



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2565

ภาคผนวก ค

ใบรับรองผลการตรวจวิเคราะห์  
ผลกระทบสิ่งแวดล้อม



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

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คุณภาพอากาศในบรรยากาศ



## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520388-1

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**Sample Number** 22126699-1  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	24/11/22 - 25/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloro ethane	24/11/22 - 25/11/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	24/11/22 - 25/11/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	24/11/22 - 25/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	24/11/22 - 25/11/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	24/11/22 - 25/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	24/11/22 - 25/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	24/11/22 - 25/11/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	24/11/22 - 25/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	24/11/22 - 25/11/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	24/11/22 - 25/11/22	ug/m3	0.20	0.60	3.49	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	24/11/22 - 25/11/22	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	24/11/22 - 25/11/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoro ethane	24/11/22 - 25/11/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	24/11/22 - 25/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	24/11/22 - 25/11/22	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	24/11/22 - 25/11/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	24/11/22 - 25/11/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	24/11/22 - 25/11/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	24/11/22 - 25/11/22	ug/m3	0.50	1.52	6.12	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	24/11/22 - 25/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	24/11/22 - 25/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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**P/O** : 4170008459

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**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

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**Sample Number** 22126699-1  
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**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	24/11/22 - 25/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	24/11/22 - 25/11/22	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	24/11/22 - 25/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	24/11/22 - 25/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	24/11/22 - 25/11/22	ug/m3	0.05	0.18	3.21	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	24/11/22 - 25/11/22	ug/m3	0.08	0.24	6.98	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	24/11/22 - 25/11/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	24/11/22 - 25/11/22	ug/m3	0.08	0.23	<0.23	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	24/11/22 - 25/11/22	ug/m3	0.07	0.22	0.26	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	24/11/22 - 25/11/22	ug/m3	0.05	0.16	1.02	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	24/11/22 - 25/11/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Senior Manager

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**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

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**Sample Number** 22126699-1  
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**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	24/11/22 - 25/11/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	24/11/22 - 25/11/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	24/11/22 - 25/11/22	ug/m3	0.06	0.19	Not Detected	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	24/11/22 - 25/11/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	24/11/22 - 25/11/22	ug/m3	0.05	0.16	0.19	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	24/11/22 - 25/11/22	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	24/11/22 - 25/11/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	24/11/22 - 25/11/22	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	24/11/22 - 25/11/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	24/11/22 - 25/11/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	24/11/22 - 25/11/22	ug/m3	0.30	1.03	2.35	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

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**Sample Number** 22126699-1  
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**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	24/11/22 - 25/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	24/11/22 - 25/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	24/11/22 - 25/11/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	24/11/22 - 25/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	24/11/22 - 25/11/22	ug/m3	0.80	2.47	2.97	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	24/11/22 - 25/11/22	ug/m3	0.06	0.17	0.49	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	24/11/22 - 25/11/22	ug/m3	0.30	0.94	9.04	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	24/11/22 - 25/11/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	24/11/22 - 25/11/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	24/11/22 - 25/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	24/11/22 - 25/11/22	ug/m3	0.40	1.15	4.31	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

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**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	24/11/22 - 25/11/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	24/11/22 - 25/11/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	24/11/22 - 25/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	24/11/22 - 25/11/22	ug/m3	0.20	0.66	6.63	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	24/11/22 - 25/11/22	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	24/11/22 - 25/11/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	24/11/22 - 25/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	24/11/22 - 25/11/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	24/11/22 - 25/11/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	24/11/22 - 25/11/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	24/11/22 - 25/11/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	24/11/22 - 25/11/22	ug/m3	0.50	1.48	6.85	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	24/11/22 - 25/11/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	24/11/22 - 25/11/22	ug/m3	0.30	0.86	2.79	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	24/11/22 - 25/11/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	24/11/22 - 25/11/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	24/11/22 - 25/11/22	ug/m3	0.60	1.88	4.00	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	24/11/22 - 25/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropro pene	24/11/22 - 25/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	24/11/22 - 25/11/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	24/11/22 - 25/11/22	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	24/11/22 - 25/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520388-1

Page 8 of 8

**Sample Number** 22126699-1  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	24/11/22 - 25/11/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

**Guideline :**

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

**Sampled By** : Apiwat Chanta

**Remark :**

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

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Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 15, 2022

Report Number : 2520388-2

Page 1 of 1

**Sample Number** 22126699-1  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	10:00 AM - 01:00 PM	ppm	-	1.0	2.2	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	2.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	-	4.2	EPA 40 CFR Part 50	Bangkok

**Sampled By** : Apiwat Chanta

Remark :

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

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Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520389-1

Page 1 of 8

**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	25/11/22 - 26/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloro ethane	25/11/22 - 26/11/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	25/11/22 - 26/11/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	25/11/22 - 26/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	25/11/22 - 26/11/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	25/11/22 - 26/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	25/11/22 - 26/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	25/11/22 - 26/11/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	25/11/22 - 26/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	25/11/22 - 26/11/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	25/11/22 - 26/11/22	ug/m3	0.20	0.60	2.41	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520389-1

Page 2 of 8

**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	25/11/22 - 26/11/22	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	25/11/22 - 26/11/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoro ethane	25/11/22 - 26/11/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	25/11/22 - 26/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	25/11/22 - 26/11/22	ug/m3	0.04	0.11	Not Detected	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	25/11/22 - 26/11/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	25/11/22 - 26/11/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	25/11/22 - 26/11/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	25/11/22 - 26/11/22	ug/m3	0.50	1.52	3.52	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	25/11/22 - 26/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	25/11/22 - 26/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520389-1

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**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	25/11/22 - 26/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	25/11/22 - 26/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	25/11/22 - 26/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	25/11/22 - 26/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	25/11/22 - 26/11/22	ug/m3	0.05	0.18	1.70	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	25/11/22 - 26/11/22	ug/m3	0.08	0.24	6.08	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	25/11/22 - 26/11/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	25/11/22 - 26/11/22	ug/m3	0.08	0.23	<0.23	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	25/11/22 - 26/11/22	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	25/11/22 - 26/11/22	ug/m3	0.05	0.16	0.51	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	25/11/22 - 26/11/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520389-1

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**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	25/11/22 - 26/11/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	25/11/22 - 26/11/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	25/11/22 - 26/11/22	ug/m3	0.06	0.19	Not Detected	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	25/11/22 - 26/11/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	25/11/22 - 26/11/22	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	25/11/22 - 26/11/22	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	25/11/22 - 26/11/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	25/11/22 - 26/11/22	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	25/11/22 - 26/11/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	25/11/22 - 26/11/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	25/11/22 - 26/11/22	ug/m3	0.30	1.03	1.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520389-1

Page 5 of 8

**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	25/11/22 - 26/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	25/11/22 - 26/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	25/11/22 - 26/11/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	25/11/22 - 26/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	25/11/22 - 26/11/22	ug/m3	0.80	2.47	2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	25/11/22 - 26/11/22	ug/m3	0.06	0.17	0.35	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	25/11/22 - 26/11/22	ug/m3	0.30	0.94	5.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	25/11/22 - 26/11/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	25/11/22 - 26/11/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	25/11/22 - 26/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	25/11/22 - 26/11/22	ug/m3	0.40	1.15	1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520389-1

Page 6 of 8

**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	25/11/22 - 26/11/22	ug/m3	0.50	1.39	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	25/11/22 - 26/11/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	25/11/22 - 26/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	25/11/22 - 26/11/22	ug/m3	0.20	0.66	5.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	25/11/22 - 26/11/22	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	25/11/22 - 26/11/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	25/11/22 - 26/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	25/11/22 - 26/11/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	25/11/22 - 26/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	25/11/22 - 26/11/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	25/11/22 - 26/11/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520389-1

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**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	25/11/22 - 26/11/22	ug/m3	0.50	1.48	2.01	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	25/11/22 - 26/11/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	25/11/22 - 26/11/22	ug/m3	0.30	0.86	1.38	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	25/11/22 - 26/11/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	25/11/22 - 26/11/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	25/11/22 - 26/11/22	ug/m3	0.60	1.88	1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	25/11/22 - 26/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropro pene	25/11/22 - 26/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	25/11/22 - 26/11/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	25/11/22 - 26/11/22	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	25/11/22 - 26/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520389-1

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**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	25/11/22 - 26/11/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

**Guideline :**

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

**Sampled By** : Apiwat Chanta

**Remark :**

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

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Dej Changchon  
Senior Manager



## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 15, 2022

Report Number : 2520389-2

Page 1 of 1

**Sample Number** 22126699-2  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	10:00 AM - 01:00 PM	ppm	-	1.0	2.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	2.6	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	-	4.7	EPA 40 CFR Part 50	Bangkok

**Sampled By** : Apiwat Chanta

Remark :

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Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520390-1

Page 1 of 8

**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	26/11/22 - 27/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloro ethane	26/11/22 - 27/11/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	26/11/22 - 27/11/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	26/11/22 - 27/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	26/11/22 - 27/11/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	26/11/22 - 27/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	26/11/22 - 27/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	26/11/22 - 27/11/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	26/11/22 - 27/11/22	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	26/11/22 - 27/11/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	26/11/22 - 27/11/22	ug/m3	0.20	0.60	1.56	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520390-1

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**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	26/11/22 - 27/11/22	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	26/11/22 - 27/11/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoro ethane	26/11/22 - 27/11/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	26/11/22 - 27/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	26/11/22 - 27/11/22	ug/m3	0.04	0.11	Not Detected	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	26/11/22 - 27/11/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	26/11/22 - 27/11/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	26/11/22 - 27/11/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	26/11/22 - 27/11/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	26/11/22 - 27/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	26/11/22 - 27/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520390-1

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**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	26/11/22 - 27/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	26/11/22 - 27/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	26/11/22 - 27/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	26/11/22 - 27/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	26/11/22 - 27/11/22	ug/m3	0.05	0.18	2.16	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	26/11/22 - 27/11/22	ug/m3	0.08	0.24	9.31	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	26/11/22 - 27/11/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	26/11/22 - 27/11/22	ug/m3	0.08	0.23	<0.23	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	26/11/22 - 27/11/22	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	26/11/22 - 27/11/22	ug/m3	0.05	0.16	0.77	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	26/11/22 - 27/11/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Senior Manager

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**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520390-1

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**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	26/11/22 - 27/11/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	26/11/22 - 27/11/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	26/11/22 - 27/11/22	ug/m3	0.06	0.19	Not Detected	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	26/11/22 - 27/11/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	26/11/22 - 27/11/22	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	26/11/22 - 27/11/22	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	26/11/22 - 27/11/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	26/11/22 - 27/11/22	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	26/11/22 - 27/11/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	26/11/22 - 27/11/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	26/11/22 - 27/11/22	ug/m3	0.30	1.03	2.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

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Senior Manager

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**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520390-1

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**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	26/11/22 - 27/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	26/11/22 - 27/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	26/11/22 - 27/11/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	26/11/22 - 27/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	26/11/22 - 27/11/22	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	26/11/22 - 27/11/22	ug/m3	0.06	0.17	0.28	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	26/11/22 - 27/11/22	ug/m3	0.30	0.94	5.95	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	26/11/22 - 27/11/22	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	26/11/22 - 27/11/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	26/11/22 - 27/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	26/11/22 - 27/11/22	ug/m3	0.40	1.15	2.07	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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## Analysis / Test Report

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**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520390-1

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**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	26/11/22 - 27/11/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	26/11/22 - 27/11/22	ug/m3	1.50	4.34	<4.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	26/11/22 - 27/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	26/11/22 - 27/11/22	ug/m3	0.20	0.66	11.66	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	26/11/22 - 27/11/22	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	26/11/22 - 27/11/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	26/11/22 - 27/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	26/11/22 - 27/11/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	26/11/22 - 27/11/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	26/11/22 - 27/11/22	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	26/11/22 - 27/11/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520390-1

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**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	26/11/22 - 27/11/22	ug/m3	0.50	1.48	2.24	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	26/11/22 - 27/11/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	26/11/22 - 27/11/22	ug/m3	0.30	0.86	2.55	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	26/11/22 - 27/11/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	26/11/22 - 27/11/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	26/11/22 - 27/11/22	ug/m3	0.60	1.88	4.00	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	26/11/22 - 27/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropro pene	26/11/22 - 27/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	26/11/22 - 27/11/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	26/11/22 - 27/11/22	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	26/11/22 - 27/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520390-1

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**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	26/11/22 - 27/11/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

**Guideline :**

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

**Sampled By** : Apiwat Chanta

**Remark :**

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

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 15, 2022

Report Number : 2520390-2

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**Sample Number** 22126699-3  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	10:00 AM - 01:00 PM	ppm	-	1.0	2.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	2.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	-	4.2	EPA 40 CFR Part 50	Bangkok

**Sampled By** : Apiwat Chanta

Remark :

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

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Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520391-1

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**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	24/11/22 - 25/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloro ethane	24/11/22 - 25/11/22	ug/m3	0.10	0.34	0.41	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	24/11/22 - 25/11/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	24/11/22 - 25/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	24/11/22 - 25/11/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	24/11/22 - 25/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	24/11/22 - 25/11/22	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	24/11/22 - 25/11/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	24/11/22 - 25/11/22	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	24/11/22 - 25/11/22	ug/m3	0.10	0.38	1.23	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	24/11/22 - 25/11/22	ug/m3	0.20	0.60	5.41	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520391-1

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**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	24/11/22 - 25/11/22	ug/m3	0.07	0.20	0.24	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	24/11/22 - 25/11/22	ug/m3	0.08	0.23	<0.23	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoro ethane	24/11/22 - 25/11/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	24/11/22 - 25/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	24/11/22 - 25/11/22	ug/m3	0.04	0.11	0.22	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	24/11/22 - 25/11/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	24/11/22 - 25/11/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	24/11/22 - 25/11/22	ug/m3	0.10	0.36	1.37	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	24/11/22 - 25/11/22	ug/m3	0.50	1.52	13.58	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	24/11/22 - 25/11/22	ug/m3	0.40	1.23	1.67	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	24/11/22 - 25/11/22	ug/m3	0.70	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520391-1

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**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	24/11/22 - 25/11/22	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	24/11/22 - 25/11/22	ug/m3	0.40	1.23	1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	24/11/22 - 25/11/22	ug/m3	0.70	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	24/11/22 - 25/11/22	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	24/11/22 - 25/11/22	ug/m3	0.05	0.18	21.72	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	24/11/22 - 25/11/22	ug/m3	0.08	0.24	7.93	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	24/11/22 - 25/11/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	24/11/22 - 25/11/22	ug/m3	0.08	0.23	0.46	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	24/11/22 - 25/11/22	ug/m3	0.07	0.22	0.30	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	24/11/22 - 25/11/22	ug/m3	0.05	0.16	1.02	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	24/11/22 - 25/11/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520391-1

Page 4 of 8

**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	24/11/22 - 25/11/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	24/11/22 - 25/11/22	ug/m3	1.00	5.17	<5.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	24/11/22 - 25/11/22	ug/m3	0.06	0.19	Not Detected	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	24/11/22 - 25/11/22	ug/m3	0.49	1.47	2.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	24/11/22 - 25/11/22	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	24/11/22 - 25/11/22	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	24/11/22 - 25/11/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	24/11/22 - 25/11/22	ug/m3	0.60	1.77	6.79	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	24/11/22 - 25/11/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	24/11/22 - 25/11/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	24/11/22 - 25/11/22	ug/m3	0.30	1.03	5.78	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520391-1

Page 5 of 8

**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	24/11/22 - 25/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	24/11/22 - 25/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	24/11/22 - 25/11/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	24/11/22 - 25/11/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	24/11/22 - 25/11/22	ug/m3	0.80	2.47	4.45	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	24/11/22 - 25/11/22	ug/m3	0.06	0.17	0.35	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	24/11/22 - 25/11/22	ug/m3	0.30	0.94	10.10	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	24/11/22 - 25/11/22	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	24/11/22 - 25/11/22	ug/m3	0.60	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	24/11/22 - 25/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	24/11/22 - 25/11/22	ug/m3	0.40	1.15	6.20	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520391-1

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**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	24/11/22 - 25/11/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	24/11/22 - 25/11/22	ug/m3	1.50	4.34	<4.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	24/11/22 - 25/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	24/11/22 - 25/11/22	ug/m3	0.20	0.66	17.04	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	24/11/22 - 25/11/22	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	24/11/22 - 25/11/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	24/11/22 - 25/11/22	ug/m3	0.70	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	24/11/22 - 25/11/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	24/11/22 - 25/11/22	ug/m3	0.50	1.43	1.66	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	24/11/22 - 25/11/22	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	24/11/22 - 25/11/22	ug/m3	0.50	1.76	2.25	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520391-1

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**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	24/11/22 - 25/11/22	ug/m3	0.50	1.48	7.38	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	24/11/22 - 25/11/22	ug/m3	0.50	1.19	3.99	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	24/11/22 - 25/11/22	ug/m3	0.30	0.86	7.61	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	24/11/22 - 25/11/22	ug/m3	0.70	2.13	<2.13	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	24/11/22 - 25/11/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	24/11/22 - 25/11/22	ug/m3	0.60	1.88	4.45	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	24/11/22 - 25/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropro pene	24/11/22 - 25/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	24/11/22 - 25/11/22	ug/m3	0.09	0.27	0.54	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	24/11/22 - 25/11/22	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	24/11/22 - 25/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520391-1

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**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	24/11/22 - 25/11/22	ug/m3	0.04	0.13	<0.13	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

**Guideline :**

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

**Sampled By** : Apiwat Chanta

**Remark :**

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

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Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 15, 2022

Report Number : 2520391-2

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**Sample Number** 22126699-4  
**Sampled Date** Nov 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	11:00 AM - 02:00 PM	ppm	-	1.0	2.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	11:00 AM - 02:00 PM	ppm	-	1.0	1.0	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	11:00 AM - 02:00 PM	ppm	-	-	3.2	EPA 40 CFR Part 50	Bangkok

**Sampled By** : Apiwat Chanta

Remark :

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

Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520392-1

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**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	25/11/22 - 26/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloro ethane	25/11/22 - 26/11/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	25/11/22 - 26/11/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	25/11/22 - 26/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	25/11/22 - 26/11/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	25/11/22 - 26/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	25/11/22 - 26/11/22	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	25/11/22 - 26/11/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	25/11/22 - 26/11/22	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	25/11/22 - 26/11/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	25/11/22 - 26/11/22	ug/m3	0.20	0.60	4.21	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520392-1

Page 2 of 8

**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	25/11/22 - 26/11/22	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	25/11/22 - 26/11/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoro ethane	25/11/22 - 26/11/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	25/11/22 - 26/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	25/11/22 - 26/11/22	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	25/11/22 - 26/11/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	25/11/22 - 26/11/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	25/11/22 - 26/11/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	25/11/22 - 26/11/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	25/11/22 - 26/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	25/11/22 - 26/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520392-1

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**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	25/11/22 - 26/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	25/11/22 - 26/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	25/11/22 - 26/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	25/11/22 - 26/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	25/11/22 - 26/11/22	ug/m3	0.05	0.18	2.92	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	25/11/22 - 26/11/22	ug/m3	0.08	0.24	11.16	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	25/11/22 - 26/11/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	25/11/22 - 26/11/22	ug/m3	0.08	0.23	<0.23	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	25/11/22 - 26/11/22	ug/m3	0.07	0.22	0.26	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	25/11/22 - 26/11/22	ug/m3	0.05	0.16	0.58	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	25/11/22 - 26/11/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520392-1

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**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	25/11/22 - 26/11/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	25/11/22 - 26/11/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	25/11/22 - 26/11/22	ug/m3	0.06	0.19	Not Detected	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	25/11/22 - 26/11/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	25/11/22 - 26/11/22	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	25/11/22 - 26/11/22	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	25/11/22 - 26/11/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	25/11/22 - 26/11/22	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	25/11/22 - 26/11/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	25/11/22 - 26/11/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	25/11/22 - 26/11/22	ug/m3	0.30	1.03	2.52	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520392-1

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**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	25/11/22 - 26/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	25/11/22 - 26/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	25/11/22 - 26/11/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	25/11/22 - 26/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	25/11/22 - 26/11/22	ug/m3	0.80	2.47	2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	25/11/22 - 26/11/22	ug/m3	0.06	0.17	0.35	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	25/11/22 - 26/11/22	ug/m3	0.30	0.94	5.28	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	25/11/22 - 26/11/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	25/11/22 - 26/11/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	25/11/22 - 26/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	25/11/22 - 26/11/22	ug/m3	0.40	1.15	3.95	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520392-1

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**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	25/11/22 - 26/11/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	25/11/22 - 26/11/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	25/11/22 - 26/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	25/11/22 - 26/11/22	ug/m3	0.20	0.66	9.20	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	25/11/22 - 26/11/22	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	25/11/22 - 26/11/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	25/11/22 - 26/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	25/11/22 - 26/11/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	25/11/22 - 26/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	25/11/22 - 26/11/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	25/11/22 - 26/11/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520392-1

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**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	25/11/22 - 26/11/22	ug/m3	0.50	1.48	2.24	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	25/11/22 - 26/11/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	25/11/22 - 26/11/22	ug/m3	0.30	0.86	2.55	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	25/11/22 - 26/11/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	25/11/22 - 26/11/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	25/11/22 - 26/11/22	ug/m3	0.60	1.88	1.96	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	25/11/22 - 26/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropro pene	25/11/22 - 26/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	25/11/22 - 26/11/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	25/11/22 - 26/11/22	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	25/11/22 - 26/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520392-1

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**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	25/11/22 - 26/11/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

**Guideline :**

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

**Sampled By :** Apiwat Chanta

**Remark :**

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

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Dej Changchon  
Senior Manager



## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 15, 2022

Report Number : 2520392-2

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**Sample Number** 22126699-5  
**Sampled Date** Nov 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	11:00 AM - 02:00 PM	ppm	-	1.0	2.3	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	11:00 AM - 02:00 PM	ppm	-	1.0	6.3	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	11:00 AM - 02:00 PM	ppm	-	-	8.7	EPA 40 CFR Part 50	Bangkok

**Sampled By** : Apiwat Chanta

Remark :

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

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Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520393-1

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**Sample Number** 22126699-6  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	26/11/22 - 27/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloro ethane	26/11/22 - 27/11/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	26/11/22 - 27/11/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	26/11/22 - 27/11/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	26/11/22 - 27/11/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	26/11/22 - 27/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	26/11/22 - 27/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	26/11/22 - 27/11/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	26/11/22 - 27/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	26/11/22 - 27/11/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	26/11/22 - 27/11/22	ug/m3	0.20	0.60	2.53	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520393-1

Page 2 of 8

**Sample Number** 22126699-6  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	26/11/22 - 27/11/22	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	26/11/22 - 27/11/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoro ethane	26/11/22 - 27/11/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	26/11/22 - 27/11/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	26/11/22 - 27/11/22	ug/m3	0.04	0.11	Not Detected	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	26/11/22 - 27/11/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	26/11/22 - 27/11/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	26/11/22 - 27/11/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	26/11/22 - 27/11/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	26/11/22 - 27/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	26/11/22 - 27/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520393-1

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**Sample Number** 22126699-6  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	26/11/22 - 27/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	26/11/22 - 27/11/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	26/11/22 - 27/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	26/11/22 - 27/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	26/11/22 - 27/11/22	ug/m3	0.05	0.18	2.92	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	26/11/22 - 27/11/22	ug/m3	0.08	0.24	4.99	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	26/11/22 - 27/11/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	26/11/22 - 27/11/22	ug/m3	0.08	0.23	<0.23	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	26/11/22 - 27/11/22	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	26/11/22 - 27/11/22	ug/m3	0.05	0.16	0.83	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	26/11/22 - 27/11/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520393-1

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**Sample Number** 22126699-6  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	26/11/22 - 27/11/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	26/11/22 - 27/11/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	26/11/22 - 27/11/22	ug/m3	0.06	0.19	Not Detected	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	26/11/22 - 27/11/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	26/11/22 - 27/11/22	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	26/11/22 - 27/11/22	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	26/11/22 - 27/11/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	26/11/22 - 27/11/22	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	26/11/22 - 27/11/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	26/11/22 - 27/11/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	26/11/22 - 27/11/22	ug/m3	0.30	1.03	2.97	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520393-1

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**Sample Number** 22126699-6  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	26/11/22 - 27/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	26/11/22 - 27/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	26/11/22 - 27/11/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	26/11/22 - 27/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	26/11/22 - 27/11/22	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	26/11/22 - 27/11/22	ug/m3	0.06	0.17	0.21	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	26/11/22 - 27/11/22	ug/m3	0.30	0.94	3.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	26/11/22 - 27/11/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	26/11/22 - 27/11/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	26/11/22 - 27/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	26/11/22 - 27/11/22	ug/m3	0.40	1.15	3.08	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520393-1

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**Sample Number** 22126699-6  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	26/11/22 - 27/11/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	26/11/22 - 27/11/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	26/11/22 - 27/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	26/11/22 - 27/11/22	ug/m3	0.20	0.66	13.52	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	26/11/22 - 27/11/22	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	26/11/22 - 27/11/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	26/11/22 - 27/11/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	26/11/22 - 27/11/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	26/11/22 - 27/11/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	26/11/22 - 27/11/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	26/11/22 - 27/11/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520393-1

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<b>Sample Number</b>	22126699-6
<b>Sampled Date</b>	Nov 26, 2022
<b>Sample Description</b>	Air Quality
<b>Location</b>	บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
<b>Date Analysis Commenced</b>	Nov 30, 2022
<b>Condition of Sample</b>	Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	26/11/22 - 27/11/22	ug/m3	0.50	1.48	3.42	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	26/11/22 - 27/11/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	26/11/22 - 27/11/22	ug/m3	0.30	0.86	3.20	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	26/11/22 - 27/11/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	26/11/22 - 27/11/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	26/11/22 - 27/11/22	ug/m3	0.60	1.88	2.56	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	26/11/22 - 27/11/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropro pene	26/11/22 - 27/11/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	26/11/22 - 27/11/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	26/11/22 - 27/11/22	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	26/11/22 - 27/11/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon  
Senior Manager

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 14, 2022

Report Number : 2520393-1

Page 8 of 8

**Sample Number** 22126699-6  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	26/11/22 - 27/11/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

**Guideline :**

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

**Sampled By :** Apiwat Chanta

**Remark :**

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

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Approved by

Dej Changchon  
Senior Manager



## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126699**

Date Received : Nov 29, 2022

Date Reported : Dec 15, 2022

Report Number : 2520393-2

Page 1 of 1

**Sample Number** 22126699-6  
**Sampled Date** Nov 26, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Nov 30, 2022  
**Condition of Sample** Drawn into one 10-L air sampling bag and one 6-L Canister

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	11:00 AM - 02:00 PM	ppm	-	1.0	2.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	11:00 AM - 02:00 PM	ppm	-	1.0	1.8	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	11:00 AM - 02:00 PM	ppm	-	-	3.9	EPA 40 CFR Part 50	Bangkok

**Sampled By** : Apiwat Chanta

Remark :

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

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Approved by

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID** : 22126704

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report Number : 2464833-1

Page 1 of 2

**Sample Number** : 22126704-1 to 3  
**Parameter** : Wind Speed / Wind Direction  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Sampling Date** : Nov 24 - Nov 27, 2022  
**Sampling by** : Apiwat Chanta

Time	Nov 24 - Nov 25, 2022			Nov 25 - Nov 26, 2022			Nov 26 - Nov 27, 2022			-			-			-			-		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		-	-		-	-		-	-		-	-	
10:00 AM - 11:00 AM	2.4	182.0	S	2.3	171.0	S	5.6	230.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	3.1	264.0	W	1.3	285.0	WNW	2.1	177.0	S	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	3.3	311.0	NW	4.3	319.0	NW	6.3	197.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	4.5	333.0	NNW	3.4	316.0	NW	3.5	134.0	SE	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	6.1	319.0	NW	5.9	1.0	N	3.2	118.0	ESE	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	8.2	354.0	N	3.1	338.0	NNW	2.3	339.0	NNW	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	5.8	35.0	NE	4.9	1.0	N	3.4	315.0	NW	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	7.4	207.0	SSW	3.3	352.0	N	2.3	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	6.3	194.0	SSW	5.7	346.0	NNW	0.4	324.0	NW	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	2.3	165.0	SSE	3.7	25.0	NNE	4.5	22.0	NNE	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	2.9	202.0	SSW	0.8	0.0	N	2.3	58.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	2.6	179.0	S	2.9	349.0	N	1.7	126.0	SE	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.6	144.0	SE	0.1	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	1.1	58.0	ENE	3.0	207.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.2	-	-	1.0	20.0	NNE	0.8	346.0	NNW	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.2	-	-	1.5	272.0	W	2.0	202.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.3	332.0	NNW	0.2	-	-	3.4	249.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.2	-	-	0.0	-	-	1.9	285.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.2	-	-	0.3	163.0	SSE	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	0.0	-	-	2.9	246.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.0	-	-	0.0	-	-	2.5	222.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.2	-	-	1.2	198.0	SSW	2.3	317.0	NW	-	-	-	-	-	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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

Approved by

Sarayuth Jittranont  
Assistant General Manager



## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID** : 22126704

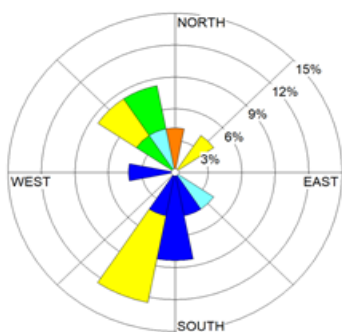
Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

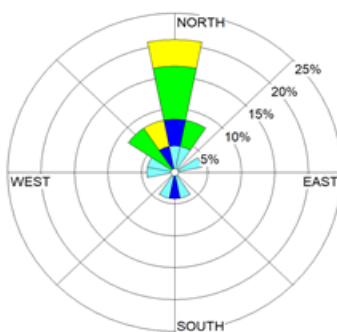
Report Number : 2464833-1

Page 2 of 2

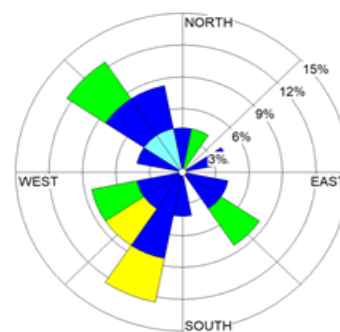
### Wind Rose



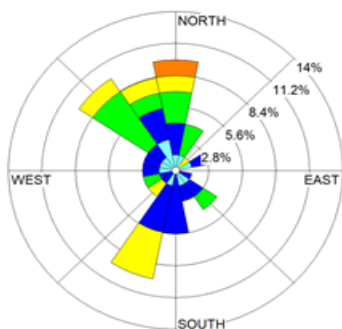
Date : Nov 24-25, 2022



Date : Nov 25-26, 2022



Date : Nov 26-27, 2022



Date : Nov 24-27, 2022

	WS(m/s)	%
	≥ 10.0	0.00
	8.0-10.0	1.38
	5.5-8.0	11.11
	3.3-5.5	15.28
	1.7-3.3	27.78
	0.3-1.7	15.28
	Calms	29.17

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Approved by

Sarayuth Jitranont  
Assistant General Manager



## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID** : 22126704

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report Number : 2464833-1

Page 1 of 2

**Sample Number** : 22126704-4 to 6  
**Parameter** : Wind Speed / Wind Direction  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Sampling Date** : Nov 24 - Nov 27, 2022  
**Sampling by** : Apiwat Chanta

Time	Nov 24 - Nov 25, 2022			Nov 25 - Nov 26, 2022			Nov 26 - Nov 27, 2022			-			-			-			-		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		-	-		-	-		-	-		-	-	
11:00 AM - 12:00 PM	0.2	-	-	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.4	299.0	WNW	3.0	34.0	NE	1.4	261.0	W	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	1.8	44.0	NE	3.1	26.0	NNE	2.7	191.0	S	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	2.5	43.0	NE	2.7	42.0	NE	0.3	161.0	SSE	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	2.0	31.0	NNE	2.5	25.0	NNE	1.3	112.0	ESE	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	1.7	83.0	E	1.0	42.0	NE	2.0	27.0	NNE	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	2.1	199.0	SSW	4.1	36.0	NE	1.6	62.0	ENE	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.1	-	-	1.1	28.0	NNE	1.2	352.0	N	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.0	-	-	1.0	220.0	SW	0.7	80.0	E	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.3	222.0	SW	0.1	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.2	-	-	0.9	193.0	SSW	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.1	-	-	0.3	198.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.0	-	-	0.2	-	-	1.0	232.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.0	-	-	0.2	-	-	0.5	228.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.2	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.2	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.2	-	-	0.0	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.1	-	-	0.3	202.0	SSW	0.3	38.0	NE	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.2	-	-	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	0.1	-	-	0.2	-	-	0.3	236.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.9	185.0	S	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.2	-	-	0.1	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.2	-	-	1.2	205.0	SSW	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jittranont  
Assistant General Manager



## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID** : 22126704

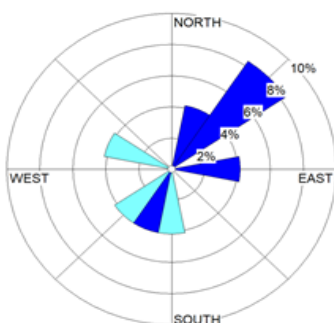
Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

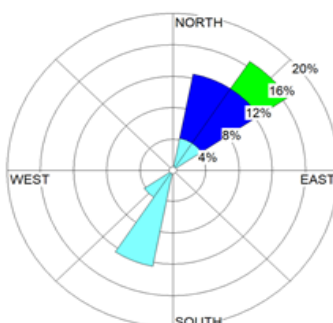
Report Number : 2464833-1

Page 2 of 2

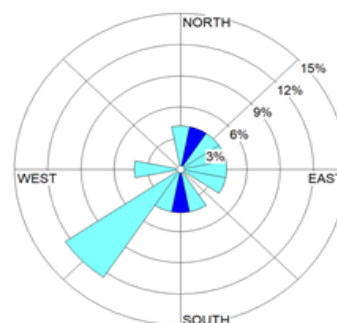
### Wind Rose



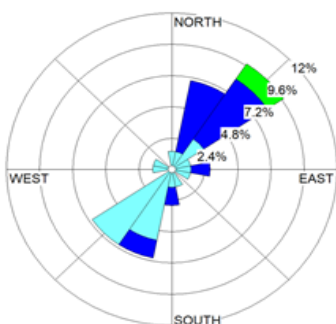
Date : Nov 24-25, 2022



Date : Nov 25-26, 2022



Date : Nov 26-27, 2022



Date : Nov 24-27, 2022

	WS(m/s)	%
	≥ 10.0	0.00
	8.0-10.0	0.00
	5.5-8.0	0.00
	3.3-5.5	1.38
	1.7-3.3	15.28
	0.3-1.7	27.78
	Calms	55.56

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Approved by

Sarayuth Jitranont  
Assistant General Manager



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2565

คุณภาพเสียง



## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126751**

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report Number: 2513472-1

Page 1 of 1

**Sample Number** 22126751-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Nov 24 - Nov 25, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level meter** Serial No. 472129

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	58.8	77.0	53.2
09:00 AM - 10:00 AM	62.8	84.9	57.6
10:00 AM - 11:00 AM	60.3	82.7	56.5
11:00 AM - 12:00 PM	61.7	80.0	54.7
12:00 PM - 01:00 PM	65.3	80.9	63.1
01:00 PM - 02:00 PM	59.2	86.5	52.5
02:00 PM - 03:00 PM	58.8	80.3	52.5
03:00 PM - 04:00 PM	55.8	74.0	50.1
04:00 PM - 05:00 PM	56.6	87.3	47.6
05:00 PM - 06:00 PM	58.4	87.5	52.6
06:00 PM - 07:00 PM	51.6	68.2	47.8
07:00 PM - 08:00 PM	51.6	70.5	47.3
08:00 PM - 09:00 PM	50.5	71.2	45.4
09:00 PM - 10:00 PM	53.4	61.0	49.3
10:00 PM - 11:00 PM	57.0	70.2	53.3
11:00 PM - 12:00 AM	58.9	65.6	56.1
12:00 AM - 01:00 AM	56.8	66.1	53.7
01:00 AM - 02:00 AM	57.4	75.2	53.8
02:00 AM - 03:00 AM	56.3	61.3	49.0
03:00 AM - 04:00 AM	56.0	61.8	52.0
04:00 AM - 05:00 AM	57.6	64.8	51.9
05:00 AM - 06:00 AM	57.5	67.3	51.5
06:00 AM - 07:00 AM	50.8	73.2	42.6
07:00 AM - 08:00 AM	53.1	69.1	44.5

Leq Average 24 hrs. (dB(A)) 58.5  
Lmax (dB(A)) 87.5  
L90 (dB(A)) 52.0  
Ldn (dB(A)) 63.7  
Standard (dB(A)) 70  
115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126751**

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report Number: 2513473-1

Page 1 of 1

**Sample Number** 22126751-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Nov 25 - Nov 26, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level meter** Serial No. 472129

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	58.1	78.5	53.0
09:00 AM - 10:00 AM	59.1	79.7	54.4
10:00 AM - 11:00 AM	59.6	81.8	55.3
11:00 AM - 12:00 PM	60.2	80.1	54.6
12:00 PM - 01:00 PM	56.3	76.7	49.4
01:00 PM - 02:00 PM	59.4	80.1	55.0
02:00 PM - 03:00 PM	60.3	79.9	55.3
03:00 PM - 04:00 PM	52.9	72.7	42.9
04:00 PM - 05:00 PM	52.8	71.9	44.2
05:00 PM - 06:00 PM	55.3	74.8	46.0
06:00 PM - 07:00 PM	54.3	76.9	47.3
07:00 PM - 08:00 PM	52.9	73.2	46.3
08:00 PM - 09:00 PM	58.9	69.9	54.3
09:00 PM - 10:00 PM	58.5	78.2	56.0
10:00 PM - 11:00 PM	55.4	66.7	53.3
11:00 PM - 12:00 AM	53.3	63.9	50.5
12:00 AM - 01:00 AM	52.3	68.5	49.8
01:00 AM - 02:00 AM	53.3	62.9	51.5
02:00 AM - 03:00 AM	52.0	61.7	48.0
03:00 AM - 04:00 AM	52.7	59.4	47.4
04:00 AM - 05:00 AM	53.0	68.6	49.0
05:00 AM - 06:00 AM	52.7	69.7	46.6
06:00 AM - 07:00 AM	50.4	73.5	41.8
07:00 AM - 08:00 AM	55.1	77.2	44.4

Leq Average 24 hrs. (dB(A)) 56.4  
Lmax (dB(A)) 81.8  
L90 (dB(A)) 49.4  
Ldn (dB(A)) 60.5  
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22126751**

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report Number: 2513474-1

Page 1 of 1

**Sample Number** 22126751-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Nov 26 - Nov 27, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level meter** Serial No. 472129

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	57.6	86.6	51.6
09:00 AM - 10:00 AM	61.8	84.0	56.9
10:00 AM - 11:00 AM	61.1	80.8	56.3
11:00 AM - 12:00 PM	60.1	84.0	54.5
12:00 PM - 01:00 PM	53.6	74.4	45.1
01:00 PM - 02:00 PM	56.8	80.2	50.1
02:00 PM - 03:00 PM	58.6	80.3	51.9
03:00 PM - 04:00 PM	54.9	72.1	50.2
04:00 PM - 05:00 PM	56.5	76.9	51.8
05:00 PM - 06:00 PM	56.3	72.9	52.1
06:00 PM - 07:00 PM	57.7	83.4	51.9
07:00 PM - 08:00 PM	55.0	69.1	52.0
08:00 PM - 09:00 PM	58.5	82.5	54.3
09:00 PM - 10:00 PM	59.2	74.9	55.0
10:00 PM - 11:00 PM	60.3	69.8	56.8
11:00 PM - 12:00 AM	57.1	64.3	54.5
12:00 AM - 01:00 AM	60.5	63.2	57.7
01:00 AM - 02:00 AM	57.4	63.3	54.1
02:00 AM - 03:00 AM	54.4	61.8	50.8
03:00 AM - 04:00 AM	54.3	62.1	50.8
04:00 AM - 05:00 AM	54.4	64.8	51.5
05:00 AM - 06:00 AM	52.8	66.4	49.2
06:00 AM - 07:00 AM	49.5	71.3	43.9
07:00 AM - 08:00 AM	50.9	67.0	42.1

Leq Average 24 hrs. (dB(A)) 57.6  
Lmax (dB(A)) 86.6  
L90 (dB(A)) 51.9  
Ldn (dB(A)) 63.4

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

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

**Technical Management**

*Saranya C.*

Saranya Chalermthamrong  
Scientist (4)

**Approved by**

*Supot S.*

Supot Salamteh  
Section Head

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## Analysis / Test Report

TESTING

No.0009

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**Lot ID: 22126754**

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report Number : 2512905-1

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 22126754-1  
**Parameter** เสียงรบกวน  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Nov 24, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level Meter** 00472128

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(D)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
08:00 AM - 09:00 AM	62.3	51.6	10.7	0.5	61.8	-	47.8	14.0
09:00 AM - 10:00 AM	63.6	51.6	12.0	0.5	63.1	-	47.8	15.3
10:00 AM - 11:00 AM	65.5	51.6	13.9	0.0	65.5	-	47.8	17.7
11:00 AM - 12:00 PM	64.3	51.6	12.7	0.0	64.3	-	47.8	16.5
12:00 PM - 01:00 PM	67.8	51.6	16.2	0.0	67.8	-	47.8	20.0
01:00 PM - 02:00 PM	68.9	51.6	17.3	0.0	68.9	-	47.8	21.1
02:00 PM - 03:00 PM	68.4	51.6	16.8	0.0	68.4	-	47.8	20.6
03:00 PM - 04:00 PM	67.6	51.6	16.0	0.0	67.6	-	47.8	19.8
04:00 PM - 05:00 PM	70.9	51.6	19.3	0.0	70.9	-	47.8	23.1
ค่ามาตรฐาน								≤ 10

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

มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 24 พฤศจิกายน 2565 (08:00 - 17:00 น.)  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22126754-1 วันที่ตรวจวัด 24 พฤศจิกายน 2565, 17:00 - 22:00 น.)

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING

No.0009

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**Lot ID: 22126754**

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report Number : 2512906-1

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 22126754-2  
**Parameter** เสียงรบกวน  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Nov 25, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level Meter** 00472128

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(D)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
08:00 AM - 09:00 AM	70.0	54.3	15.7	0.0	70.0	-	47.3	22.7
09:00 AM - 10:00 AM	65.3	54.3	11.0	0.5	64.8	-	47.3	17.5
10:00 AM - 11:00 AM	70.1	54.3	15.8	0.0	70.1	-	47.3	22.8
11:00 AM - 12:00 PM	68.9	54.3	14.6	0.0	68.9	-	47.3	21.6
12:00 PM - 01:00 PM	69.3	54.3	15.0	0.0	69.3	-	47.3	22.0
01:00 PM - 02:00 PM	69.5	54.3	15.2	0.0	69.5	-	47.3	22.2
02:00 PM - 03:00 PM	68.9	54.3	14.6	0.0	68.9	-	47.3	21.6
03:00 PM - 04:00 PM	66.7	54.3	12.4	0.5	66.2	-	47.3	18.9
04:00 PM - 05:00 PM	67.4	54.3	13.1	0.0	67.4	-	47.3	20.1
ค่ามาตรฐาน								≤ 10

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

มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 25 พฤศจิกายน 2565 (08:00 - 17:00 น.)  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22126757-2 วันที่ตรวจวัด 25 พฤศจิกายน 2565, 17:00 - 22:00 น.)

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING

No.0009

**Client :** PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**Lot ID: 22126754**

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report Number : 2512907-1

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 22126754-3  
**Parameter** เสียงรบกวน  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Nov 26, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level Meter** 00472128

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(D)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
08:00 AM - 09:00 AM	68.6	56.3	12.3	0.5	68.1	-	52.1	16.0
09:00 AM - 10:00 AM	65.6	56.3	9.3	0.5	65.1	-	52.1	13.0
10:00 AM - 11:00 AM	70.1	56.3	13.8	0.0	70.1	-	52.1	18.0
11:00 AM - 12:00 PM	68.2	56.3	11.9	0.5	67.7	-	52.1	15.6
12:00 PM - 01:00 PM	64.5	56.3	8.2	0.5	64.0	-	52.1	11.9
01:00 PM - 02:00 PM	70.6	56.3	14.3	0.0	70.6	-	52.1	18.5
02:00 PM - 03:00 PM	65.2	56.3	8.9	0.5	64.7	-	52.1	12.6
03:00 PM - 04:00 PM	64.5	56.3	8.2	0.5	64.0	-	52.1	11.9
04:00 PM - 05:00 PM	66.5	56.3	10.2	0.5	66.0	-	52.1	13.9
ค่ามาตรฐาน								≤ 10

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

มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 26 พฤศจิกายน 2565 (08:00 - 17:00 น.)  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.22126757-3 วันที่ตรวจวัด 26 พฤศจิกายน 2565, 17:00 - 22:00 น.)

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**Lot ID: 22126757**

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report No. : 2512914-1

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 22126757-1  
**Parameter** Noise  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497) (Shut down)  
**Measurement Date** Nov 24, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level Meter** 00472129

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	58.4	87.5	52.6
06:00 PM - 07:00 PM	51.6	68.2	47.8
07:00 PM - 08:00 PM	51.6	70.5	47.3
08:00 PM - 09:00 PM	50.5	71.2	45.4
09:00 PM - 10:00 PM	53.4	61.0	49.3

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

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**Lot ID: 22126757**

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report No. : 2512915-1

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 22126757-2  
**Parameter** Noise  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497) (Shut down)  
**Measurement Date** Nov 25, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level Meter** 00472129

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	55.3	74.8	46.0
06:00 PM - 07:00 PM	54.3	76.9	47.3
07:00 PM - 08:00 PM	52.9	73.2	46.3
08:00 PM - 09:00 PM	58.9	69.9	54.3
09:00 PM - 10:00 PM	58.5	78.2	56.0

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

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

Approved by

Kanokkorn Anek  
Senior Manager



## Analysis / Test Report

TESTING  
No.0009

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**Lot ID:** 22126757

Date Received : Nov 29, 2022

Date Reported : Dec 07, 2022

Report No. : 2512916-1

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 22126757-3  
**Parameter** Noise  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497) (Shut down)  
**Measurement Date** Nov 26, 2022  
**Measurement by** Apiwat Chanta  
**Sound Level Meter** 00472129

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	56.3	72.9	52.1
06:00 PM - 07:00 PM	57.7	83.4	51.9
07:00 PM - 08:00 PM	55.0	69.1	52.0
08:00 PM - 09:00 PM	58.5	82.5	54.3
09:00 PM - 10:00 PM	59.2	74.9	55.0

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

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

Approved by

Kanokkorn Anek  
Senior Manager



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2565

คุณภาพน้ำทิ้งจากพื้นที่ทิ้งตะกอน



## Analysis / Test Report

TESTING  
No.0166

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location**: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22116741**

Date Received : Oct 20, 2022

Date Reported : Oct 25, 2022

Report Number : 2441694-1

Page 1 of 1

**Sample Number** 22116741-1  
**Sampled Date** Oct 19, 2022 12:30 PM  
**Sample Description** น้ำทิ้งจากพื้นที่ทิ้งตะกอนดิน  
**Location** บริเวณบ่อพักน้ำทิ้งก่อนระบายออกสู่ระบบน้ำสาธารณะ  
**Date Analysis Commenced** Oct 21, 2022  
**Condition of Sample** Contained in one plastic bottle, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.001	0.005	<0.005	≤0.25	Based on APHA (2017), 3125	Songkhla
<b>Water Testing</b>							
pH at 25 degree C		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla

**Guideline** : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment , effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017) and effluent standard for factories, industrial estate and industrial park set by Notification of Marine Department No.164/2560

**Sampled By** : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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

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บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2565

ทรัพยากรทางชีวภาพ



สถานีวิจัยประมงศรีราชา

101/12 หมู่ 9 ต. บางพระ

อ. ศรีราชา จ. ชลบุรี 20110

โทร./โทรสาร. (038) 311379

Client : PTT Oil and Retail Business Public Company Limited

Address : 555 Ardnarong Rd., Klongtoey, Klongtoey, Bangkok, 10260

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

รายงานผลการวิเคราะห์แพลงก์ตอนพืช

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
<b>Division Cyanophyta</b>			
<b>Class Cyanophyceae</b>			
<b>Order Chroococcales</b>			
<b>Family Chroococcaceae</b>			
1. <i>Microcystis aeruginosa</i>	26,000	23,000	40,000
<b>Order Nostocales</b>			
<b>Family Oscillatoriaceae</b>			
2. <i>Lyngbya</i> sp.	-	-	30,000
3. <i>Oscillatoria brevis</i>	9,000	-	-
4. <i>Oscillatoria</i> sp.	299,000	92,000	158,000
<b>Family Nostocaceae</b>			
5. <i>Cylindrospermum</i> sp.	-	15,000	-
<b>Family Rivulariaceae</b>			
6. <i>Calothrix</i> sp.	-	15,000	-

ตาราง ผลการวิเคราะห์แฟลงก์ตอนพืช (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

(ต่อ)

ชนิดแฟลงก์ตอนพืช	ปริมาณแฟลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
<b>Division Chlorophyta</b>			
<b>Class Chlorophyceae</b>			
<b>Order Volvocales</b>			
<b>Family Volvocaceae</b>			
7. <i>Eudorina elegans</i>	-	8,000	-
8. <i>Pandorina morum</i>	9,000	15,000	50,000
9. <i>Volvox tertius</i>	51,000	131,000	59,000
<b>Order Chlorococcales</b>			
<b>Family Hydrodictyaceae</b>			
10. <i>Pediastrum duplex</i>	34,000	77,000	40,000
11. <i>Pediastrum simplex</i>	26,000	8,000	-
<b>Family Coelastraceae</b>			
12. <i>Coelastrum microporum</i>	-	15,000	-
<b>Family Oocystaceae</b>			
13. <i>Dictyosphaerium pulchellum</i>	9,000	62,000	-
14. <i>Oocystis elliptica</i>	43,000	-	-
15. <i>Planktosphaeria gelatinosa</i>	-	15,000	-
16. <i>Selenastrum gracile</i>	-	-	59,000
17. <i>Tetraedron geacile</i>	9,000	15,000	30,000
<b>Family Scenedesmaceae</b>			
18. <i>Actinastrum gracillimum</i>	137,000	-	-
19. <i>Actinastrum hantzschii</i>	-	54,000	10,000
20. <i>Micractinium pusillum</i>	103,000	216,000	396,000
21. <i>Micractinium quadrisetum</i>	68,000	31,000	59,000
22. <i>Scenedesmus armatus</i>	-	8,000	40,000
23. <i>Scenedesmus arcuatus</i>	9,000	-	-
24. <i>Scenedesmus dimorphus</i>	77,000	15,000	50,000

**ตาราง** ผลการวิเคราะห์แฟลงก์ตอนพืช (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

(ต่อ)

ชนิดแฟลงก์ตอนพืช	ปริมาณแฟลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
25. <i>Scenedesmus opoliensis</i>	26,000	8,000	50,000
<b>Order Ulotrichales</b>			
<b>Family Ulotrichaceae</b>			
26. <i>Geminella</i> sp.	26,000	-	-
<b>Family Desmidiaceae</b>			
27. <i>Closterium gracile</i>	26,000	85,000	50,000
28. <i>Closterium lineatum</i>	9,000	8,000	-
29. <i>Closterium</i> sp.	43,000	-	40,000
30. <i>Cosmarium nudum</i>	17,000	-	20,000
31. <i>Pleurotaenium</i> sp.	9,000	-	-
32. <i>Staurastrum gracile</i>	205,000	85,000	119,000
33. <i>Staurastrum muticum</i>	-	69,000	-
34. <i>Staurastrum</i> sp.	-	15,000	99,000
<b>Class Euglenophyceae</b>			
<b>Order Euglenales</b>			
<b>Family Euglenaceae</b>			
35. <i>Euglena acus</i>	-	8,000	-
36. <i>Euglena</i> sp.	43,000	-	-
37. <i>Lepocinclis ovum</i>	26,000	31,000	-
38. <i>Phacus longicauda</i>	17,000	-	-
39. <i>Phacus myersi</i>	9,000	-	-
40. <i>Phacus platalea</i>	9,000	8,000	-
41. <i>Phacus pleuronectes</i>	9,000	-	-
42. <i>Phacus ranula</i>	-	23,000	40,000
43. <i>Phacus</i> sp.	17,000	8,000	-
44. <i>Strombomonas australica</i>	-	15,000	-
45. <i>Strombomonas gibberosa</i>	-	8,000	-

**ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช** (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
46. <i>Strombomonas girardiana</i>	60,000	92,000	79,000
47. <i>Trachelomonas crebea</i>	9,000	-	30,000
48. <i>Trachelomonas hispida</i>	308,000	277,000	198,000
49. <i>Trachelomonas mirabilis</i>	51,000	8,000	-
50. <i>Trachelomonas volzii</i>	9,000	-	20,000
<b>Division Chromophyta</b>			
<b>Class Bacillariophyceae</b>			
<b>Order Biddulphiales</b>			
<b>Suborder Coscinodiscineae</b>			
<b>Family Thalassiosiraceae</b>			
51. <i>Cyclotella meneghiniana</i>	171,000	123,000	238,000
<b>Family Aulacoseiraceae</b>			
52. <i>Aulacoseira baicalensis</i>	103,000	69,000	89,000
53. <i>Aulacoseira granulata</i>	18,981,000	16,016,000	8,514,000
<b>Suborder Biddulphiineae</b>			
<b>Family Eupodiscaceae</b>			
54. <i>Odontella sisensis</i>	34,000	23,000	50,000
<b>Order Bacillariales</b>			
<b>Suborder Fragilariineae</b>			
<b>Family Fragilariaceae</b>			
55. <i>Diatoma tenue</i>	9,000	-	-
56. <i>Fragilaria capucina</i>	-	-	178,000
57. <i>Synedra acus</i>	9,000	-	10,000
58. <i>Synedra rumpens</i>	34,000	8,000	-
59. <i>Synedra ulna</i>	43,000	92,000	129,000
<b>Family Tabellariaceae</b>			
60. <i>Tabellaria fenestrata</i>	26,000	-	-

**ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช** (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
<b>Suborder Bacillariineae</b>			
<b>Family Eunotiaceae</b>			
61. <i>Eunotia pectinalis</i>	-	39,000	10,000
<b>Family Cymbellaceae</b>			
62. <i>Cymbella tumida</i>	9,000	-	-
63. <i>Gomphonema parvulum</i>	9,000	39,000	-
<b>Family Naviculaceae</b>			
64. <i>Gyrosigma attenuatum</i>	-	46,000	59,000
65. <i>Gyrosigma balticum</i>	9,000	-	-
66. <i>Gyrosigma distortum</i>	-	-	10,000
67. <i>Gyrosigma</i> sp.	-	23,000	79,000
68. <i>Hantzschia amphioxys</i>	-	-	20,000
69. <i>Navicula cuspidata</i>	-	8,000	-
70. <i>Navicula lanceolata</i>	9,000	-	-
71. <i>Pinnularia viridis</i>	26,000	-	-
<b>Family Bacillariaceae</b>			
72. <i>Bacillaria paxillifer</i>	17,000	-	40,000
73. <i>Nitzschia lorenziana</i>	17,000	-	-
74. <i>Nitzschia</i> sp.	-	46,000	-
<b>Family Surirellaceae</b>			
75. <i>Entomoneis alata</i>	-	-	10,000
76. <i>Entomoneis robusta</i>	-	54,000	-
77. <i>Surirella elegans</i>	-	23,000	-
78. <i>Surirella linearis</i>	34,000	15,000	40,000
79. <i>Surirella ovata</i>	137,000	8,000	30,000
80. <i>Surirella robusta</i>	34,000	-	-
81. <i>Surirella tenera</i>	-	62,000	20,000

**ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช** (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
<b>Class Cryophyceae</b>			
<b>Order Synurales</b>			
<b>Family Mallomonadaceae</b>			
82. <i>Mallomonas litomesa</i>	180,000	77,000	-
<b>Class Dinophyceae</b>			
<b>Order Gonyaulacales</b>			
<b>Family Ceratiaceae</b>			
83. <i>Ceratium hirundinella</i>	-	8,000	-
<b>Order Peridiniales</b>			
<b>Family Peridiniaceae</b>			
84. <i>Peridinium gatunense</i>	43,000	77,000	-
85. <i>Peridinium</i> sp.	34,000	39,000	3,179,000
<b>ชนิดแพลงก์ตอนพืช</b>	<b>57</b>	<b>55</b>	<b>42</b>
<b>ปริมาณแพลงก์ตอนพืช</b>	<b>21,805,000</b>	<b>18,458,000</b>	<b>14,471,000</b>
<b>ดัชนีความหลากหลายแพลงก์ตอนพืช</b>	<b>0.8299</b>	<b>0.8552</b>	<b>1.5915</b>
<b>ดัชนีความสม่ำเสมอแพลงก์ตอนพืช</b>	<b>0.2053</b>	<b>0.2134</b>	<b>0.4258</b>

**Sample Location :**

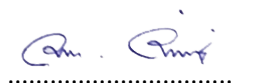
1. สถานี 22116729-1 : บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือปตท. 500 เมตร
2. สถานี 22116729-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
3. สถานี 22116729-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

**Condition of Sample :** contained in one plastic bottle, sample containers comply to pretreatment-preservation standards (APHA, USEPA)



(นางสาวกนกวรรณ ขาวดอน)

ผู้วิเคราะห์



(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา  
101/12 หมู่ 9 ต. บางพระ  
อ. ศรีราชา จ. ชลบุรี 20110  
โทร./โทรสาร. (038) 311379

Client : PTT Oil and Retail Business Public Company Limited

Address : 555 Ardnarong Rd., Klongtoey, Klongtoey, Bangkok, 10260

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

รายงานผลการวิเคราะห์แพลงก์ตอนสัตว์

ตาราง ผลการวิเคราะห์แพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

ชนิดแพลงก์ตอนสัตว์	ปริมาณแพลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
<b>Phylum Protozoa</b>			
<b>Subphylum Plasmodroma</b>			
<b>Class Sarcodina</b>			
<b>Subclass Rhizopoda</b>			
<b>Order Testacida</b>			
<b>Family Arcellidae</b>			
1. <i>Arcella</i> sp.	17,000	15,000	10,000
2. <i>Arcella vulgaris</i>	9,000	15,000	-
<b>Family Diffugiidae</b>			
3. <i>Diffugia acuminata</i>	51,000	69,000	40,000
<b>Family Euglyphidae</b>			
4. <i>Euglypha acanthophora</i>	26,000	-	10,000
5. <i>Euglypha rotunda</i>	-	8,000	-



**ตาราง ผลการวิเคราะห์แฟลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)**

(ต่อ)

ชนิดแฟลงก์ตอนสัตว์	ปริมาณแฟลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
<b>Subphylum Ciliophora</b>			
<b>Class Ciliata</b>			
<b>Subclass Holotricha</b>			
<b>Order Gymnostomatida</b>			
6. <i>Coleps</i> sp.	9,000	-	-
7. <i>Didinium</i> sp.	9,000	8,000	10,000
<b>Subclass Peritricha</b>			
<b>Order Peritrichida</b>			
8. <i>Pyxicola</i> sp.	-	-	20,000
<b>Phylum Rotifera</b>			
<b>Class Monogononta</b>			
<b>Order Ploima</b>			
<b>Family Brachionidae</b>			
9. <i>Anuraeopsis fissa</i>	9,000	8,000	-
10. <i>Brachionus angularis</i>	-	8,000	-
11. <i>Brachionus</i> sp.	-	8,000	-
12. <i>Keratella cochlearis</i>	26,000	23,000	10,000
13. <i>Keratella valga</i>	9,000	8,000	-
<b>Family Tricercidae</b>			
14. <i>Trichocerca pusilla</i>	43,000	69,000	30,000
15. <i>Trichocerca similis</i>	9,000	-	-
16. <i>Trichocerca weberi</i>	17,000	-	-
<b>Family Asplanchnidae</b>			
17. <i>Asplanchna priodonta</i>	9,000	-	-
<b>Family Synchaetidae</b>			
18. <i>Polyarthra dolichoptera</i>	-	-	20,000
19. <i>Polyarthra vulgaris</i>	17,000	31,000	20,000

**ตาราง ผลการวิเคราะห์แพลงก์ตอนสัตว์** (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

(ต่อ)

ชนิดแพลงก์ตอนสัตว์	ปริมาณแพลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)		
	22116729-1	22116729-2	22116729-3
<b>Order Flosculariacea</b>			
<b>Family Testudinellidae</b>			
20. <i>Filinia camasacla</i>	-	8,000	-
21. <i>Filinia terminalis</i>	9,000	-	-
<b>Phylum Arthropoda</b>			
<b>Class Crustacea</b>			
<b>Subclass Copepoda</b>			
22. Copepod nauplius	17,000	-	-
<b>Phylum Mollusca</b>			
<b>Class Gastropoda</b>			
23. Gastropod larva	-	-	10,000
<b>Class Bivalvia</b>			
24. Pelecypod larva	-	-	30,000
<b>ชนิดแพลงก์ตอนสัตว์</b>	<b>16</b>	<b>13</b>	<b>11</b>
<b>ปริมาณแพลงก์ตอนสัตว์</b>	<b>286,000</b>	<b>278,000</b>	<b>210,000</b>
<b>ดัชนีความหลากหลายแพลงก์ตอนสัตว์</b>	<b>2.5702</b>	<b>2.1723</b>	<b>2.2685</b>
<b>ดัชนีความสม่ำเสมอแพลงก์ตอนสัตว์</b>	<b>0.9270</b>	<b>0.8469</b>	<b>0.9460</b>

**Sample Location :**

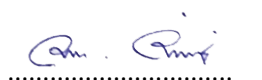
1. สถานี 22116729-1 : บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือปตท. 500 เมตร
2. สถานี 22116729-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
3. สถานี 22116729-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

**Condition of Sample :** contained in one plastic bottle, sample containers comply to pretreatment-preservation standards (APHA, USEPA)



(นางสาวกนกวรรณ ขาวดอน)

ผู้วิเคราะห์



(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา

101/12 หมู่ 9 ต. บางพระ

อ.ศรีราชา จ. ชลบุรี 20110

โทร./โทรสาร. (038) 311379

Client : PTT Oil and Retail Business Public Company Limited

Address : 555 Ardnarong Rd., Klongtoey, Klongtoey, Bangkok, 10260

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

### รายงานผลการวิเคราะห์ผลผลิตเบื้องต้น (Primary productivity)

ค่า Primary productivity (ผลผลิตเบื้องต้น) จะบอกถึงความอุดมสมบูรณ์ของแหล่งน้ำ แหล่งน้ำใดที่มีค่า Primary productivity สูงก็จะมี ความอุดมสมบูรณ์มาก ในทางกลับกันแหล่งน้ำใดที่มีค่า Primary productivity ต่ำก็จะมี ความอุดมสมบูรณ์น้อย ซึ่งค่า Primary productivity มักจะมีความสัมพันธ์กับปริมาณแพลงก์ตอนพืชและแพลงก์ตอนสัตว์ในน้ำ และในการศึกษาเกี่ยวกับค่า Primary productivity จะมีส่วนที่ทำการศึกษ 3 ส่วน คือ

ค่า Gross production เป็นค่าที่บอกถึงความสามารถในการผลิตของผู้ผลิตชั้นปฐมในแหล่งน้ำ ซึ่งก็คือแพลงก์ตอนพืช ในกระบวนการสังเคราะห์แสง ในกระบวนการดังกล่าวสามารถวัดได้โดยการวัดออกมาในรูปของปริมาณออกซิเจนที่เพิ่มขึ้นหรือปริมาณคาร์บอนไดออกไซด์ที่ใช้ไป แต่ในการคำนวณขั้นสุดท้ายมักจะคำนวณออกมาในรูปของคาร์บอน (C) ซึ่งเป็นสารอินทรีย์ที่เกิดขึ้นในกระบวนการผลิต โดยจะแสดงในรูปของ  $\text{mgC}/\text{m}^3/\text{hr}$

ค่า Respiration จะบอกถึงการใช้ออกซิเจนของแพลงก์ตอนพืช และแพลงก์ตอนสัตว์ที่อยู่ในน้ำ รวมทั้งขบวนการย่อยสลายสารอินทรีย์ที่มีอยู่ในน้ำโดยแบคทีเรีย

ค่า Net production หรือผลผลิตเบื้องต้นสุทธิ จะบอกถึงความสามารถในการรองรับกิจกรรมในการใช้ออกซิเจนของแหล่งน้ำนั้นๆ เช่น การเพาะเลี้ยงสัตว์น้ำหรือเป็นแหล่งที่อยู่อาศัยให้กับสัตว์น้ำขนาดใหญ่อื่นๆ ถ้าค่า Net production มีค่าเป็นลบ แสดงว่าความสามารถในการผลิตของแพลงก์ตอนพืชน้อยกว่าการใช้ออกซิเจนของแพลงก์ตอนพืช แพลงก์ตอนสัตว์ที่อยู่ในน้ำและการย่อยสลายสารอินทรีย์ที่มีอยู่ในน้ำโดยแบคทีเรีย ซึ่งแสดงถึงความอุดมสมบูรณ์ของแพลงก์ตอนพืชในแหล่งน้ำบริเวณนั้นต่ำ หรือมีปริมาณแพลงก์ตอนพืชหรือการย่อยสลายสารอินทรีย์มาก แต่ค่าปริมาณออกซิเจนที่ละลายในน้ำที่วัดได้ในแหล่งน้ำนั้นอาจมาจากกระบวนการทางกายภาพ ได้แก่ กระแสน้ำและกระแสลม

**ตาราง ผลการวิเคราะห์ผลผลิตเบื้องต้น บริเวณคลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2**  
(เก็บตัวอย่างเมื่อวันที่ 18 ตุลาคม 2565)

Station	Gross production (mgC/m <sup>3</sup> /hr)	Respiration (mgC/m <sup>3</sup> /hr)	Net production (mgC/m <sup>3</sup> /hr)
<b>Lot 22116732-1</b> บริเวณแม่น้ำตาปีเหนือ น้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร	136.84	32.84	109.47
<b>Lot 22116732-2</b> บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือปตท.	109.47	98.52	27.37
<b>Lot 22116732-3</b> บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร	85.14	51.09	42.57

**Condition of Sample :** contained in incubation bottles; S1 – 3 bottles, S2 – 3 bottles, S3 – 6 bottles,

จากการวิเคราะห์ค่าผลผลิตเบื้องต้นบริเวณคลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2 เก็บตัวอย่างมาเมื่อวันที่ 18 ตุลาคม 2565 ซึ่งค่าผลผลิตเบื้องต้นแสดงในรูปค่าของ Gross production โดยมีค่าอยู่ระหว่าง 85.14-136.84 mgC/m<sup>3</sup>/hr ดังแสดงไว้ในตาราง สถานีที่มีผลผลิตเบื้องต้นมากที่สุด คือ สถานี Lot 22116732-1 (บริเวณแม่น้ำตาปีเหนือ น้ำห่างจากท่าเทียบเรือปตท. 500 เมตร) ซึ่งมีค่าผลผลิตเบื้องต้น 136.84 mgC/m<sup>3</sup>/hr ส่วนสถานีที่มีผลผลิตเบื้องต้นน้อยที่สุด คือ สถานี Lot 2251915-3 (บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือปตท. 500 เมตร) ซึ่งมีค่าผลผลิตเบื้องต้น 85.14 mgC/m<sup>3</sup>/hr ซึ่งปัจจัยที่มีผลต่อการเพิ่มขึ้นหรือลดลงของผลผลิตเบื้องต้นนี้ ได้แก่ ปริมาณของแพลงก์ตอนพืช แพลงก์ตอนสัตว์ อุณหภูมิ และปริมาณแสง ซึ่งจะมีผลต่อกระบวนการสังเคราะห์แสงของแพลงก์ตอนพืชในน้ำนั่นเอง



(นางสาวกนกวรรณ ขาวดอน)

ผู้วิเคราะห์



(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา  
101/12 หมู่ 9 ต. บางพระ  
อ. ศรีราชา จ. ชลบุรี 20110  
โทร./โทรสาร. (038) 311379

Client : PTT Oil and Retail Business Public Company Limited

Address : 555 Ardnarong Rd., Klongtoey, Klongtoey, Bangkok, 10260

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

รายงานผลการวิเคราะห์สัตว์หน้าดิน

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)		
	22116737-1	22116737-2	22116737-3
<b>Phylum Annelida</b>			
<b>Class Polychaeta</b>			
<b>Order Phyllodocida</b>			
<b>Family Nephtyidae</b>			
<i>Nephtys</i> sp. (ไส้เดือนทะเล)	-	-	30
<b>Order Spionida</b>			
<b>Family Spionidae</b>			
<i>Prionospio</i> sp. (ไส้เดือนทะเล)	104	104	-
<b>Phylum Mollusca</b>			
<b>Class Gastropoda</b>			
<b>Order Caenogastropoda</b>			
<b>Family Thiaridae</b>			
<i>Sermyla</i> sp. (หอยเจดีย์)	60	-	15
<i>Tarebia</i> sp. (หอยเจดีย์)	45	-	15
<i>Thiara</i> sp. (หอยเจดีย์หนาม)	60	-	-

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 18 ตุลาคม 2565)

(ต่อ)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)		
	22116737-1	22116737-2	22116737-3
ชนิดสัตว์หน้าดิน	4	1	3
ปริมาณสัตว์หน้าดิน	269	104	60
ค่าดัชนีความหลากหลายสัตว์หน้าดิน	1.3358	0.0000	1.0397

**Sample Location :** 1. สถานี 22116737-1 : บริเวณแม่น้ำตาปีเหนือ น้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร  
2. สถานี 22116737-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.  
3. สถานี 22116737-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

**Condition of Sample :** contained in one plastic zip bag

  
.....

(นายอรรณวุฒิ กันทะวงศ์)

ผู้วิเคราะห์

  
.....

(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2565

คุณภาพน้ำน้ำผิวดิน



## Analysis / Test Report

TESTING  
No.0166

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22116726**

Date Received : Oct 19, 2022

Date Reported : Oct 25, 2022

Report Number : 2441679-1

Page 1 of 3

<b>Sample Number</b>	22116726-1						
<b>Sampled Date</b>	Oct 18, 2022 10:00 AM						
<b>Sample Description</b>	น้ำผิวดิน						
<b>Location</b>	บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร						
<b>Date Analysis Commenced</b>	Oct 19, 2022						
<b>Condition of Sample</b>	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Microbiological Testing</b>							
Fecal Coliform	MPN/100mL	-	-	3300.0	≤4000	APHA (2017), 9221 E	Songkhla
Total Coliform	MPN/100mL	-	-	79000.0	≤20000	APHA (2017), 9221 B	Songkhla
<b>Water Testing</b>							
BOD (5 days at 20 degree C) *	mg/L	-	2	<2	≤2	Based on APHA (2017), 5210 B	Songkhla
Dissolved Oxygen *	mg/L	-	0.1	5.1	≥4	Based on APHA (2017), 4500-O (C)	Songkhla
Oil & Grease	mg/L	-	3	<3	No Standard	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.6	5.0-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	134	No Standard	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	9	No Standard	APHA (2017), 2540 D	Songkhla

**Guideline** : Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act. B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)

n': Change from Natural condition not more than 3 degree C

n : Not Change from natural condition

**Sampled By** : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

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

Approved by

*Sutthirak T.*

Sutthirak Tiprat  
Scientist (2)

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## Analysis / Test Report

TESTING  
No.0166

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22116726**

Date Received : Oct 19, 2022

Date Reported : Oct 25, 2022

Report Number : 2441679-1

Page 2 of 3

<b>Sample Number</b>	22116726-2
<b>Sampled Date</b>	Oct 18, 2022 10:10 AM
<b>Sample Description</b>	น้ำผิวดิน
<b>Location</b>	บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
<b>Date Analysis Commenced</b>	Oct 19, 2022
<b>Condition of Sample</b>	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Microbiological Testing</b>							
Fecal Coliform	MPN/100mL	-	-	3300.0	≤4000	APHA (2017), 9221 E	Songkhla
Total Coliform	MPN/100mL	-	-	24000.0	≤20000	APHA (2017), 9221 B	Songkhla
<b>Water Testing</b>							
BOD (5 days at 20 degree C) *	mg/L	-	2	<2	≤2	Based on APHA (2017), 5210 B	Songkhla
Dissolved Oxygen *	mg/L	-	0.1	5.0	≥4	Based on APHA (2017), 4500-O (C)	Songkhla
Oil & Grease	mg/L	-	3	<3	No Standard	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.7	5.0-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	124	No Standard	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	13	No Standard	APHA (2017), 2540 D	Songkhla

**Guideline** : Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act. B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)

n': Change from Natural condition not more than 3 degree C

n : Not Change from natural condition

**Sampled By** : Panya Kiartputtirak , Yuttapong Rattana

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Approved by

*Sutthirak T.*

Sutthirak Tiprat  
Scientist (2)

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## Analysis / Test Report

TESTING  
No.0166

**Client** : PTT Oil and Retail Business Public Company Limited  
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok 10260

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

**Lot ID: 22116726**

Date Received : Oct 19, 2022

Date Reported : Oct 25, 2022

Report Number : 2441679-1

Page 3 of 3

<b>Sample Number</b>	22116726-3						
<b>Sampled Date</b>	Oct 18, 2022 10:20 AM						
<b>Sample Description</b>	น้ำผิวดิน						
<b>Location</b>	บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร						
<b>Date Analysis Commenced</b>	Oct 19, 2022						
<b>Condition of Sample</b>	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Microbiological Testing</b>							
Fecal Coliform	MPN/100mL	-	-	3300.0	≤4000	APHA (2017), 9221 E	Songkhla
Total Coliform	MPN/100mL	-	-	4900.0	≤20000	APHA (2017), 9221 B	Songkhla
<b>Water Testing</b>							
BOD (5 days at 20 degree C) *	mg/L	-	2	<2	≤2	Based on APHA (2017), 5210 B	Songkhla
Dissolved Oxygen *	mg/L	-	0.1	4.8	≥4	Based on APHA (2017), 4500-O (C)	Songkhla
Oil & Grease	mg/L	-	3	<3	No Standard	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.8	5.0-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	246	No Standard	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	10	No Standard	APHA (2017), 2540 D	Songkhla

**Guideline** : Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act. B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)

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**Sampled By** : Panya Kiartputtirak , Yuttapong Rattana

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บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2565

คุณภาพน้ำทิ้ง



## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2274784**

Date Received : Jul 27, 2022

Date Reported : Aug 03, 2022

Report Number : 2392275-1

Page 1 of 1

<b>Sample Number</b>	2274784-1
<b>Sampled Date</b>	Jul 26, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jul 27, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	8.0	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	29.1	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	70	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	11	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2274784**

Date Received : Jul 27, 2022

Date Reported : Aug 02, 2022

Report Number : 2392275-2

Page 1 of 1

<b>Sample Number</b>	2274784-1						
<b>Sampled Date</b>	Jul 26, 2022 11:00 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Jul 29, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Narin Saiseng

Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2274784**

Date Received : Jul 27, 2022

Date Reported : Aug 03, 2022

Report Number : 2392276-1

Page 1 of 1

<b>Sample Number</b>	2274784-2
<b>Sampled Date</b>	Jul 26, 2022 11:10 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jul 27, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	8.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	29.4	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	87	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	9	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2274784**

Date Received : Jul 27, 2022

Date Reported : Aug 02, 2022

Report Number : 2392276-2

Page 1 of 1

<b>Sample Number</b>	2274784-2						
<b>Sampled Date</b>	Jul 26, 2022 11:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Jul 29, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Narin Saiseng  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2274784**

Date Received : Jul 27, 2022

Date Reported : Aug 03, 2022

Report Number : 2392277-1

Page 1 of 1

<b>Sample Number</b>	2274784-3
<b>Sampled Date</b>	Jul 26, 2022 11:20 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jul 27, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	28.8	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	136	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	9	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2274784**

Date Received : Jul 27, 2022

Date Reported : Aug 02, 2022

Report Number : 2392277-2

Page 1 of 1

<b>Sample Number</b>	2274784-3						
<b>Sampled Date</b>	Jul 26, 2022 11:20 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Jul 29, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Narin Saiseng

Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2287263**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2413804-1

Page 1 of 1

<b>Sample Number</b>	2287263-1
<b>Sampled Date</b>	Aug 17, 2022 12:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Aug 18, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	8	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	8.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	30.1	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	86	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	8	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2287263**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2413804-2

Page 1 of 1

<b>Sample Number</b>	2287263-1						
<b>Sampled Date</b>	Aug 17, 2022 12:00 PM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Aug 19, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2287263**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2413805-1

Page 1 of 1

<b>Sample Number</b>	2287263-2
<b>Sampled Date</b>	Aug 17, 2022 11:50 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Aug 18, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	10	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	8.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	30.2	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	112	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	9	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat  
Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn  
Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2287263**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2413805-2

Page 1 of 1

<b>Sample Number</b>	2287263-2						
<b>Sampled Date</b>	Aug 17, 2022 11:50 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Aug 19, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2287263**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2413806-1

Page 1 of 1

<b>Sample Number</b>	2287263-3
<b>Sampled Date</b>	Aug 17, 2022 11:40 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Aug 18, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	7	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.9	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	30.4	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	140	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	8	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

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Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 2287263**

Date Received : Aug 18, 2022

Date Reported : Aug 24, 2022

Report Number : 2413806-2

Page 1 of 1

<b>Sample Number</b>	2287263-3
<b>Sampled Date</b>	Aug 17, 2022 11:40 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Aug 19, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22103436**

Date Received : Sep 21, 2022

Date Reported : Sep 27, 2022

Report Number : 2447320-1

Page 1 of 1

<b>Sample Number</b>	22103436-1
<b>Sampled Date</b>	Sep 20, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Sep 21, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	8.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	30.1	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	80	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	8	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22103436**

Date Received : Sep 21, 2022

Date Reported : Sep 27, 2022

Report Number : 2447320-2

Page 1 of 1

<b>Sample Number</b>	22103436-1						
<b>Sampled Date</b>	Sep 20, 2022 11:00 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Sep 22, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22103436**

Date Received : Sep 21, 2022

Date Reported : Sep 27, 2022

Report Number : 2447321-1

Page 1 of 1

<b>Sample Number</b>	22103436-2
<b>Sampled Date</b>	Sep 20, 2022 11:05 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Sep 21, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	8	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	8.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	31.2	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	88	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	9	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22103436**

Date Received : Sep 21, 2022

Date Reported : Sep 27, 2022

Report Number : 2447321-2

Page 1 of 1

<b>Sample Number</b>	22103436-2						
<b>Sampled Date</b>	Sep 20, 2022 11:05 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Sep 22, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

*Kanokkorn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22103436**

Date Received : Sep 21, 2022

Date Reported : Sep 27, 2022

Report Number : 2447322-1

Page 1 of 1

<b>Sample Number</b>	22103436-3						
<b>Sampled Date</b>	Sep 20, 2022 11:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Sep 21, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	8.3	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	30.2	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	84	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	8	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat  
Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn  
Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22103436**

Date Received : Sep 21, 2022

Date Reported : Sep 27, 2022

Report Number : 2447322-2

Page 1 of 1

<b>Sample Number</b>	22103436-3						
<b>Sampled Date</b>	Sep 20, 2022 11:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Sep 22, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client** : PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O** :

**Project Name** : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location** :

**Lot ID: 22115467**

Date Received : Oct 20, 2022

Date Reported : Oct 26, 2022

Report Number : 2474248-1

Page 1 of 1

<b>Sample Number</b>	22115467-1						
<b>Sampled Date</b>	Oct 19, 2022 1:00 PM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Oct 21, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	No Standard	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	7	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	26.1	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	88	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	8	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By** : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O** :

**Project Name** : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location** :

**Lot ID: 22115467**

Date Received : Oct 20, 2022

Date Reported : Oct 26, 2022

Report Number : 2474248-2

Page 1 of 1

<b>Sample Number</b>	22115467-1						
<b>Sampled Date</b>	Oct 19, 2022 1:00 PM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Oct 21, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By** : Panya Kiarputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

*Kanokkorn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22115467**

Date Received : Oct 20, 2022

Date Reported : Oct 26, 2022

Report Number : 2474249-1

Page 1 of 1

<b>Sample Number</b>	22115467-2
<b>Sampled Date</b>	Oct 19, 2022 1:05 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Oct 21, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	28.2	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	80	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	7	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O** :

**Project Name** : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location** :

**Lot ID: 22115467**

Date Received : Oct 20, 2022

Date Reported : Oct 26, 2022

Report Number : 2474249-2

Page 1 of 1

<b>Sample Number</b>	22115467-2
<b>Sampled Date</b>	Oct 19, 2022 1:05 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Oct 21, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By** : Panya Kiarputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Siriluk P.*

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

*Kanokkorn Anek*

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client** : PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O** :

**Project Name** : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location** :

**Lot ID: 22115467**

Date Received : Oct 20, 2022

Date Reported : Oct 26, 2022

Report Number : 2474250-1

Page 1 of 1

<b>Sample Number</b>	22115467-3
<b>Sampled Date</b>	Oct 19, 2022 1:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Oct 21, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	8	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	28.1	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	76	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	6	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By** : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client** : PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O** :

**Project Name** : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location** :

**Lot ID: 22115467**

Date Received : Oct 20, 2022

Date Reported : Oct 26, 2022

Report Number : 2474250-2

Page 1 of 1

<b>Sample Number</b>	22115467-3
<b>Sampled Date</b>	Oct 19, 2022 1:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Oct 21, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By** : Panya Kiarputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client** : PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O** :

**Project Name** : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location** :

**Lot ID: 22129183**

Date Received : Nov 19, 2022

Date Reported : Nov 25, 2022

Report Number : 2503049-1

Page 1 of 1

<b>Sample Number</b>	22129183-1
<b>Sampled Date</b>	Nov 18, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Nov 19, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	6	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.5	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	28.2	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	176	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	8	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By** : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22129183**

Date Received : Nov 19, 2022

Date Reported : Nov 25, 2022

Report Number : 2503049-2

Page 1 of 1

<b>Sample Number</b>	22129183-1						
<b>Sampled Date</b>	Nov 18, 2022 11:00 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Nov 21, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

- LOD : Limit of Detection
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Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22129183**

Date Received : Nov 19, 2022

Date Reported : Nov 25, 2022

Report Number : 2503050-1

Page 1 of 1

<b>Sample Number</b>	22129183-2						
<b>Sampled Date</b>	Nov 18, 2022 11:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Nov 19, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	6	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.6	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	27.4	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	156	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	7	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22129183**

Date Received : Nov 19, 2022

Date Reported : Nov 25, 2022

Report Number : 2503050-2

Page 1 of 1

<b>Sample Number</b>	22129183-2						
<b>Sampled Date</b>	Nov 18, 2022 11:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Nov 21, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22129183**

Date Received : Nov 19, 2022

Date Reported : Nov 25, 2022

Report Number : 2503051-1

Page 1 of 1

<b>Sample Number</b>	22129183-3						
<b>Sampled Date</b>	Nov 18, 2022 11:20 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Nov 19, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Based on APHA (2017), 5220 D	Songkhla
Oil & Grease	mg/L	-	3	<3	≤5	Based on APHA (2017), 5520 B	Songkhla
pH at 25 degree C		-	-	7.7	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	28.6	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	100	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	8	≤50	APHA (2017), 2540 D	Songkhla

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22129183**

Date Received : Nov 19, 2022

Date Reported : Nov 25, 2022

Report Number : 2503051-2

Page 1 of 1

<b>Sample Number</b>	22129183-3						
<b>Sampled Date</b>	Nov 18, 2022 11:20 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Nov 21, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Based on APHA (2017), 4500-Norg (C)	Bangkok

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

**Sampled By :** Panya Kiartputtirak , Yuttapong Rattana

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22140771**

Date Received : Dec 22, 2022

Date Reported : Dec 28, 2022

Report Number : 2532464-1

Page 1 of 1

<b>Sample Number</b>	22140771-1
<b>Sampled Date</b>	Dec 21, 2022 1:30 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Dec 22, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	26.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	172	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	6	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

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

**Sampling By :** Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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

**Technical Management**

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

**Approved by**

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22140771**

Date Received : Dec 22, 2022

Date Reported : Dec 28, 2022

Report Number : 2532464-2

Page 1 of 1

<b>Sample Number</b>	22140771-1
<b>Sampled Date</b>	Dec 21, 2022 1:30 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Dec 23, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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

**Sampling By :** Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22140771**

Date Received : Dec 22, 2022

Date Reported : Dec 28, 2022

Report Number : 2532465-1

Page 1 of 1

<b>Sample Number</b>	22140771-2
<b>Sampled Date</b>	Dec 21, 2022 1:40 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Dec 22, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B	Songkhla
COD	mg/L	-	5	6	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	27.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	160	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	6	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

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

**Sampling By :** Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22140771**

Date Received : Dec 22, 2022

Date Reported : Dec 28, 2022

Report Number : 2532465-2

Page 1 of 1

<b>Sample Number</b>	22140771-2
<b>Sampled Date</b>	Dec 21, 2022 1:40 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Dec 23, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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

**Sampling By :** Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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## Analysis / Test Report

TESTING  
No.0166

**Client** : PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O** :

**Project Name** : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location** :

**Lot ID: 22140771**

Date Received : Dec 22, 2022

Date Reported : Dec 28, 2022

Report Number : 2532466-1

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<b>Sample Number</b>	22140771-3
<b>Sampled Date</b>	Dec 21, 2022 1:45 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Dec 22, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
BOD (5 days at 20 degree C)	mg/L	-	2	<2	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B	Songkhla
COD	mg/L	-	5	<5	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	26.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	128	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	6	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

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

**Sampling By** : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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

**Technical Management**

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

**Approved by**

*Kanitta H.*

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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## Analysis / Test Report

**Client :** PTT Oil and Retail Business Public Company Limited  
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

**P/O :**

**Project Name :** คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

**Project Location :**

**Lot ID: 22140771**

Date Received : Dec 22, 2022

Date Reported : Dec 28, 2022

Report Number : 2532466-2

Page 1 of 1

<b>Sample Number</b>	22140771-3
<b>Sampled Date</b>	Dec 21, 2022 1:45 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Dec 23, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Water Testing</b>							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

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

**Sampling By :** Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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

Technical Management

Siriluk P.

Siriluk Puengpang

Supervisor

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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