23	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	<0.2	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
Sampled By : Pethompong Kornsewat, Penupong Manit

Remark :  
- LOD : Limit of Detection  
- "<" : Lower than LOQ (Unit of Quantization) / LOR (Unit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co., Ltd. Bangkok branch, DSS Accreditation No. 0009.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur-Phuakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149316

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185734-1

Page 1 of 1

Sample Number	21149316-1															
Sampled Date	Jan 07, 2022 10:40 AM															
Sample Description	Wastewater															
Contract ID	L_HESIE_012_2560															
Location	Plot B18-2 Site Gulf T54 Company Limited. จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และถัง															
Date Analysis Commenced	Jan 07, 2022															
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)															
Physical Property	Yellow, some odour, solid and turbid															
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location									
Water Testing																
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong									
COD	mg/L	1.5	5	34	≤750	APHA (2017), 5220 D	Rayong									
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong									
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong									
Temperature *	Degree C	-	-	29.7	≤45	Based on APHA (2017), 2550 B	Rayong									
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	246	≤3000	APHA (2017), 2540 C	Rayong									
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤200	APHA (2017), 2540 D	Rayong									

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur-Phuakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2221007

Date Received : Mar 07, 2022

Date Reported : Mar 14, 2022

Report Number : 2236432-1

Page 1 of 1

Sample Number	2221007-1															
Sampled Date	Mar 07, 2022 10:55 AM															
Sample Description	Wastewater															
Contract ID	L_HESIE_012_2560															
Plot	B18-2															
Location	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต และถัง															
Date Analysis Commenced	Mar 07, 2022															
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)															
Physical Property	Yellow, some odour, solid and turbid															
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location									
Water Testing																
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong									
COD	mg/L	1.5	5	24	≤750	APHA (2017), 5220 D	Rayong									
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong									
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong									
Temperature *	Degree C	-	-	31.3	≤45	Based on APHA (2017), 2550 B	Rayong									
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	174	≤3000	APHA (2017), 2540 C	Rayong									
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤200	APHA (2017), 2540 D	Rayong									

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasi, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2249232

Date Received : May 05, 2022  
Date Reported : May 12, 2022  
Report Number : 2294983-1

Page 1 of 1

Sample Number	2249232-1									
Sampled Date	May 05, 2022 11:09 AM									
Sample Description	Wastewater									
Contract ID	L_HESIE_012_2560									
Location	Plot B18-2      Site Gulf TS4 Company Limited.									
Date Analysis Commenced	จุดที่ 1 เก็บน้ำเสียจากกระบวนการผลิต แอ่งบำบัด									
Condition of Sample	May 05, 2022									
Physical Property	Contained In two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA) Yellow, some odour, a lot of solid and some turbid									
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location			
Water Testing										
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong			
COD	mg/L	1.5	5	21	≤750	APHA (2017), 5220 D	Rayong			
Color (at Original pH)	ADMI	-	5	9	≤600	APHA (2017), 2120 F	Rayong			
Color (at pH 7.0)	ADMI	-	5	8	≤600	APHA (2017), 2120 F	Rayong			
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong			
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong			
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong			
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong			
Phenol	mg/L	0.005	0.01	Not Detected	≤1	APHA (2017), 5530 D	Rayong			
Temperature *	Degree C	-	-	30.0	≤45	Based on APHA (2017), 2550 B	Rayong			
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	112	≤3000	APHA (2017), 2540 C	Rayong			
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong			

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Komsawat, Panupong Manit

Remark :

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

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Page 1 of 1



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasi, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2248232

Date Received : May 05, 2022  
Date Reported : May 12, 2022  
Report Number : 2294983-2

Page 1 of 1

Sample Number	2248232-1										Page 1 of 1
Sampled Date	May 05, 2022 11:09 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_012_2560		Plot	B18-2		Site	Gulf TSE Company Limited.				
Location	จุด 1 เก็บน้ำเสียจากกระบวนการผลิต แอ่งบำบัด										
Date Analysis Commenced	May 09, 2022										
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, some odour, a lot of solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
<b>Metals Testing</b>											
Arsenic	mg/L	0.0003	0.0005	<0.0005	≤0.25	Based on APHA (2017), 3125	Bangkok				
Barium	mg/L	0.0003	0.0005	0.03	≤1.0	Based on APHA (2017), 3125	Bangkok				
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok				
Copper	mg/L	0.0003	0.0005	0.01	≤2.0	Based on APHA (2017), 3125	Bangkok				
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Based on APHA (2017), 3500-Cr (5)	Bangkok				
Lead	mg/L	0.0003	0.0005	Not Detected	≤0.2	Based on APHA (2017), 3125	Bangkok				
Manganese	mg/L	0.0003	0.0005	0.01	≤5.0	Based on APHA (2017), 3125	Bangkok				
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok				
Nickel	mg/L	0.0003	0.0005	0.0008	≤1.0	Based on APHA (2017), 3125	Bangkok				
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok				
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok				
Zinc	mg/L	0.003	0.005	0.07	≤5.0	Based on APHA (2017), 3125	Bangkok				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Komsawat, Panupong Manit

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248232

Date Received : May 05, 2022

Date Reported : May 12, 2022

Report Number : 2294983-3

Page 1 of 1

Sample Number	2248232-1
Sampled Date	May 05, 2022 11:09 AM
Sample Description	Wastewater
Contract ID	L_HESIE_012_2560
Plot	B18-2
Site	Gulf T54 Company Limited.
Location	จุดที่ 1. เก็บน้ำเสียจากกระบวนการผลิต แอลกอฮอล์
Date Analysis Commenced	May 06, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.23	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	<0.2	≤5	APHA (2017), 4500-FC	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Kornsewat, Panupong Manit

Remark :

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- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok branch, DSS Accreditation No. 0009.

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149166

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185303-1

Page 1 of 1

Sample Number	21149166-1
Sampled Date	Jan 10, 2022 10:41 AM
Sample Description	Wastewater
Contract ID	L_HESIE_037_2556
Plot	G-10
Site	Harrington Industries (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	79	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	246	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (9)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	300	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	132	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

- LOD : Limit of Detection
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หน้างานที่ 7-323-9-9445

หน้างานที่ 7-323-9-9442

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220843  
Date Received : Mar 10, 2022  
Date Reported : Mar 16, 2022  
Report Number : 2235611-1

Page 1 of 1

Sample Number 2220843-1  
Sampled Date Mar 10, 2022 10:15 AM  
Sample Description Wastewater  
Contract ID L\_HESIE\_037\_2556 Plot G-10 Site Harrington Industries (Thailand) Co., Ltd.  
Date Analysis Commenced Mar 10, 2022  
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	99	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	238	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	352	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	47	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Moungma

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248322  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295202-1

Page 1 of 1

Sample Number 2248322-1  
Sampled Date May 12, 2022 3:00 PM  
Sample Description Wastewater  
Contract ID L\_HESIE\_037\_2556 Plot G-10 Site Harrington Industries (Thailand) Co., Ltd.  
Date Analysis Commenced May 12, 2022  
Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	82	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	184	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	384	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	35	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusom Lertrathakunchai

Remark :

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## Analysis / Test Report

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121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESTE 1

TESTING  
No.0042  
Lot ID: 2220797  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2235340-1

Page 1 of 1

Sample Number	2220797-1						
Sampled Date	Mar 11, 2022 11:22 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_002_2561	Plot	FZ.14,FZ.15	Site	HDMC (THAILAND) LTD.		
Date Analysis Commenced	Mar 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	98	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	234	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	488	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	59	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chianusorn Letthanakunchai

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantification) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESTE 1

TESTING  
No.0042  
Lot ID: 21149134  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185195-1

Page 1 of 1

Sample Number	21149134-1						
Sampled Date	Jan 07, 2022 11:10 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_002_2561	Plot	FZ.14,FZ.15	Site	HDMC (THAILAND) LTD.		
Date Analysis Commenced	Jan 10, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	28	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	142	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	448	≤3000	APHA (2017), 2540 C	Rayong
Total suspended Solids Dried at 103-105 degree C	mg/L	-	5	53	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitheya Thongbaeng

Remark :

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

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluekdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248282

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number : 2295089-1

Page 1 of 1

Sample Number	2248282-1										
Sampled Data	May 13, 2022 2:10 PM										
Sample Description	Wastewater										
Contract ID	L_HESIE_002_2561		Plot	FZ.14,FZ.15		Site	HDMC (THAILAND) LTD.				
Date Analysis Commenced	May 13, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid, and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	59	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	195	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	632	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	85	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluekdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149144

Date Received : Jan 12, 2022

Date Reported : Jan 18, 2022

Report Number : 2185268-1

Page 1 of 1

Sample Number	Z1149144-1											Page 1 of 1
Sampled Date	Jan 12, 2022 10:30 AM											
Sample Description	Wastewater											
Contract ID	L_HESIE_004_2560											
Plot	HLP2A.5											
Site	Helmann Worldwide Logistic Company Limited.											
Date Analysis Commenced	Jan 12, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, solid and some turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	158	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	372	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	20	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	312	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	129	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Seityayakun

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

**Client : WHA Utilities and Power Public Company Limited**

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

**P/O :**

Project Name : Factory I Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042

Lot ID: 2248292

Date Received : May 09, 2022

Data Reported : May 16, 2022

Report Number : 2295124-1

Page 1 of 1

Sample Number	2248292-1					
Sampled Date	May 09, 2022 11:00 AM					
Sample Description	Wastewater					
Contract ID	L_HESIE_004_2550	Plot	HLP2A.5	Site	Hellmann Worldwide Logistic Company Limited.	
Date Analysis Commenced	May 09, 2022					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
Physical Property	Yellow, a lot of odour, solid and some turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2	46	≤500	APHA (2017), 5210 B
COD	mg/L	1.5	5	164	≤750	APHA (2017), 5220 D
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B
pH (on site) *		-	-	6.8	5.5-9.0	Based on APHA (2017), 4500-H (B)
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	240	≤3000	APHA (2017), 2540 C
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	62	≤200	APHA (2017), 2540 D

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By:** Chainusorn Lertnantiakunchai

Remark :

- \* LOD : Limit of Detection
- " $\leq$ " : Lower than LOQ (Limit of Quantization) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149207  
Date Received : Jan 11, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2185495-1

Page 1 of 1

Sample Number	21149207-1										
Sample Date	Jan 11, 2022 3:05 PM										
Sample Description	Wastewater										
Contract ID	L_WHA ESIE1_034_2562										
Date Analysis Commenced	Jan 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	157	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	333	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	375	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	78	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat Thammassaro

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220732  
Date Received : Mar 04, 2022  
Date Reported : Mar 11, 2022  
Report Number : 2234999-1

Page 1 of 1

Sample Number		2220732-1		Page 1 of 1			
Sampled Data		Mar 04, 2022 2:30 PM					
Sample Description		Wastewater					
Contract ID	L_WHA ESIE1_034_2562	Plot	H.04	Site	Hi-Tech Mould and Plastics (Thailand) Co., Ltd.		
Data Analysis Commenced		Mar 04, 2022					
Condition of Sample		Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
Physical Property		Yellow, a lot of odour, solid and some turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	166	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	307	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	91	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	87	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.158	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	31.3	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	368	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	74	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Patompong Korsawat , Thanasoun Namakunna

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phua Daeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0009

Lot ID: 2220732

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2234999-2

Page 1 of 1

Sample Number	2220732-1
Sampled Date	Mar 04, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_034_2562
Date Analysis Commenced	Mar 05, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.09	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.04	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (6)	Bangkok
Lead	mg/L	0.0003	0.0005	0.003	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.06	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.007	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.41	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Patrompong Kornswat , Thanasoun Namakunna

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phua Daeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2220732

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2234999-3

Page 1 of 1

Sample Number	2220732-1
Sampled Date	Mar 04, 2022 2:30 PM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_034_2562
Date Analysis Commenced	Mar 05, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.77	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing Fluoride	mg/L	0.05	0.2	0.3	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Patrompong Kornswat , Thanasoun Namakunna

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co., Ltd. Bangkok Branch, DSS Accreditation No. 0009.

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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2248352

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295324-1

Page 1 of 1

Sample Number	2248352-1											
Sampled Date	May 13, 2022 1:48 PM											
Sample Description	Wastewater											
Contract ID	L.WHA ESIE1_034_2562 May 13, 2022											
Date Analysis Commenced												
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, some solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	78	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	188	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	324	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	43	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongzang

Remark :

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



## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 21149196

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Date Received : Jan 11, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2185424-1

Page 1 of 1

Sample Number	21149196-1												Page 1 of 1
Sampled Date	Jan 11, 2022 9:41 AM												
Sample Description	Wastewater												
Contract ID	L_WHA	ESIE1_019_2562	Plot	D.30	Site	HSF Films (Thailand) Co., Ltd.							
Date Analysis Commenced	Jan 11, 2022												
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)												
Physical Property	Yellow, some odour, solid and turbid												
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location						
Water Testing													
BOD (5 days at 20 Degree C)	mg/L	-	2	40	≤500	APHA (2017), 5210 B	Rayong						
COD	mg/L	1.5	5	137	≤750	APHA (2017), 5220 D	Rayong						
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong						
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong						
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong						
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	392	≤3000	APHA (2017), 2540 C	Rayong						
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	30	≤200	APHA (2017), 2540 D	Rayong						

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory Monthly  
Project Location : WHA ESIE 1

Sample Number 2220871-1

Sampled Date Mar 09, 2022 11:12 AM

Sample Description Wastewater

Contract ID L.WHA ESIE1 019\_2562

Site HSF Films (Thailand) Co., Ltd.

Plot D.30

Date Analysis Commenced Mar 09, 2022

Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)

Physical Property Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	29	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	152	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	412	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	28	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Moungma

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory Random Check  
Project Location : WHA ESIE 1

Sample Number 2248222-1

Sampled Date May 09, 2022 3:17 PM

Sample Description Wastewater

Contract ID L.WHA ESIE1 019\_2562

Site HSF Films (Thailand) Co., Ltd.

Plot D.30

Date Analysis Commenced May 09, 2022

Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)

Physical Property Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	31	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	118	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	85	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	81	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	Not Detected	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.12	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.2	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	296	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chahusorn Lerthanthakunchai, Nantawat Sarin

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory Monthly  
Project Location : WHA ESIE 1

Sample Number 2220871-1

Sampled Date Mar 09, 2022 11:12 AM

Sample Description Wastewater

Contract ID L.WHA ESIE1 019\_2562

Site HSF Films (Thailand) Co., Ltd.

Plot D.30

Date Analysis Commenced Mar 09, 2022

Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)

Physical Property Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	29	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	152	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	412	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	28	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Moungma

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory Random Check  
Project Location : WHA ESIE 1

Sample Number 2248222-1

Sampled Date May 09, 2022 3:17 PM

Sample Description Wastewater

Contract ID L.WHA ESIE1 019\_2562

Site HSF Films (Thailand) Co., Ltd.

Plot D.30

Date Analysis Commenced May 09, 2022

Condition of Sample Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)

Physical Property Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	31	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	118	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	85	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	81	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	Not Detected	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.12	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.2	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	296	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chahusorn Lerthanthakunchai, Nantawat Sarin

Remark :

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Supervisor

หน้างาน 7-323-9445

Senior Manager

หน้างาน 7-323-9442

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Supervisor

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Senior Manager

หน้างาน 7-323-9442

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## Analysis / Test Report

TESTING  
No.0009

Lot ID: 2248222  
Date Received : May 09, 2022  
Date Reported : May 17, 2022  
Report Number : 2294970-2

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	2248222-1
Sampled Date	May 09, 2022 3:17 PM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_019_2562
Date Analysis Commenced	May 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	<0.0005	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.07	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.01	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (6)	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.19	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.006	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.22	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Lertnathakunchal , Nantawat Sarin

Remark :  
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## Analysis / Test Report

TESTING  
No.0042

Lot ID: 2248222  
Date Received : May 09, 2022  
Date Reported : May 16, 2022  
Report Number : 2294970-3

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

Sample Number	2248222-1
Sampled Date	May 09, 2022 3:17 PM
Sample Description	Wastewater
Contract ID	L.WHA ESIE1_019_2562
Date Analysis Commenced	May 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.30	≤10.0	Based on APHA (2017), 3125	Bangkok
Fluoride	mg/L	0.05	0.2	0.4	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Lertnathakunchal , Nantawat Sarin

Remark :  
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.  
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co., Ltd. Bangkok Branch, DSS Accreditation No. 0009.

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149107

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185100-1

Page 1 of 1

Sample Number	21149107-1						
Sampled Date	Jan 10, 2022 2:39 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_013_2554	Plot	B16-1	Site	ITAKURA (Thailand) Co.,Ltd.		
Date Analysis Commenced	Jan 10, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	70	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	172	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	264	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	44	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchanaow

Remark :

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TEL:033-9445

TEL:033-9442

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220765

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235239-1

Page 1 of 1

Sample Number	2220765-1						
Sampled Date	Mar 09, 2022 3:04 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_013_2554	Plot	B16-1	Site	ITAKURA (Thailand) Co., Ltd.		
Date Analysis Commenced	Mar 09, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	46	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	117	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	180	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	64	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitayya Thongsaeng

Remark :

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

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248257  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 225054-1

Page 1 of 1

Sample Number	2248257-1										
Sampled Date	May 13, 2022 10:03 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_013_2554		Plot	B16-1		Site	ITAKURA (Thailand) Co.,Ltd.				
Date Analysis Commenced	May 13, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	52	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	156	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	280	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	48	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thonglaeng

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149159  
Date Received : Jan 11, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2185288-1

Page 1 of 1

Sample Number	21149159-1										Page 1 of 1
Sampled Data	Jan 11, 2022 9:05 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_014_2556	Plot	D-24	Site	JFE Steel Galvanizing (Thailand) Ltd.						
Date Analysis Commenced	Jan 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, some odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	2	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	27	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	6.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1220	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur-Phuakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220822

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235419-1

Page 1 of 1

Sample Number	2220822-1
Sampled Date	Mar 09, 2022 10:34 AM
Sample Description	Wastewater
Contract ID	L_HESIE_014_2556
Site	JFE Steel Galvanizing (Thailand) Ltd.
Date Analysis Commenced	Mar 09, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	3	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	29	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	960	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romnachai Moungma

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

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur-Phuakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248305

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295150-1

Page 1 of 1

Sample Number	2248305-1
Sampled Date	May 12, 2022 9:14 AM
Sample Description	Wastewater
Contract ID	L_HESIE_014_2556
Plot	D-24
Site	JFE Steel Galvanizing (Thailand) Ltd.
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	4	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	26	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	828	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Letranthakunchal

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 21149102

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185092-1

Page 1 of 1

Sample Number	21149102-1						
Sampled Date	Jan 10, 2022 2:15 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_007_2556	Plot	B-14	Site	KANEKA (THAILAND) CO., LTD		
Date Analysis Commenced	Jan 10, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	35	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	132	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	340	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	63	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchaisaw

Remark :

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

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2220760

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235231-1

Page 1 of 1

Page 1 of 1

Sample Number	2220760-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		</
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Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :

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

TESTING  
No.0042  
Lot ID: 2248252

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1  
Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2295048-1

Page 1 of 1

Sample Number	2248252-1
Sampled Date	May 11, 2022 11:20 AM
Sample Description	Wastewater
Contract ID	L_HESIE_007_2556
Plot	B-14
Site	KANEKA (THAILAND) CO., LTD
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	18	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	112	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	640	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	21	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nararat thiammasaro

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



## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 21149180

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1  
Date Received : Jan 12, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2185369-1

Page 1 of 1

Sample Number	21149180-1
Sampled Date	Jan 12, 2022 4:00 PM
Sample Description	Wastewater
Contract ID	L_WHA ESIE1_001_2562
Plot	B-8WHALP3
Site	Katoen Nade (Thailand) Limited.
Date Analysis Commenced	Jan 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	104	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	265	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	380	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	42	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Parameet Sattayakun

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESTE 1

TESTING  
No.0042  
Lot ID: 2220853

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235641-1

Page 1 of 1

Sample Number	2220853-1
Sampled Date	Mar 11, 2022 2:53 PM
Sample Description	Wastewater
Contract ID	L-WHA ESTE1_001_2562
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	96	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	222	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *				7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L		5	388	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L		5	32	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romachai Moungma

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESTE 1

TESTING  
No.0042  
Lot ID: 2248335

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295276-1

Page 1 of 1

Sample Number	2248335-1
Sampled Date	May 12, 2022 1:45 PM
Sample Description	Wastewater
Contract ID	L-WHA ESTE1_001_2562
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	92	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	214	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *				7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	456	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	41	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thonglaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149100

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185091-1

Page 1 of 1

Sample Number	21149100-1
Sampled Date	Jan 10, 2022 2:05 PM
Sample Description	Wastewater
Contract ID	L_HESIE_032_2556
Plot	B-13
Site	KERRY Logistics (Thailand) Limited
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	80	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	205	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	304	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	37	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchalarnw

Remark :

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- "<" : Lower than LOQ (Unit of Quantitation) / LOR (Unit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220759

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235226-1

Page 1 of 1

Sample Number	2220759-1
Sampled Date	Mar 09, 2022 2:06 PM
Sample Description	Wastewater
Contract ID	L_HESIE_032_2556
Plot	B-13
Site	KERRY Logistics (Thailand) Limited
Date Analysis Commenced	Mar 09, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	90	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	218	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	408	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	38	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thonglaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Taet, Amphur Plakdaeng, Rayong 21140

P/O :

Project Name : Factory I Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248251

Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2295047-1

Page 1 of 1

Sample Number	2248251-1
Sample Date	May 11, 2022 11:05 AM
Sample Description	Wastewater
Contract ID	L_HESIE_032_2556 Plot B-13
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	64	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	196	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	368	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	42	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Taet, Amphur Plakdaeng, Rayong 21140

P/O :

Project Name : Factory I Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149095

Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185087-1

Page 1 of 1

Sample Number	21149095-1
Sample Date	Jan 10, 2022 3:50 PM
Sample Description	Wastewater
Contract ID	L_HESIE_012_2554 Plot B-06,B-07
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	205	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	416	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	14	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	6.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	380	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	72	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchainawong

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220756

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 22352221-1

Page 1 of 1

Sample Number	2220756-1
Sampled Date	Mar 11, 2022 11:13 AM
Sample Description	Wastewater
Contract ID	L_HESIE_012_2554
Plot	B-06,B-07
Site	Komatsu Selki (Thailand) Co.,Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	100	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	226	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	188	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	61	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chainusorn Lerthanakunchai

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248248

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295041-1

Page 1 of 1

Sample Number	2248248-1
Sampled Date	May 11, 2022 3:00 PM
Sample Description	Wastewater
Contract ID	L_HESIE_012_2554
Plot	B-06,B-07
Site	Komatsu Selki (Thailand) Co.,Ltd.
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	119	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	212	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	276	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	61	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thamasaro

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149069  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2184192-1

Page 1 of 1

Sample Number		21149069-1					
Sample Date		Jan 10, 2022 1:45 PM					
Sample Description		Wastewater					
Contract ID	L_HESIE_017_2560	Plot	D.51				
Date Analysis Commenced		Jan 10, 2022					
Condition of Sample							
Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property							
Yellow, a lot of odour, some solid and no turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	35	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	90	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	68	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	64	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.111	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.1	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	656	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Random Check  
Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149069  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2184192-2

Page 1 of 1

Sample Number	21149069-1										
Sampled Date	Jan 10, 2022 1:45 PM										
Sample Description	Wastewater										
Contract ID	L_HESIE_017_2560	Plot	D.51	Site KUSUMOTO CHEMICALS (THAILAND) Co.,Ltd.							
Date Analysis Commenced	Jan 11, 2022										
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and no turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Metals Testing											
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Based on APHA (2017), 3125	Bangkok				
Barium	mg/L	0.0003	0.0005	0.06	≤1.0	Based on APHA (2017), 3125	Bangkok				
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok				
Copper	mg/L	0.0003	0.0005	0.04	≤2.0	Based on APHA (2017), 3125	Bangkok				
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Based on APHA (2017), 3500-Cr (6)	Bangkok				
Lead	mg/L	0.0003	0.0005	0.001	≤0.2	Based on APHA (2017), 3125	Bangkok				
Manganese	mg/L	0.0003	0.0005	0.06	≤5.0	Based on APHA (2017), 3125	Bangkok				
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok				
Nickel	mg/L	0.0003	0.0005	0.005	≤1.0	Based on APHA (2017), 3125	Bangkok				
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok				
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok				
Zinc	mg/L	0.003	0.005	0.10	≤5.0	Based on APHA (2017), 3125	Bangkok				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149069

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184192-3

Page 1 of 1

Sample Number	21149069-1
Sampled Date	Jan 10, 2022 1:45 PM
Sample Description	Wastewater
Contract ID	L_HESIE_017_2560
Plot	D.51
Site	KUSUMOTO CHEMICALS (THAILAND) Co.,Ltd.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and no turbid

Analyte	Unit	LOD	LOQ (LOG)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.21	≤10.0	Based on APHA (2017), 3125	Bangkok
Fluoride	mg/L	0.05	0.2	0.4	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :  
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- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220827

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235447-1

Page 1 of 1

Sample Number	2220827-1
Sampled Date	Mar 09, 2022 10:16 AM
Sample Description	Wastewater
Contract ID	L_HESIE_017_2560
Plot	D.51
Site	KUSUMOTO CHEMICALS (THAILAND) Co.,Ltd.
Date Analysis Commenced	Mar 09, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOG)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	23	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	111	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1800	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Youngma

Remark :  
- LOD : Limit of Detection  
- "≤" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248310  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295158-1

Page 1 of 1

Sample Number	2248310-1										
Sampled Date	May 12, 2022 11:20 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_017_2560	Plot	D.51	Site	KUSUMOTO CHEMICALS (THAILAND) Co., Ltd.						
Date Analysis Commenced	May 12, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	13	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	63	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	436	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalmusorn Lerthanakunchal

Remark :  
- LOD : Limit of Detection  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149140  
Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185218-1

Page 1 of 1

Sample Number	21149140-1											Page 1 of 1
Sampled Date	Jan 07, 2022 10:50 AM											
Sample Description	Wastewater											
Contract ID	L_HESIE_012_2557		Plot	FZ-29	Site	Lucy Switchgear Eastern Seaboard Limited.						
Date Analysis Commenced	Jan 07, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, solid and some turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	79	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	222	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	425	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	62	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng

Remark :  
- LOD : Limit of Detection  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

Sample Number 2220803-1

Sampled Date Mar 11, 2022 9:43 AM

Sample Description Wastewater

Contract ID L\_HESIE\_012\_2557

Plot FZ-29

Site Lucy Switchgear Eastern Seaboard Limited.

Date Analysis Commenced Mar 11, 2022

Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation

Physical Property standards. (APHA / USEPA)

Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	119	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	216	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	332	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	45	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chainuom Letwanthakunchal

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

Sample Number 2248288-1

Sampled Date May 11, 2022 2:35 PM

Sample Description Wastewater

Contract ID L\_HESIE\_012\_2557

Plot FZ-29

Site Lucy Switchgear Eastern Seaboard Limited.

Date Analysis Commenced May 11, 2022

Condition of Sample Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation

Physical Property standards. (APHA / USEPA)

Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	64	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	183	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	704	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	38	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng

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## TESTING

No.0042

Lot ID: 2248288

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295096-1

Page 1 of 1

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING

No.0042

Lot ID: 21149146

Date Received : Jan 11, 2022

Date Reported : Jan 17, 2022

Report Number : 2185272-1

Page 1 of 1

Sample Number	21149146-1										
Sample Date	Jan 11, 2022 9:36 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_016_2555	Plot	D29	Site	M&K Precision (Thailand) Co., Ltd.						
Date Analysis Commenced	Jan 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	91	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	348	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.3	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	15	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	408	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	176	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thanmasaro

Remark :

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- "L" : Lower than LOQ (Limit of Quantification) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING

No.0042

Lot ID: 2220809

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235385-1

Page 1 of 1

Sample Number	2220809-1											Page 1 of 1
Sampled Date	Mar 09, 2022 11:02 AM											
Sample Description	Wastewater											
Contract ID	L_HESIE_016_2555	Plot	D29	Site	M&K Precision (Thailand) Co.,Ltd.							
Date Analysis Commenced	Mar 09, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	97	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	323	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	18	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (5)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	416	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 102-105 degree C	mg/L	-	5	181	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Moungma

Remark :

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## Analysis / Test Report

TESTING  
No.0042

Lot ID: 21149068

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184184-1

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

Page 1 of 1

Sample Number	21149068-1
Sampled Date	Jan 10, 2022 2:16 PM
Sample Description	Wastewater
Contract ID	L_HESIE_036_2556
Plot	D-49
Site	Mann and hummel (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	31	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	114	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	57	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	54	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.026	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	32.7	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	196	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	39	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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



## Analysis / Test Report

TESTING  
No.0042

Lot ID: 21149068

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184184-1

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

Page 1 of 1

Sample Number	21149068-1
Sampled Date	Jan 10, 2022 2:16 PM
Sample Description	Wastewater
Contract ID	L_HESIE_036_2556
Plot	D-49
Site	Mann and hummel (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	31	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	114	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	57	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	54	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.026	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	32.7	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	196	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	39	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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

## Analysis / Test Report

TESTING  
No.0009

Lot ID: 21149068

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184184-2

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

Page 1 of 1

Sample Number	21149068-1
Sampled Date	Jan 10, 2022 2:16 PM
Sample Description	Wastewater
Contract ID	L_HESIE_036_2556
Plot	D-49
Site	Mann and hummel (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.09	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.06	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25 (B)	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.003	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.04	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.005	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	<0.0005	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.24	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location:** WHA ESTE 1

**TESTING**  
**No.0042**  
**Lot ID: 21149068**  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2184184-3

Page 1 of 1

**Sample Number** 21149068-1  
**Sampled Date** Jan 10, 2022 2:16 PM  
**Sample Description** Wastewater  
**Contract ID** L\_HESIE\_036\_2556 **Plot** D-49 **Site** Mann and hummel (Thailand) Co.,Ltd.  
**Date Analysis Commenced** Jan 11, 2022  
**Condition of Sample** Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)  
**Physical Property** Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.61	≤10.0	Based on APHA (2017), 3125	Bangkok
<b>Water Testing</b>							
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Niranet themmasaro , Parupong Manit

**Remark :**  
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- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok branch, DSS Accreditation No. 0009.



## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESTE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220826**  
Date Received : Mar 09, 2022  
Date Reported : Mar 15, 2022  
Report Number : 2235446-1

Page 1 of 1

**Sample Number** 2220826-1  
**Sampled Date** Mar 09, 2022 11:38 AM  
**Sample Description** Wastewater  
**Contract ID** L\_HESIE\_036\_2556 **Plot** D-49 **Site** Mann and hummel (Thailand) Co.,Ltd.  
**Date Analysis Commenced** Mar 09, 2022  
**Condition of Sample** Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)  
**Physical Property** Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	46	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	139	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	320	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	31	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Ronnachai Moungma

**Remark :**  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248309

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295156-1

Page 1 of 1

Sample Number	2248309-1
Sampled Date	May 12, 2022 10:55 AM
Sample Description	Wastewater
Contract ID	L_HESIE_036_2556
Plot	D-49
Site	Mann and hummel (Thailand) Co.,Ltd.
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	52	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	139	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	364	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	24	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Lerthanakundhal

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149127

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185161-1

Page 1 of 1

Sample Number	21149127-1
Sampled Date	Jan 07, 2022 3:15 PM
Sample Description	Wastewater
Contract ID	L_HESIE_030_2556
Plot	A09C28
Site	MAX (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 07, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	118	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	271	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	336	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	43	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasi, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220790**  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2253316-1

Page 1 of 1

Sample Number	2220790-1
Sample Date	Mar 11, 2022 2:01 PM
Sample Description	Wastewater
Contract ID	L_HESIE_030_2556 Plot A09C2B
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	93	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	201	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	316	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	41	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chalmusorn Letthanthakunchai

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasi, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248275**  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295080-1

Page 1 of 1

Sample Number	2248275-1
Sample Date	May 13, 2022 2:50 PM
Sample Description	Wastewater
Contract ID	L_HESIE_030_2556 Plot A09C2B
Date Analysis Commenced	May 13, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	76	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	220	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B (B)	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	352	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	60	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pittaya Thongtaeng

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149111

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2185114-1

Page 1 of 1

Sample Number	21149111-1
Sampled Date	Jan 10, 2022 2:54 PM
Sample Description	Wastewater
Contract ID	L_HESIE_010_2558
Plot	C_09A
Site	Merry Electronics (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	93	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	273	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	296	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	133	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Natnatt thammassaro

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220769

Date Received : Mar 10, 2022

Date Reported : Mar 16, 2022

Report Number : 2235250-1

Page 1 of 1

Sample Number	2220769-1
Sampled Date	Mar 10, 2022 3:58 PM
Sample Description	Wastewater
Contract ID	L_HESIE_010_2558
Plot	C_09A
Site	Merry Electronics (Thailand) Co.,Ltd.
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	145	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	419	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	500	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	64	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romnachai Mungma

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasi, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248260  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295057-1

Page 1 of 1

Sample Number	2248260-1
Sampled Date	May 13, 2022 9:20 AM
Sample Description	Wastewater
Contract ID	L_HESIE_010_2558 Plot C.09A
Site	Merry Electronics (Thailand) Co.,Ltd.
Date Analysis Commenced	May 13, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	51	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	161	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	224	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasi, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149138  
Date Received : Jan 07, 2022  
Date Reported : Jan 13, 2022  
Report Number : 2185213-1

Page 1 of 1

Sample Number	21149138-1
Sampled Date	Jan 07, 2022 10:05 AM
Sample Description	Wastewater
Contract ID	L_HESIE_012_2556 Plot FZ-26
Site	Metalsa (Thailand) Limited.
Date Analysis Commenced	Jan 07, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	14	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	69	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	13	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	258	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	56	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

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

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220801

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235349-1

Page 1 of 1

Sample Number	2220801-1
Sampled Date	Mar 11, 2022 9:58 AM
Sample Description	Wastewater
Contract ID	L_HESIE_012_2556
Plot	FZ-26
Site	Metalsa (Thailand) Limited.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	76	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	172	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	668	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	22	≤200	APHA (2017), 2540 D	Rayong

Guideline: Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Lertvanchakulchai

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248286

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295094-1

Page 1 of 1

Sample Number	2248286-1
Sampled Date	May 11, 2022 2:50 PM
Sample Description	Wastewater
Contract ID	L_HESIE_012_2556
Plot	FZ-26
Site	Metalsa (Thailand) Limited.
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	27	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	104	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	348	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	67	≤200	APHA (2017), 2540 D	Rayong

Guideline: Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :

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## Analysis / Test Report

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121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149145  
Date Received : Jan 11, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185271-1

Page 1 of 1

Sample Number	21149145-1										
Sampled Data	Jan 11, 2022 9:25 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_012_2555	Plot	D26	Site	Mizuki (Thailand) Company Limited.						
Date Analysis Commenced	Jan 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, some odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	58	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	156	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	6.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	508	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nannat thammassaro

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220808  
Date Received : Mar 09, 2022  
Date Reported : Mar 15, 2022  
Report Number : 2235384-1

Page 1 of 1

Sample Number	2220808-1										
Sampled Date	Mar 09, 2022 10:48 AM										
Sample Description	Wastewater										
Contract ID	L_HSEIE_012_2555	Plot	D26	Site Mizuki (Thailand) Company Limited.							
Date Analysis Commenced	Mar 09, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	89	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	185	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	6.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	396	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Moungma

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number : 2248293-1  
Sampled Date : May 12, 2022 9:31 AM  
Sample Description : Wastewater  
Contract ID : L\_HESIE\_012\_2555 Plot : D26 Site : Mizuki (Thailand) Company Limited.  
Date Analysis Commenced : May 12, 2022  
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property : Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	79	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	186	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	6.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	500	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	11	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chainusorn Lertranthakunchai

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## Analysis / Test Report

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P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number : 21149123-1  
Sampled Date : Jan 07, 2022 3:40 PM  
Sample Description : Wastewater  
Contract ID : L\_HESIE\_009\_2554 Plot : A06-A07A-A07B Site : NHK Spring (Thailand) Co., Ltd.  
Date Analysis Commenced : Jan 07, 2022  
Condition of Sample : Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
Physical Property : Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	132	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	360	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	380	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	111	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :  
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- "<" : Lower than LOQ (Unit of Quantitation) / LOR (Unit of Reporting)  
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## Analysis / Test Report

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121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220782**  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2235306-1

Page 1 of 1

Sample Number	2220782-1						
Sampled Date	Mar 11, 2022 10:01 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_009_2554	Plot	A06,A07A-A07B	Site	NHK Spiring (Thailand) Co.,Ltd.		
Date Analysis Commenced	Mar 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	70	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	173	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	272	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	71	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2550 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chalusorn Leritnathakunchai

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248271**  
Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2295075-1

Page 1 of 1

Sample Number	2248271-1						
Sampled Date	May 11, 2022 10:00 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_009_2554	Plot	A05,A07A-A07B	Site	NHK Spring (Thailand) Co., Ltd.		
Date Analysis Commenced	May 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	60	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	186	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	376	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	55	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2550 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pittaya Thongtaeng

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149125

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185154-1

Page 1 of 1

Sample Number	21149125-1
Sampled Date	Jan 07, 2022 9:05 AM
Sample Description	Wastewater
Contract ID	L_HESIE_013_2556 Plot A-08A Site Nissan Spring (Thailand) Co., Ltd.
Date Analysis Commenced	Jan 07, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	168	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	321	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	14	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	380	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	44	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220784

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235311-1

Page 1 of 1

Sample Number	2220784-1
Sampled Date	Mar 11, 2022 10:19 AM
Sample Description	Wastewater
Contract ID	L_HESIE_013_2556 Plot A-08A Site Nissan Spring (Thailand) Co., Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	191	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	406	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	15	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	416	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	66	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Lertwanthakunchai

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248273  
Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2295077-1

Page 1 of 1

Sample Number	2248273-1										
Sample Date	May 11, 2022 10:20 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_013_2556	Plot	A-08A	Site	Nissan Spring (Thailand) Co., Ltd.						
Date Analysis Commenced	May 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	85	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	219	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	256	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	41	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :  
- LOD : Limit of Detection  
- "L" : Lower than LOQ (Limit of Quantification) / LOR (Limit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149176  
Date Received : Jan 12, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2185361-1

Page 1 of 1

Sample Number	21149176-1										Page 1 of 1
Sampled Date	Jan 12, 2022 10:50 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_001_2561	Plot	D.01	Site	ROBERT BOSCH AUTOMOTIVE TECHNOLOGIES (THAILAND) CO., LTD						
Date Analysis Commenced	Jan 12, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	115	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	215	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	300	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	37	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Sattayakun

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2220850

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235635-1

Page 1 of 1

Sample Number	2220850-1
Sampled Date	Mar 11, 2022 3:29 PM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2561 Plot D.01
Site	ROBERT BOSCH AUTOMOTIVE TECHNOLOGIES (THAILAND) CO., LTD
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	94	\$500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	190	\$750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	\$1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	\$10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	240	\$3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	33	\$200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Weungma

Remark :  
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- "<" : Lower than LOQ (Unit of Quantification) / LOR (Unit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2248332

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295271-1

Page 1 of 1

Sample Number	2248332-1
Sampled Date	May 12, 2022 9:20 AM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2561 Plot D.01
Site	ROBERT BOSCH AUTOMOTIVE TECHNOLOGIES (THAILAND) CO., LTD
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	86	\$500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	170	\$750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	\$1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	\$10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	244	\$3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	28	\$200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149244  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185527-1

Page 1 of 1

Sample Number	21149244-1									
Sampled Date	Jan 10, 2022 3:38 PM									
Sample Description	Wastewater									
Contract ID	L_HESIE_001_2557	Plot	B-02	Site	Siam Chuyo Co., Ltd.					
Date Analysis Commenced	Jan 10, 2022									
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)									
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid									
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location			
Water Testing										
BOD (5 days at 20 Degree C)	mg/L	-	2	135	≤500	APHA (2017), 5210 B	Rayong			
COD	mg/L	1.5	5	318	≤750	APHA (2017), 5220 D	Rayong			
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong			
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong			
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong			
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	264	≤3000	APHA (2017), 2540 C	Rayong			
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	67	≤200	APHA (2017), 2540 D	Rayong			

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchalraow , Mongkon Phalathip

Remark :

- LOD : Limit of Detection
- \* < : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149244  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185527-2

Page 1 of 1

Page 1 of 1										
Sample Number	21149244-1									
Sampled Date	Jan 10, 2022 3:38 PM									
Sample Description	Wastewater									
Contract ID	L_HESIE_001_2557		Plot	B-02		Site	Siam Chuyo Co.,Ltd.			
Date Analysis Commenced	Jan 11, 2022									
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)									
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid									
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location			
Metals Testing										
Copper	mg/L	0.0003	0.0005	0.09	≤2.0	Based on APHA (2017), 3125	Bangkok			
Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant										
Sampled By : Wanlop Hunchalraow , Mongkon Phalathip										
Remark :										
- LOD : Limit of Detection										
- * < : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)										
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220993

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2226411-1

Page 1 of 1

Sample Number	2220993-1
Sampled Date	Mar 11, 2022 11:14 AM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2557
Plot	B-02
Site	Siam Chuyo Co., Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, a lot of odour, some solid and a lot of turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	122	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	278	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	16	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	604	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	59	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalmusorn Lertnathakunchai, Jakkarin Manwicha

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2220993

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2226411-2

Page 1 of 1

Sample Number	2220993-1
Sampled Date	Mar 11, 2022 11:14 AM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2557
Plot	B-02
Site	Siam Chuyo Co., Ltd.
Date Analysis Commenced	Mar 14, 2022
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, a lot of odour, some solid and a lot of turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Copper	mg/L	0.0003	0.0005	0.06	≤2.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalmusorn Lertnathakunchai, Jakkarin Manwicha

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :  
Project Name : Factory / Monthly  
Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248368

Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number: 2295335-1

Page 1 of 1

Sample Number	2248368-1										
Sample Date	May 11, 2022 3:25 PM										
Sample Description	Wastewater										
Contract ID	L_HESIE_001_2557	Plot	B-02	Site	Siam Chuvo Co.,Ltd.						
Date Analysis Commenced	May 11, 2022										
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.										
Physical Property	Yellow, a lot of odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	123	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	258	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	336	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	61	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharges to central wastewater Treatment Plant

Sampled By : Narurat Thammasaro , Jakkarin Manwicha

Remark :

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- <L : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :  
Project Name : Factory / Monthly  
Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2248368

Date Received : May 11, 2022  
Date Reported : May 19, 2022  
Report Number: 2295335-2

Page 1 of 1

Sample Number	2248368-1	Sample Date	May 11, 2022 3:25 PM	Sample Description	Wastewater	Contract ID	L_HESIE_001_2557	Plot	B-02	Site	Siam Chuvo Co.,Ltd.
Date Analysis Commenced	May 12, 2022	Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.	Physical Property	Yellow, a lot of odour, solid and turbid						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat Thammasaro , Jakkarin Manwicha

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149173

Date Received : Jan 11, 2022

Date Reported : Jan 18, 2022

Report Number : 2185353-1

Page 1 of 1

Sample Number	21149173-1
Sampled Date	Jan 11, 2022 2:25 PM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2558
Plot	H-14,H-15,H-16
Site	SMC (THAILAND) LIMITED.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	63	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	185	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	252	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	45	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220728

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2234957-1

Page 1 of 1

Sample Number	2220728-1
Sampled Date	Mar 04, 2022 10:50 AM
Sample Description	Wastewater
Contract ID	L_HESIE_003_2558
Plot	H-14,H-15,H-16
Site	SMC (THAILAND) LIMITED.
Date Analysis Commenced	Mar 04, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	60	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	142	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	90	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	85	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.209	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	28.6	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	184	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	33	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Kornseawat , Thanassou Namakunna

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

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0009**  
**Lot ID: 2220728**  
Date Received : Mar 04, 2022  
Date Reported : Mar 11, 2022  
Report Number : 2234957-2

Page 1 of 1

Sample Number	2220728-1						
Sampled Date	Mar 04, 2022 10:50 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_003_2558	Plot	H-14,H-15,H-16	Site	SMC (THAILAND) LIMITED.		
Date Analysis Commenced	Mar 05, 2022						
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.05	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.03	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.006	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.13	≤5.0	Based on APHA (2017), 3125	Bangkok

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pathompong Kornswat , Thanasoun Namakunna

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



## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220728**  
Date Received : Mar 04, 2022  
Date Reported : Mar 11, 2022  
Report Number : 2234957-3

Page 1 of 1

Sample Number	2220728-1						
Sampled Date	Mar 04, 2022 10:50 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_003_2558	Plot	H-14,H-15,H-16	Site	SMC (THAILAND) LIMITED.		
Date Analysis Commenced	Mar 05, 2022						
Condition of Sample	Contained in two glass Vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.27	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pathompong Kornswat , Thanasoun Namakunna

**Remark :**  
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- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2248329

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295261-1

Page 1 of 1

Sample Number	2248329-1						
Sampled Date	May 12, 2022 2:00 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_003_2558	Plot	H-14,H-15,H-16	Site	SMC (THAILAND) LIMITED.		
Date Analysis Commenced	May 12, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	95	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	196	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	276	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant.

Sampled By : Pittaya Thongtaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 21149133

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185187-1

Page 1 of 1

Sample Number	21149133-1						
Sampled Date	Jan 07, 2022 2:45 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_025_2555	Plot	FZ-13	Site	SMR Automotive System (Thailand) Ltd.		
Date Analysis Commenced	Jan 07, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	47	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	152	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	284	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	32	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant.

Sampled By : Pittaya Thongtaeng

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220796**  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 22253335-1

Page 1 of 1

Sample Number	2220796-1						
Sampled Date	Mar 11, 2022 11:05 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_025_2555	Plot	F2-13	Site	SMR Automotive System (Thailand) Ltd.		
Date Analysis Commenced	Mar 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	17	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	59	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	260	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	28	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chainusorn Lertmanthakunchai

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248281**  
Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2225088-1

Page 1 of 1

Sample Number	2248281-1							Page 1 of 7
Sampled Date	May 11, 2022 3:50 PM							
Sample Description	Wastewater							
Contract ID	L_HESIE_025_2555	Plot	F2-13	Site	SMR Automotive System (Thailand) Ltd.			
Date Analysis Commenced	May 11, 2022							
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property	Yellow, some odour, a lot of solid and some turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
<b>Water Testing</b>								
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong	
COD	mg/L	1.5	5	14	≤750	APHA (2017), 5220 D	Rayong	
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong	
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong	
pH (on site) *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	264	≤3000	APHA (2017), 2540 C	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	24	≤200	APHA (2017), 2540 D	Rayong	

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pittaya Thongtaeng

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149158

Date Received : Jan 11, 2022

Date Reported : Jan 18, 2022

Report Number : 2185286-1

Page 1 of 1

Sample Number	21149158-1
Sampled Date	Jan 11, 2022 9:13 AM
Sample Description	Wastewater
Contract ID	L_HESIE_008_2554
Plot	D-24A
Site	Steel Alliance service center Co., Ltd.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	120	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	287	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	376	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	78	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nararat thammassaro

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory 1 Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220821

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235416-1

Page 1 of 1

Sample Number	2220821-1
Sampled Date	Mar 09, 2022 10:40 AM
Sample Description	Wastewater
Contract ID	L_HESIE_008_2554
Plot	D-24A
Site	Steel Alliance service center Co., Ltd.
Date Analysis Commenced	Mar 09, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	108	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	271	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	488	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	54	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Moungma

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248304**  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number: 2295149-1

Page 1 of 1

Sample Number	2248304-1							
Sampled Date	May 12, 2022 9:25 AM							
Sample Description	Wastewater							
Contract ID	L_HESIE_008_2554	Plot	D-24A	Site	Steel Alliance service center Co.,Ltd.			
Date Analysis Commenced	May 12, 2022							
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property	Yellow, a lot of odour, solid and some turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
Water Testing								
BOD (5 days at 20 Degree C)	mg/L	-	2	96	≤500	APHA (2017), 5210 B	Rayong	
COD	mg/L	1.5	5	196	≤750	APHA (2017), 5220 D	Rayong	
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong	
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong	
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	412	≤3000	APHA (2017), 2540 C	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	41	≤200	APHA (2017), 2540 D	Rayong	

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chainusorn Lerthanakunchai

**Remark :**  
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- "C" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 21149118**  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number: 2185135-1

Page 1 of 1

Sample Number	21149118-1								Page 1 of 1
Sampled Date	Jan 10, 2022 9:55 AM								
Sample Description	Wastewater								
Contract ID	L_HESIE_021_2557	Plot	A-01	Site	SUMMIT KEYLEX (THAILAND) Co.,Ltd.				
Date Analysis Commenced	Jan 10, 2022								
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)								
Physical Property	Yellow, a lot of odour, some solid and turbid								
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location		
Water Testing									
BOD (5 days at 20 Degree C)	mg/L	-	2	15	≤500	APHA (2017), 5210 B	Rayong		
COD	mg/L	1.5	5	55	≤750	APHA (2017), 5220 D	Rayong		
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong		
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong		
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong		
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	204	≤3000	APHA (2017), 2540 C	Rayong		
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤200	APHA (2017), 2540 D	Rayong		

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Wanlop Hunchalraow

**Remark :**  
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- "C" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory I Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220777

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number: 2235295-1

Page 1 of 1

Sample Number	2220777-1
Sampled Date	Mar 11, 2022 9:05 AM
Sample Description	Wastewater
Contract ID	L_HESIE_021_2557 Plot A-01
Site	SUMMIT KEYLEX (THAILAND) Co., Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	38	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	93	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	356	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	13	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chainusorn Lerthanakulchal

Remark :

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- "<" : Lower than LOQ (Limit of Quantization) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory I Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248267

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number: 2295067-1

Page 1 of 1

Sample Number	2248267-1
Sampled Date	May 13, 2022 9:45 AM
Sample Description	Wastewater
Contract ID	L_HESIE_021_2557 Plot A-01
Site	SUMMIT KEYLEX (THAILAND) Co., Ltd.
Date Analysis Commenced	May 13, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	16	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	79	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	364	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng

Remark :

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 21149149**  
Date Received : Jan 11, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2185276-1

Page 1 of 1

Sample Number	21149149-1
Sample Date	Jan 11, 2022 9:50 AM
Sample Description	Wastewater
Contract ID	L_HESIE_011_2554
Plot	D-31
Location	Site SUPREME FELTOL (THAILAND) Co., Ltd.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	174	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	406	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	444	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	87	≤200	APHA (2017), 2540 D	Rayong

**Guideline:** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Narurat Channasaro

**Remark :**  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location:** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220811**  
Date Received : Mar 09, 2022  
Date Reported : Mar 15, 2022  
Report Number : 2235388-1

Page 1 of 1

Sample Number	2220811-1
Sample Date	Mar 09, 2022 11:21 AM
Sample Description	Wastewater
Contract ID	L_HESIE_011_2554
Plot	D-31
Location	Site SUPREME FELTOL (THAILAND) Co., Ltd.
Date Analysis Commenced	Mar 09, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	113	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	228	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	372	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	47	≤200	APHA (2017), 2540 D	Rayong

**Guideline:** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Ronnachai Moungma

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Taet, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248296  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295130-1

Page 1 of 1

Sample Number	2248296-1					
Sampled Date	May 12, 2022 9:53 AM					
Sample Description	Wastewater					
Contract ID	L_HESIE_011_2554	Plot	D-31	Site	SUPREME FELTOL (THAILAND) Co.,Ltd.	
Location	Point 1					
Date Analysis Commenced	May 12, 2022					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards (APHA / USEPA)					
Physical Property	Yellow, a lot of odour, solid and some turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2	144	≤500	APHA (2017), 5210 B
COD	mg/L	1.5	5	307	≤750	APHA (2017), 5220 D
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (3)
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	528	≤3000	APHA (2017), 2540 C
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	76	≤200	APHA (2017), 2540 D

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiusorn Lerthanakunchai

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Taet, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149261  
Date Received : Jan 13, 2022  
Date Reported : Jan 19, 2022  
Report Number : 2185339-1

Page 1 of 1

Sample Number		21149261-1					
Sampled Date	Jan 13, 2022 9:35 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_004_2554	Plot	D-19				
Site	Suzuki Motor (Thailand) Co.,Ltd.						
Date Analysis Commenced	Jan 14, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, some odour, a lot of solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	96	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	265	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	320	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	35	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Taat, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 21149261**  
Date Received : Jan 13, 2022  
Date Reported : Jan 15, 2022  
Report Number : 2185539-2

Page 1 of 1

**Sample Number** 21149261-1  
**Sampled Date** Jan 13, 2022 9:35 AM  
**Sample Description** Wastewater  
**Contract ID** L\_HESIE\_004\_2554 **Plot** D-19 **Site** Suzuki Motor (Thailand) Co.,Ltd.  
**Date Analysis Commenced** Jan 14, 2022  
**Condition of Sample** Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)  
**Physical Property** Yellow, some odour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant  
**Sampled By :** Pitthaya Thongdaeng

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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Taat, Amphur Phakdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220736**  
Date Received : Mar 09, 2022  
Date Reported : Mar 15, 2022  
Report Number : 2235041-1

Page 1 of 1

**Sample Number** 2220736-1  
**Sampled Date** Mar 09, 2022 9:18 AM  
**Sample Description** Wastewater  
**Contract ID** L\_HESIE\_004\_2554 **Plot** D-19 **Site** Suzuki Motor (Thailand) Co.,Ltd.  
**Date Analysis Commenced** Mar 09, 2022  
**Condition of Sample** Contained in one amber glass bottle, seven plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)  
**Physical Property** Yellow, some odour, a lot of solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	52	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	171	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	64	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	61	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.01	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.1	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	356	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	58	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pitthaya Thongdaeng , Nantawat Sarin

**Remark :**  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tsak, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2220736

Date Received : Mar 09, 2022

Date Reported : Mar 16, 2022

Report Number : 2235041-2

Page 1 of 1

Sample Number	2220736-1
Sampled Date	Mar 09, 2022 9:18 AM
Sample Description	Wastewater
Contract ID	L_HESIE_004_2554
Plot	D-19
Site	Suzuki Motor (Thailand) Co., Ltd.
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle, seven plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, a lot of solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.09	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.04	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (8)	Bangkok
Lead	mg/L	0.0003	0.0005	0.003	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.05	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.010	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.49	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng , Nantawat Sarin

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tsak, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220736

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235041-3

Page 1 of 1

Sample Number	2220736-1
Sampled Date	Mar 09, 2022 9:18 AM
Sample Description	Wastewater
Contract ID	L_HESIE_004_2554
Plot	D-19
Site	Suzuki Motor (Thailand) Co., Ltd.
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle, seven plastic bottles and two glass vials, sample containers comply to pretreatment - preservation standards (APHA, USEPA)
Physical Property	Yellow, some odour, a lot of solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
(A) Iron	mg/L	0.003	0.005	0.44	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	0.3	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongdaeng , Nantawat Sarin

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248369

Date Received : May 11, 2022

Date Reported : May 19, 2022

Report Number : 2295338-1

Page 1 of 1

Sample Number	2248369-1
Sampled Date	May 11, 2022 9:15 AM
Sample Description	Wastewater
Contract ID	L_HESIE_004_2554
Plot	D-19
Site	Suzuki Motor (Thailand) Co., Ltd.
Date Analysis Commenced	May 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	28	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	79	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	648	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	27	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248369

Date Received : May 11, 2022

Date Reported : May 19, 2022

Report Number : 2295338-2

Page 1 of 1

Sample Number	2248369-1
Sampled Date	May 11, 2022 9:15 AM
Sample Description	Wastewater
Contract ID	L_HESIE_004_2554
Plot	D-19
Site	Suzuki Motor (Thailand) Co., Ltd.
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Fluoride	mg/L	0.05	0.2	0.8	≤5	APHA (2017), 4500-FC	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory | Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149163  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185296-1

Page 1 of 1

Sample Number	21149163-1
Sample Date	Jan 10, 2022 9:34 AM
Sample Description	Wastewater
Contract ID	L_HESIE_027_2556
Plot	G-02
Site	Tadano (Thailand) Co.,Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	32	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	101	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	296	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nannat thammassaro

Remark :  
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- "<" : Lower than LOQ (Unit of Quantization) / LOR (Unit of Reporting)  
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory | Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220838  
Date Received : Mar 10, 2022  
Date Reported : Mar 16, 2022  
Report Number : 2235585-1

Page 1 of 1

Sample Number	2220838-1
Sample Date	Mar 10, 2022 9:23 AM
Sample Description	Wastewater
Contract ID	L_HESIE_027_2556
Plot	G-02
Site	Tadano (Thailand) Co.,Ltd.
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	20	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	111	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	404	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Moungma

Remark :  
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- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.



## Analysis / Test Report

TESTING  
No.0042

**Lot ID: 2248319**  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295197-1

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

Page 1 of 1

Sample Number	2248319-1						
Sampled Date	May 12, 2022 2:24 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_027_2556	Plot	G-02	Site	Tadlano (Thailand) Co.,Ltd.		
Date Analysis Commenced	May 12, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	16	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	49	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	232	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chaihusorn Lertthanthakunchal

**Remark :**

- \* LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

TESTING  
No.0042

**Lot ID: 21149074**  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2184248-1

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Random Check  
**Project Location :** WHA ESIE 1

Page 1 of 1

<b>Sample Number</b>	21149074-1
<b>Sampled Date</b>	Jan 10, 2022 11:09 AM
<b>Sample Description</b>	Wastewater
<b>Contract ID</b>	L_HESIE_072_2556
<b>Plot</b>	D-22B
<b>Site</b>	Takahata Precision (Thailand) Co., Ltd.
<b>Date Analysis Commenced</b>	Jan 10, 2022
<b>Condition of Sample</b>	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
<b>Physical Property</b>	Yellow, a lot of odour, solid and turbid

<b>Analyte</b>	<b>Unit</b>	<b>LOD</b>	<b>LOQ (LOR)</b>	<b>Result</b>	<b>Guideline / Specification</b>	<b>Method</b>	<b>Testing Location</b>
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	111	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	317	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	71	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	68	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.012	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.6	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	384	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	106	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Narurat thammassaro , Panupong Manit

**Remark :**

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0009

Lot ID: 21149074

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184248-2

Page 1 of 1

Sample Number	21149074-1
Sampled Date	Jan 10, 2022 11:09 AM
Sample Description	Wastewater
Contract ID	L_HESIE_022_2556
Plot	D-228
Site	Takahata Precision (Thailand) Co., Ltd.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.001	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.07	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (B)	Bangkok
Lead	mg/L	0.0003	0.0005	0.003	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.03	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.006	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.21	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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- "ND" : Not Detected
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042

Lot ID: 21149074

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184248-3

Page 1 of 1

Sample Number	21149074-1
Sampled Date	Jan 10, 2022 11:09 AM
Sample Description	Wastewater
Contract ID	L_HESIE_022_2556
Plot	D-228
Site	Takahata Precision (Thailand) Co., Ltd.
Date Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.57	≤10.0	Based on APHA (2017), 3125	Bangkok
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

- LOD : Limit of Detection
- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co., Ltd. Bangkok Branch, DSS Accreditation No. 0009.



## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2220831**  
Date Received : Mar 10, 2022  
Date Reported : Mar 16, 2022  
Report Number : 2235465-1

Page 1 of 1

Sample Number	2220831-1						
Sampled Date	Mar 10, 2022 10:37 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_022_2556	Plot	D-22B	Site	Takahata Precision (Thailand) Co.,Ltd.		
Date Analysis Commenced	Mar 10, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	128	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	335	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	408	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	116	≤200	APHA (2017), 2540 D	Rayong

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Ronnachai Moungrua

**Remark :**  
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## Analysis / Test Report

**Client :** WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
**P/O :**  
**Project Name :** Factory / Monthly  
**Project Location :** WHA ESIE 1

**TESTING**  
**No.0042**  
**Lot ID: 2248314**  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295167-1

Page 1 of 1

Sample Number	2248314-1							Page 1 of 1
Sampled Date	May 12, 2022 3:28 PM							
Sample Description	Wastewater							
Contract ID	L_HESIE_022_2556	Plot	D-22B	Site	Takahata Precision (Thailand) Co.,Ltd.			
Date Analysis Commenced	May 12, 2022							
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property	Yellow, a lot of odour, some solid and turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
Water Testing								
BOD (5 days at 20 Degree C)	mg/L	-	2	64	≤500	APHA (2017), 5210 B	Rayong	
COD	mg/L	1.5	5	173	≤750	APHA (2017), 5220 D	Rayong	
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong	
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong	
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	340	≤3000	APHA (2017), 2540 C	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	44	≤200	APHA (2017), 2540 D	Rayong	

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Chalmusorn Lerthanakunchai

**Remark :**  
\* LOD : Limit of Detection  
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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2220851

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
Date Received : Mar 09, 2022  
Date Reported : Mar 15, 2022  
Report Number : 2235637-1

P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	2220851-1										
Sampled Date	Mar 09, 2022 9:53 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_003_2559	Plot	D.02C	Site	Thai JE Technology Co.,Ltd.						
Date Analysis Commenced	Mar 09, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	54	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	156	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	320	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	11	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romnachai Moungma

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

TESTING  
No.0042  
Lot ID: 2248333

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number : 2295272-1

P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	2248333-1										
Sampled Date	May 12, 2022 9:56 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_003_2559	Plot	D.02C	Site	Thal JE Technology Co.,Ltd.						
Date Analysis Commenced	May 12, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	27	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	70	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	264	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	19	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thonglaeng

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149319  
Date Received : Jan 11, 2022  
Date Reported : Jan 18, 2022  
Report Number : 21182299-1

Page 1 of 1

Sample Number	21149319-1						
Sampled Date	Jan 11, 2022 2:15 PM						
Sample Description	Wastewater						
Contract ID	L.WHA ESIEL_003_2564	Plot	H.01A	Site	Thai Ming Lighting CO., LTD.		
Date Analysis Commenced	Jan 11, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	49	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	143	≤750	APHA (2017), 5220 D	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Temperature *	Degree C	-	-	29.4	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	284	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	22	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Nannat thannasaro

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2221010  
Date Received : Mar 04, 2022  
Date Reported : Mar 10, 2022  
Report Number : 2236480-1

Page 1 of 1

Sample Number	2221010-1							Page 1 of 1
Sampled Date	Mar 04, 2022 10:40 AM							
Sample Description	Wastewater							
Contract ID	L.WHA ESIE1_003_2564	Plot	H.01A	Site	Thai Ming Lighting CO., LTD.			
Date Analysis Commenced	Mar 04, 2022							
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property	Yellow, a lot of odour, some solid and turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
<b>Water Testing</b>								
BOD (5 days at 20 Degree C)	mg/L	-	2	74	≤500	APHA (2017), 5210 B	Rayong	
COD	mg/L	1.5	5	145	≤750	APHA (2017), 5220 D	Rayong	
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong	
pH (on site) *		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong	
Temperature *	Degree C	-	-	29.7	≤45	Based on APHA (2017), 2550 B	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	340	≤3000	APHA (2017), 2540 C	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	20	≤200	APHA (2017), 2540 D	Rayong	

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pathompong Kornsawat

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149120

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number: 2185139-1

Page 1 of 1

Sample Number	21149120-1
Sample Date	Jan 10, 2022 10:20 AM
Sample Description	Wastewater
Contract ID	L_HESIE_008_2551
Plot	A-03
Site	Thal Okawa Co., Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some colour, a lot of solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	23	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	69	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	1580	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	31	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchaiyaw

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220779

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number: 2235299-1

Page 1 of 1

Sample Number	2220779-1
Sample Date	Mar 11, 2022 9:23 AM
Sample Description	Wastewater
Contract ID	L_HESIE_008_2551
Plot	A-03
Site	Thal Okawa Co., Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of colour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	125	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	500	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	16	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	384	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	45	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chaiyusorn Lertrantakulchul

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 2248269

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295072-1

P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

## Analysis / Test Report

TESTING  
No.0042  
Lot ID: 21149153

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
Date Received : Jan 12, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2185280-1

P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	2248269-1						
Sampled Date	May 13, 2022 10:15 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_008_2551	Plot	A-03	Site	Thai Okawa Co.,Ltd.		
Date Analysis Commenced	May 13, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	18	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	82	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	884	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :

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Page 1 of 1

Sample Number	21149153-1							Page 1 of 1
Sampled Date	Jan 12, 2022 2:40 PM							
Sample Description	Wastewater							
Contract ID	L_HESIE_007_2554		Plot	D-14		Site	Thai Summit Engineering Co.,Ltd.	
Date Analysis Commenced	Jan 12, 2022							
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)							
Physical Property	Yellow, a lot of odour, solid and turbid							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
Water Testing								
BOD (5 days at 20 Degree C)	mg/L	-	2	110	≤500	APHA (2017), 5210 B	Rayong	
COD	mg/L	1.5	5	326	≤750	APHA (2017), 5220 D	Rayong	
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong	
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong	
pH (on site) *		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	348	≤3000	APHA (2017), 2540 C	Rayong	
Total Suspended Solids Dried at 102-105 degree C	mg/L	-	5	99	≤200	APHA (2017), 2540 D	Rayong	

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Saitayakun

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220815

Date Received : Mar 10, 2022

Date Reported : Mar 16, 2022

Report Number : 2235400-1

Page 1 of 1

Sample Number	2220815-1
Sample Date	Mar 10, 2022 2:10 PM
Sample Description	Wastewater
Contract ID	L_HESIE_007_2554
Plot	D-14
Site	Thal Summit Engineering Co., Ltd.
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, some odour, solid and no turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	17	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	3	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *				7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	148	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central

wastewater Treatment Plant

Sampled By : Romachai Moungma

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248300

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295135-1

Page 1 of 1

Sample Number	2248300-1
Sample Date	May 12, 2022 10:33 AM
Sample Description	Wastewater
Contract ID	L_HESIE_007_2554
Plot	D-14
Site	Thal Summit Engineering Co., Ltd.
Date Analysis Commenced	May 12, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	37	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	110	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *				7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	304	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	43	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central

wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149268  
Date Received : Jan 12, 2022  
Date Reported : Jan 19, 2022  
Report Number : 2185545-1

Page 1 of 1

Sample Number	21149268-1										
Sample Date	Jan 12, 2022 11:05 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_005_2553	Plot	D-02	Site	Thal Summit PK Corporation Ltd.						
Date Analysis Commenced	Jan 12, 2022										
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, some odour, a lot of solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	210	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	427	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (3)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	644	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	38	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Sattayakun , Thanassou Namakuma

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

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149268  
Date Received : Jan 12, 2022  
Date Reported : Jan 19, 2022  
Report Number : 2185545-2

Page 1 of 1

Sample Number	21149268-1											Page 1 of 1
Sampled Date	Jan 12, 2022 11:05 AM											
Sample Description	Wastewater											
Contract ID	L_HESIE_005_2553											
Plot	D-02											
Site	Thal Summit PK Corporation Ltd.											
Date Analysis Commenced	Jan 13, 2022											
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, some odour, a lot of solid and some turbid											

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Nickel	mg/L	0.0003	0.0005	0.40	≤1.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Sattayakun , Thanassou Namakuma

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory I Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2221001

Date Received : Mar 10, 2022

Date Reported : Mar 16, 2022

Report Number : 2236420-1

Page 1 of 1

Sample Number	2221001-1
Sampled Date	Mar 10, 2022 3:24 PM
Sample Description	Wastewater
Contract ID	L_HESIE_005_2553
Plot	D-02
Site	Thai Summit PK Corporation Ltd.
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	227	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	731	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	524	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	36	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romnachai Moungma , Nantawat Sarin

Remark :

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

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory I Monthly

Project Location : WHA ESIE 1

TESTING  
No.0009  
Lot ID: 2221001

Date Received : Mar 10, 2022

Date Reported : Mar 17, 2022

Report Number : 2236420-2

Page 1 of 1

Sample Number	2221001-1
Sampled Date	Mar 10, 2022 3:24 PM
Sample Description	Wastewater
Contract ID	L_HESIE_005_2553
Plot	D-02
Site	Thai Summit PK Corporation Ltd.
Date Analysis Commenced	Mar 11, 2022
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.
Physical Property	(APHA / USEPA) Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Nickel	mg/L	0.0003	0.0005	0.30	≤1.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romnachai Moungma , Nantawat Sarin

Remark :

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



## Analysis / Test Report

TESTING  
No.0042

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Lot ID: 2248372  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295351-1

Page 1 of 1

Sample Number	2248372-1										
Sampled Date	May 13, 2022 10:15 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_005_2553	Plot	D-02	Site	Thal Summit PK Corporation Ltd.						
Date Analysis Commenced	May 13, 2022										
Condition of Sample	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards.										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	306	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	643	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	972	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	32	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater treatment plant

Sampled By : Chaiusorn Letranthakunchal, Panupong Manit

Remark :

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

## Analysis / Test Report

TESTING  
No.0009

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

Lot ID: 2248372  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295351-2

Page 1 of 1

Sample Number	2248372-1										
Sampled Date	May 13, 2022 10:15 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_005_2553										
Date Analysis Commenced	May 17, 2022										
Condition of Sample	Site Thai Summit PK Corporation Ltd.										
Physical Property	Contained in one amber glass bottle and four plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA) Yellow, a lot of odour, some solid and turbid										

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Nickel	mg/L	0.0003	0.0005	0.33	≤1.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater treatment plant

Sampled By : Chaiusorn Letranthakunchal, Panupong Manit

Remark :

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

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory | Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149155

Date Received : Jan 12, 2022

Date Reported : Jan 18, 2022

Report Number : 2185282-1

Page 1 of 1

Sample Number	21149155-1						
Sampled Date	Jan 12, 2022 3:10 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_007_2555	Plot	D-17,D-18	Site	Thai Summit Rayong Autoparts Industry Co.,Ltd.		
Date Analysis Commenced	Jan 12, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)						
Physical Property	Yellow, some odour, a lot of solid and some turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	16	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	50	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	271	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central

wastewater Treatment Plant

Sampled By : Paramet Sattayakun

Remark :

- LOD : Limit of Detection
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory | Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220817

Date Received : Mar 10, 2022

Date Reported : Mar 16, 2022

Report Number : 2235404-1

Page 1 of 1

Sample Number	2220817-1						
Sampled Date	Mar 10, 2022 2:38 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_007_2555	Plot	D-17/D-18	Site	Thai Summit Rayong Autoparts Industry Co.,Ltd.		
Date Analysis Commenced	Mar 10, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards, (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, some solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	102	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	407	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	228	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	16	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central

wastewater Treatment Plant

Sampled By : Kornnuch Mungma

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location: WHA ESIE 1

TESTING  
No.0042  
**Lot ID: 2248302**  
Date Received : May 12, 2022  
Date Reported : May 19, 2022  
Report Number: 2295145-1

Page 1 of 1

Sample Number	2248302-1										
Sampled Date	May 12, 2022 10:53 AM										
Sample Description	Wastewater										
Contract ID	L_HESTE_007_2555	Plot	D-17/D-18	Site	Thal Summit Rayong Autoparts Industry Co.,Ltd.						
Date Analysis Commenced	May 12, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	124	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	232	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	276	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	31	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location: WHA ESIE 1

TESTING  
No.0042  
**Lot ID: 21149152**  
Date Received : Jan 12, 2022  
Date Reported : Jan 18, 2022  
Report Number: 2185279-1

Page 1 of 1

Sample Number	21149152-1										Page 1 of 1
Sample Date	Jan 12, 2022 2:35 PM										
Sample Description	Wastewater										
Contract ID	L_HESIE_001_2560	Plot	D.12	Site	Thai Summit Roll Forming Technology Co.,Ltd.						
Date Analysis Commenced	Jan 12, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	75	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	172	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *	-	-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	332	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	32	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Paramet Satoayakun

Remark :  
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220814

Date Received : Mar 10, 2022

Date Reported : Mar 16, 2022

Report Number : 2235398-1

Page 1 of 1

Sample Number	2220814-1												
Sampled Date	Mar 10, 2022 1:58 PM												
Sample Description	Wastewater												
Contract ID	L_HESIE_001_2550	Plot	D.12	Site	Thal Summit Roll Forming Technology Co.,Ltd.								
Date Analysis Commenced	Mar 10, 2022												
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)												
Physical Property	Yellow, a lot of odour, some solid and turbid												
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location						
Water Testing													
BOD (5 days at 20 Degree C)	mg/L	-	2	79	≤500	APHA (2017), 5210 B	Rayong						
COD	mg/L	1.5	5	205	≤750	APHA (2017), 5220 D	Rayong						
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong						
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong						
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong						
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	316	≤3000	APHA (2017), 2540 C	Rayong						
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	35	≤200	APHA (2017), 2540 D	Rayong						

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachal Moungma

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248299

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295134-1

Page 1 of 1

Sample Number	2248299-1												
Sampled Data	May 12, 2022 10:18 AM												
Sample Description	Wastewater												
Contract ID	L_HESIE_001_2560	Plot	D.12	Site	Thal Summit Roll Forming Technology Co.,Ltd.								
Date Analysis Commenced	May 12, 2022												
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)												
Physical Property	Yellow, a lot of odour, some solid and turbid												
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location						
Water Testing													
BOD (5 days at 20 Degree C)	mg/L	-	2	10	≤500	APHA (2017), 5210 B	Rayong						
COD	mg/L	1.5	5	49	≤750	APHA (2017), 5220 D	Rayong						
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong						
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong						
pH (on site) *		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong						
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	248	≤3000	APHA (2017), 2540 C	Rayong						
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤200	APHA (2017), 2540 D	Rayong						

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thongdaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING

No.0042

Lot ID: 21149112

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number: 2185116-1

Page 1 of 1

Sample Number	21149112-1
Sampled Date	Jan 10, 2022 3:05 PM
Sample Description	Wastewater
Contract ID	L_HESIE_023_2556
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	138	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	345	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	13	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	8.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	312	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	81	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thannasaro

Remark :

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

Tech

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING

No.0042

Lot ID: 2220770

Date Received : Mar 10, 2022

Date Reported : Mar 16, 2022

Report Number: 2235269-1

Page 1 of 1

Sample Number	2220770-1
Sampled Date	Mar 10, 2022 11:24 AM
Sample Description	Wastewater
Contract ID	L_HESIE_023_2556
Date Analysis Commenced	Mar 10, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	112	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	259	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	368	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	37	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romsachai Moungma

Remark :

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





## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory | Monthly

Project Location : WHA ESIE 1

TESTING

No.0042

Lot ID: 2248261

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number : 2295058-1

Page 1 of 1

Sample Number	2248261-1						
Sampled Date	May 13, 2022 9:10 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_023_2556	Plot	C-09B	Site	TI Automotive (Thailand) Ltd.		
Date Analysis Commenced	May 13, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	190	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	293	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.8	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	424	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	62	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pichaya Thongtaeng

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory | Monthly

Project Location : WHA ESIE 1

TESTING

No.0042

Lot ID: 21149131

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185176-1

Page 1 of 1

Sample Number	21149131-1						
Sampled Date	Jan 07, 2022 10:00 AM						
Sample Description	Wastewater						
Contract ID	L_HESIE_002_2551	Plot	FZ-09	Site	Toyo Filling International Co.,Ltd.		
Date Analysis Commenced	Jan 07, 2022						
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, some odour, solid and no turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	8	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	144	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pichaya Thongtaeng

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220794  
Date Received : Mar 11, 2022  
Date Reported : Mar 17, 2022  
Report Number : 2235330-1

Page 1 of 1

Sample Number	2220794-1										
Sample Date	Mar 11, 2022 9:07 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_002_2551	Plot	FZ-09	Site	Toyo Filling International Co., Ltd.						
Date Analysis Commenced	Mar 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, some odour, solid and no turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	10	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	152	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chainusorn Letranthakunhai

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248279  
Date Received : May 11, 2022  
Date Reported : May 18, 2022  
Report Number : 2295085-1

Page 1 of 1

Sample Number	2248279-1											Page 1 of 1
Sampled Date	May 11, 2022 10:55 AM											
Sample Description	Wastewater											
Contract ID	L_HESIE_002_2551	Plot	FZ-09	Site	Toyo Filling International Co.,Ltd.							
Date Analysis Commenced	May 11, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, some odour, solid and no turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	<2	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	28	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	<3	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *		-	-	7.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	188	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149171

Date Received : Jan 14, 2022

Date Reported : Jan 19, 2022

Report Number : 2185341-1

Page 1 of 1

Sample Number	21149171-1											
Sampled Date	Jan 14, 2022 10:00 AM											
Sample Description	Wastewater											
Contract ID	L_HESIE_007_2558	Plot	E.11	Site	Toyota Tsusho (Thailand) Co.,Ltd							
Date Analysis Commenced	Jan 14, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	110	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	294	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	296	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	66	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pabhompong Kornasawat

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220849

Date Received : Mar 04, 2022

Date Reported : Mar 10, 2022

Report Number : 2235632-1

Page 1 of 1

Sample Number	2220849-1											
Sampled Date	Mar 04, 2022 4:00 PM											
Sample Description	Wastewater											
Contract ID	L_HESIE_007_2558	Plot	E.11	Site	Toyota Tsusho (Thailand) Co.,Ltd							
Data Analysis Commenced		Mar 04, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, some solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degrees C)	mg/L	-	2	96	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	194	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	356	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	46	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pabhompong Kornasawat

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248327  
Date Received : May 13, 2022  
Date Reported : May 19, 2022  
Report Number : 2295231-1

Page 1 of 1

Sample Number	2248327-1									
Sampled Date	May 13, 2022 3:30 PM									
Sample Description	Wastewater									
Contract ID	L_HESIE_007_2558	Plot	E.11	Site	Toyota Tsusho (Thailand) Co.,Ltd					
Date Analysis Commenced	May 13, 2022									
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)									
Physical Property	Yellow, a lot of odour, solid and turbid									
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location			
Water Testing										
BOD (5 days at 20 Degree C)	mg/L	-	2	67	≤500	APHA (2017), 5210 B	Rayong			
COD	mg/L	1.5	5	181	≤750	APHA (2017), 5220 D	Rayong			
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong			
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong			
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong			
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	292	≤3000	APHA (2017), 2540 C	Rayong			
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	46	≤200	APHA (2017), 2540 D	Rayong			

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pittaya Thongtaeng

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140  
P/O :  
Project Name : Factory / Monthly  
Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149099  
Date Received : Jan 10, 2022  
Date Reported : Jan 17, 2022  
Report Number : 2185090-1

Page 1 of 1

Sample Number	21149099-1											Page 1 of 1
Sampled Date	Jan 10, 2022 1:45 PM											
Sample Description	Wastewater											
Contract ID	L_HESIE_010_2554	Plot	B-12	Site	U-Shin (Thailand) Co.,Ltd.							
Date Analysis Commenced	Jan 10, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, some solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	37	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	126	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	228	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	27	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Wanlop Hunchanaow

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





## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220758

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235224-1

Page 1 of 1

Sample Number	2220758-1											
Sampled Date	Mar 09, 2022 1:56 PM											
Sample Description	Wastewater											
Contract ID	L_HESIE_010_2554	Plot	B-12	Site	U-Shin (Thailand) Co.,Ltd.							
Data Analysis Commenced	Mar 09, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, solid and some turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	63	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	183	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	240	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	37	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pichaiya Thungbaeng

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248250

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295046-1

Page 1 of 1

Sample Number	2248250-1											
Sampled Date	May 11, 2022 10:55 AM											
Sample Description	Wastewater											
Contract ID	L_HSEIE_010_2554	Plot	B-12	Site	U-Shin (Thailand) Co.,Ltd.							
Date Analysis Commenced	May 11, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, some solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	32	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	106	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	5	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	256	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	33	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thammassaro

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

TESTING  
No.0042

Lot ID: 21149175

Date Received : Jan 11, 2022  
Date Reported : Jan 18, 2022  
Report Number : 2185358-1

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	21149175-1
Sampled Date	Jan 11, 2022 3:17 PM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2558
Plot	H-03
Site	Vibracoustic (Thailand) Limited
Data Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and a lot of turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	77	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	229	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	4	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	336	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	27	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant.

Sampled By : Narurat thammazaro

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

## Analysis / Test Report

TESTING  
No.0042

Lot ID: 2220730

Date Received : Mar 04, 2022  
Date Reported : Mar 11, 2022  
Report Number : 2234978-1

Client : WHA Utilities and Power Public Company Limited  
121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

Page 1 of 1

Sample Number	2220730-1
Sampled Date	Mar 04, 2022 2:50 PM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2558
Plot	H-03
Site	Vibracoustic (Thailand) Limited
Data Analysis Commenced	Mar 04, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	86	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	194	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	154	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	150	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	7	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.073	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	30.1	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	408	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	28	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant.

Sampled By : Pathompong Kornaswat , Thanasoun Namakuma

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0009

Lot ID: 2220730

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2234978-2

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2220730

Date Received : Mar 04, 2022

Date Reported : Mar 11, 2022

Report Number : 2234978-3

Page 1 of 1

Sample Number	2220730-1										
Sampled Date	Mar 04, 2022 2:50 PM										
Sample Description	Wastewater										
Contract ID	L_HESIE_001_2558	Plot	H-03	Site	Vibracoustic (Thailand) Limited						
Date Analysis Commenced	Mar 05, 2022										
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Metals Testing											
Arsenic	mg/L	0.0003	0.0005	0.003	≤0.25	Based on APHA (2017), 3125	Bangkok				
Barium	mg/L	0.0003	0.0005	0.06	≤1.0	Based on APHA (2017), 3125	Bangkok				
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok				
Copper	mg/L	0.0003	0.0005	0.02	≤2.0	Based on APHA (2017), 3125	Bangkok				
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Based on APHA (2017), 3500-Cr (6)	Bangkok				
Lead	mg/L	0.0003	0.0005	0.002	≤0.2	Based on APHA (2017), 3125	Bangkok				
Manganese	mg/L	0.0003	0.0005	0.05	≤5.0	Based on APHA (2017), 3125	Bangkok				
Mercury *	mg/L	0.0001	0.0005	<0.0005	≤0.005	Based on APHA (2017), 3112	Bangkok				
Nickel	mg/L	0.0003	0.0005	0.01	≤1.0	Based on APHA (2017), 3125	Bangkok				
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok				
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok				
Zinc	mg/L	0.003	0.005	0.32	≤5.0	Based on APHA (2017), 3125	Bangkok				

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pethompong Kornasawat , Thanassou Namakunna

Remark :

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

Page 1 of 1

Sample Number	2220730-1										
Sampled Date	Mar 04, 2022 2:50 PM										
Sample Description	Wastewater										
Contract ID	L_HESIE_001_2558										
Date Analysis Commenced	Mar 05, 2022										
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Metals Testing											
Iron	mg/L	0.003	0.005	0.25	≤10.0	Based on APHA (2017), 3125	Bangkok				
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong				

**Guideline :** Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

**Sampled By :** Pethompong Kornasawat , Thanassou Namakunna

Remark :

- LOD : Limit of Detection
- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluekdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING

No.0042

Lot ID: 2248331

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number : 2295268-1

Page 1 of 1

Sample Number	2248331-1
Sampled Date	May 13, 2022 2:00 PM
Sample Description	Wastewater
Contract ID	L_HESIE_001_2558
Plot	H-03
Site	Vibacoustic (Thailand) Limited
Date Analysis Commenced	May 13, 2022
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, some solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	123	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	300	≤750	APHA (2017), 5220 D	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *	-	-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	412	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	43	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thongtaeng

Remark :

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

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluekdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING

No.0042

Lot ID: 21149067

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184178-1

Page 1 of 1

Sample Number	21149067-1
Sampled Date	Jan 10, 2022 2:21 PM
Sample Description	Wastewater
Contract ID	L_HESIE_020_2556
Plot	D-48
Site	Visteon Automotive Electronics (Thailand) Ltd.
Date Analysis Commenced	Jan 10, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 Degree C)	mg/L	-	2	131	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	306	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	153	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	150	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	<0.005	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B (B)	Rayong
pH (on site) *	-	-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	0.217	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	28.3	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	392	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	66	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thiammasaro , Panupong Manit

Remark :

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





## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149067

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184178-2

Page 1 of 1

Sample Number	21149067-1					
Sampled Date	Jan 10, 2022 2:21 PM					
Sample Description	Wastewater					
Contract ID	L_HESIE_020_2556	Plot	D-48	Site	Vision Automotive Electronics (Thailand) Ltd.	
Date Analysis Commenced	Jan 11, 2022					
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
Physical Property	Yellow, a lot of odour, solid and turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Testing Location
Metals Testing						
Arsenic	mg/L	0.0003	0.0005	0.002	≤0.25	Bangkok
Barium	mg/L	0.0003	0.0005	0.08	≤1.0	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Bangkok
Copper	mg/L	0.0003	0.0005	0.10	≤2.0	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	<0.01	≤0.25	Bangkok
Lead	mg/L	0.0003	0.0005	0.010	≤0.2	Bangkok
Manganese	mg/L	0.0003	0.0005	0.07	≤5.0	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Bangkok
Nickel	mg/L	0.0003	0.0005	0.01	≤1.0	Bangkok
Selenium	mg/L	0.0003	0.0005	0.0006	≤0.02	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Bangkok
Zinc	mg/L	0.003	0.005	0.44	≤5.0	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149067

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184178-3

Page 1 of 1

Sample Number	21149067-1						
Sampled Date	Jan 10, 2022 2:21 PM						
Sample Description	Wastewater						
Contract ID	L_HESIE_020_2556	Plot	D-48	Site	Visteon Automotive Electronics (Thailand) Ltd.		
Date Analysis Commenced	Jan 11, 2022						
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)						
Physical Property	Yellow, a lot of odour, solid and turbid						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Iron	mg/L	0.003	0.005	0.63	≤10.0	Based on APHA (2017), 3125	Bangkok
Water Testing							
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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- "L" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220825

Date Received : Mar 09, 2022

Date Reported : Mar 15, 2022

Report Number : 2235443-1

Page 1 of 1

Sample Number	2220825-1										
Sample Date	Mar 09, 2022 11:45 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_020_2556	Plot	D-48	Site	Visteon Automotive Electronics (Thailand) Ltd.						
Date Analysis Commenced	Mar 09, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	184	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	398	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	10	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	560	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	69	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Ronnachai Moungma

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248308

Date Received : May 13, 2022

Date Reported : May 19, 2022

Report Number : 2295155-1

Page 1 of 1

Sample Number	2248308-1										
Sampled Date	May 13, 2022 10:03 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_020_2556	Plot	D-48	Site	Visteon Automotive Electronics (Thailand) Ltd.						
Date Analysis Commenced	May 13, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, some solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	293	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	495	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	12	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	476	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	82	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pithaya Thonglaeng

Remark :

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## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149136

Date Received : Jan 07, 2022

Date Reported : Jan 13, 2022

Report Number : 2185210-1

Page 1 of 1

Sample Number		21149136-1									
Sampled Date		Jan 07, 2022 2:55 PM									
Sample Description		Wastewater									
Contract ID	L_HESIE_001_2553	Plot	FZ-21	Site	Visy Padagang (Thailand) Limited.						
Data Analysis Commenced		Jan 07, 2022									
Condition of Sample		Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)									
Physical Property		Yellow, a lot of odour, solid and some turbid									
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	110	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	260	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	9	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	404	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	42	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment plant

Sampled By : Pithaya Thongdaeng

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2220799

Date Received : Mar 11, 2022

Date Reported : Mar 17, 2022

Report Number : 2235943-1

Page 1 of 1

Sample Number	2220799-1										
Sampled Date	Mar 11, 2022 10:54 AM										
Sample Description	Wastewater										
Contract ID	L_HESIE_001_2553	Plot	FZ-21	Site	Visy Packaging (Thailand) Limited.						
Date Analysis Commenced	Mar 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and some turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	126	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	247	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	408	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	36	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment plant

Sampled By : Chaiusorn Lertrathakunchal

Remark :

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- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 2248284

Date Received : May 11, 2022

Date Reported : May 18, 2022

Report Number : 2295091-1

Page 1 of 1

Sample Number	2248284-1										
Sample Date	May 11, 2022 3:35 PM										
Sample Description	Wastewater										
Contract ID	L_HESIE_001_2553	Plot	FZ-21	Site	Visy Packaging (Thailand) Limited.						
Date Analysis Commenced	May 11, 2022										
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)										
Physical Property	Yellow, a lot of odour, solid and turbid										
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location				
Water Testing											
BOD (5 days at 20 Degree C)	mg/L	-	2	52	≤500	APHA (2017), 5210 B	Rayong				
COD	mg/L	1.5	5	185	≤750	APHA (2017), 5220 D	Rayong				
Formaldehyde	mg/L	0.03	0.1	<0.1	≤1	Wastewater Analysis	Rayong				
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong				
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong				
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	264	≤3000	APHA (2017), 2540 C	Rayong				
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	71	≤200	APHA (2017), 2540 D	Rayong				

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Pitthaya Thonglaeng

Remark :

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phukdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location : WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149075

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184250-1

Page 1 of 1

Sample Number		21149075-1		Page 1 of 1			
Sampled Date		Jan 10, 2022 9:41 AM					
Sample Description		Wastewater					
Contract ID	Plot	Site	Y-Ogura Automotive (Thailand) Co.,Ltd.				
L_HESIE_028_2556	G-03,04						
Data Analysis Commenced		Jan 10, 2022					
Condition of Sample		Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)					
Physical Property		Yellow, a lot of odour, solid and some turbid					
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2	19	≤500	APHA (2017), 5210 B	Rayong
COD	mg/L	1.5	5	70	≤750	APHA (2017), 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	54	≤600	APHA (2017), 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	53	≤600	APHA (2017), 2120 F	Rayong
Cyanide as HCN	mg/L	0.001	0.005	Not Detected	≤0.2	Based on APHA (2017), 4500-CN(C), (E)	Rayong
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong
pH (on site) *		-	-	7.4	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong
Phenol	mg/L	0.005	0.01	<0.010	≤1	APHA (2017), 5530 D	Rayong
Temperature *	Degree C	-	-	28.6	≤45	Based on APHA (2017), 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	320	≤3000	APHA (2017), 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	10	≤200	APHA (2017), 2540 D	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narurat thaimasaro , Perngpong Manit

Remark :

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





## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0009  
Lot ID: 21149075

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184250-2

Page 1 of 1

Sample Number	21149075-1
Sampled Date	Jan 10, 2022 9:41 AM
Sample Description	Wastewater
Contract ID	L_HESIE_028_2556
Plot	G-03/04
Site	Y-Ogura Automotive (Thailand) Co.,Ltd.
Data Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.0003	0.0005	0.0007	≤0.25	Based on APHA (2017), 3125	Bangkok
Barium	mg/L	0.0003	0.0005	0.05	≤1.0	Based on APHA (2017), 3125	Bangkok
Cadmium	mg/L	0.0003	0.0005	Not Detected	≤0.03	Based on APHA (2017), 3125	Bangkok
Copper	mg/L	0.0003	0.0005	0.01	≤2.0	Based on APHA (2017), 3125	Bangkok
Hexavalent Chromium	mg/L	0.003	0.01	Not Detected	≤0.25	Based on APHA (2017), 3500-Cr (6)	Bangkok
Lead	mg/L	0.0003	0.0005	0.001	≤0.2	Based on APHA (2017), 3125	Bangkok
Manganese	mg/L	0.0003	0.0005	0.05	≤5.0	Based on APHA (2017), 3125	Bangkok
Mercury *	mg/L	0.0001	0.0005	Not Detected	≤0.005	Based on APHA (2017), 3112	Bangkok
Nickel	mg/L	0.0003	0.0005	0.003	≤1.0	Based on APHA (2017), 3125	Bangkok
Selenium	mg/L	0.0003	0.0005	Not Detected	≤0.02	Based on APHA (2017), 3125	Bangkok
Trivalent Chromium *	mg/L	-	0.01	<0.01	≤0.75	Based on APHA (2017), Calculated	Bangkok
Zinc	mg/L	0.003	0.005	0.15	≤5.0	Based on APHA (2017), 3125	Bangkok

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

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

## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Tasit, Amphur Phakdaeng, Rayong 21140

P/O :

Project Name : Factory / Random Check

Project Location: WHA ESIE 1

TESTING  
No.0042  
Lot ID: 21149075

Date Received : Jan 10, 2022

Date Reported : Jan 17, 2022

Report Number : 2184250-3

Page 1 of 1

Sample Number	21149075-1
Sampled Date	Jan 10, 2022 9:41 AM
Sample Description	Wastewater
Contract ID	L_HESIE_028_2556
Plot	G-03/04
Site	Y-Ogura Automotive (Thailand) Co.,Ltd.
Data Analysis Commenced	Jan 11, 2022
Condition of Sample	Contained in two glass vials, one amber glass bottle and seven plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)
Physical Property	Yellow, a lot of odour, solid and some turbid

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Iron	mg/L	0.003	0.005	0.25	≤10.0	Based on APHA (2017), 3125	Bangkok
Fluoride	mg/L	0.05	0.2	0.2	≤5	APHA (2017), 4500-F(C)	Rayong

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Narunat thammassaro , Panupong Manit

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked \* is/are not included in scope of Accreditation ISO/IEC 17025.
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Taet, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2220832

Date Received : Mar 10, 2022

Date Reported : Mar 16, 2022

Report Number : 2225469-1

Page 1 of 1

Sample Number	2220832-1												
Sample Date	Mar 10, 2022 9:30 AM												
Sample Description	Wastewater												
Contract ID	L_HESIE_028_2556	Plot	G-03/04	Site	Y-Ogura Automotive (Thailand) Co., Ltd.								
Date Analysis Commenced	Mar 10, 2022												
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)												
Physical Property	Yellow, a lot of odour, some solid and turbid												
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location						
Water Testing													
BOD (5 days at 20 Degree C)	mg/L	-	2	40	≤500	APHA (2017), 5210 B	Rayong						
COD	mg/L	1.5	5	158	≤750	APHA (2017), 5220 D	Rayong						
Formaldehyde	mg/L	0.03	0.1	0.2	≤1	Wastewater Analysis	Rayong						
Oil & Grease	mg/L	-	3	8	≤10	Based on APHA (2017), 5520 B	Rayong						
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong						
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	432	≤3000	APHA (2017), 2540 C	Rayong						
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	18	≤200	APHA (2017), 2540 D	Rayong						

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Romnachai Youngma

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



## Analysis / Test Report

Client : WHA Utilities and Power Public Company Limited

121 Moo 3, Tambol Taet, Amphur Pluakdaeng, Rayong 21140

P/O :

Project Name : Factory / Monthly

Project Location : WHA ESIE 1

TESTING  
No.0042

Lot ID: 2248315

Date Received : May 12, 2022

Date Reported : May 19, 2022

Report Number : 2295184-1

Page 1 of 1

Sample Number	2248315-1											
Sampled Date	May 12, 2022 3:16 PM											
Sample Description	Wastewater											
Contract ID	L_HESIE_028_2556	Plot	G-03/04	Site	Y-Ogura Automotive (Thailand) Co., Ltd.							
Date Analysis Commenced	May 12, 2022											
Condition of Sample	Contained in one amber glass bottle and three plastic bottles. Sample containers comply to pretreatment - preservation standards. (APHA / USEPA)											
Physical Property	Yellow, a lot of odour, some solid and turbid											
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location					
Water Testing												
BOD (5 days at 20 Degree C)	mg/L	-	2	59	≤500	APHA (2017), 5210 B	Rayong					
COD	mg/L	1.5	5	169	≤750	APHA (2017), 5220 D	Rayong					
Formaldehyde	mg/L	0.03	0.1	Not Detected	≤1	Wastewater Analysis	Rayong					
Oil & Grease	mg/L	-	3	6	≤10	Based on APHA (2017), 5520 B	Rayong					
pH (on site) *	-	-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Rayong					
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	376	≤3000	APHA (2017), 2540 C	Rayong					
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	34	≤200	APHA (2017), 2540 D	Rayong					

Guideline : Notification of the Industrial Estate Authority of Thailand No.76, B.E. 2560 : Criteria of wastewater characteristic from factory discharge to central wastewater Treatment Plant

Sampled By : Chalinusorn Lertrantakunchai

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