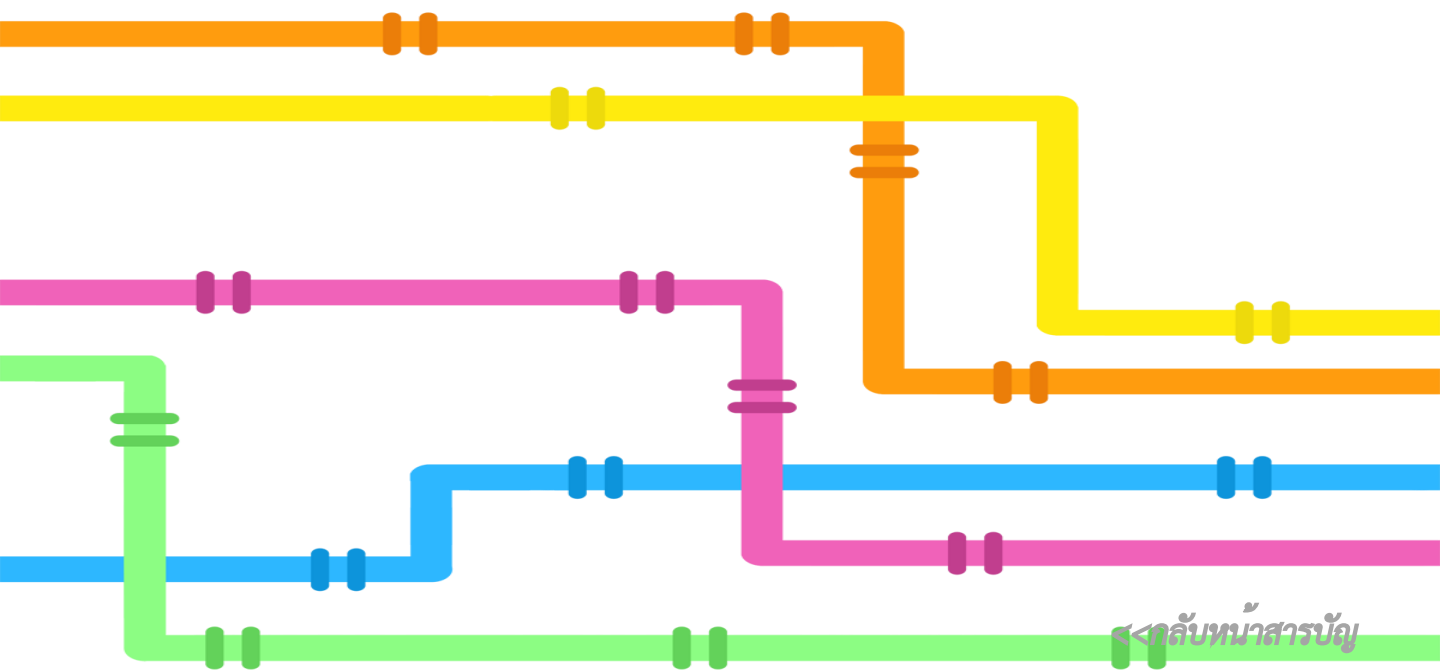


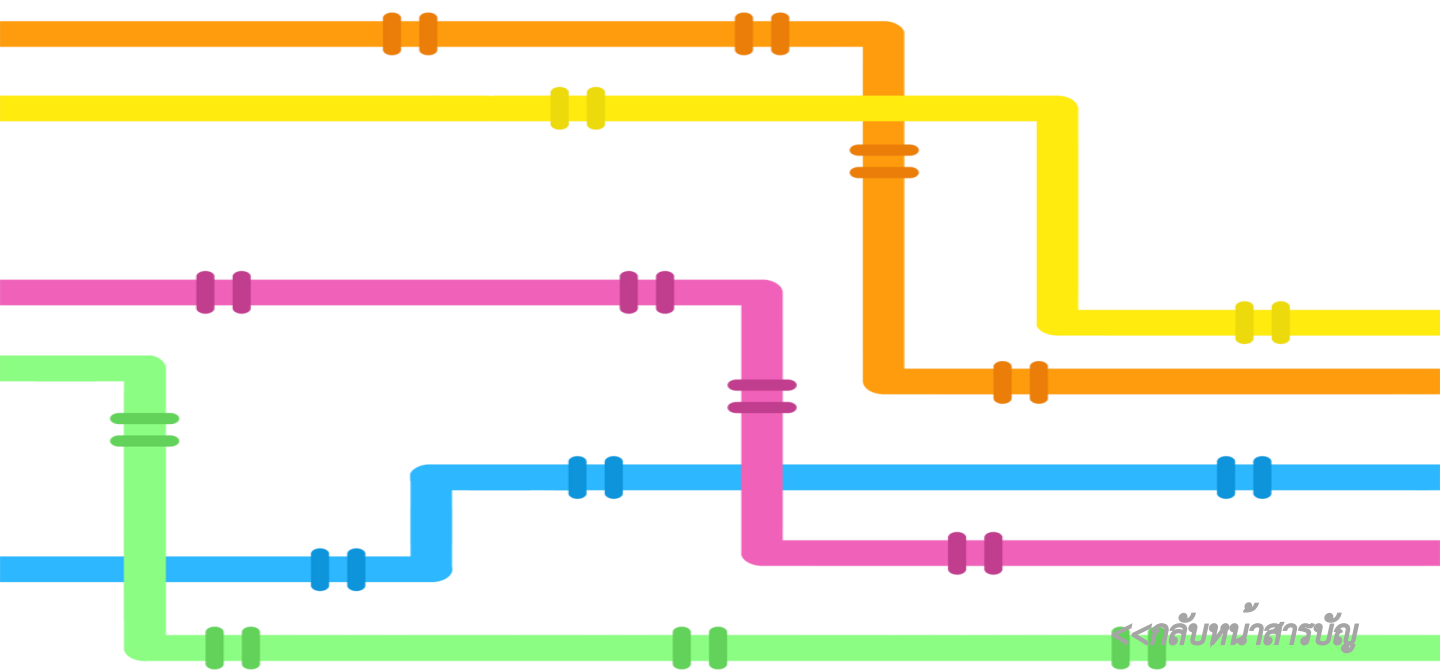
ภาคผนวก 4



ภาคผนวก 4.1-1

ผลการติดตามตรวจสอบ

ด้านนิเวศวิทยาทางทะเล ระยะดำเนินการ



1-2566

นิเวศวิทยาทางทะเล

ANALYSIS REPORT

PROJECT NAME : THE NONG FAB JETTY DEVELOPMENT AND LNG RECEIVING TERMINAL PROJECT IN OPERATION PHASE
CUSTOMER NAME : PTT LNG COMPANY LIMITED
ADDRESS : 8/2 RONG PUI ROAD MAP TA PHUT MUEANG RAYONG RAYONG 21150
CONTACT INFORMATION : TEL : 0 3897 8200 e-mail : dan.s@pttlng.com
SAMPLING SOURCE : -
SAMPLE TYPE : SEAWATER
SAMPLING DATE : APRIL 25, 2023
SAMPLING TIME : *
SAMPLING METHOD : PLANKTON NET
SAMPLING BY : MR ANUSART SUAYDEE
ANALYZED BY : MISS NAPAPORN PURATAKO

RECEIVED DATE : APRIL 26, 2023
ANALYTICAL DATE : APRIL 26-MAY 11, 2023
REPORT NO. : 2023-U036793
WORK NO. : 2022-009414
ANALYSIS NO. : T23AH355-0007 - T23AH355-0010

PHYTOPLANKTON (Natural Units/mL)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 13:05 HOUR * T23AH355-0007	SAMPLE NO. 2 12:20 HOUR * T23AH355-0008	SAMPLE NO. 3 13:45 HOUR * T23AH355-0009	SAMPLE NO. 4 10:35 HOUR * T23AH355-0010
Division Cyanophyta					
Class Cyanophyceae					
Family Oscillatoriaceae					
<i>Oscillatoria</i> spp.	FILAMENT	0	0	0	317
Family Nostocaceae					
<i>Richelia intracellularis</i>	FILAMENT	16	0	0	26
Division Chromophyta					
Class Bacillariophyceae					
Family Thalassiosiraceae					
<i>Lauderia annulata</i>	FILAMENT	0	0	0	62
<i>Skeletonema</i> spp.	FILAMENT	77,229	134,075	3,000	0
<i>Thalassiosira</i> spp.	CELL	90	112	77	45
Family Melosiraceae					
<i>Paralia sulcata</i>	CELL	13	21	21	0
Family Leptocylindraceae					
<i>Corethron criophilum</i>	CELL	0	0	10	16
<i>Leptocylindrus danicus</i>	FILAMENT	67	54	27	163
Family Coscinodiscaceae					
<i>Coscinodiscus</i> spp.	CELL	0	11	51	8
<i>Palmeria hardmaniana</i>	CELL	0	0	0	1
Family Asterolampraceae					
<i>Asteromphalus</i> spp.	CELL	0	29	0	0
Family Rhizosoleniaceae					
<i>Dactyliosolen</i> spp.	CELL	89	93	71	72
<i>Guinardia</i> spp.	CELL	0	0	0	586
<i>Proboscia alata</i>	CELL	15	41	23	202
<i>Rhizosolenia</i> spp.	CELL	181	133	165	417

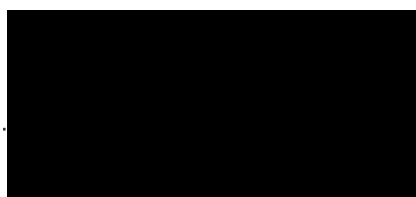


PHYTOPLANKTON (Natural Units/mL)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 13:05 HOUR * T23AH355-0007	SAMPLE NO. 2 12:20 HOUR * T23AH355-0008	SAMPLE NO. 3 13:45 HOUR * T23AH355-0009	SAMPLE NO. 4 10:35 HOUR * T23AH355-0010
Family Hemiaulaceae					
<i>Cerataulina</i> spp.	CELL	20	22	0	0
<i>Eucampia</i> spp.	CELL	0	0	0	147
<i>Hemiaulus</i> spp.	CELL	0	43	0	1,148
Family Biddulphiaceae					
<i>Biddulphia bidduphiana</i>	CELL	0	0	21	0
Family Chaetocerotaceae					
<i>Bacteriastrum</i> spp.	FILAMENT	415	118	251	3,247
<i>Chaetoceros</i> spp.	CELL	4,156	4,635	96,494	47,158
Family Lithodesmaceae					
<i>Ditylum</i> spp.	CELL	75	129	60	75
<i>Helicotheca tamesis</i>	CELL	14	47	0	0
Family Eupodiscaceae					
<i>Odontella</i> spp.	CELL	0	21	34	55
Family Thalassionemataceae					
<i>Thalassionema nitzschioides</i>	CELL	75	386	555	1,178
Family Lyrellaceae					
<i>Lyrella lyra</i>	CELL	19	5	21	8
Family Naviculaceae					
<i>Amphora</i> spp.	CELL	174	443	116	213
<i>Diploneis</i> spp.	CELL	8	10	14	0
<i>Meuniera membranacea</i>	CELL	30	55	31	34
<i>Navicula</i> spp.	CELL	0	37	0	86
<i>Pleurosigma</i> spp.	CELL	147	126	160	0
<i>Trachyneis</i> spp.	CELL	0	5	4	0
Family Bacillariaceae					
<i>Bacillaria paxillifer</i>	CELL	76	74	209	0
<i>Nitzschia longissima</i>	CELL	0	41	44	0
<i>Pseudo-nitzschia</i> spp.	CELL	4,727	3,991	439	1,316
Family Surirellaceae					
<i>Entomoneis</i> spp.	CELL	0	0	29	10
<i>Surirella</i> spp.	CELL	69	37	31	10
Class Dictyochophyceae					
Family Dictyochophyceae					
<i>Dictyocha</i> spp.	CELL	0	0	0	12
Class Dinophyceae					
Family Prorocentraceae					
<i>Prorocentrum</i> spp.	CELL	409	211	357	0

PHYTOPLANKTON (Natural Units/mL)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 13:05 HOUR * T23AH355-0007	SAMPLE NO. 2 12:20 HOUR * T23AH355-0008	SAMPLE NO. 3 13:45 HOUR * T23AH355-0009	SAMPLE NO. 4 10:35 HOUR * T23AH355-0010
Family Dinophysiaceae <i>Dinophysis</i> spp.	CELL	0	0	1	9
Family Ceratiaceae <i>Ceratium</i> spp.	CELL	3	1	0	9
<i>C. furca</i>	CELL	161	155	223	4
<i>C. fusus</i>	CELL	0	0	0	3
Family Goniadomaceae <i>Gonyaulax</i> spp.	CELL	0	0	33	10
Family Pyrophacaceae <i>Pyrophacus</i> spp.	CELL	12	31	7	2
Family Protoperdiniaceae <i>Protoperdinium</i> spp.	CELL	1,416	1,285	1,534	99
TOTAL ABUNDANCE (Natural Units/mL)		89,706	146,477	104,113	56,748
AMOUNT OF SPECIES		27	33	32	34
SAMPLE VOLUME (mL)		194	204	218	188
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT		COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN

REMARK : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF 23RD EDITION, 2017 PART 10200 F.

SAMPLE NO. 1 100 METERS OF THE END OF INTAKE
SAMPLE NO. 2 100 METERS OF THE END OF OUTFALL
SAMPLE NO. 3 HIN KHONG AREA
SAMPLE NO. 4 REFERENCE STATION: 5 KILOMETERS FROM PROJECT AREA



MAY 19, 2023

ANALYSIS REPORT

PROJECT NAME : THE NONG FAB JETTY DEVELOPMENT AND LNG RECEIVING TERMINAL PROJECT IN OPERATION PHASE
CUSTOMER NAME : PTT LNG COMPANY LIMITED
ADDRESS : 8/2 RONG PUI ROAD MAP TA PHUT MUEANG RAYONG RAYONG 21150
CONTACT INFORMATION : TEL : 0 3897 8200 e-mail : dan.s@pttng.com
SAMPLING SOURCE : -
SAMPLE TYPE : SEAWATER
SAMPLING DATE : APRIL 25, 2023
SAMPLING TIME : *
SAMPLING METHOD : PLANKTON NET
SAMPLING BY : MR ANUSART SUAYDEE
ANALYZED BY : MISS NAPAPORN PURATAKO

RECEIVED DATE : APRIL 26, 2023
ANALYTICAL DATE : APRIL 26-MAY 10, 2023
REPORT NO. : 2023-U036796
WORK NO. : 2022-009414
ANALYSIS NO. : T23AH355-0007 - T23AH355-0010

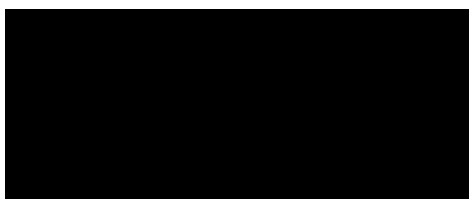
ZOOPLANKTON (UNITS/m ³)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 13:05 HOUR * T23AH355-0007	SAMPLE NO. 2 12:20 HOUR * T23AH355-0008	SAMPLE NO. 3 13:45 HOUR * T23AH355-0009	SAMPLE NO. 4 10:35 HOUR * T23AH355-0010
Phylum Protozoa					
Class Sarcodina					
Foraminifera	CELL	958	0	0	0
Family Sticholonchidae					
<i>Sticholonche</i> sp.	CELL	0	0	0	262
Family Actinommididae					
<i>Actinomma leptoderma</i>	CELL	0	0	0	438
Class Ciliata					
Family Codonellidae					
<i>Tintinnopsis</i> sp.	CELL	14,768	5,662	3,706	872
Family Cyttarocylindidae					
<i>Favella</i> sp.	CELL	12,395	44,346	35,339	0
Phylum Chaetognatha					
Class Sagittoidea					
Family Sagittidae					
<i>Sagitta</i> sp.	INDIVIDUAL	0	1,883	677	349
Phylum Annelida					
Class Polychaeta					
Polychaete Larva	INDIVIDUAL	63,860	3,298	45,436	176
Phylum Arthropoda					
Class Crustacea					
Cyclopoid Copepod	INDIVIDUAL	73,381	20,284	91,204	1,396
Calanoid Copepod	INDIVIDUAL	69,092	70,772	127,552	1,485
Harpacticoid Copepod	INDIVIDUAL	6,677	4,714	10,774	438
Nauplius of Copepod	INDIVIDUAL	271,149	151,918	262,515	6,722
Cerriperdia Nauplius	INDIVIDUAL	0	949	4,372	0
Zoea	INDIVIDUAL	472	0	8,411	0



ZOOPLANKTON (UNITS/m ³)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 13:05 HOUR * T23AH355-0007	SAMPLE NO. 2 12:20 HOUR * T23AH355-0008	SAMPLE NO. 3 13:45 HOUR * T23AH355-0009	SAMPLE NO. 4 10:35 HOUR * T23AH355-0010
Phylum Mollusca					
Class Gastropoda					
Gastropod Larva	INDIVIDUAL	16,198	1,883	20,870	872
Class Bivalvia					
Bivalvia Larva	INDIVIDUAL	143,431	70,772	102,311	872
Phylum Echinodermata					
Class Echinoidea					
Echinopluteus Larva	INDIVIDUAL	1,430	0	0	0
Phylum Chordata					
Class Larvacea					
Family Oikopleuridae					
<i>Oikopleura</i> sp.	INDIVIDUAL	54,325	6,611	41,730	700
TOTAL ABUNDANCE (UNITS/m ³)		728,136	383,092	754,897	14,582
AMOUNT OF SPECIES		13	12	13	12
SAMPLE CONDITION					
WATER'S COLOUR/TURBID		COLOURLESS/CLEAR	COLOURLESS/CLEAR	COLOURLESS/CLEAR	COLOURLESS/CLEAR
SEDIMENT		GREEN	GREEN	GREEN	GREEN

REMARK : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF 23rd EDITION, 2017 PART 10200 F.

- SAMPLE NO. 1 100 METERS OF THE END OF INTAKE
SAMPLE NO. 2 100 METERS OF THE END OF OUTFALL
SAMPLE NO. 3 HIN KHONG AREA
SAMPLE NO. 4 REFERENCE STATION: 5 KILOMETERS FROM PROJECT AREA



MAY 19, 2023

ANALYSIS REPORT

PROJECT NAME : THE NONG FAB JETTY DEVELOPMENT AND LNG RECEIVING TERMINAL PROJECT IN OPERATION PHASE
CUSTOMER NAME : PTT LNG COMPANY LIMITED
ADDRESS : 8/2 RONG PUI ROAD MAP TA PHUT MUEANG RAYONG RAYONG 21150
CONTACT INFORMATION : TEL : 0 3897 8200 e-mail : dan.s@pttng.com
SAMPLING SOURCE : -
SAMPLE TYPE : SEDIMENT
SAMPLING DATE : APRIL 25, 2023
SAMPLING TIME : *
SAMPLING METHOD : PETERSEN GRAB
SAMPLING BY : MR ANUSART SUAYDEE
ANALYZED BY : MISS PATCHAREE KONGCHUMNAN

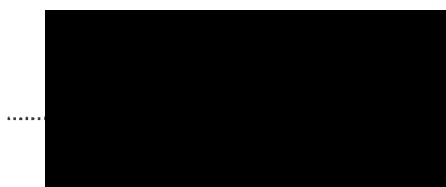
RECEIVED DATE : APRIL 26, 2023
ANALYTICAL DATE : APRIL 26-MAY 9, 2023
REPORT NO. : 2023-U036862
WORK NO. : 2022-009414
ANALYSIS NO. : T23AH355-0015 - T23AH355-0017

BENTHOS (INDIVIDUALS/m ²)	RESULT		
	SAMPLE NO. 1 13:10 HOUR * T23AH355-0015	SAMPLE NO. 2 12:25 HOUR * T23AH355-0016	SAMPLE NO. 3 10:40 HOUR * T23AH355-0017
Phylum Annelida			
Class Polychaeta			
Family Nephtyidae	7	0	0
Family Capitellidae	98	14	14
Family Lumbrineridae	7	0	0
Family Pisionidae	0	7	0
Family Opheliidae	140	14	21
Family Maldanidae	7	0	0
Family Nereididae	63	0	0
Family Eunicidae	56	0	0
Family Spionidae	91	14	7
Family Sabellidae	14	7	7
Family Chrysopetalidae	14	0	0
Phylum Arthropoda			
Class Malacostraca			
Family Eusiridae	7	0	0
Family Portunidae			
<i>Portunus pelagicus</i>	7	0	0



BENTHOS (INDIVIDUALS/m ²)	RESULT		
	SAMPLE NO. 1 13:10 HOUR * T23AH355-0015	SAMPLE NO. 2 12:25 HOUR * T23AH355-0016	SAMPLE NO. 3 10:40 HOUR * T23AH355-0017
Phylum Chordata Class Leptocardii Family Branchistomidae <i>Branchiostoma</i> sp.	0	7	0
TOTAL DENSITY (INDIVIDUALS/m ²)	511	63	49
AMOUNT OF SPECIES	12	6	4
SAMPLE CONDITION	SAND	SAND	CLAY WITH SHELLS

SAMPLE NO. 1 100 METERS OF THE END OF INTAKE
SAMPLE NO. 2 100 METERS OF THE END OF OUTFALL
SAMPLE NO. 3 REFERENCE STATION: 5 KILOMETERS FROM PROJECT AREA



MAY 19, 2023

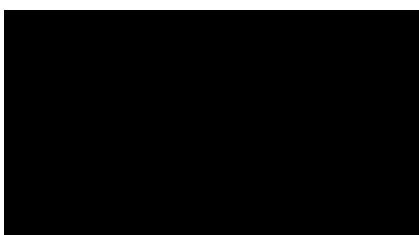
ANALYSIS REPORT

PROJECT NAME : THE NONG FAB JETTY DEVELOPMENT AND LNG RECEIVING TERMINAL PROJECT IN OPERATION PHASE
CUSTOMER NAME : PTT LNG COMPANY LIMITED
ADDRESS : 8/2 RONG PUI ROAD MAP TA PHUT MUEANG RAYONG RAYONG 21150
CONTACT INFORMATION : TEL : 0 3897 8200 e-mail : dan.s@pttng.com
SAMPLING SOURCE : -
SAMPLE TYPE : SEAWATER
SAMPLING DATE : APRIL 25, 2023
SAMPLING TIME : *
SAMPLING METHOD : LARVA NET
SAMPLING BY : MR ANUSART SUAYDEE
ANALYZED BY : MISS PATCHARAPA SAWANGWONG
RECEIVED DATE : APRIL 26, 2023
ANALYTICAL DATE : APRIL 26-MAY 10, 2023
REPORT NO. : 2023-U036861
WORK NO. : 2022-009414
ANALYSIS NO. : T23AH355-0011 - T23AH355-0014

FISH EGG AND FISH LARVA	RESULT			
	SAMPLE NO. 1	SAMPLE NO. 2	SAMPLE NO. 3	SAMPLE NO. 4
	13:30 HOUR *	12:55 HOUR *	14:10 HOUR *	11:00 HOUR *
	(INDIVIDUALS/1000m ³)	(INDIVIDUALS/1000m ³)	(INDIVIDUALS/1000m ³)	(INDIVIDUALS/1000m ³)
	T23AH355-0011	T23AH355-0012	T23AH355-0013	T23AH355-0014
Fish Egg **	1,397	1,200	4,570	14,263
Phylum Chordata				
Apogonidae	0	0	0	20
Atherinidae	0	0	20	0
Carangidae	0	0	0	88
Clupeidae	0	0	0	117
Fish Larvae	0	0	0	0
Nemipteridae	0	40	0	185
Sillaginidae	0	0	0	146
TOTAL ABUNDANCE (FISH LARVA)	0	40	20	556
TOTAL ABUNDANCE (FISH EGG)	1,397	1,200	4,570	14,263
TOTAL FISH FAMILY	0	1	1	5

REMARK ** MEAN INDIVIDUALS/1000m³

SAMPLE NO. 1 100 METERS OF THE END OF INTAKE
SAMPLE NO. 2 100 METERS OF THE END OF OUTFALL
SAMPLE NO. 3 HIN KHONG AREA
SAMPLE NO. 4 REFERENCE STATION: 5 KILOMETERS FROM PROJECT AREA



MAY 19, 2023



2-2566

นิเวศวิทยาทางทะเล

ANALYSIS REPORT

PROJECT NAME : THE NONG FAB JETTY DEVELOPMENT AND LNG RECEIVING TERMINAL PROJECT IN OPERATION PHASE
CUSTOMER NAME : PTT LNG COMPANY LIMITED
ADDRESS : 8/2 RONG PUI ROAD MAP TA PHUT MUEANG RAYONG RAYONG 21150
CONTACT INFORMATION : TEL : 0 3897 8200 e-mail : dan.s@pttng.com
SAMPLING SOURCE : -
SAMPLE TYPE : SEAWATER
SAMPLING DATE : NOVEMBER 7, 2023
SAMPLING TIME : *
SAMPLING METHOD : PLANKTON NET
SAMPLING BY : MR. ANUSART SUAYDEE
ANALYZED BY : MISS NAPAPORN PURATAKO

RECEIVED DATE : NOVEMBER 8, 2023
ANALYTICAL DATE : NOVEMBER 8-17, 2023
REPORT NO. : 2023-U100746
WORK NO. : 2022-009414
ANALYSIS NO. : T23AW195-0007 - T23AW195-0010

PHYTOPLANKTON (Natural Units/mL)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 15:05 HOUR * T23AW195-0007	SAMPLE NO. 2 15:20 HOUR * T23AW195-0008	SAMPLE NO. 3 14:35 HOUR * T23AW195-0009	SAMPLE NO. 4 13:20 HOUR * T23AW195-0010
Division Cyanophyta					
Class Cyanophyceae					
Family Oscillatoriaceae					
<i>Oscillatoria</i> spp. ^b	FILAMENT	81	25	42	51
Division Chromophyta					
Class Bacillariophyceae					
Family Thalassiosiraceae					
<i>Lauderia annulata</i> ^b	FILAMENT	31	31	32	25
<i>Thalassiosira</i> spp. ^b	CELL	756	462	805	98
Family Leptocylindraceae					
<i>Leptocylindrus danicus</i> ^b	FILAMENT	25	44	38	17
Family Coscinodiscaceae					
<i>Coscinodiscus</i> spp. ^b	CELL	6	50	13	2
Family Rhizosoleniaceae					
<i>Dactylosolen</i> spp. ^b	CELL	0	29	43	105
<i>Gulnardia</i> spp. ^b	CELL	365	333	63	310
<i>Proboscia alata</i> ^b	CELL	0	16	0	39
<i>Rhizosolenia</i> spp. ^b	CELL	152	145	220	115
Family Hemiaulaceae					
<i>Eucampia</i> spp. ^b	CELL	100	28	0	36
<i>Hemiaulus</i> spp. ^b	CELL	63	69	0	32
Family Chaetocerotaceae					
<i>Bacteriastrum</i> spp. ^b	FILAMENT	1,726	1,048	915	1,234
<i>Chaetoceros</i> spp. ^a	CELL	26,1080	62,179	192,739	56,974
Family Lithodismaceae					
<i>Ditylum</i> spp. ^b	CELL	0	9	0	0
Family Eupodiscaceae					
<i>Odontella</i> spp. ^b	CELL	13	22	9	4



PHYTOPLANKTON (Natural Units/mL)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 15:05 HOUR * T23AW195-0007	SAMPLE NO. 2 15:20 HOUR * T23AW195-0008	SAMPLE NO. 3 14:35 HOUR * T23AW195-0009	SAMPLE NO. 4 13:20 HOUR * T23AW195-0010
Family Thalassiomataceae					
<i>Thalassiomata frauenfeldii</i> ^b	CELL	16	0	0	12
<i>T. nitzschoides</i> ^b	CELL	67	134	62	115
Family Lyrellaceae					
<i>Lyrella lyra</i> ^b	CELL	15	11	0	0
Family Naviculaceae					
<i>Amphora</i> spp. ^b	CELL	22	46	32	0
<i>Meuniera membranacea</i> ^b	CELL	23	37	31	30
<i>Navicula</i> spp. ^b	CELL	26	41	0	0
<i>Pleurosigma</i> spp. ^b	CELL	213	224	148	52
<i>Trachyneis</i> spp. ^b	CELL	22	26	29	0
Family Bacillariaceae					
<i>Bacillaria paxillifer</i> ^b	CELL	0	0	65	0
<i>Nitzschia</i> spp. ^b	CELL	16	49	62	0
Family Surirellaceae					
<i>Entomoneis</i> spp. ^b	CELL	16	15	0	0
Class Dinophyceae					
Family Prorocentraceae					
<i>Prorocentrum</i> spp. ^b	CELL	121	258	11	0
Family Dinophysiaceae					
<i>Dinophysis</i> spp. ^b	CELL	15	35	24	2
Family Gymnodiniaceae					
<i>Gymnodinium</i> spp. ^b	CELL	0	9	0	0
Family Ceratiaceae					
<i>Ceratium</i> spp. ^b	CELL	4	13	0	18
<i>C. furca</i> ^b	CELL	50	264	295	13
<i>C. fusus</i> ^b	CELL	2	6	8	5
Family Goniadomaceae					
<i>Gonyaulax</i> spp. ^b	CELL	15	24	21	23
Family Pyrophacaceae					
<i>Pyrophacus</i> spp. ^b	CELL	0	0	0	4

PHYTOPLANKTON (Natural Units/mL)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 15:05 HOUR * T23AW195-0007	SAMPLE NO. 2 15:20 HOUR * T23AW195-0008	SAMPLE NO. 3 14:35 HOUR * T23AW195-0009	SAMPLE NO. 4 13:20 HOUR * T23AW195-0010
Family Peridiniaceae <i>Peridinium</i> spp. ^b	CELL	263	152	259	103
Family Protoperidiniaceae <i>Protoperidinium</i> spp. ^b	CELL	145	151	225	45
TOTAL ABUNDANCE ^b (Natural Units/mL)		265,449	65,985	196,191	59,464
AMOUNT OF SPECIES ^b		30	33	25	26
SAMPLE VOLUME ^b (mL)		196	192	206	200
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT		COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

มาตรฐาน: 1. STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF 23rd EDITION, 2017 PART 10200.F

SAMPLE NO. 1 100 METERS OF THE END OF INTAKE
 SAMPLE NO. 2 100 METERS OF THE END OF OUTFALL
 SAMPLE NO. 3 HIN KHONG AREA
 SAMPLE NO. 4 REFERENCE STATION: 5 KILOMETERS FROM PROJECT AREA



NOVEMBER 27, 2023

ANALYSIS REPORT

PROJECT NAME : THE NONG FAB JETTY DEVELOPMENT AND LNG RECEIVING TERMINAL PROJECT IN OPERATION PHASE
CUSTOMER NAME : PTT LNG COMPANY LIMITED
ADDRESS : 8/2 RONG PUI ROAD MAP TA PHUT MUEANG RAYONG RAYONG 21150
CONTACT INFORMATION : TEL : 0 3897 8200 e-mail : dan.s@ptting.com
SAMPLING SOURCE : -
SAMPLE TYPE : SEAWATER
SAMPLING DATE : NOVEMBER 7, 2023
SAMPLING TIME : *
SAMPLING METHOD : PLANKTON NET
SAMPLING BY : MR ANUSART SUAYDEE
ANALYZED BY : MISS NAPAPORN PURATAKO

RECEIVED DATE : NOVEMBER 8, 2023
ANALYTICAL DATE : NOVEMBER 8-17, 2023
REPORT NO. : 2023-U100747
WORK NO. : 2022-009414
ANALYSIS NO. : T23AW195-0007 - T23AW195-0010

ZOOPLANKTON (UNITS/m ³)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 15:05 HOUR * T23AW195-0007	SAMPLE NO. 2 15:20 HOUR * T23AW195-0008	SAMPLE NO. 3 14:35 HOUR * T23AW195-0009	SAMPLE NO. 4 13:20 HOUR * T23AW195-0010
Phylum Protozoa					
Class Sarcodina					
Foraminifera	CELL	34	0	0	0
Family Sticholonchidae					
<i>Sticholonche</i> sp.	CELL	0	0	0	25
Phylum Chaetognatha					
Class Sagittoidea					
Family Sagittidae					
<i>Sagitta</i> sp.	INDIVIDUAL	0	110	84	178
Phylum Annelida					
Class Polychaeta					
Polychaete Larva	INDIVIDUAL	193	8	17	25
Phylum Arthropoda					
Class Crustacea					
Cyclopoid Copepod	INDIVIDUAL	216	24	0	35
Calanoid Copepod	INDIVIDUAL	624	328	159	296
Nauplius of Copepod	INDIVIDUAL	0	12	25	15
Ceripedia Nauplius	INDIVIDUAL	46	43	0	0
Zoea	INDIVIDUAL	499	254	242	119
Phylum Mollusca					
Class Gastropoda					
Gastropod Larva	INDIVIDUAL	91	0	75	35
Class Bivalvia					
Bivalvia Larva	INDIVIDUAL	0	20	17	0
Phylum Echinodermata					
Class Echinoidea					
Echinopluteus Larva	INDIVIDUAL	57	0	117	64



ZOOPLANKTON (UNITS/m ³)	COUNTING UNIT	RESULT			
		SAMPLE NO. 1 15:05 HOUR * T23AW195-0007	SAMPLE NO. 2 15:20 HOUR * T23AW195-0008	SAMPLE NO. 3 14:35 HOUR * T23AW195-0009	SAMPLE NO. 4 13:20 HOUR * T23AW195-0010
Phylum Chordata Class Larvacea Family Oikopleuridae <i>Oikopleura</i> sp.	INDIVIDUAL	1,315	207	900	79
TOTAL ABUNDANCE (UNITS/m ³)		3,075	1,006	1,636	871
AMOUNT OF SPECIES		9	9	9	10
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT		COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN	COLOURLESS/CLEAR GREEN

หมายเหตุ: 1. STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF 23rd EDITION, 2017 PART 10200 F.

SAMPLE NO. 1 100 METERS OF THE END OF INTAKE
 SAMPLE NO. 2 100 METERS OF THE END OF OUTFALL
 SAMPLE NO. 3 HIN KHONG AREA
 SAMPLE NO. 4 REFERENCE STATION: 5 KILOMETERS FROM PROJECT AREA



NOVEMBER 27, 2023

ANALYSIS REPORT

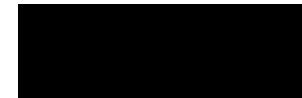
PROJECT NAME : THE NONG FAB JETTY DEVELOPMENT AND LNG RECEIVING TERMINAL PROJECT IN OPERATION PHASE
CUSTOMER NAME : PTT LNG COMPANY LIMITED
ADDRESS : 8/2 RONG PUI ROAD MAP TA PHUT MUEANG RAYONG RAYONG 21150
CONTACT INFORMATION : TEL : 0 3897 8200 e-mail : dan.s@pttting.com
SAMPLING SOURCE :
SAMPLE TYPE : SEAWATER
SAMPLING DATE : NOVEMBER 7, 2023
SAMPLING TIME : *
SAMPLING METHOD : LARVA NET
SAMPLING BY : MR ANUSART SUAYDEE
ANALYZED BY : MISS PATCHARAPA SAWANGWONG

RECEIVED DATE : NOVEMBER 8, 2023
ANALYTICAL DATE : NOVEMBER 8-15, 2023
REPORT NO. : 2023-U100749
WORK NO. : 2022-009414
ANALYSIS NO. : T23AW195-0011 - T23AW195-0014

FISH EGG AND FISH LARVA	RESULT			
	SAMPLE NO. 1 15:05 HOUR * (INDIVIDUALS/1000m ³) T23AW195-0011	SAMPLE NO. 2 15:20 HOUR * (INDIVIDUALS/1000m ³) T23AW195-0012	SAMPLE NO. 3 14:35 HOUR * (INDIVIDUALS/1000m ³) T23AW195-0013	SAMPLE NO. 4 13:20 HOUR * (INDIVIDUALS/1000m ³) T23AW195-0014
Fish Egg **	4,474	1,716	474	240
Phylum Chordata				
Apogonidae	16	5	0	0
Blennidae	0	14	0	0
Callionymidae	38	42	0	0
Clupeidae	61	455	0	0
Gobiidae	23	0	0	0
Nemipteridae	0	33	0	0
Platycephalidae	0	5	0	0
Sillaginidae	0	60	0	0
TOTAL ABUNDANCE (FISH LARVA)	138	614	0	0
TOTAL ABUNDANCE (FISH EGG)	4,474	1,716	474	240
TOTAL FISH FAMILY	4	7	0	0

REMARK ** MEAN INDIVIDUALS/1000m³

SAMPLE NO. 1 100 METERS OF THE END OF INTAKE
 SAMPLE NO. 2 100 METERS OF THE END OF OUTFALL
 SAMPLE NO. 3 HIN KHONG AREA
 SAMPLE NO. 4 REFERENCE STATION: 5 KILOMETERS FROM PROJECT AREA



NOVEMBER 27, 2023

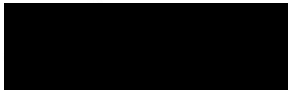


ANALYSIS REPORT

PROJECT NAME : THE NONG FAB JETTY DEVELOPMENT AND LNG RECEIVING TERMINAL PROJECT IN OPERATION PHASE
CUSTOMER NAME : PTT LNG COMPANY LIMITED
ADDRESS : 8/2 RONG PUI ROAD MAP TA PHUT MUEANG RAYONG RAYONG 21150
CONTACT INFORMATION : TEL : 0 3897 8200 e-mail : dan.s@ptting.com
SAMPLING SOURCE : -
SAMPLE TYPE : SEDIMENT
SAMPLING DATE : NOVEMBER 7, 2023
SAMPLING TIME : *
SAMPLING METHOD : PETERSEN GRAB
SAMPLING BY : MR. ANUSART SUAYDEE
ANALYZED BY : MISS PATCHAREE KONGCHUMNAN
RECEIVED DATE : NOVEMBER 8, 2023
ANALYTICAL DATE : NOVEMBER 8-17, 2023
REPORT NO. : 2023-U100750
WORK NO. : 2022-009414
ANALYSIS NO. : T23AW195-0015 - T23AW195-0017

BENTHOS (INDIVIDUALS/m²)	RESULT		
	SAMPLE NO. 1 14:50 HOUR *	SAMPLE NO. 2 15:05 HOUR *	SAMPLE NO. 3 13:05 HOUR *
	T23AW195-0015	T23AW195-0016	T23AW195-0017
Phylum Annelida			
Class Polychaeta			
Family Nephtyidae	7	0	0
Family Capitellidae	7	21	0
Family Pisionidae	0	35	0
Family Nereididae	7	0	0
Family Spionidae	63	7	7
Phylum Arthropoda			
Class Malacostraca			
Family Aoridae	14	0	0
Phylum Chordata			
Class Leptocardii			
Family Branchiomidae			
Branchiostoma sp.	7	7	0
TOTAL DENSITY (INDIVIDUALS/m²)	105	70	7
AMOUNT OF SPECIES	6	4	1
SAMPLE CONDITION	SAND	SAND	SAND

SAMPLE NO. 1 100 METERS OF THE END OF INTAKE
SAMPLE NO. 2 100 METERS OF THE END OF OUTFALL
SAMPLE NO. 3 REFERENCE STATION: 5 KILOMETERS FROM PROJECT AREA



NOVEMBER 27, 2023

