



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนมกราคมถึงมิถุนายน พ.ศ. 2565

ภาคผนวก ค

ใบรับรองผลการตรวจวิเคราะห์  
ผลกระทบสิ่งแวดล้อม



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนมกราคมถึงมิถุนายน พ.ศ. 2565

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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367218-2

Page 1 of 8

**Sample Number** : 2259029-1  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	23/06/22 - 24/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2,2-Tetrachloro ethane	23/06/22 - 24/06/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,1,2-Trichloro-1,2,2-Trifluoroethane	23/06/22 - 24/06/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2-Trichloroethane	23/06/22 - 24/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethane	23/06/22 - 24/06/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethene	23/06/22 - 24/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,3-Trimethylbenzene	23/06/22 - 24/06/22	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trichlorobenzene	23/06/22 - 24/06/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trimethylbenzene	23/06/22 - 24/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2-Dibromoethane	23/06/22 - 24/06/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorobenzene	23/06/22 - 24/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367218-2

Page 2 of 8

**Sample Number** : 2259029-1  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	23/06/22 - 24/06/22	ug/m3	0.07	0.20	Not Detected	48	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichloropropane	23/06/22 - 24/06/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorotetrafluoro ethane	23/06/22 - 24/06/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3,5-Trimethylbenzene	23/06/22 - 24/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3-Butadiene	23/06/22 - 24/06/22	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,3-Dichlorobenzene	23/06/22 - 24/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,4-Dichlorobenzene	23/06/22 - 24/06/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,4-Dioxane	23/06/22 - 24/06/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1-Butanol	23/06/22 - 24/06/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1-Propanol	23/06/22 - 24/06/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Hexanone	23/06/22 - 24/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367218-2

Page 3 of 8

**Sample Number** 2259029-1  
**Sampled Date** Jun 23, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	23/06/22 - 24/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Propanol	23/06/22 - 24/06/22	ug/m3	0.40	1.23	1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Hexanone	23/06/22 - 24/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Pentanone	23/06/22 - 24/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetaldehyde	23/06/22 - 24/06/22	ug/m3	0.05	0.18	2.16	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acetone	23/06/22 - 24/06/22	ug/m3	0.08	0.24	13.97	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetonitrile	23/06/22 - 24/06/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acrolein	23/06/22 - 24/06/22	ug/m3	0.08	0.23	<0.23	0.55	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acrylonitrile	23/06/22 - 24/06/22	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzene	23/06/22 - 24/06/22	ug/m3	0.05	0.16	0.38	7.6	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzyl Chloride	23/06/22 - 24/06/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367218-2

Page 4 of 8

**Sample Number** : 2259029-1  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	23/06/22 - 24/06/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromoform	23/06/22 - 24/06/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromomethane	23/06/22 - 24/06/22	ug/m3	0.06	0.19	0.85	190	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Butanal	23/06/22 - 24/06/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Carbon Disulfide	23/06/22 - 24/06/22	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compendium Method, TO-15	NEB	Bangkok
Carbon Tetrachloride	23/06/22 - 24/06/22	ug/m3	0.10	0.31	Not Detected	150	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chlorobenzene	23/06/22 - 24/06/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chlorodifluoromethane (HCFC-22)	23/06/22 - 24/06/22	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroethane	23/06/22 - 24/06/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroform	23/06/22 - 24/06/22	ug/m3	0.08	0.24	Not Detected	57	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chloromethane	23/06/22 - 24/06/22	ug/m3	0.30	1.03	<1.03	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367218-2

Page 5 of 8

**Sample Number** : 2259029-1  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	23/06/22 - 24/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
cis-1,3-Dichloropropene	23/06/22 - 24/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclohexane	23/06/22 - 24/06/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclopentane	23/06/22 - 24/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichlorodifluoromethane (CFC-112)	23/06/22 - 24/06/22	ug/m3	0.80	2.47	2.97	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichloromethane	23/06/22 - 24/06/22	ug/m3	0.06	0.17	<0.17	210	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Ethanol	23/06/22 - 24/06/22	ug/m3	0.30	0.94	6.22	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Ethyl Benzene	23/06/22 - 24/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexanal	23/06/22 - 24/06/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexane	23/06/22 - 24/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Isobutene	23/06/22 - 24/06/22	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367218-2

Page 6 of 8

**Sample Number** 2259029-1  
**Sampled Date** Jun 23, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	23/06/22 - 24/06/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
m,p-Xylene	23/06/22 - 24/06/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methacrolein	23/06/22 - 24/06/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methanol	23/06/22 - 24/06/22	ug/m3	0.20	0.66	3.93	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Ethyl Ketone	23/06/22 - 24/06/22	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Iodide	23/06/22 - 24/06/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Isobutyl Ketone	23/06/22 - 24/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl tert butyl ether	23/06/22 - 24/06/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Vinyl Ketone	23/06/22 - 24/06/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
o-Xylene	23/06/22 - 24/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Pentanal	23/06/22 - 24/06/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367218-2

Page 7 of 8

**Sample Number** 2259029-1  
**Sampled Date** Jun 23, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	23/06/22 - 24/06/22	ug/m3	0.50	1.48	<1.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propanal	23/06/22 - 24/06/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propene (Propylene)	23/06/22 - 24/06/22	ug/m3	0.30	0.86	1.20	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Styrene	23/06/22 - 24/06/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Tetrachloroethylene	23/06/22 - 24/06/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Toluene	23/06/22 - 24/06/22	ug/m3	0.60	1.88	8.37	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,2-Dichloroethene	23/06/22 - 24/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,3-Dichloropro pene	23/06/22 - 24/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Trichloroethylene	23/06/22 - 24/06/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Trichlorofluoromethane (F-11)	23/06/22 - 24/06/22	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Vinyl Acetate	23/06/22 - 24/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367218-2

Page 8 of 8

**Sample Number** 2259029-1  
**Sampled Date** Jun 23, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	23/06/22 - 24/06/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

**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 :** Yongsil Rangsee

**Remark :**

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-1

Page 1 of 1

**Sample Number** 2259029-2  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	09:30 AM - 12:30 PM	ppm	-	1.0	2.5	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	09:30 AM - 12:30 PM	ppm	-	1.0	1.6	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	09:30 AM - 12:30 PM	ppm	-	1.0	4.2	EPA 40 CFR Part 50, Appendix C	Bangkok

**Sampled By** : Yongsil Rangsee

Remark :

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-2

Page 1 of 8

**Sample Number** 2259029-2  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	24/06/22 - 25/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2,2-Tetrachloro ethane	24/06/22 - 25/06/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,1,2-Trichloro-1,2,2-Trifluoroethane	24/06/22 - 25/06/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2-Trichloroethane	24/06/22 - 25/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethane	24/06/22 - 25/06/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethene	24/06/22 - 25/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,3-Trimethylbenzene	24/06/22 - 25/06/22	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trichlorobenzene	24/06/22 - 25/06/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trimethylbenzene	24/06/22 - 25/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2-Dibromoethane	24/06/22 - 25/06/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorobenzene	24/06/22 - 25/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-2

Page 2 of 8

**Sample Number** 2259029-2  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	24/06/22 - 25/06/22	ug/m3	0.07	0.20	Not Detected	48	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichloropropane	24/06/22 - 25/06/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorotetrafluoro ethane	24/06/22 - 25/06/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3,5-Trimethylbenzene	24/06/22 - 25/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3-Butadiene	24/06/22 - 25/06/22	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,3-Dichlorobenzene	24/06/22 - 25/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,4-Dichlorobenzene	24/06/22 - 25/06/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,4-Dioxane	24/06/22 - 25/06/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1-Butanol	24/06/22 - 25/06/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1-Propanol	24/06/22 - 25/06/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Hexanone	24/06/22 - 25/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-2

Page 3 of 8

**Sample Number** : 2259029-2  
**Sampled Date** : Jun 24, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	24/06/22 - 25/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Propanol	24/06/22 - 25/06/22	ug/m3	0.40	1.23	1.33	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Hexanone	24/06/22 - 25/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Pentanone	24/06/22 - 25/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetaldehyde	24/06/22 - 25/06/22	ug/m3	0.05	0.18	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acetone	24/06/22 - 25/06/22	ug/m3	0.08	0.24	5.65	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetonitrile	24/06/22 - 25/06/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acrolein	24/06/22 - 25/06/22	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acrylonitrile	24/06/22 - 25/06/22	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzene	24/06/22 - 25/06/22	ug/m3	0.05	0.16	0.51	7.6	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzyl Chloride	24/06/22 - 25/06/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-2

Page 4 of 8

**Sample Number** 2259029-2  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	24/06/22 - 25/06/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromoform	24/06/22 - 25/06/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromomethane	24/06/22 - 25/06/22	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Butanal	24/06/22 - 25/06/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Carbon Disulfide	24/06/22 - 25/06/22	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compendium Method, TO-15	NEB	Bangkok
Carbon Tetrachloride	24/06/22 - 25/06/22	ug/m3	0.10	0.31	Not Detected	150	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chlorobenzene	24/06/22 - 25/06/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chlorodifluoromethane (HCFC-22)	24/06/22 - 25/06/22	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroethane	24/06/22 - 25/06/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroform	24/06/22 - 25/06/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chloromethane	24/06/22 - 25/06/22	ug/m3	0.30	1.03	<1.03	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-2

Page 5 of 8

**Sample Number** : 2259029-2  
**Sampled Date** : Jun 24, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	24/06/22 - 25/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
cis-1,3-Dichloropropene	24/06/22 - 25/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclohexane	24/06/22 - 25/06/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclopentane	24/06/22 - 25/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichlorodifluoromethane (CFC-112)	24/06/22 - 25/06/22	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichloromethane	24/06/22 - 25/06/22	ug/m3	0.06	0.17	Not Detected	210	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Ethanol	24/06/22 - 25/06/22	ug/m3	0.30	0.94	10.36	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Ethyl Benzene	24/06/22 - 25/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexanal	24/06/22 - 25/06/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexane	24/06/22 - 25/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Isobutene	24/06/22 - 25/06/22	ug/m3	0.40	1.15	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-2

Page 6 of 8

**Sample Number** : 2259029-2  
**Sampled Date** : Jun 24, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	24/06/22 - 25/06/22	ug/m3	0.50	1.39	1.45	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
m,p-Xylene	24/06/22 - 25/06/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methacrolein	24/06/22 - 25/06/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methanol	24/06/22 - 25/06/22	ug/m3	0.20	0.66	2.83	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Ethyl Ketone	24/06/22 - 25/06/22	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Iodide	24/06/22 - 25/06/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Isobutyl Ketone	24/06/22 - 25/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl tert butyl ether	24/06/22 - 25/06/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Vinyl Ketone	24/06/22 - 25/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
o-Xylene	24/06/22 - 25/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Pentanal	24/06/22 - 25/06/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-2

Page 7 of 8

**Sample Number** 2259029-2  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	24/06/22 - 25/06/22	ug/m3	0.50	1.48	<1.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propanal	24/06/22 - 25/06/22	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propene (Propylene)	24/06/22 - 25/06/22	ug/m3	0.30	0.86	0.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Styrene	24/06/22 - 25/06/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Tetrachloroethylene	24/06/22 - 25/06/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Toluene	24/06/22 - 25/06/22	ug/m3	0.60	1.88	3.69	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,2-Dichloroethene	24/06/22 - 25/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,3-Dichloropro pene	24/06/22 - 25/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Trichloroethylene	24/06/22 - 25/06/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Trichlorofluoromethane (F-11)	24/06/22 - 25/06/22	ug/m3	0.90	2.81	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Vinyl Acetate	24/06/22 - 25/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367219-2

Page 8 of 8

**Sample Number** 2259029-2  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	24/06/22 - 25/06/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

**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 :** Yongsil Rangsee

**Remark :**

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-1

Page 1 of 1

**Sample Number** 2259029-3  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	09:30 AM - 12:30 PM	ppm	-	1.0	2.3	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	09:30 AM - 12:30 PM	ppm	-	1.0	2.4	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	09:30 AM - 12:30 PM	ppm	-	1.0	4.7	EPA 40 CFR Part 50, Appendix C	Bangkok

**Sampled By** : Yongsil Rangsee

Remark :

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

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

Sararat Mongkonjirawut  
Supervisor

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-2

Page 1 of 8

**Sample Number** : 2259029-3  
**Sampled Date** : Jun 25, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	25/06/22 - 26/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2,2-Tetrachloro ethane	25/06/22 - 26/06/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,1,2-Trichloro-1,2,2-Trifluoroethane	25/06/22 - 26/06/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2-Trichloroethane	25/06/22 - 26/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethane	25/06/22 - 26/06/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethene	25/06/22 - 26/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,3-Trimethylbenzene	25/06/22 - 26/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trichlorobenzene	25/06/22 - 26/06/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trimethylbenzene	25/06/22 - 26/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2-Dibromoethane	25/06/22 - 26/06/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorobenzene	25/06/22 - 26/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-2

Page 2 of 8

**Sample Number** 2259029-3  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	25/06/22 - 26/06/22	ug/m3	0.07	0.20	Not Detected	48	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichloropropane	25/06/22 - 26/06/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorotetrafluoro ethane	25/06/22 - 26/06/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3,5-Trimethylbenzene	25/06/22 - 26/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3-Butadiene	25/06/22 - 26/06/22	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,3-Dichlorobenzene	25/06/22 - 26/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,4-Dichlorobenzene	25/06/22 - 26/06/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,4-Dioxane	25/06/22 - 26/06/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1-Butanol	25/06/22 - 26/06/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1-Propanol	25/06/22 - 26/06/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Hexanone	25/06/22 - 26/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-2

Page 3 of 8

**Sample Number** : 2259029-3  
**Sampled Date** : Jun 25, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	25/06/22 - 26/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Propanol	25/06/22 - 26/06/22	ug/m3	0.40	1.23	4.52	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Hexanone	25/06/22 - 26/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Pentanone	25/06/22 - 26/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetaldehyde	25/06/22 - 26/06/22	ug/m3	0.05	0.18	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acetone	25/06/22 - 26/06/22	ug/m3	0.08	0.24	7.60	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetonitrile	25/06/22 - 26/06/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acrolein	25/06/22 - 26/06/22	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acrylonitrile	25/06/22 - 26/06/22	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzene	25/06/22 - 26/06/22	ug/m3	0.05	0.16	1.02	7.6	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzyl Chloride	25/06/22 - 26/06/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-2

Page 4 of 8

**Sample Number** 2259029-3  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	25/06/22 - 26/06/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromoform	25/06/22 - 26/06/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromomethane	25/06/22 - 26/06/22	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Butanal	25/06/22 - 26/06/22	ug/m3	0.49	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Carbon Disulfide	25/06/22 - 26/06/22	ug/m3	0.05	0.16	0.31	100	Based on US EPA Compendium Method, TO-15	NEB	Bangkok
Carbon Tetrachloride	25/06/22 - 26/06/22	ug/m3	0.10	0.31	Not Detected	150	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chlorobenzene	25/06/22 - 26/06/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chlorodifluoromethane (HCFC-22)	25/06/22 - 26/06/22	ug/m3	0.60	1.77	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroethane	25/06/22 - 26/06/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroform	25/06/22 - 26/06/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chloromethane	25/06/22 - 26/06/22	ug/m3	0.30	1.03	<1.03	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-2

Page 5 of 8

**Sample Number** : 2259029-3  
**Sampled Date** : Jun 25, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	25/06/22 - 26/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
cis-1,3-Dichloropropene	25/06/22 - 26/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclohexane	25/06/22 - 26/06/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclopentane	25/06/22 - 26/06/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichlorodifluoromethane (CFC-112)	25/06/22 - 26/06/22	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichloromethane	25/06/22 - 26/06/22	ug/m3	0.06	0.17	Not Detected	210	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Ethanol	25/06/22 - 26/06/22	ug/m3	0.30	0.94	11.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Ethyl Benzene	25/06/22 - 26/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexanal	25/06/22 - 26/06/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexane	25/06/22 - 26/06/22	ug/m3	0.60	1.76	2.68	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Isobutene	25/06/22 - 26/06/22	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-2

Page 6 of 8

**Sample Number** 2259029-3  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	25/06/22 - 26/06/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
m,p-Xylene	25/06/22 - 26/06/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methacrolein	25/06/22 - 26/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methanol	25/06/22 - 26/06/22	ug/m3	0.20	0.66	4.30	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Ethyl Ketone	25/06/22 - 26/06/22	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Iodide	25/06/22 - 26/06/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Isobutyl Ketone	25/06/22 - 26/06/22	ug/m3	0.70	2.05	2.87	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl tert butyl ether	25/06/22 - 26/06/22	ug/m3	0.60	1.80	<1.80	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Vinyl Ketone	25/06/22 - 26/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
o-Xylene	25/06/22 - 26/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Pentanal	25/06/22 - 26/06/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-2

Page 7 of 8

**Sample Number** 2259029-3  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	25/06/22 - 26/06/22	ug/m3	0.50	1.48	5.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propanal	25/06/22 - 26/06/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propene (Propylene)	25/06/22 - 26/06/22	ug/m3	0.30	0.86	1.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Styrene	25/06/22 - 26/06/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Tetrachloroethylene	25/06/22 - 26/06/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Toluene	25/06/22 - 26/06/22	ug/m3	0.60	1.88	13.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,2-Dichloroethene	25/06/22 - 26/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,3-Dichloropro pene	25/06/22 - 26/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Trichloroethylene	25/06/22 - 26/06/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Trichlorofluoromethane (F-11)	25/06/22 - 26/06/22	ug/m3	0.90	2.81	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Vinyl Acetate	25/06/22 - 26/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367220-2

Page 8 of 8

**Sample Number** 2259029-3  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	25/06/22 - 26/06/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

**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 :** Yongsil Rangsee

**Remark :**

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-1

Page 1 of 1

**Sample Number** 2259029-4  
**Sampled Date** Jun 23, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	09:15 AM - 12:15 PM	ppm	-	1.0	2.3	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	09:15 AM - 12:15 PM	ppm	-	1.0	3.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	09:15 AM - 12:15 PM	ppm	-	1.0	5.4	EPA 40 CFR Part 50, Appendix C	Bangkok

**Sampled By** : Yongsil Rangsee

Remark :

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-2

Page 1 of 8

**Sample Number** : 2259029-4  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	23/06/22 - 24/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2,2-Tetrachloro ethane	23/06/22 - 24/06/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,1,2-Trichloro-1,2,2-Trifluoroethane	23/06/22 - 24/06/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2-Trichloroethane	23/06/22 - 24/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethane	23/06/22 - 24/06/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethene	23/06/22 - 24/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,3-Trimethylbenzene	23/06/22 - 24/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trichlorobenzene	23/06/22 - 24/06/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trimethylbenzene	23/06/22 - 24/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2-Dibromoethane	23/06/22 - 24/06/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorobenzene	23/06/22 - 24/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-2

Page 2 of 8

**Sample Number** : 2259029-4  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	23/06/22 - 24/06/22	ug/m3	0.07	0.20	Not Detected	48	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichloropropane	23/06/22 - 24/06/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorotetrafluoro ethane	23/06/22 - 24/06/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3,5-Trimethylbenzene	23/06/22 - 24/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3-Butadiene	23/06/22 - 24/06/22	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,3-Dichlorobenzene	23/06/22 - 24/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,4-Dichlorobenzene	23/06/22 - 24/06/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,4-Dioxane	23/06/22 - 24/06/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1-Butanol	23/06/22 - 24/06/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1-Propanol	23/06/22 - 24/06/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Hexanone	23/06/22 - 24/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-2

Page 3 of 8

**Sample Number** 2259029-4  
**Sampled Date** Jun 23, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	23/06/22 - 24/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Propanol	23/06/22 - 24/06/22	ug/m3	0.40	1.23	1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Hexanone	23/06/22 - 24/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Pentanone	23/06/22 - 24/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetaldehyde	23/06/22 - 24/06/22	ug/m3	0.05	0.18	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acetone	23/06/22 - 24/06/22	ug/m3	0.08	0.24	7.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetonitrile	23/06/22 - 24/06/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acrolein	23/06/22 - 24/06/22	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acrylonitrile	23/06/22 - 24/06/22	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzene	23/06/22 - 24/06/22	ug/m3	0.05	0.16	0.26	7.6	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzyl Chloride	23/06/22 - 24/06/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-2

Page 4 of 8

**Sample Number** : 2259029-4  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	23/06/22 - 24/06/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromoform	23/06/22 - 24/06/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromomethane	23/06/22 - 24/06/22	ug/m3	0.06	0.19	0.23	190	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Butanal	23/06/22 - 24/06/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Carbon Disulfide	23/06/22 - 24/06/22	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compendium Method, TO-15	NEB	Bangkok
Carbon Tetrachloride	23/06/22 - 24/06/22	ug/m3	0.10	0.31	Not Detected	150	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chlorobenzene	23/06/22 - 24/06/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chlorodifluoromethane (HCFC-22)	23/06/22 - 24/06/22	ug/m3	0.60	1.77	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroethane	23/06/22 - 24/06/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroform	23/06/22 - 24/06/22	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chloromethane	23/06/22 - 24/06/22	ug/m3	0.30	1.03	<1.03	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-2

Page 5 of 8

**Sample Number** : 2259029-4  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	23/06/22 - 24/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
cis-1,3-Dichloropropene	23/06/22 - 24/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclohexane	23/06/22 - 24/06/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclopentane	23/06/22 - 24/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichlorodifluoromethane (CFC-112)	23/06/22 - 24/06/22	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichloromethane	23/06/22 - 24/06/22	ug/m3	0.06	0.17	Not Detected	210	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Ethanol	23/06/22 - 24/06/22	ug/m3	0.30	0.94	11.80	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Ethyl Benzene	23/06/22 - 24/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexanal	23/06/22 - 24/06/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexane	23/06/22 - 24/06/22	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Isobutene	23/06/22 - 24/06/22	ug/m3	0.40	1.15	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-2

Page 6 of 8

**Sample Number** 2259029-4  
**Sampled Date** Jun 23, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	23/06/22 - 24/06/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
m,p-Xylene	23/06/22 - 24/06/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methacrolein	23/06/22 - 24/06/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methanol	23/06/22 - 24/06/22	ug/m3	0.20	0.66	1.57	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Ethyl Ketone	23/06/22 - 24/06/22	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Iodide	23/06/22 - 24/06/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Isobutyl Ketone	23/06/22 - 24/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl tert butyl ether	23/06/22 - 24/06/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Vinyl Ketone	23/06/22 - 24/06/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
o-Xylene	23/06/22 - 24/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Pentanal	23/06/22 - 24/06/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-2

Page 7 of 8

**Sample Number** : 2259029-4  
**Sampled Date** : Jun 23, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	23/06/22 - 24/06/22	ug/m3	0.50	1.48	1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propanal	23/06/22 - 24/06/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propene (Propylene)	23/06/22 - 24/06/22	ug/m3	0.30	0.86	1.55	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Styrene	23/06/22 - 24/06/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Tetrachloroethylene	23/06/22 - 24/06/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Toluene	23/06/22 - 24/06/22	ug/m3	0.60	1.88	9.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,2-Dichloroethene	23/06/22 - 24/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,3-Dichloropro pene	23/06/22 - 24/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Trichloroethylene	23/06/22 - 24/06/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Trichlorofluoromethane (F-11)	23/06/22 - 24/06/22	ug/m3	0.90	2.81	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Vinyl Acetate	23/06/22 - 24/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367221-2

Page 8 of 8

**Sample Number** 2259029-4  
**Sampled Date** Jun 23, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	23/06/22 - 24/06/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

**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** : Yongsil Rangsee

**Remark :**

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-1

Page 1 of 1

**Sample Number** 2259029-5  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	09:15 AM - 12:15 PM	ppm	-	1.0	2.3	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	09:15 AM - 12:15 PM	ppm	-	1.0	3.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	09:15 AM - 12:15 PM	ppm	-	1.0	5.4	EPA 40 CFR Part 50, Appendix C	Bangkok

**Sampled By** : Yongsil Rangsee

Remark :

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-2

Page 1 of 8

**Sample Number** : 2259029-5  
**Sampled Date** : Jun 24, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	24/06/22 - 25/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2,2-Tetrachloro ethane	24/06/22 - 25/06/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,1,2-Trichloro-1,2,2-Trifluoroethane	24/06/22 - 25/06/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2-Trichloroethane	24/06/22 - 25/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethane	24/06/22 - 25/06/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethene	24/06/22 - 25/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,3-Trimethylbenzene	24/06/22 - 25/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trichlorobenzene	24/06/22 - 25/06/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trimethylbenzene	24/06/22 - 25/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2-Dibromoethane	24/06/22 - 25/06/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorobenzene	24/06/22 - 25/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-2

Page 2 of 8

**Sample Number** : 2259029-5  
**Sampled Date** : Jun 24, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	24/06/22 - 25/06/22	ug/m3	0.07	0.20	Not Detected	48	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichloropropane	24/06/22 - 25/06/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorotetrafluoro ethane	24/06/22 - 25/06/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3,5-Trimethylbenzene	24/06/22 - 25/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3-Butadiene	24/06/22 - 25/06/22	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,3-Dichlorobenzene	24/06/22 - 25/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,4-Dichlorobenzene	24/06/22 - 25/06/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,4-Dioxane	24/06/22 - 25/06/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1-Butanol	24/06/22 - 25/06/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1-Propanol	24/06/22 - 25/06/22	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Hexanone	24/06/22 - 25/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-2

Page 3 of 8

**Sample Number** 2259029-5  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	24/06/22 - 25/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Propanol	24/06/22 - 25/06/22	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Hexanone	24/06/22 - 25/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Pentanone	24/06/22 - 25/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetaldehyde	24/06/22 - 25/06/22	ug/m3	0.05	0.18	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acetone	24/06/22 - 25/06/22	ug/m3	0.08	0.24	7.27	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetonitrile	24/06/22 - 25/06/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acrolein	24/06/22 - 25/06/22	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acrylonitrile	24/06/22 - 25/06/22	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzene	24/06/22 - 25/06/22	ug/m3	0.05	0.16	0.51	7.6	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzyl Chloride	24/06/22 - 25/06/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-2

Page 4 of 8

**Sample Number** 2259029-5  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	24/06/22 - 25/06/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromoform	24/06/22 - 25/06/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromomethane	24/06/22 - 25/06/22	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Butanal	24/06/22 - 25/06/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Carbon Disulfide	24/06/22 - 25/06/22	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compendium Method, TO-15	NEB	Bangkok
Carbon Tetrachloride	24/06/22 - 25/06/22	ug/m3	0.10	0.31	Not Detected	150	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chlorobenzene	24/06/22 - 25/06/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chlorodifluoromethane (HCFC-22)	24/06/22 - 25/06/22	ug/m3	0.60	1.77	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroethane	24/06/22 - 25/06/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroform	24/06/22 - 25/06/22	ug/m3	0.08	0.24	Not Detected	57	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chloromethane	24/06/22 - 25/06/22	ug/m3	0.30	1.03	<1.03	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-2

Page 5 of 8

**Sample Number** : 2259029-5  
**Sampled Date** : Jun 24, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	24/06/22 - 25/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
cis-1,3-Dichloropropene	24/06/22 - 25/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclohexane	24/06/22 - 25/06/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclopentane	24/06/22 - 25/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichlorodifluoromethane (CFC-112)	24/06/22 - 25/06/22	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichloromethane	24/06/22 - 25/06/22	ug/m3	0.06	0.17	Not Detected	210	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Ethanol	24/06/22 - 25/06/22	ug/m3	0.30	0.94	6.41	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Ethyl Benzene	24/06/22 - 25/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexanal	24/06/22 - 25/06/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexane	24/06/22 - 25/06/22	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Isobutene	24/06/22 - 25/06/22	ug/m3	0.40	1.15	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-2

Page 6 of 8

**Sample Number** 2259029-5  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	24/06/22 - 25/06/22	ug/m3	0.50	1.39	1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
m,p-Xylene	24/06/22 - 25/06/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methacrolein	24/06/22 - 25/06/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methanol	24/06/22 - 25/06/22	ug/m3	0.20	0.66	5.63	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Ethyl Ketone	24/06/22 - 25/06/22	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Iodide	24/06/22 - 25/06/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Isobutyl Ketone	24/06/22 - 25/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl tert butyl ether	24/06/22 - 25/06/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Vinyl Ketone	24/06/22 - 25/06/22	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
o-Xylene	24/06/22 - 25/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Pentanal	24/06/22 - 25/06/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-2

Page 7 of 8

**Sample Number** : 2259029-5  
**Sampled Date** : Jun 24, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	24/06/22 - 25/06/22	ug/m3	0.50	1.48	1.53	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propanal	24/06/22 - 25/06/22	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propene (Propylene)	24/06/22 - 25/06/22	ug/m3	0.30	0.86	1.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Styrene	24/06/22 - 25/06/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Tetrachloroethylene	24/06/22 - 25/06/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Toluene	24/06/22 - 25/06/22	ug/m3	0.60	1.88	13.49	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,2-Dichloroethene	24/06/22 - 25/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,3-Dichloropro pene	24/06/22 - 25/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Trichloroethylene	24/06/22 - 25/06/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Trichlorofluoromethane (F-11)	24/06/22 - 25/06/22	ug/m3	0.90	2.81	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Vinyl Acetate	24/06/22 - 25/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367222-2

Page 8 of 8

**Sample Number** 2259029-5  
**Sampled Date** Jun 24, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	24/06/22 - 25/06/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

**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 :** Yongsil Rangsee

**Remark :**

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-1

Page 1 of 1

**Sample Number** 2259029-6  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
<b>Air Testing</b>							
Methane	09:15 AM - 12:15 PM	ppm	-	1.0	2.1	EPA 40 CFR Part 50, Appendix C	Bangkok
Non-Methane Hydrocarbon	09:15 AM - 12:15 PM	ppm	-	1.0	1.9	EPA 40 CFR Part 50, Appendix C	Bangkok
Total Hydrocarbon	09:15 AM - 12:15 PM	ppm	-	1.0	4.0	EPA 40 CFR Part 50, Appendix C	Bangkok

**Sampled By** : Yongsil Rangsee

Remark :

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

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

Sararat Mongkonjirawut  
Supervisor



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-2

Page 1 of 8

**Sample Number** 2259029-6  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,1,1-Trichloroethane	25/06/22 - 26/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2,2-Tetrachloro ethane	25/06/22 - 26/06/22	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,1,2-Trichloro-1,2,2-Trifluoroethane	25/06/22 - 26/06/22	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1,2-Trichloroethane	25/06/22 - 26/06/22	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethane	25/06/22 - 26/06/22	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,1-Dichloroethene	25/06/22 - 26/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,3-Trimethylbenzene	25/06/22 - 26/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trichlorobenzene	25/06/22 - 26/06/22	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2,4-Trimethylbenzene	25/06/22 - 26/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,2-Dibromoethane	25/06/22 - 26/06/22	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorobenzene	25/06/22 - 26/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-2

Page 2 of 8

**Sample Number** : 2259029-6  
**Sampled Date** : Jun 25, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
1,2-Dichloroethane	25/06/22 - 26/06/22	ug/m3	0.07	0.20	Not Detected	48	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichloropropane	25/06/22 - 26/06/22	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,2-Dichlorotetrafluoro ethane	25/06/22 - 26/06/22	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3,5-Trimethylbenzene	25/06/22 - 26/06/22	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,3-Butadiene	25/06/22 - 26/06/22	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,3-Dichlorobenzene	25/06/22 - 26/06/22	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1,4-Dichlorobenzene	25/06/22 - 26/06/22	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1,4-Dioxane	25/06/22 - 26/06/22	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
1-Butanol	25/06/22 - 26/06/22	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
1-Propanol	25/06/22 - 26/06/22	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Hexanone	25/06/22 - 26/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-2

Page 3 of 8

**Sample Number** 2259029-6  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
2-Pentanone	25/06/22 - 26/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
2-Propanol	25/06/22 - 26/06/22	ug/m3	0.40	1.23	1.38	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Hexanone	25/06/22 - 26/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
3-Pentanone	25/06/22 - 26/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetaldehyde	25/06/22 - 26/06/22	ug/m3	0.05	0.18	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acetone	25/06/22 - 26/06/22	ug/m3	0.08	0.24	3.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acetonitrile	25/06/22 - 26/06/22	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Acrolein	25/06/22 - 26/06/22	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Acrylonitrile	25/06/22 - 26/06/22	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzene	25/06/22 - 26/06/22	ug/m3	0.05	0.16	0.19	7.6	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Benzyl Chloride	25/06/22 - 26/06/22	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-2

Page 4 of 8

**Sample Number** : 2259029-6  
**Sampled Date** : Jun 25, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Bromodichloromethane	25/06/22 - 26/06/22	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromoform	25/06/22 - 26/06/22	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Bromomethane	25/06/22 - 26/06/22	ug/m3	0.06	0.19	Not Detected	190	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Butanal	25/06/22 - 26/06/22	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Carbon Disulfide	25/06/22 - 26/06/22	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compendium Method, TO-15	NEB	Bangkok
Carbon Tetrachloride	25/06/22 - 26/06/22	ug/m3	0.10	0.31	Not Detected	150	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chlorobenzene	25/06/22 - 26/06/22	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chlorodifluoromethane (HCFC-22)	25/06/22 - 26/06/22	ug/m3	0.60	1.77	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroethane	25/06/22 - 26/06/22	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Chloroform	25/06/22 - 26/06/22	ug/m3	0.08	0.24	Not Detected	57	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Chloromethane	25/06/22 - 26/06/22	ug/m3	0.30	1.03	<1.03	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-2

Page 5 of 8

**Sample Number** : 2259029-6  
**Sampled Date** : Jun 25, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
cis-1,2-Dichloroethene	25/06/22 - 26/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
cis-1,3-Dichloropropene	25/06/22 - 26/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclohexane	25/06/22 - 26/06/22	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Cyclopentane	25/06/22 - 26/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichlorodifluoromethane (CFC-112)	25/06/22 - 26/06/22	ug/m3	0.80	2.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Dichloromethane	25/06/22 - 26/06/22	ug/m3	0.06	0.17	Not Detected	210	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Ethanol	25/06/22 - 26/06/22	ug/m3	0.30	0.94	5.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Ethyl Benzene	25/06/22 - 26/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexanal	25/06/22 - 26/06/22	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Hexane	25/06/22 - 26/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Isobutene	25/06/22 - 26/06/22	ug/m3	0.40	1.15	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-2

Page 6 of 8

**Sample Number** : 2259029-6  
**Sampled Date** : Jun 25, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Isoprene	25/06/22 - 26/06/22	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
m,p-Xylene	25/06/22 - 26/06/22	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methacrolein	25/06/22 - 26/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methanol	25/06/22 - 26/06/22	ug/m3	0.20	0.66	3.04	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Ethyl Ketone	25/06/22 - 26/06/22	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Iodide	25/06/22 - 26/06/22	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Isobutyl Ketone	25/06/22 - 26/06/22	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl tert butyl ether	25/06/22 - 26/06/22	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Methyl Vinyl Ketone	25/06/22 - 26/06/22	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
o-Xylene	25/06/22 - 26/06/22	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Pentanal	25/06/22 - 26/06/22	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-2

Page 7 of 8

**Sample Number** : 2259029-6  
**Sampled Date** : Jun 25, 2022  
**Sample Description** : Air Quality  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** : Jun 29, 2022  
**Condition of Sample** : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Pentane	25/06/22 - 26/06/22	ug/m3	0.50	1.48	<1.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propanal	25/06/22 - 26/06/22	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Propene (Propylene)	25/06/22 - 26/06/22	ug/m3	0.30	0.86	0.93	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Styrene	25/06/22 - 26/06/22	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Tetrachloroethylene	25/06/22 - 26/06/22	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Toluene	25/06/22 - 26/06/22	ug/m3	0.60	1.88	1.96	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,2-Dichloroethene	25/06/22 - 26/06/22	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
trans-1,3-Dichloropro pene	25/06/22 - 26/06/22	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Trichloroethylene	25/06/22 - 26/06/22	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Bangkok
Trichlorofluoromethane (F-11)	25/06/22 - 26/06/22	ug/m3	0.90	2.81	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok
Vinyl Acetate	25/06/22 - 26/06/22	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Bangkok

Approved by

Sararat Mongkonjirawut  
Supervisor

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.



## 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: 2259029**

Date Received : Jun 28, 2022

Date Reported : Jul 06, 2022

Report Number : 2367223-2

Page 8 of 8

**Sample Number** 2259029-6  
**Sampled Date** Jun 25, 2022  
**Sample Description** Air Quality  
**Location** บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Date Analysis Commenced** Jun 29, 2022  
**Condition of Sample** Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
<b>Air Testing</b>									
Vinyl Chloride	25/06/22 - 26/06/22	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Bangkok

**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 :** Yongsil Rangsee

**Remark :**

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

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

Sararat Mongkonjirawut  
Supervisor



## 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** : 2259032

Date Received : Jun 28, 2022

Date Reported : Jul 04, 2022

Report Number : 2315057-1

Page 1 of 2

**Sample Number** : 2259032-1 to 3  
**Parameter** : Wind Speed / Wind Direction  
**Location** : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)  
**Sampling Date** : Jun 23 - Jun 26, 2022  
**Sampling by** : Yongsil Rangsee

Time	Jun 23 - Jun 24, 2022			Jun 24 - Jun 25, 2022			Jun 25 - Jun 26, 2022			-			-			-			-		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		-	-		-	-		-	-		-	-	
07:00 AM - 08:00 AM	1.2	268.0	W	2.2	219.0	SW	1.4	255.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.9	273.0	W	1.3	314.0	NW	1.5	265.0	W	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	2.3	202.0	SSW	1.0	272.0	W	4.5	263.0	W	-	-	-	-	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	3.6	313.0	NW	1.5	290.0	WNW	3.3	245.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	3.1	288.0	WNW	3.5	267.0	W	3.4	329.0	NNW	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	3.3	269.0	W	4.1	235.0	SW	2.1	359.0	N	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	3.1	309.0	NW	3.7	311.0	NW	2.0	341.0	NNW	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	2.3	268.0	W	6.6	325.0	NW	2.8	331.0	NNW	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	3.1	355.0	N	3.7	290.0	WNW	2.1	20.0	NNE	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	3.2	359.0	N	2.4	296.0	WNW	1.2	243.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	2.6	9.0	N	1.4	233.0	SW	1.8	195.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	1.4	318.0	NW	5.1	244.0	WSW	1.4	228.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	2.1	220.0	SW	2.9	270.0	W	1.1	248.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	2.9	225.0	SW	1.3	268.0	W	1.4	267.0	W	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	2.8	256.0	WSW	1.2	239.0	WSW	0.6	294.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.6	245.0	WSW	1.6	288.0	WNW	1.7	252.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	2.1	255.0	WSW	1.2	274.0	W	2.7	274.0	W	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	2.1	261.0	W	1.8	228.0	SW	1.5	264.0	W	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	2.0	237.0	WSW	1.2	263.0	W	1.5	284.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	2.2	285.0	WNW	3.8	310.0	NW	1.0	277.0	W	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	2.1	274.0	W	1.6	229.0	SW	0.7	258.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	2.9	227.0	SW	1.1	222.0	SW	2.0	264.0	W	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	1.9	248.0	WSW	2.3	254.0	WSW	1.0	274.0	W	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	1.7	282.0	WNW	1.1	249.0	WSW	0.9	272.0	W	-	-	-	-	-	-	-	-	-	-	-	-

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 Jittrantont  
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** : 2259032

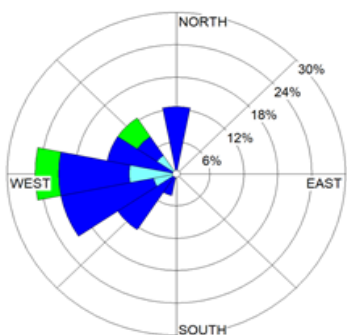
Date Received : Jun 28, 2022

Date Reported : Jul 04, 2022

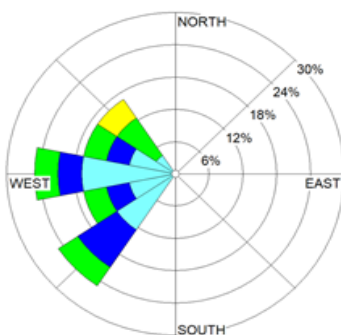
Report Number : 2315057-1

Page 2 of 2

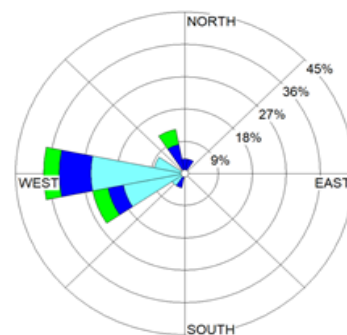
### Wind Rose



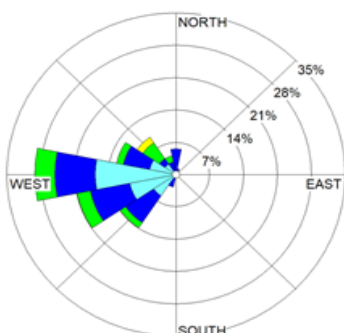
Date : Jun 23-24, 2022



Date : Jun 24-25, 2022



Date : Jun 25-26, 2022



Date : Jun 23-26, 2022

	WS(m/s)	%
	$\geq 10.0$	0.00
	8.0-10.0	0.00
	5.5-8.0	1.38
	3.3-5.5	15.28
	1.7-3.3	43.06
	0.3-1.7	40.28
	Calms	0.00

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 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** : 2259032  
Date Received : Jun 28, 2022  
Date Reported : Jul 04, 2022  
Report Number : 2315057-1

Page 1 of 2

**Sample Number** : 2259032-4 to 6  
**Parameter** : Wind Speed / Wind Direction  
**Location** : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)  
**Sampling Date** : Jun 23 - Jun 26, 2022  
**Sampling by** : Yongsil Rangsee

Time	Jun 23 - Jun 24, 2022			Jun 24 - Jun 25, 2022			Jun 25 - Jun 26, 2022			-			-			-			-		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		-	-		-	-		-	-		-	-	
07:00 AM - 08:00 AM	0.7	227.0	SW	0.5	283.0	WNW	1.1	276.0	W	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	2.4	294.0	WNW	2.3	320.0	NW	1.6	352.0	N	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	1.8	288.0	WNW	1.2	353.0	N	2.3	252.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	1.3	301.0	WNW	2.8	278.0	W	0.5	251.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	1.7	335.0	NNW	2.4	305.0	NW	1.7	34.0	NE	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	1.2	306.0	NW	2.5	309.0	NW	2.0	358.0	N	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	1.7	288.0	WNW	3.2	307.0	NW	0.8	252.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	2.0	318.0	NW	3.1	282.0	WNW	0.6	239.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	3.5	26.0	NNE	4.9	315.0	NW	1.7	192.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	1.1	330.0	NNW	1.8	274.0	W	0.8	273.0	W	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	1.3	305.0	NW	1.2	329.0	NNW	1.8	242.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	1.1	306.0	NW	4.0	248.0	WSW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.8	258.0	WSW	1.1	265.0	W	0.4	246.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.7	229.0	SW	0.8	310.0	NW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	1.0	272.0	W	2.4	284.0	WNW	1.1	314.0	NW	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	1.1	307.0	NW	0.3	295.0	WNW	0.7	309.0	NW	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.7	258.0	WSW	0.9	276.0	W	0.9	275.0	W	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.6	256.0	WSW	2.0	276.0	W	0.9	291.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	1.9	264.0	W	1.2	288.0	WNW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	2.7	278.0	W	0.6	275.0	W	0.7	228.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	1.1	197.0	SSW	0.6	304.0	NW	0.8	321.0	NW	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.9	283.0	WNW	0.6	322.0	NW	0.9	332.0	NNW	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	1.2	284.0	WNW	0.6	276.0	W	0.5	301.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.3	285.0	WNW	1.0	264.0	W	0.7	304.0	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 Jittrantont  
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** : 2259032

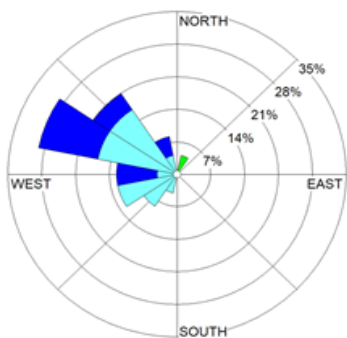
Date Received : Jun 28, 2022

Date Reported : Jul 04, 2022

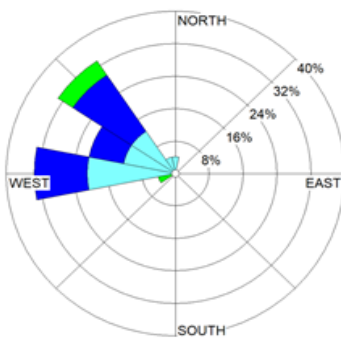
Report Number : 2315057-1

Page 2 of 2

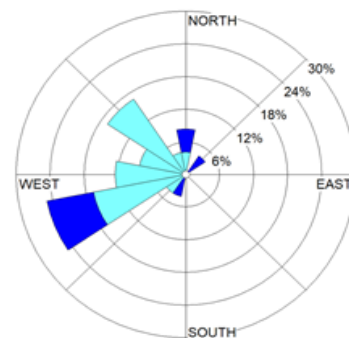
### Wind Rose



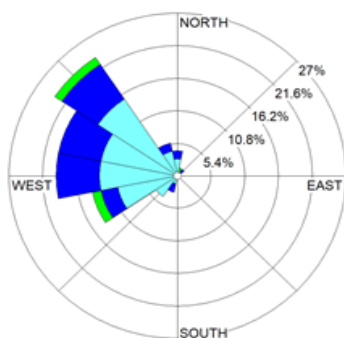
Date : Jun 23-24, 2022



Date : Jun 24-25, 2022



Date : Jun 25-26, 2022



Date : Jun 23-26, 2022

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	4.16
1.7-3.3	29.17
0.3-1.7	62.50
Calms	4.17

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 Jitranont  
Assistant General Manager



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนมกราคมถึงมิถุนายน 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: 2259038**

Date Received : Jun 28, 2022

Date Reported : Jul 05, 2022

Report Number: 2366116-1

Page 1 of 1

**Sample Number** 2259038-1  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Jun 23 - Jun 24, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level meter** Serial No. 672671

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
07:00 AM - 08:00 AM	55.4	76.3	47.5
08:00 AM - 09:00 AM	57.8	82.8	52.0
09:00 AM - 10:00 AM	59.1	78.6	56.5
10:00 AM - 11:00 AM	58.5	76.9	55.8
11:00 AM - 12:00 PM	58.3	70.2	55.9
12:00 PM - 01:00 PM	55.7	71.0	51.1
01:00 PM - 02:00 PM	53.2	67.3	45.1
02:00 PM - 03:00 PM	53.7	73.2	44.7
03:00 PM - 04:00 PM	52.5	68.2	44.4
04:00 PM - 05:00 PM	54.1	72.7	46.2
05:00 PM - 06:00 PM	55.0	72.6	45.0
06:00 PM - 07:00 PM	56.7	72.3	48.5
07:00 PM - 08:00 PM	53.4	71.8	45.1
08:00 PM - 09:00 PM	52.4	73.7	46.3
09:00 PM - 10:00 PM	51.0	69.2	47.2
10:00 PM - 11:00 PM	49.1	69.2	47.0
11:00 PM - 12:00 AM	48.5	63.5	47.1
12:00 AM - 01:00 AM	48.6	66.7	46.4
01:00 AM - 02:00 AM	50.4	69.5	47.8
02:00 AM - 03:00 AM	49.2	65.6	46.7
03:00 AM - 04:00 AM	47.2	63.2	45.8
04:00 AM - 05:00 AM	47.4	64.6	45.4
05:00 AM - 06:00 AM	53.0	68.2	48.3
06:00 AM - 07:00 AM	53.9	69.9	47.1

Leq Average 24 hrs. (dB(A)) 54.4  
Lmax (dB(A)) 82.8  
L90 (dB(A)) 47.0  
Ldn (dB(A)) 58.1  
Standard (dB(A)) 70

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

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.



## 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: 2259038**

Date Received : Jun 28, 2022

Date Reported : Jul 05, 2022

Report Number: 2366117-1

Page 1 of 1

**Sample Number** 2259038-2  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Jun 24 - Jun 25, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level meter** Serial No. 672671

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
07:00 AM - 08:00 AM	56.3	70.4	49.7
08:00 AM - 09:00 AM	56.2	76.7	49.3
09:00 AM - 10:00 AM	54.8	75.2	48.5
10:00 AM - 11:00 AM	55.7	77.8	48.5
11:00 AM - 12:00 PM	56.8	79.8	48.7
12:00 PM - 01:00 PM	54.6	72.7	46.7
01:00 PM - 02:00 PM	66.9	77.6	63.9
02:00 PM - 03:00 PM	57.4	72.4	47.3
03:00 PM - 04:00 PM	54.9	75.7	48.4
04:00 PM - 05:00 PM	53.7	71.0	45.8
05:00 PM - 06:00 PM	56.6	74.3	47.3
06:00 PM - 07:00 PM	57.4	77.0	48.8
07:00 PM - 08:00 PM	52.0	72.9	44.8
08:00 PM - 09:00 PM	50.5	71.7	45.0
09:00 PM - 10:00 PM	52.6	79.9	44.7
10:00 PM - 11:00 PM	47.7	64.7	43.1
11:00 PM - 12:00 AM	45.6	69.9	41.7
12:00 AM - 01:00 AM	42.1	57.2	40.5
01:00 AM - 02:00 AM	47.3	68.9	40.6
02:00 AM - 03:00 AM	42.6	63.3	40.4
03:00 AM - 04:00 AM	42.0	53.0	40.9
04:00 AM - 05:00 AM	46.4	68.4	42.6
05:00 AM - 06:00 AM	55.5	77.4	44.6
06:00 AM - 07:00 AM	56.4	74.9	45.8

Leq Average 24 hrs. (dB(A)) 56.5  
Lmax (dB(A)) 79.9  
L90 (dB(A)) 45.8  
Ldn (dB(A)) 59.2  
Standard (dB(A)) 70

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

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.



## 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: 2259038**

Date Received : Jun 28, 2022

Date Reported : Jul 05, 2022

Report Number: 2366118-1

Page 1 of 1

**Sample Number** 2259038-3  
**Parameter** Noise (Leq 24 hrs.)  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Jun 25 - Jun 26, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level meter** Serial No. 672671

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
07:00 AM - 08:00 AM	57.8	78.1	46.5
08:00 AM - 09:00 AM	60.2	77.9	53.1
09:00 AM - 10:00 AM	58.4	76.0	47.6
10:00 AM - 11:00 AM	57.0	80.7	45.9
11:00 AM - 12:00 PM	55.4	70.1	45.5
12:00 PM - 01:00 PM	57.4	76.9	46.0
01:00 PM - 02:00 PM	58.2	78.8	45.0
02:00 PM - 03:00 PM	56.6	74.9	47.2
03:00 PM - 04:00 PM	66.2	75.1	63.3
04:00 PM - 05:00 PM	58.4	78.9	49.2
05:00 PM - 06:00 PM	58.7	77.4	48.9
06:00 PM - 07:00 PM	58.6	82.8	47.8
07:00 PM - 08:00 PM	52.6	69.8	47.8
08:00 PM - 09:00 PM	54.0	77.0	50.0
09:00 PM - 10:00 PM	51.2	68.5	48.6
10:00 PM - 11:00 PM	49.5	63.8	47.3
11:00 PM - 12:00 AM	48.4	61.3	47.5
12:00 AM - 01:00 AM	47.1	63.9	45.3
01:00 AM - 02:00 AM	46.1	60.3	44.6
02:00 AM - 03:00 AM	45.6	64.5	42.3
03:00 AM - 04:00 AM	45.9	66.0	43.9
04:00 AM - 05:00 AM	46.4	63.2	44.6
05:00 AM - 06:00 AM	54.3	75.2	47.0
06:00 AM - 07:00 AM	52.8	73.6	45.1

Leq Average 24 hrs. (dB(A)) 57.2  
Lmax (dB(A)) 82.8  
L90 (dB(A)) 47.0  
Ldn (dB(A)) 59.2  
Standard (dB(A)) 70

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

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.



## Analysis / Test Report

TESTING

No.0009

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

**Lot ID: 2259042**

Date Received : Jun 28, 2022

Date Reported : Jul 02, 2022

Report Number : 2364455-1

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 2259042-1  
**Parameter** เสียงรบกวน  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Jun 23, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level Meter** 00672671

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
07:00 AM - 08:00 AM	55.4	52.4	3.0	3.0	52.4	-	46.3	6.1
08:00 AM - 09:00 AM	57.8	52.4	5.4	1.5	56.3	-	46.3	10.0
09:00 AM - 10:00 AM	59.1	52.4	6.7	1.0	58.1	-	46.3	11.8
10:00 AM - 11:00 AM	58.5	52.4	6.1	1.5	57.0	-	46.3	10.7
11:00 AM - 12:00 PM	58.3	52.4	5.9	1.5	56.8	-	46.3	10.5
12:00 PM - 01:00 PM	55.7	52.4	3.3	3.0	52.7	-	46.3	6.4
01:00 PM - 02:00 PM	53.2	52.4	0.8	7.0	46.2	-	46.3	-0.1
02:00 PM - 03:00 PM	53.7	52.4	1.3	7.0	46.7	-	46.3	0.4
03:00 PM - 04:00 PM	52.5	52.4	0.1	7.0	45.5	-	46.3	-0.8
04:00 PM - 05:00 PM	54.1	52.4	1.7	4.5	49.6	-	46.3	3.3
ค่ามาตรฐาน								≤ 10

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

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ เรื่อง ค่าระดับเสียงรบกวน ฉบับที่ 29 พ.ศ. 2550
- ประกาศคณะกรรมการควบคุมมลพิษ เรื่อง วิธีการตรวจวัดระดับเสียงพื้นฐาน ระดับเสียงขณะไม่มีการรบกวน การตรวจวัดและคำนวณระดับเสียงขณะมีการรบกวน การคำนวณค่าระดับการรบกวน และแบบบันทึกการตรวจวัดเสียงรบกวน พ.ศ. 2550 และประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 23 มิถุนายน 2565 (07:00 - 17:00 น.)  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.2259043-1 วันที่ตรวจวัด 23 มิถุนายน 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: 2259042**

Date Received : Jun 28, 2022

Date Reported : Jul 02, 2022

Report Number : 2364456-1

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 2259042-2  
**Parameter** เสียงรบกวน  
**Location** บริเวณเริ่มรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Jun 24, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level Meter** 00672671

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
07:00 AM - 08:00 AM	56.3	50.5	5.8	1.5	54.8	-	45.0	9.8
08:00 AM - 09:00 AM	56.2	50.5	5.7	1.5	54.7	-	45.0	9.7
09:00 AM - 10:00 AM	54.8	50.5	4.3	2.0	52.8	-	45.0	7.8
10:00 AM - 11:00 AM	55.7	50.5	5.2	1.5	54.2	-	45.0	9.2
11:00 AM - 12:00 PM	56.8	50.5	6.3	1.5	55.3	-	45.0	10.3
12:00 PM - 01:00 PM	54.6	50.5	4.1	2.0	52.6	-	45.0	7.6
01:00 PM - 02:00 PM	66.9	50.5	16.4	0.0	66.9	-	45.0	21.9
02:00 PM - 03:00 PM	57.4	50.5	6.9	1.0	56.4	-	45.0	11.4
03:00 PM - 04:00 PM	54.9	50.5	4.4	2.0	52.9	-	45.0	7.9
04:00 PM - 05:00 PM	53.7	50.5	3.2	3.0	50.7	-	45.0	5.7
ค่ามาตรฐาน								≤ 10

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

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ เรื่อง ค่าระดับเสียงรบกวน ฉบับที่ 29 พ.ศ. 2550
- ประกาศคณะกรรมการควบคุมมลพิษ เรื่อง วิธีการตรวจวัดระดับเสียงพื้นฐาน ระดับเสียงขณะไม่มีการรบกวน การตรวจวัดและคำนวณระดับเสียงขณะมีการรบกวน การคำนวณค่าระดับการรบกวน และแบบบันทึกการตรวจวัดเสียงรบกวน พ.ศ. 2550 และประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 24 มิถุนายน 2565 (07:00 - 17:00 น.)  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.2259043-2 วันที่ตรวจวัด 24 มิถุนายน 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: 2259042**

Date Received : Jun 28, 2022

Date Reported : Jul 02, 2022

Report Number : 2364457-1

**P/O :** 4170008459

**Project Name :**

**Project Location :** คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 2259042-3  
**Parameter** เสียงรบกวน  
**Location** บริเวณเริ่มรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)  
**Measurement Date** Jun 25, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level Meter** 00672671

### ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด <sup>(A)</sup>	เสียงขณะ ไม่มีการรบกวน <sup>(B)</sup>	ผลต่าง ระดับเสียง <sup>(A-B)</sup>	ตัวปรับค่า <sup>(C)</sup>	ปรับค่าเสียงจากแหล่งกำเนิด <sup>(B)</sup>		เสียงพื้นฐาน <sup>(E)</sup>	ค่าระดับ การรบกวน <sup>(D-E)</sup>
					กลางวัน <sup>(A-C)</sup>	กลางคืน <sup>(A-C)+3</sup>		
07:00 AM - 08:00 AM	57.8	51.2	6.6	1.0	56.8	-	48.6	8.2
08:00 AM - 09:00 AM	60.2	51.2	9.0	0.5	59.7	-	48.6	11.1
09:00 AM - 10:00 AM	58.4	51.2	7.2	1.0	57.4	-	48.6	8.8
10:00 AM - 11:00 AM	57.0	51.2	5.8	1.5	55.5	-	48.6	6.9
11:00 AM - 12:00 PM	55.4	51.2	4.2	2.0	53.4	-	48.6	4.8
12:00 PM - 01:00 PM	57.4	51.2	6.2	1.5	55.9	-	48.6	7.3
01:00 PM - 02:00 PM	58.2	51.2	7.0	1.0	57.2	-	48.6	8.6
02:00 PM - 03:00 PM	56.6	51.2	5.4	1.5	55.1	-	48.6	6.5
03:00 PM - 04:00 PM	66.2	51.2	15.0	0.0	66.2	-	48.6	17.6
04:00 PM - 05:00 PM	58.4	51.2	7.2	1.0	57.4	-	48.6	8.8
ค่ามาตรฐาน								≤ 10

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

#### มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ เรื่อง ค่าระดับเสียงรบกวน ฉบับที่ 29 พ.ศ. 2550
- ประกาศคณะกรรมการควบคุมมลพิษ เรื่อง วิธีการตรวจวัดระดับเสียงพื้นฐาน ระดับเสียงขณะไม่มีการรบกวน การตรวจวัดและคำนวณระดับเสียงขณะมีการรบกวน การคำนวณค่าระดับการรบกวน และแบบบันทึกการตรวจวัดเสียงรบกวน พ.ศ. 2550 และประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561  
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 25 มิถุนายน 2565 (07:00 - 17:00 น.)  
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.2259043-3 วันที่ตรวจวัด 25 มิถุนายน 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: 2259043**  
Date Received : Jun 28, 2022  
Date Reported : Jul 02, 2022  
Report No. : 2364458-1

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 2259043-1  
**Parameter** Noise  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497) (Shut down)  
**Measurement Date** Jun 23, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level Meter** 00672671

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	55.0	72.6	45.0
06:00 PM - 07:00 PM	56.7	72.3	48.5
07:00 PM - 08:00 PM	53.4	71.8	45.1
08:00 PM - 09:00 PM	52.4	73.7	46.3
09:00 PM - 10:00 PM	51.0	69.2	47.2

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: 2259043**

Date Received : Jun 28, 2022

Date Reported : Jul 02, 2022

Report No. : 2364459-1

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 2259043-2  
**Parameter** Noise  
**Location** บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497) (Shut down)  
**Measurement Date** Jun 24, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level Meter** 00672671

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	56.6	74.3	47.3
06:00 PM - 07:00 PM	57.4	77.0	48.8
07:00 PM - 08:00 PM	52.0	72.9	44.8
08:00 PM - 09:00 PM	50.5	71.7	45.0
09:00 PM - 10:00 PM	52.6	79.9	44.7

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: 2259043**

Date Received : Jun 28, 2022

Date Reported : Jul 02, 2022

Report No. : 2364460-1

**P/O** : 4170008459

**Project Name** :

**Project Location** : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

**Sample No.** 2259043-3  
**Parameter** Noise  
**Location** บริเวณเริ่มรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497) (Shut down)  
**Measurement Date** Jun 25, 2022  
**Measurement by** Yongsil Rangsee  
**Sound Level Meter** 00672671

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	58.7	77.4	48.9
06:00 PM - 07:00 PM	58.6	82.8	47.8
07:00 PM - 08:00 PM	52.6	69.8	47.8
08:00 PM - 09:00 PM	54.0	77.0	50.0
09:00 PM - 10:00 PM	51.2	68.5	48.6

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

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

Approved by

Kanokkorn Anek  
Senior Manager



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนมกราคมถึงมิถุนายน 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 แห่งที่2

**Lot ID: 2251918**

Date Received : May 26, 2022

Date Reported : Jun 01, 2022

Report Number : 2331089-1

Page 1 of 1

<b>Sample Number</b>	2251918-1
<b>Sampled Date</b>	May 25, 2022 10:50 AM
<b>Sample Description</b>	น้ำทิ้งจากพื้นที่ทิ้งตะกอนดิน
<b>Location</b>	บริเวณบ่อพักน้ำทิ้งก่อนระบายออกสู่ระบบน้ำสาธารณะ
<b>Date Analysis Commenced</b>	May 27, 2022
<b>Condition of Sample</b>	Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
<b>Metals Testing</b>							
Arsenic	mg/L	0.001	0.005	<0.005	≤0.25	Based on APHA (2017), 3125	Songkhla
<b>Water Testing</b>							
pH at 25 degree C		-	-	7.4	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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนมกราคมถึงมิถุนายน 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 17 พฤษภาคม 2565)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	2251914-1	2251914-2	2251914-3
<b>Division Cyanophyta</b>			
<b>Class Cyanophyceae</b>			
<b>Order Nostocales</b>			
<b>Family Oscillatoriaceae</b>			
1. <i>Oscillatoria</i> sp.	164,000	78,000	32,000
2. <i>Oscillatoria tenuis</i>	-	-	11,000
<b>Family Nostocaceae</b>			
3. <i>Raphidiopsis</i> sp.	44,000	20,000	-
<b>Division Chlorophyta</b>			
<b>Class Chlorophyceae</b>			
<b>Order Chlorococcales</b>			
<b>Family Hydrodictyaceae</b>			
4. <i>Pediastrum duplex</i>	11,000	-	-
5. <i>Pediastrum simplex</i>	33,000	-	21,000

**ตาราง ผลการวิเคราะห์แฟลงก์ตอนพืช** (เก็บตัวอย่างวันที่ 17 พฤษภาคม 2565)

(ต่อ)

ชนิดแฟลงก์ตอนพืช	ปริมาณแฟลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	2251914-1	2251914-2	2251914-3
<b>Family Coelastraceae</b>			
6. <i>Coelastrum microporum</i>	11,000	-	-
<b>Family Scenedesmaceae</b>			
7. <i>Scenedesmus acuminatus</i>	44,000	-	-
8. <i>Scenedesmus dimorphus</i>	-	69,000	21,000
9. <i>Scenedesmus opoliensis</i>	55,000	206,000	42,000
<b>Order Ulotrichales</b>			
<b>Family Ulotrichaceae</b>			
10. <i>Geminella</i> sp.	44,000	-	-
<b>Order Zygomatales</b>			
<b>Family Desmidiaceae</b>			
11. <i>Closterium acerosum</i>	-	20,000	127,000
12. <i>Closterium kuetzingii</i>	-	10,000	21,000
13. <i>Cosmarium nudum</i>	-	49,000	-
14. <i>Staurastrum freemanii</i>	11,000	-	-
15. <i>Staurastrum limneticum</i>	33,000	-	21,000
16. <i>Staurastrum</i> sp.	-	-	84,000
<b>Class Euglenophyceae</b>			
<b>Order Euglenales</b>			
<b>Family Euglenaceae</b>			
17. <i>Euglena acus</i>	44,000	69,000	-
18. <i>Euglena oxyuris</i>	33,000	-	-
19. <i>Euglena</i> sp.	33,000	-	-
20. <i>Euglena viridis</i>	-	127,000	-
21. <i>Lepocinclis ovum</i>	66,000	-	42,000
22. <i>Phacus angulatus</i>	88,000	29,000	-
23. <i>Phacus hamatus</i>	22,000	-	-

**ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช** (เก็บตัวอย่างวันที่ 17 พฤษภาคม 2565)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	2251914-1	2251914-2	2251914-3
24. <i>Phacus myersi</i>	-	20,000	-
25. <i>Phacus platalea</i>	-	-	32,000
26. <i>Phacus</i> sp.	44,000	20,000	-
27. <i>Phacus suecicus</i>	11,000	-	-
28. <i>Phacus tortus</i>	33,000	-	-
29. <i>Strombomonas australica</i>	-	10,000	-
30. <i>Strombomonas gibberosa</i>	-	10,000	-
31. <i>Strombomonas girardiana</i>	55,000	196,000	53,000
32. <i>Trachelomonas crebea</i>	22,000	69,000	-
33. <i>Trachelomonas hispida</i>	131,000	59,000	74,000
34. <i>Trachelomonas volzii</i>	22,000	-	-
<b>Division Chromophyta</b>			
<b>Class Bacillariophyceae</b>			
<b>Order Biddulphiales</b>			
<b>Suborder Coscinodiscineae</b>			
<b>Family Thalassiosiraceae</b>			
35. <i>Cyclotella stelligera</i>	219,000	314,000	84,000
36. <i>Planktoniella sol</i>	11,000	-	-
<b>Family Aulacoseiraceae</b>			
37. <i>Aulacoseira baicalensis</i>	22,000	39,000	-
<b>Suborder Biddulphiineae</b>			
<b>Family Eupodiscaceae</b>			
38. <i>Odontella sinensis</i>	66,000	69,000	42,000
<b>Order Bacillariales</b>			
<b>Suborder Fragilariineae</b>			
<b>Family Fragilariaceae</b>			
39. <i>Diatoma tenue</i>	657,000	274,000	63,000

**ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช** (เก็บตัวอย่างวันที่ 17 พฤษภาคม 2565)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	2251914-1	2251914-2	2251914-3
40. <i>Fragilaria capucina</i>	-	29,000	-
41. <i>Synedra acus</i>	55,000	-	11,000
42. <i>Synedra ulna</i>	175,000	39,000	32,000
<b>Family Tabellariaceae</b>			
43. <i>Tabellaria fenestrata</i>	110,000	-	32,000
<b>Suborder Bacillariineae</b>			
<b>Family Eunotiaceae</b>			
44. <i>Eunotia pectinalis</i>	131,000	69,000	-
<b>Family Achnanthaceae</b>			
45. <i>Achnanthes inflata</i>	-	-	63,000
<b>Family Cymbellaceae</b>			
46. <i>Cymbella cuspidata</i>	-	20,000	-
47. <i>Cymbella sumatraensis</i>	22,000	-	-
48. <i>Cymbella tumida</i>	88,000	29,000	-
49. <i>Cymbella turgida</i>	11,000	-	-
50. <i>Gomphonema parvulum</i>	77,000	10,000	-
<b>Family Naviculaceae</b>			
51. <i>Amphora</i> sp.	33,000	29,000	42,000
52. <i>Diploneis bombus</i>	11,000	-	-
53. <i>Gyrosigma attenuatum</i>	77,000	59,000	11,000
54. <i>Gyrosigma balticum</i>	-	-	11,000
55. <i>Gyrosigma distortum</i>	-	-	11,000
56. <i>Navicula cuspidata</i>	-	-	11,000
57. <i>Navicula lanceolata</i>	66,000	39,000	-
58. <i>Pinnularia viridis</i>	22,000	39,000	11,000
59. <i>Pleurosigma angulatum</i>	22,000	-	32,000

**ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช** (เก็บตัวอย่างวันที่ 17 พฤษภาคม 2565)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	2251914-1	2251914-2	2251914-3
<b>Family Bacillariaceae</b>			
60. <i>Nitzschia lorenziana</i>	22,000	108,000	-
61. <i>Nitzschia sigmoidea</i>	77,000	118,000	-
62. <i>Nitzschia</i> sp.	11,000	29,000	-
<b>Family Surirellaceae</b>			
63. <i>Surirella elegans</i>	-	39,000	11,000
64. <i>Surirella linearis</i>	88,000	39,000	21,000
65. <i>Surirella ovata</i>	77,000	20,000	32,000
66. <i>Surirella robusta</i>	44,000	10,000	42,000
67. <i>Surirella tenera</i>	-	29,000	32,000
<b>Class Chrysophyceae</b>			
<b>Order Synurales</b>			
<b>Family Mallomonadaceae</b>			
68. <i>Mallomonas litomesa</i>	55,000	-	-
<b>Class Dinophyceae</b>			
<b>Order Gonyaulacales</b>			
<b>Family Ceratiaceae</b>			
69. <i>Ceratium hirundinella</i>	-	10,000	-
<b>Order Peridiniales</b>			
<b>Family Peridiniaceae</b>			
70. <i>Peridinium gatunense</i>	-	20,000	-
71. <i>Peridinium</i> sp.	44,000	-	-
<b>ชนิดแพลงก์ตอนพืช</b>	<b>50</b>	<b>41</b>	<b>32</b>
<b>ปริมาณแพลงก์ตอนพืช</b>	<b>3,347,000</b>	<b>2,541,000</b>	<b>1,175,000</b>
<b>ดัชนีความหลากหลายแพลงก์ตอนพืช</b>	<b>3.3889</b>	<b>3.2624</b>	<b>3.2371</b>
<b>ดัชนีความสม่ำเสมอแพลงก์ตอนพืช</b>	<b>0.8663</b>	<b>0.8785</b>	<b>0.9340</b>


**Sample Location :**

1. สถานี 2251914-1 : บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร
2. สถานี 2251914-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
3. สถานี 2251914-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

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



(นางสาวกนกวรรณ ขาวด่อน)  
ผู้วิเคราะห์



(นายอลงกต อินทรชาติ)  
หัวหน้าสถานีวิจัยประมงศรีราชา

## รายงานผลการวิเคราะห์แพลงก์ตอนพืช (Phytoplankton)

### 1. สถานี 2251914-1 : บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร

ทำการเก็บตัวอย่างแพลงก์ตอนเมื่อวันที่ 17 พฤษภาคม 2565 จากการศึกษาวิเคราะห์ตัวอย่างพบแพลงก์ตอนพืชใน Division Cyanophyta จำนวน 2 ชนิด ใน Division Chlorophyta จำนวน 21 ชนิด และใน Division Chromophyta จำนวน 27 ชนิด รวมทั้งหมด 50 ชนิด มีปริมาณ 3,347,000 หน่วยต่อลูกบาศก์เมตร แพลงก์ตอนพืชที่พบมากที่สุดคือ *Diatoma tenue* มีค่าดัชนีความหลากหลายของแพลงก์ตอนพืชเท่ากับ 3.3889 และมีค่าดัชนีความสม่ำเสมอของแพลงก์ตอนพืชเท่ากับ 0.8663 รายละเอียดชนิดและปริมาณแพลงก์ตอนพืช ดังแสดงไว้ในตาราง

### 2. สถานี 2251914-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.

ทำการเก็บตัวอย่างแพลงก์ตอนเมื่อวันที่ 17 พฤษภาคม 2565 จากการศึกษาวิเคราะห์ตัวอย่างพบแพลงก์ตอนพืชใน Division Cyanophyta จำนวน 2 ชนิด ใน Division Chlorophyta จำนวน 15 ชนิด และใน Division Chromophyta จำนวน 24 ชนิด รวมทั้งหมด 41 ชนิด มีปริมาณ 2,541,000 หน่วยต่อลูกบาศก์เมตร แพลงก์ตอนพืชที่พบมากที่สุดคือ *Cyclotella stelligera* มีค่าดัชนีความหลากหลายของแพลงก์ตอนพืชเท่ากับ 3.2624 และมีค่าดัชนีความสม่ำเสมอของแพลงก์ตอนพืชเท่ากับ 0.8785 รายละเอียดชนิดและปริมาณแพลงก์ตอนพืช ดังแสดงไว้ในตาราง

### 3. สถานี 2251914-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

ทำการเก็บตัวอย่างแพลงก์ตอนเมื่อวันที่ 17 พฤษภาคม 2565 จากการศึกษาวิเคราะห์ตัวอย่างพบแพลงก์ตอนพืชใน Division Cyanophyta จำนวน 2 ชนิด ใน Division Chlorophyta จำนวน 11 ชนิด และใน Division Chromophyta จำนวน 19 ชนิด รวมทั้งหมด 32 ชนิด มีปริมาณ 1,175,000 หน่วยต่อลูกบาศก์เมตร แพลงก์ตอนพืชที่พบมากที่สุดคือ *Closterium acerosum* มีค่าดัชนีความหลากหลายของแพลงก์ตอนพืชเท่ากับ 3.2371 และมีค่าดัชนีความสม่ำเสมอของแพลงก์ตอนพืชเท่ากับ 0.9340 รายละเอียดชนิดและปริมาณแพลงก์ตอนพืช ดังแสดงไว้ในตาราง



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 17 พฤษภาคม 2565)

ชนิดแพลงก์ตอนสัตว์	ปริมาณแพลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)		
	2251914-1	2251914-2	2251914-3
<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.	33,000	10,000	11,000
2. <i>Arcella vulgaris</i>	33,000	10,000	11,000
<b>Family Diffugiidae</b>			
3. <i>Centropyxis aculeata</i>	11,000	-	-
4. <i>Diffugia acuminata</i>	11,000	10,000	42,000
<b>Family Euglyphidae</b>			
5. <i>Euglypha acanthophora</i>	22,000	-	32,000
6. <i>Euglypha rotunda</i>	22,000	10,000	11,000

ตาราง ผลการวิเคราะห์แฟลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 17 พฤษภาคม 2565)

(ต่อ)

ชนิดแฟลงก์ตอนสัตว์	ปริมาณแฟลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)		
	2251914-1	2251914-2	2251914-3
<b>Subphylum Ciliophora</b> <b>Class Ciliata</b> <b>Subclass Holotricha</b> <b>Order Gymnostomatida</b> 7. <i>Coleps</i> sp. 22,000 - 11,000 8. <i>Didinium</i> sp. - 20,000 11,000 <b>Subclass Spirotricha</b> <b>Order Tintinnida</b> <b>Family Codonellidae</b> 9. <i>Tintinnopsis tocantinensis</i> 11,000 - -			
<b>Phylum Rotifera</b> <b>Class Monogononta</b> <b>Order Ploima</b> <b>Family Brachionidae</b> 10. <i>Anuraeopsis fissa</i> - 10,000 11,000 <b>Family Notommatidae</b> 11. <i>Cephalodella gibba</i> 22,000 - - <b>Family Tricocercidae</b> 12. <i>Trichocerca pusilla</i> - - 11,000 <b>Family Synchaetidae</b> 13. <i>Polyarthra dolichoptera</i> - 10,000 -			
ชนิดแฟลงก์ตอนสัตว์	9	7	9
ปริมาณแฟลงก์ตอนสัตว์	187,000	80,000	151,000
ดัชนีความหลากหลายแฟลงก์ตอนสัตว์	2.1193	1.9062	2.0204
ดัชนีความสม่ำเสมอแฟลงก์ตอนสัตว์	0.9645	0.9796	0.9195


**Sample Location :**

1. สถานี 2251914-1 : บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร
2. สถานี 2251914-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
3. สถานี 2251914-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

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



(นางสาวกนกวรรณ ขาวด่อน)  
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 เป็นค่าที่บอกถึงความสามารถในการผลิตของผู้ผลิตขั้นปฐมในแหล่งน้ำ 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 17 พฤษภาคม 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 2251915-1</b> บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือปตท. 500 เมตร	82.10	32.84	54.73
<b>Lot 2251915-2</b> บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือปตท.	109.47	65.68	54.73
<b>Lot 2251915-3</b> บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือปตท. 500 เมตร	54.73	35.70	29.75

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

จากการวิเคราะห์ค่าผลผลิตเบื้องต้นบริเวณคลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2 เก็บตัวอย่างมาเมื่อวันที่ 17 พฤษภาคม 2565 ซึ่งค่าผลผลิตเบื้องต้นแสดงในรูปค่าของ Gross production โดยมีค่าอยู่ระหว่าง 54.73-109.47 mgC/m<sup>3</sup>/hr ดังแสดงไว้ในตาราง สถานีที่มีผลผลิตเบื้องต้นมากที่สุด คือ สถานี Lot 2251915-2 (บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือปตท.) ซึ่งมีค่าผลผลิตเบื้องต้น 109.47 mgC/m<sup>3</sup>/hr ส่วนสถานีที่มีผลผลิตเบื้องต้นน้อยที่สุด คือ สถานี Lot 2251915-3 (บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือปตท. 500 เมตร) ซึ่งมีค่าผลผลิตเบื้องต้น 54.73 mgC/m<sup>3</sup>/hr ซึ่งปัจจัยที่มีผลต่อการเพิ่มขึ้นหรือลดลงของผลผลิตเบื้องต้นนี้ ได้แก่ ปริมาณของแพลงก์ตอนพืช แพลงก์ตอนสัตว์ อุณหภูมิ และปริมาณแสง ซึ่งจะมีผลต่อกระบวนการสังเคราะห์แสงของแพลงก์ตอนพืชในน้ำนั่นเอง

  
.....

(นางสาวกนกวรรณ ขวต่อน)  
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 17 พฤษภาคม 2565)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)		
	2251917-1	2251917-2	2251917-3
<b>Phylum Annelida</b>			
<b>Class Polychaeta</b>			
<b>Order Capitellida</b>			
<b>Family Capitellidae</b>			
<i>Heteromastus</i> sp. (ไส้เดือนทะเล)	-	15	-
<b>Order Eunicida</b>			
<b>Family Onuphidae</b>			
<i>Diopatra</i> sp. (ไส้เดือนทะเล)	-	-	15
<b>Order Phyllodocida</b>			
<b>Family Nephtyidae</b>			
<i>Nephtys</i> sp. (ไส้เดือนทะเล)	45	-	-
<b>Phylum Arthropoda</b>			
<b>Class Malacostraca</b>			
<b>Order Decapoda</b>			
<b>Family Penaeidae</b>			
<i>Metapenaeus</i> sp. (กุ้งชนิดหนึ่ง)	-	-	15

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 17 พฤษภาคม 2565)

(ต่อ)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)		
	2251917-1	2251917-2	2251917-3
<b>Phylum Mollusca</b> <b>Class Gastropoda</b> <b>Order Littorinimorpha</b> <b>Family Littorinidae</b> <i>Littoraria</i> sp. (หอยก้นแหลม)	-	15	-
<b>Class Bivalvia</b> <b>Order Cardiida</b> <b>Family Tellinidae</b> <i>Tellina</i> sp. (หอยสองฝาชนิดหนึ่ง)	-	-	15
ชนิดสัตว์หน้าดิน	1	2	3
ปริมาณสัตว์หน้าดิน	45	30	45
ค่าดัชนีความหลากหลายสัตว์หน้าดิน	0.0000	0.6931	1.0986

**Sample Location :** 1. สถานี 2251917-1 : บริเวณแม่น้ำตาปีเหนือ น้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร  
 2. สถานี 2251917-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.  
 3. สถานี 2251917-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

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

อรรถวุฒิ กันทะวงศ์

(นายอรรถวุฒิ กันทะวงศ์)

ผู้วิเคราะห์

อ. อธิชา

(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนมกราคมถึงมิถุนายน 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: 2251913**

Date Received : May 18, 2022

Date Reported : May 24, 2022

Report Number : 2299618-1

Page 1 of 3

<b>Sample Number</b>	2251913-1
<b>Sampled Date</b>	May 17, 2022 10:01 AM
<b>Sample Description</b>	น้ำผิวดิน
<b>Location</b>	บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร
<b>Date Analysis Commenced</b>	May 18, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle, two BOD bottles 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	-	-	2400.0	≤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	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		-	-	7.3	5.0-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	166	No Standard	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	62	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.

Approved by

*Chompoonuch F.*

Chompoonuch Funtha  
Scientist (4)

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

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2251913**

Date Received : May 18, 2022

Date Reported : May 24, 2022

Report Number : 2299618-1

Page 2 of 3

<b>Sample Number</b>	2251913-2
<b>Sampled Date</b>	May 17, 2022 10:15 AM
<b>Sample Description</b>	น้ำผิวดิน
<b>Location</b>	บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
<b>Date Analysis Commenced</b>	May 18, 2022
<b>Condition of Sample</b>	Contained in one amber glass bottle, two BOD bottles 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	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		-	-	7.3	5.0-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	200	No Standard	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	60	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.

Approved by

Chompoonuch F.

Chompoonuch Funtha  
Scientist (4)

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

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2251913**

Date Received : May 18, 2022

Date Reported : May 24, 2022

Report Number : 2299618-1

Page 3 of 3

<b>Sample Number</b>	2251913-3						
<b>Sampled Date</b>	May 17, 2022 10:21 AM						
<b>Sample Description</b>	น้ำผิวดิน						
<b>Location</b>	บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร						
<b>Date Analysis Commenced</b>	May 18, 2022						
<b>Condition of Sample</b>	Contained in one amber glass bottle, two BOD bottles 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	-	-	7900.0	≤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		-	-	7.4	5.0-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	120	No Standard	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	88	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.

Approved by

Chompoonuch F.

Chompoonuch Funtha  
Scientist (4)

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

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม  
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนมกราคมถึงมิถุนายน 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: 227171**

Date Received : Jan 20, 2022

Date Reported : Jan 26, 2022

Report Number : 2216023-1

Page 1 of 1

<b>Sample Number</b>	227171-1
<b>Sampled Date</b>	Jan 19, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jan 20, 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	-	-	29.4	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	106	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227171**

Date Received : Jan 20, 2022

Date Reported : Jan 26, 2022

Report Number : 2216023-2

Page 1 of 1

<b>Sample Number</b>	227171-1
<b>Sampled Date</b>	Jan 19, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jan 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 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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227171**

Date Received : Jan 20, 2022

Date Reported : Jan 26, 2022

Report Number : 2216024-1

Page 1 of 1

<b>Sample Number</b>	227171-2
<b>Sampled Date</b>	Jan 19, 2022 11:10 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jan 20, 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		-	-	7.6	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	99	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227171**

Date Received : Jan 20, 2022

Date Reported : Jan 26, 2022

Report Number : 2216024-2

Page 1 of 1

<b>Sample Number</b>	227171-2						
<b>Sampled Date</b>	Jan 19, 2022 11:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำอเนกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Jan 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 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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227171**

Date Received : Jan 20, 2022

Date Reported : Jan 26, 2022

Report Number : 2216025-1

Page 1 of 1

<b>Sample Number</b>	227171-3
<b>Sampled Date</b>	Jan 19, 2022 11:25 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jan 20, 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		-	-	7.6	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	107	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227171**

Date Received : Jan 20, 2022

Date Reported : Jan 26, 2022

Report Number : 2216025-2

Page 1 of 1

<b>Sample Number</b>	227171-3
<b>Sampled Date</b>	Jan 19, 2022 11:25 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jan 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 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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227176**

Date Received : Feb 22, 2022

Date Reported : Mar 02, 2022

Report Number : 2246137-1

Page 1 of 1

<b>Sample Number</b>	227176-1
<b>Sampled Date</b>	Feb 21, 2022 3:00 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Feb 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	4	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	12	≤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		-	-	8.1	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	138	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227176**

Date Received : Feb 22, 2022

Date Reported : Feb 28, 2022

Report Number : 2246137-2

Page 1 of 1

<b>Sample Number</b>	227176-1						
<b>Sampled Date</b>	Feb 21, 2022 3:00 PM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Feb 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	1.2	≤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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227176**

Date Received : Feb 22, 2022

Date Reported : Mar 02, 2022

Report Number : 2246138-1

Page 1 of 1

<b>Sample Number</b>	227176-2
<b>Sampled Date</b>	Feb 21, 2022 3:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Feb 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	4	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	14	≤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	-	-	30.1	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	200	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227176**

Date Received : Feb 22, 2022

Date Reported : Feb 28, 2022

Report Number : 2246138-2

Page 1 of 1

<b>Sample Number</b>	227176-2						
<b>Sampled Date</b>	Feb 21, 2022 3:20 PM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Feb 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	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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227176**

Date Received : Feb 22, 2022

Date Reported : Mar 02, 2022

Report Number : 2246139-1

Page 1 of 1

<b>Sample Number</b>	227176-3
<b>Sampled Date</b>	Feb 21, 2022 3:35 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Feb 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	3	≤20	Based on APHA (2017), 5210 B	Songkhla
COD	mg/L	-	5	15	≤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		-	-	8.1	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	29.0	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	222	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 227176**

Date Received : Feb 22, 2022

Date Reported : Feb 28, 2022

Report Number : 2246139-2

Page 1 of 1

<b>Sample Number</b>	227176-3
<b>Sampled Date</b>	Feb 21, 2022 3:35 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Feb 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	1.2	≤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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2220555**

Date Received : Mar 17, 2022

Date Reported : Mar 23, 2022

Report Number : 2268882-1

Page 1 of 1

<b>Sample Number</b>	2220555-1
<b>Sampled Date</b>	Mar 16, 2022 11:50 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Mar 17, 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	21	≤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	-	-	29.1	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	96	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2220555**

Date Received : Mar 17, 2022

Date Reported : Mar 23, 2022

Report Number : 2268882-2

Page 1 of 1

<b>Sample Number</b>	2220555-1						
<b>Sampled Date</b>	Mar 16, 2022 11:50 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Mar 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>							
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 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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2220555**

Date Received : Mar 17, 2022

Date Reported : Mar 23, 2022

Report Number : 2268883-1

Page 1 of 1

<b>Sample Number</b>	2220555-2
<b>Sampled Date</b>	Mar 16, 2022 12:10 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Mar 17, 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		-	-	8.7	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	88	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2220555**

Date Received : Mar 17, 2022

Date Reported : Mar 23, 2022

Report Number : 2268883-2

Page 1 of 1

<b>Sample Number</b>	2220555-2
<b>Sampled Date</b>	Mar 16, 2022 12:10 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Mar 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>							
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 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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2220555**

Date Received : Mar 17, 2022

Date Reported : Mar 23, 2022

Report Number : 2268884-1

Page 1 of 1

<b>Sample Number</b>	2220555-3
<b>Sampled Date</b>	Mar 16, 2022 12:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Mar 17, 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	9	≤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		-	-	8.7	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	91	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2220555**

Date Received : Mar 17, 2022

Date Reported : Mar 23, 2022

Report Number : 2268884-2

Page 1 of 1

<b>Sample Number</b>	2220555-3
<b>Sampled Date</b>	Mar 16, 2022 12:20 PM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Mar 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>							
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 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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2227646**

Date Received : Apr 21, 2022

Date Reported : Apr 27, 2022

Report Number : 2296984-1

Page 1 of 1

<b>Sample Number</b>	2227646-1
<b>Sampled Date</b>	Apr 20, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Apr 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		-	-	8.4	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	97	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2227646**

Date Received : Apr 21, 2022

Date Reported : Apr 27, 2022

Report Number : 2296984-2

Page 1 of 1

<b>Sample Number</b>	2227646-1						
<b>Sampled Date</b>	Apr 20, 2022 11:00 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Apr 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

Narin Saiseng  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2227646**

Date Received : Apr 21, 2022

Date Reported : Apr 27, 2022

Report Number : 2296985-1

Page 1 of 1

<b>Sample Number</b>	2227646-2
<b>Sampled Date</b>	Apr 20, 2022 11:10 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Apr 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	-	-	31.0	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	144	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2227646**

Date Received : Apr 21, 2022

Date Reported : Apr 27, 2022

Report Number : 2296985-2

Page 1 of 1

<b>Sample Number</b>	2227646-2						
<b>Sampled Date</b>	Apr 20, 2022 11:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Apr 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

Narin Saiseng  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2227646**

Date Received : Apr 21, 2022

Date Reported : Apr 27, 2022

Report Number : 2296986-1

Page 1 of 1

<b>Sample Number</b>	2227646-3
<b>Sampled Date</b>	Apr 20, 2022 11:20 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Apr 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		-	-	8.2	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	134	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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.

Technical Management

*Sutthirak T.*

Sutthirak Tiprat

Scientist (1)

ทะเบียนเลขที่ ว-267-จ-7299

Approved by

*Kanitta H.*

Kanitta Hemprasatporn

Supervisor

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2227646**

Date Received : Apr 21, 2022

Date Reported : Apr 27, 2022

Report Number : 2296986-2

Page 1 of 1

<b>Sample Number</b>	2227646-3						
<b>Sampled Date</b>	Apr 20, 2022 11:20 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Apr 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

Narin Saiseng  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2243229**

Date Received : May 26, 2022

Date Reported : Jun 01, 2022

Report Number : 2330802-1

Page 1 of 1

<b>Sample Number</b>	2243229-1
<b>Sampled Date</b>	May 25, 2022 11:00 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	May 26, 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		-	-	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	132	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068

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

Life Sciences

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2243229**

Date Received : May 26, 2022

Date Reported : Jun 01, 2022

Report Number : 2330802-2

Page 1 of 1

<b>Sample Number</b>	2243229-1						
<b>Sampled Date</b>	May 25, 2022 11:00 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	May 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>							
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

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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2243229**

Date Received : May 26, 2022

Date Reported : Jun 01, 2022

Report Number : 2330803-1

Page 1 of 1

<b>Sample Number</b>	2243229-2
<b>Sampled Date</b>	May 25, 2022 11:10 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	May 26, 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		-	-	8.2	5.5-9.0	Based on APHA (2017), 4500-H (B)	Songkhla
Temperature *	Degree C	-	-	29.7	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	142	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068

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

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2243229**

Date Received : May 26, 2022

Date Reported : Jun 01, 2022

Report Number : 2330803-2

Page 1 of 1

<b>Sample Number</b>	2243229-2						
<b>Sampled Date</b>	May 25, 2022 11:10 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	May 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>							
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

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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2243229**

Date Received : May 26, 2022

Date Reported : Jun 01, 2022

Report Number : 2330804-1

Page 1 of 1

<b>Sample Number</b>	2243229-3
<b>Sampled Date</b>	May 25, 2022 11:20 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	May 26, 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	12	≤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	-	-	29.5	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C *	mg/L	-	5	68	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2243229**

Date Received : May 26, 2022

Date Reported : Jun 01, 2022

Report Number : 2330804-2

Page 1 of 1

<b>Sample Number</b>	2243229-3						
<b>Sampled Date</b>	May 25, 2022 11:20 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	May 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>							
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

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

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2261186**

Date Received : Jun 21, 2022

Date Reported : Jun 27, 2022

Report Number : 2358299-1

Page 1 of 1

<b>Sample Number</b>	2261186-1
<b>Sampled Date</b>	Jun 20, 2022 10:30 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 1 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jun 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	15	≤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	-	-	29.4	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	71	≤3000	APHA (2017), 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤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

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2261186**

Date Received : Jun 21, 2022

Date Reported : Jun 27, 2022

Report Number : 2358299-2

Page 1 of 1

<b>Sample Number</b>	2261186-1						
<b>Sampled Date</b>	Jun 20, 2022 10:30 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Jun 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

Narin Saiseng  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2261186**

Date Received : Jun 21, 2022

Date Reported : Jun 27, 2022

Report Number : 2358300-1

Page 1 of 1

<b>Sample Number</b>	2261186-2
<b>Sampled Date</b>	Jun 20, 2022 10:40 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 2 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jun 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	15	≤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	-	-	29.6	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	232	≤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

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2261186**

Date Received : Jun 21, 2022

Date Reported : Jun 27, 2022

Report Number : 2358300-2

Page 1 of 1

<b>Sample Number</b>	2261186-2						
<b>Sampled Date</b>	Jun 20, 2022 10:40 AM						
<b>Sample Description</b>	Wastewater						
<b>Location</b>	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
<b>Date Analysis Commenced</b>	Jun 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

Narin Saiseng  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2261186**

Date Received : Jun 21, 2022

Date Reported : Jun 27, 2022

Report Number : 2358301-1

Page 1 of 1

<b>Sample Number</b>	2261186-3
<b>Sampled Date</b>	Jun 20, 2022 10:50 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jun 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	12	≤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	-	-	29.8	≤40	Based on APHA (2017), 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	126	≤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

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.

ADDRESS 114/1 Moo 8 Karnchanawanich Road T. Ban Phru A. Hat Yai Songkhla 90250 Thailand | PHONE +66 0 7489 5060 | FAX +66 0 7489 5068  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



## 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: 2261186**

Date Received : Jun 21, 2022

Date Reported : Jun 27, 2022

Report Number : 2358301-2

Page 1 of 1

<b>Sample Number</b>	2261186-3
<b>Sampled Date</b>	Jun 20, 2022 10:50 AM
<b>Sample Description</b>	Wastewater
<b>Location</b>	น้ำมันแยกไข 3 (คปสร) คลังใหม่
<b>Date Analysis Commenced</b>	Jun 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

Narin Saiseng  
Supervisor

ทะเบียนเลขที่ ว-204-จ-4715

Approved by

Kanokkorn Anek  
Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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.

ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand | PHONE +66 0 2760 3000 | FAX +66 0 2760 3197  
ALS LABORATORY GROUP (THAILAND) CO., LTD. An ALS Limited Company

Life Sciences

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER