เอกสารแนบที่ 38

PPE Inventory

PPE Issue and Usage Analysis Record

Location: Wassana MOPU Ingenium **Department/Shop: Deck Crew** **Record Period: 2025**

No.	Employee Name (Company)	PPE Issue / Reason for Issue * / Employeee Signature																	
		Safety Suits			Safety Boots/ Shoes	Prescription Safety Glasses	Safety Goggles	Safety Glasses	Safety Hats + Chin strap	Ear Muffs	Respirators	Cartridges	Hand Gloves					Other (Specify)	Description of Incident / Accident Associated with PPE, Date of IIR/PRNCA
		Coveralls	Jacket	Pants									Lab rubber glove	Nytry Rubber glove	Impact Gloves	Mechanix gloves	Hyflex gloves		
1	Suriya Dueramae														1				
						1													
															1				
					1										1				
																	1		
										1									
			2	2															
															1				
2	Suriya Chubua				1										1				
			1																
															1				
						1													
			2	2															
									1										
					1														
3	Manoch Prom-a-ree														1				
															1				
															1				
					1														
						1													
			2	2															
4	Pon-anan Komdacha				1				1										
															1				
			2	2															
					1														
5	Chalermchai Janchum														1				
																1			
			2	2															
6	Chainan Tipsang	1																	
															1				
															1				
					1														
															1				
			2	2															
7	Vichai Phimonrat														1				
			2	2															
8	Sa-nguan Sorn-in																1		
								1											
								2											
			2	2															

No.	Employee Name (Company)	PPE Issue / Reason for Issue * / Employeee Signature																	
		Safety Suits			Safety Boots/ Shoes	Prescription Safety Glasses	Safety Goggles	Safety Glasses	Safety Hats + Chin strap	Ear Muffs	Respirators	Cartridges	Hand Gloves					Other (Specify)	Description of Incident / Accident Associated with PPE, Date of IIR/PRNCA
		Coveralls	Jacket	Pants									Lab rubber glove	Nytry Rubber glove	Impact Gloves	Mechanix gloves	Hyflex gloves		
9	Watthana Khamkoed	1																	
								1											
			2	2															
					1										1				
10	Wisarut Nhuklay	1					1												
																1			
					1														
			2	2															
								2							1				
									1										
	Total																		
Conclusions																			

* Reason for issue

D = Defective from normal wear and tear, L = Lost, N= new employee, A = Damaged by accident, S = Scheduled issue

PPE Issue and Usage Analysis Record

Location: Wassana MOPU Ingenium **Department/Shop: EIO** **Record Period: 2025**

No.	Employee Name (Company)	PPE Issue / Reason for Issue * / Employeee Signature																	
		Safety Suits			Safety Boots/ Shoes	Prescription Safety Glasses	Safety Goggles	Safety Glasses	Safety Hats + Chin strap	Ear Muffs	Respirators	Cartridges	Hand Gloves					Other (Specify)	Description of Incident / Accident Associated with PPE, Date of IIR/PRNCA
		Coveralls	Jacket	Pants									Lab rubber glove	Nytry Rubber glove	Impact Glove	Mechanix gloves	Hyflex gloves		
1	Mongkolchai Saengsawang																1		
			2	2															
									1								1		
2	Jeerayut Thepkhamdee																1		
																	1		
			2	2															
																	1		
3	Kongton Nakaget																1		
																	1		
																	1		
			2	2															
																	1		
									1								1		
4	Teerapong Rodsai							1									1		
			2	2															
5	Apisit Mahoran																1		
																	1		
			2	2															
																	1		
6	Phakdee Sriprapai								1										
								1									1		
					1														
								1									1		
								1						4					
			2	2															
																	1		
	Total																		
	Conclusions																		

*** Reason for issue** **D = Defective from normal wear and tear, L = Lost, N= new employee, A = Damaged by accident, S = Scheduled issue**

PPE Issue and Usage Analysis Record

Location: Wassana MOPU Ingenium **Department/Shop:** Mechanic **Record Period:** **2025**

No.	Employee Name (Company)	PPE Issue / Reason for Issue * / Employeee Signature																	
		Safety Suits			Safety Boots/ Shoes	Prescription Safety Glasses	Safety Goggles	Safety Glasses	Safety Hats + Chin strap	Ear Muffs	Respirators	Cartridges	Hand Gloves					Other (Specify)	Description of Incident / Accident Associated with PPE, Date of IIR/PRNCA
		Coveralls	Jacket	Pants									Lab rubber glove	Nytry Rubber glove	Impact Glove	Mechanix gloves	Hyflex gloves		
1	Jakkrapan Chuybumrung																1		
									1				1			1	1		
																	1		
			1	1															
																1			
																1	1		
			1	1							1	1					1		
2	Suntipap Laothongsan				1														
		1																	
																1			
								1											
								1											
		1																	
																1			
			2	2															
																1			
									1										
3	Phoowanat Premjai															1			
					1														
																1			
			2	2															
4	Paisan Kongarunsuk															1	1		
																1	1		
			2	2															
					1														
									1										
5	Pitak Pota							1		1						1			
	Total																		
	Conclusions																		

*** Reason for issue** **D = Defective from normal wear and tear, L = Lost, N= new employee, A = Damaged by accident, S = Scheduled issue**

PPE Issue and Usage Analysis Record

Location: Wassana MOPU Ingenium **Department/Shop:** Production **Record Period:** **2025**

No.	Employee Name (Company)	PPE Issue / Reason for Issue * / Employeee Signature																	
		Safety Suits			Safety Boots/ Shoes	Prescription Safety Glasses	Safety Goggles	Safety Glasses	Safety Hats + Chin strap	Ear Muffs	Respirators	Cartridges	Hand Gloves					Other (Specify)	Description of Incident / Accident Associated with PPE, Date of IIR/PRNCA
		Coveralls	Jacket	Pants									Lab rubber glove	Nytry Rubber glove	Impact Glove	Mechanix gloves	Hyflex gloves		
1	Maharat Witee								1								1		
			2	2															
2	Pongsut Madbu		2	2															
3	Anuphap Srisroy		2	2															
4	Ratthawut Klumkoon		2	2															
5	Suwan Lomduang										1	1					1		
						1													
									1										
					1														
																	1		
			2	2															
6	Surawit Nuklay				1			1									1		
		1																	
			2	2															
7	Waris Lambelsah																1		
												1							
			2	2															
																	1		
8	Sittisak Lauhatianrod																5		
			1					1+1									2		
		1															2		
									1+1								1		
																	3		
																	2		
			2	2															
													1				2		
								1											
													1					1	
9	Tawat Maneekat																1		
								1											
									1										
			2	2															
																	1		
10	Radchakit Prapunkool	1						2				1					1		
		1																	
			2	2															
					1												1		
	Total																		
	Conclusions																		

PPE Issue and Usage Analysis Record

Location: Wassana MOPU Ingenium **Department/Shop:** Support team **Record Period:** **2025**

No.	Employee Name (Company)	PPE Issue / Reason for Issue * / Employeee Signature																	
		Safety Suits			Safety Boots/ Shoes	Prescription Safety Glasses	Safety Goggles	Safety Glasses	Safety Hats + Chin strap	Ear Muffs	Respirators	Cartridges	Hand Gloves					Other (Specify)	Description of Incident / Accident Associated with PPE, Date of IIR/PRNCA
		Coveralls	Jacket	Pants									Lab rubber glove	Nytry Rubber glove	Impact Glove	Mechanix gloves	Hyflex gloves		
1	Terdthanath Wongsrikaew		2	2															
2	Witchu Kusolsiri		2	2															
3	Manop Mamee								1							1			
			2	2															
																1			
4	Phairat Ngampradablert																1		
			2	2															
5	Wisit Damsanit		2	2															
6	Chalermporn Laomala		1	1													1		
			2	2															
7	Wichawut Phaendee								1										
			2	2															
8	Pongsadhorn Inprommar		2	2															
9	Gomes Nookamsun		2	2															
10	Passanai Wongthai																1		
			2	2															
11	Somchai Suwannaroj																1		
			2	2															
12	Panuwat Petjamras																1		
			2	2															
																	1		
	Total																		
	Conclusions																		

*** Reason for issue** **D = Defective from normal wear and tear, L = Lost, N= new employee, A = Damaged by accident, S = Scheduled issue**

PPE Issue and Usage Analysis Record

Location: Wassana MOPU Ingenium **Department/Shop:** Other **Record Period:** **2025**

No.	Employee Name (Company)	PPE Issue / Reason for Issue * / Employeee Signature																	
		Safety Suits			Safety Boots/ Shoes	Prescription Safety Glasses	Safety Goggles	Safety Glasses	Safety Hats + Chin strap	Ear Muffs	Respirators	Cartridges	Hand Gloves					Other (Specify)	Description of Incident / Accident Associated with PPE, Date of IIR/PRNCA
		Coveralls	Jacket	Pants									Lab rubber glove	Nytry Rubber glove	Impact Glove	Mechanix gloves	Hyflex gloves		
1	Chanon Jaikaruna																		
2	Charuwat Meepian								1										
3	Athitep Prommoon								1										
4	Somboon Kongjan																		
5	Wanchai Nachumhet								1										
6	Niasan Ausree Sulongku								1										
7	Nitipong Yangthong																		
8	Sulaiman Kuethong																		
9	Chirawin Matman								1										
10	Winit Manlae																		
	Total																		
	Conclusions																		

*** Reason for issue** **D = Defective from normal wear and tear, L = Lost, N= new employee, A = Damaged by accident, S = Scheduled issue**

Items	Description	Brand	Model	Comment
1	**Head Protection**			
1.1	Safety Helmet MSA-V-Guard White	MSA	Hat V-Gard Fas-Trac, White	
1.3	Safety Helmet MSA-V-Guard Green	MSA	Type I Protective helmet, Green	
1.4	Safety Helmet MSA-V-Guard (Orange for VIP)	MSA	Type I Protective helmet, Orange	
1.5	Fas-trac Suspension	MSA	Fas-Trac II	
1.6	Fire Helmet: Yellow, Fiberglass, Modern, Ratchet	None	None	
1.7	The fire hood : Normex	None	None	
1.8	Chinstrap 4 PTS	MSA	9100002	
1.9	SAFETY HELMET, TYPE V-GARD FULL BRIM,	MSA	FAS-TRAC RATCHET SUSPENSION, COLOR WHITE,	
1.10	STRAP, CHIN, HARD HAT, ELASTIC, WITH HOOK AND BUCKLE	MSA	10171104	
2	**Face and Eye Protection**			
2.1	Safety glass Clear	KING'S	KY711	
2.2	Safety glass Dark	KING'S	KY711	
2.3	Safety Goggles Clear	Honeywell	V-MAXX GOGGLE	
2.4	Safety Goggles Dark	DELTAPLUS	Galesas smoke	
2.5	Lens Cleaning Tissues (500 lens)	Honeywell	Honeywell clear	
2.6	Lens Cleaning solution น้ำยาเช็ดแว่น	Honeywell	UVEX Clear plus	
2.7	Eye wash solution bottle.น้ำยาเติมกันตะไคร่น้ำ** See comment	Honeywell	Eyesaline	
2.8	Eyewash additive contrate for eyewash station	Honeywell	Eyesaline	
2.9	GLASSES, SAFETY, TYPE PRESCRIPTION SPECTACLES, LENS MATL PLASTIC,	UVEX	RX-SP-5510	
2.10	GOGGLES, TYPE ULTRASONIC, LENS COLOR CLEAR	UVEX	P/N 9302.805	
2.11	LENS, FACE SHIELD, CLEAR, SIZE 8IN. X 15.5IN.	PAN TAIWAN	SE173A	
2.12	BRACKET, HEAD CASE FOR FACE SHIELD	PAN TAIWAN	SE173B	
2.13	SAFETY GLASSES, CLEAR LENS WITH SIDE COVER, POLYCARBONATE LENS WITH ANTI-FOG FILTER, MFG SYNOS, P/N 2047W-AF	SYNOS	2047W-AF	
2.14	CLEANER, TYPE CLEAR LENS CLEANSING SPRAY, DISPOSALE STATION 500 ML, MFG SPERIAN, P/N 1011380	SPERIAN	1011380	
2.15	GLASSES, SAFETY, TYPE I-3 SPECTACLE, LENS COLOR BLACK, LENS MATL PLASTIC	UVEX	9190281	
2.16	GLASSES, SAFETY, TYPE I-3 SPECTACLE, LENS COLOR CLEAR, LENS MATL PLASTIC	UVEX	9190175	
3	**Respiratory Protection**			
3.1	Dust Mask 1730 Respirator (N95 Particulate Respirator)	3 M	N95	
3.2	Half Mask: 3M Double filter,	3 M	7500	
3.3	Cartridge Filter -Organic Vapor/Acid gas cartridge (3M 6003)	3 M	6003	
3.4	Cartridge Filter -Mercury Vapor/Organic Vapor (3M 6007)	3 M	6007	
3.5	Cartridge Filter - Dust ,Fume (3M 2097)	3 M	2097	

Items	Description	Brand	Model	Comment
3.6	Dust air filter Model:5N11 (3M 5N11)	3 M	5N11	
3.7	Mask for multi pupose	3 M	8246	
3.8	RESPIRATOR, PARTICULATE, MOLDEX 2207 N95 SERIES, MATERIAL 100 PERCENT PVC-FREE, 10 EA PER BOX, MFG MOLDEX, P/N 2207N95	MOLDEX	2207N95	
3.9	MASK, TYPE HALF FACE MASK RESPIRATOR, MEDIUM, TO USE WITH 6003 SERIES CARTRIDGE	3M	6200	
4	**Hearing Protection**			
4.1	Ears Muff (MSA-HPE Part No.10061272) (Keep on level 2)	MSA	V-Gard HP	
4.2	Ear Plugs	UVEX	UVEX X-fit	
4.3	EARMUFFS, TYPE CAP MOUNTED L2H	SPERIAN	15SPR1010923	
4.4	EAR PLUG, TYPE EAR NOISE REDUCTION, RATING (NRR) 33DB, COLOR YELLOW, MATL POLYURETHANE	3M	312-1250	
4.5	HEADSET, 3M PELTOR, INTRINSICALLY-SAFE HEADSET 230 OHM, DYNAMIC MICROPHONE AND J11 PLUG, HELMET MOUNTED	3M	MT7H79P3E50	
4.6	EARMUFFS, TYPE HEARING PROTECTION, HARD HAT ATTACHED, ELECTRICALLY INSULATED	3M	X3P5E	
5	**Body Protection**			
5.1	Rain Coat	Best Safe	Best Rain suit HV	
5.2	Chemical Coverall (Tychem F) Size L ชุดป้องการสารฯสีเทา	DuPont	Tychem F	
5.3	Chemical Coverall (Tyvek)-สีขาว	3M	4510	
5.4	Arc flash suits	PETROCHEM	PPE CAT 3 & CAT 4	
5.5	Fire suits (Drager Nomex Fireman's suit)	Drager	Drager Nomex Fireman's suit	
5.6	APRON, STANDARD, THCK 8MM., MATL PVC	ANSELL EDMONT	56-100	
5.7	SUIT, TYPE CHEMICAL PROTECTION, MATL TYVEK	DUPONT	1422A	
6	**Hand Protection**			
6.1	Safety Hyflex E&I gloves, Size "M"	Ansell	11-840 (HyFlex)	
6.2	Safety Hyflex E&I gloves, Size "L"	Ansell	11-840 (HyFlex)	
6.3	Impact gloves (Rigger, Deck crews)	ELITE	Trimar ELITE	
6.4	Wire Glove ถุงมือกันบาด	BATEK	Antikutt-Hanske	
6.5	Safety Rubber chemical Gloves	Ansell	Solvex	
6.6	Safety Chemical gloves for Lab (touch ntuff)	Ansell	Touch Ntuff	
6.7	Fire fighting gloves	Drager	None	
6.8	GLOVES, CHEMICAL RESISTANT, LG 13IN., COLOR GREEN, MATL NITRILE, SOLVEX	ANSELL EDMONT	37-175-9	
6.9	GLOVES, TYPE HYFLEX, ANSELL EDMONT FOAM, SIZE 7, COLOR GRAY PALM/WHITE NYLON, GRAY FOAM NITRILE/PALM COATED, HYFLEX	ANSELL EDMONT	11-800	
6.10	GLOVES, DISPOSABLE, SIZE L, COLOR GREEN, MODEL TOUCH N TUFF POWDER FREE, MATL NITRILE, BOX OF 100EA	ANSELL EDMONT	92-600	
6.11	GLOVES, DISPOSABLE, SIZE XL, COLOR GREEN, MODEL TOUCH N TUFF POWDER FREE, MATL NITRILE, BOX OF 100EA	ANSELL EDMONT	92-600-XL	
6.12	GLOVES, TYPE ELECTRICIANS GLOVES, SIZE 9M, CLASS 00, MAXIMUM USE AC 500V.	REGELTEX	GLE00	

Items	Description	Brand	Model	Comment
6.13	GLOVES, TYPE MAXIFLEX, G-TEK, WORLD CLASS FIT, FEEL, DEXTERITY, OPEN BACK NYLON LINER WITH BLACK MICROFOAM NITRILE, DIPPED PALM EN388 SCORE 3141, MAXIFLEX, MFG G-TEK, P/N 34-874-8	G-TEK	34-874-8	
6.14	GLOVES, ELECTRICAL, VOL AC/DC 7500/11250V, SIZE 9, LG 36cm., MATL RUBBER, COLOR YELLOW, MFG REGELTEX, P/N 21RGTGLE1	REGELTEX	21RGTGLE1	
6.15	GLOVES, PEAK IMPACT PROTECTION, KONG	ORR SAFETY	SDX2	
6.16	GLOVES, TYPE DISPOSABLE GLOVE, SIZE M, L, MATL RUBBER, COLOR WHITE, BOX OF 100EACH	SRITRANG	N/A	
7	**Foot Protection**			
7.1	Safety Shoes Size "7"-"12"	Red wing	8241	
7.2	Safety Shoes Size "7"-"12"	Red wing	2245	
7.3	Rubber Boot	YAMADA	Water Guard	
7.4	Firefighter boots	Firefighter	None	
7.5	Dielectric Safety Boot	Respirex	Dielectric (yellow)	
7.6	Shoes cover	None	None	
7.7	SAFETY BOOTS, SIZE 5-12 (Ruber boots)	KINGS SAFETY	KV20YX	
8	**Falling Protection and Rescue**			
8.1	Safety Harness (3M Protecta)	3 M	1110600	
8.2	3 M DBI-Sala Tie-off adaptor (2.1 m.)	3 M	1002010	
8.3	3M | DBI-SALA Sliding Beam Anchor, Small, 2104710	3 M	2104710	
8.4	3M™ DBI-SALA™ Nano-Lok™ Twin-Leg Quick Connect Self Retracting Lifeline - Web	3 M	NANO-LOK	

FSO JAKA TARUB

WASSANA OILFIELD

PPE INVENTORY

THRE360 ENERGY

No.	Item Description	Unit	QTY	Remark
1	KONG® Original Impact Protection gloves, Size: L	Pcs	38	
2	Glove Clip Grips	Pcs	40	
3	Green Nitrile Chemical Resistant Gloves	Pair	40	
4	3M™ Comfort Grip Gloves size: 9L	Pair	70	
5	Leather Hand Glove (Welding)	Pair	24	
6	Cut Resistant gloves	Pair	12	
7	Protective Eyewear - Clear	Pcs	40	
8	Protective Eyewear Nuvo - Black	Pcs	40	
9	Safety Goggle	Pcs	9	
10	Ear Plug	Box	2	
11	3M™ Reusable Half Mask Respirator 6502QL Size L	Set	19	
12	3M Particulate Filter P100 Cartridge	Set	144	
13	3M™ Mercury Vapor/Organic Vapor/Acid Gas Cartridge, 6007 (2Pcs / Pack)	Set	33	
14	TouchNTuff Chemical Disposable Gloves, Size:L	Box	8	Lab equipment
15	Roll type paper towel	Roll	8	Lab equipment
16	3M disposable cover alls	Pcs	10	
17	Safety Helmet with Chin Strap	Set	14	
18	Confined Space Equipment			
19	Cotton gloves	Pair	70	

Page 1

Inventory Spare PPE Onboard SC SUMMER November 2025

	Spare Onboard			รายการเบิกจ่าย		
Item	Spare PPE	วันที่/ยอดรับของ	จำนวนคงเหลือ	วันที่แจกจ่าย	ชื่อผู้เบิก	Remark
1	**Helmets (white)**					
	Recommend on board = 3 Pcs		2			EXP 5/2027 : 2 Pc
2	**Helmets (Green)**					
	Recommend on board = 5 Pcs		5			Exp. 9/2026 = 5 ea
3	**สายคาดคาง**					
	Recommend on board = 8 Pcs	05 Nov 25 / 4 PC	30			
4	**รองในหมวกแบบปรับหมุน**					
	Recommend on board = 5 Pcs		9			
5	**ถุงมือกันกระแทก**					
	Recommend on board M=1		2			
	L=2		2			
	XL=1		3			
6	**แว่นตา Safety แบบใส**					
	Recommend on board = 4 Pcs		4			
	แว่นครอบสายตา(ขอบกันด้านบนและข้าง) = 3 pcs		3			
7	**แว่นตา Safety แบบดำ**					
	Recommend on board = 4 Pcs		7			
8	**ชุดหมี**					
	Recommend on board M=2		4			
	L=3		3			
	XL=3		6			
	XXL=3		5			
	XXXL=3	05 Nov 25 / 2 PC	2			
9	**รองเท้า Safety**					
10	**BBS card**					
			4			
11	**HAZOB card**					
			8			
12	**Arm Band**		2			
	เสื้อกั๊กสะท้อนแสง		1			
13	**Drug Test Kits (ชุดตรวจสารเสพติด MET)**					
			0			

SECTION 9 : SAFETY MANAGEMENT

P-09-05

Personal Protective Equipment

RECORD OF CHANGES & REVISION STATUS		
Rev. Status	**Originator**	**Description of change**
0	Theetas S.	Wholly reviews for compatible with OVMSA
1	Theetas S.	Fully update and New establishes
2	Theetas S.	New SMS Formatting which is revived & reified by ABS Class
3	Theetas S.	Change to item 5.8 Eye Protection
4	Theetas S.	Add Item 8: Reference Standard
5	Ongarj S.	Revise wording item 5.2-5.5, 5.8-5.12 and add appendix 7.1: Table selection of proper type of eye protection
6	Ongarj S.	Revise wording item 5.1: Personal Protective Equipment and item 5.2
7	Wasana J.	Add wording “Grinding” to item 5.14: PPE Matrix Table
8	Wasana J.	Review procedure and update correct wording to position reviewed
9	Wasana J.	Revise wording for items 5.1 Personal Protective Equipment (PPE) and 5.14: PPE Matrix Table.
10	Wasana J.	Add and Revise wording for items 5.3, 5.4, 5.5.1 and 5.14: PPE Matrix Table.
11	Wasana J.	Revise mandate highlight in item 5.14 PPE Matrix Table – Job Task 1: Cargo / Crane / Stores Operations

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5.14 PPE Matrix Table

Job Task	Personal Protective Equipment (PPE)																								
		Foot Protection		Hand Protection						Head Protection		Face, Eye Protection				Hearing Protection		Respiratory Protection						
	Coverall	Safety Boots	Safety Rubber Boots	Impact Gloves	Mechanic Gloves	Butcher Gloves, Kevlar Gloves	Nitrile, Rubber Gloves	Electrical Insulating Gloves	Welding Gloves	Safety Helmet	Bump Caps	Face Shield	Safety Goggle	Safety Glasses	Welding Mask	Ear Muffs	Ear Plugs	Half Mask + 3m Filter 6096	Particulate Respirator(N95)	Welding Apron	Self-Contained Breathing Apparatus (SCBA)	Floatation Devices	Fall Arrest	Sweaters
1. Cargo / Crane / Stores Operations	■	■		■						■				■								■		
2. Mooring Operations	■	■		■						■				■								■		
3. Anchor Handling	■	■		■						■				■								■		
4. Towing Operations	■	■		■						■				■								■		
5. Machinery Spaces	■	■			■					■	■			■		■	■							
6. Personnel Transfer	■	■		■						■				■								■		
7. Working at Height (> 1.80 Meters)	■	■		■						■				■									■	
8. Working Over Water	■	■		■						■				■								■	■	
9. Chipping / Painting	■	■		■			■			■		■	■	■		■	■		■			■	■	
10. Power Tools	■	■		■						■		■	■	■		■	■						■	
11. Chemical / Corrosives	■	■					■			■		■	■	■					■					
12. Small Boat Operations	■	■		■						■				■								■	■	
13. Batteries	■	■					■			■	■	■	■	■					■					

SC GALAXY: Spare PPE Inventory November 2025

	Spare Onboard			รายการเบิกจ่าย		
Item	Spare PPE	วันที่/ยอดรับของ	จำนวนคงเหลือ	วันที่แจกจ่าย	ชื่อผู้เบิก	Remark
1	**Helmets (white)**					
	Minimum spare = **3** Pcs		**3**			**Exp.09/26 = 3 pcs.**
2	**Helmets (Green)**					
	Minimum spare = **3** Pcs		**2**			**Exp.12/27 = 2 pcs.**
3	**สายคาดคาง**					
	Minimum spare = **30** Pcs		**30**			
4	**รองในหมวกแบบปรับหมุน**					
	Minimum spare = **5** Pcs		**4**			
			1			
5	**ถุงมือกันกระแทก**					
	Minimum spare M=1		**2**			
	L=2		**2**			
	XL=1		**2**			
6	**แว่นตา Safety แบบใส**					
	Minimum spare = **4** Pcs		**5**			
7	**แว่นตา Safety แบบดำ**					
	Minimum spare = **4** Pcs		**3**			
8	**ชุดหมี (new regulation)**					
	Minimum spare M=2		**3**			
	Minimum spare L=2		**3**			
	Minimum spare XL=2		**5**			
	Minimum spare 2XL=3		**2**			
	3XL		**0**			
	4XL		**2**			
9	**Arm band**					
	Minimum spare = **1** Pc		**2**			
10	**แว่นครอบแว่นสายตา**					
	Minimum spare = **3** Pcs		**3**			
11	**BBS & HAZOB card**					
	Minimum spare BBS card = **3** Pcs		**3**			
	Minimum spare HAZOB card = **3** Pcs		**3**			
12	**เสื้อกั๊กสะท้อนแสง**					
			1			

5.14 PPE Matrix Table (Cont.)

Job Task	Personal Protective Equipment (PPE)																							
		Foot Protection		Hand Protection						Head Protection		Face, Eye Protection				Hearing Protection		Respiratory Protection						
	Coverall	Safety Boots	Safety Rubber Boots	Impact Gloves	Mechanic Gloves	Butcher Gloves, Kevlar Gloves	Nitrile, Rubber Gloves	Electrical Insulating Gloves	Welding Gloves	Safety Helmet	Bump Caps	Face Shield	Safety Goggle	Safety Glasses	Welding Mask	Ear Muffs	Ear Plugs	Half Mask + 3m Filter 6096	Particulate Respirator(N95)	Welding Apron	Self-Contained Breathing Apparatus (SCBA)	Floatation Devices	Fall Arrest	Sweaters
14. Confined Spaces	Mandate	Mandate		Recommend	Recommend		Recommend			Mandate			Recommend	Mandate			Recommend				Mandate		Recommend	
15. High Pressure Systems	Mandate	Mandate		Mandate						Mandate		Mandate	Recommend	Mandate		Mandate								
16. Store Rooms/Freezer Room	Mandate	Mandate		Mandate						Mandate														Mandate
17. Galley						Mandate																		
18. Welding / Cutting/ Grinding	Mandate	Mandate							Mandate	Mandate		Mandate	Mandate		Mandate				Recommend	Recommend		Recommend		
19. Electrical Work	Mandate	Mandate						Mandate		Mandate				Mandate										
20. Dusty Areas (Includes Dry Bulk)	Mandate	Mandate		Mandate						Mandate			Recommend	Mandate					Mandate					
21. Docks, Quays, Harbors, Dry-Dock Etc.	Mandate	Mandate		Mandate				Recommend		Mandate						Mandate	Recommend					Mandate		
22. Produced water transfer	Mandate		Mandate				Mandate			Mandate		Recommend	Mandate					Mandate						

Mandate Recommend

เอกสารแนบที่ 39

Health, Safety and Sustainability Policy

valeura energy

HEALTH, SAFETY AND SUSTAINABILITY POLICY

Valeura Energy is committed to conduct its activities in a manner that will protect the health and safety of its employees, contractors, our other stakeholders, and the environment. We recognize the importance of implementing and maintaining an integrated Health, Safety, Security, Environment, Community and Quality (HSSECQ) management system that complies with applicable laws and international standards.

Health, Safety and Sustainability performance is a core value of Valeura. All Valeura employee and contractors are accountable for its delivery, and the company's success is critically dependent on fulfilling the following objectives:

- Keep **safe** our employees and everyone working on our sites, and our local communities.
- Protect the **environment** touched by our operations and reduce the environmental footprint of Valeura.
- Protect the **health** of our employees and everyone that works on our sites.
- Provide a **secure** place for our employees to work and to ensure protection of all company assets.
- Add value to the **stakeholders and communities** where we live and work.
- Ensure the **integrity of all assets** throughout the life cycle of facilities.
- Provide our customers with **quality** of products that meet or exceed their expectations.

To meet these obligations, Valeura conducts operations using a sound HSSECQ Management System which reflects good industry practice and delivers continual improvement by systematically implementing our HSSECQ policies.

Valeura commits to:

- **Comply** with all national and local regulations and meet accepted international standards and good practices for the oil and gas industry.
- **Identify** HSSECQ risks arising from our business then assess, manage, and reduce these risks.
- **Engage** with local communities and stakeholders to ensure a positive impact.
- **Implement** HSSECQ Management System, Policies and Standard Elements across our operations.
- **Set targets and measure** our Health, Safety and Sustainability performance to drive continuous improvement.
- **Ensure** appropriate resources are available to implement the HSSECQ Management System.
- **Require** our contractors and partners to meet Valeura's HSSECQ requirements.

All of our employees and contractors must **work diligently** and with regard for the integrity of our assets, the health, safety, and security of our employees, community and other stakeholders, the impact to the environment, and reinforce our shared commitment to quality.

President & CEO

October 2023

นโยบายด้านสุขภาพ ความปลอดภัย และความยั่งยืน

Valeura Energyมุ่งมั่นที่จะดำเนินกิจกรรมในลักษณะที่จะปกป้องสุขภาพและความปลอดภัยของพนักงาน ผู้รับเหมา ผู้มีส่วนได้ส่วนเสียอื่นๆ ของเรา และสิ่งแวดล้อม เราตระหนักถึงความสำคัญของการดำเนินการและการรักษาระบบการจัดการด้านสุขภาพ ความปลอดภัย ความมั่นคง สิ่งแวดล้อม ชุมชน และคุณภาพ (HSSECQ) แบบบูรณาการที่สอดคล้องกับกฎหมายที่บังคับใช้และมาตรฐานสากล

ประสิทธิภาพ ด้านสุขภาพ ความปลอดภัย และความยั่งยืนเป็นค่านิยมหลักของ Valeura พนักงานและผู้รับเหมาของ Valeura ทุกคนมีหน้าที่รับผิดชอบในการส่งมอบ และความสำเร็จของบริษัทจะขึ้นอยู่กับการบรรลุวัตถุประสงค์ต่อไปนี้เป็นอย่างยิ่ง:

- รักษา**ความปลอดภัยให้**กับพนักงานของเราและทุกคนที่ทำงานในไซต์ของเราและชุมชนท้องถิ่นของเรา
- ปกป้อง**สิ่งแวดล้อม**จากการดำเนินงานของเรา และลดผลกระทบต่อสิ่งแวดล้อมของ Valeura
- ปกป้อง**สุขภาพ**ของพนักงานของเราและทุกคนที่ทำงานในไซต์ของเรา
- จัดให้มี สถานที่ **ที่ปลอดภัย**สำหรับพนักงานของเราในการทำงาน และเพื่อให้มั่นใจในการปกป้องทรัพย์สินทั้งหมดของบริษัท
- เพิ่มมูลค่าให้กับ**ผู้มีส่วนได้ส่วนเสียและชุมชน**ที่เราอาศัยและทำงาน
- ตรวจสอบ**ความสมบูรณ์ของทรัพย์สินทั้งหมด**ตลอดวงจรชีวิตของสิ่งอำนวยความสะดวก
- มอบ**คุณภาพ**ของผลิตภัณฑ์ที่ตรงตามหรือเกินความคาดหวังของ ลูกค้า

เพื่อให้เป็นไปตามพันธกรณีเหล่านี้ Valeura ดำเนินการโดยใช้ระบบการจัดการ HSSECQ ที่ดี ซึ่งสะท้อนถึงแนวปฏิบัติทางอุตสาหกรรมที่ดี และมอบการปรับปรุงอย่างต่อเนื่องโดยการนำนโยบาย HSSECQ ของเราไปใช้อย่างเป็นระบบ

Valeura มุ่งมั่นที่จะ:

- **ปฏิบัติ**ตามกฎระเบียบระดับชาติและระดับท้องถิ่นทั้งหมด และเป็นไปตามมาตรฐานสากลที่เป็นที่ยอมรับและแนวปฏิบัติที่ดีสำหรับอุตสาหกรรมน้ำมันและก๊าซ
- **ระบุ**ความเสี่ยง HSSECQ ที่เกิดขึ้นจากธุรกิจของเรา จากนั้นประเมิน จัดการ และลดความเสี่ยงเหล่านี้
- **มีส่วนร่วม**กับชุมชนท้องถิ่นและผู้มีส่วนได้ส่วนเสียเพื่อสร้างผลกระทบเชิงบวก
- **ใช้**ระบบการจัดการ HSSECQ นโยบาย และองค์ประกอบมาตรฐานในการดำเนินงานของเรา
- **กำหนดเป้าหมายและวัด**ประสิทธิภาพด้านสุขภาพ ความปลอดภัย และความยั่งยืนเพื่อขับเคลื่อนการปรับปรุงอย่างต่อเนื่อง
- **ตรวจสอบให้แน่ใจ**ว่ามีทรัพยากรที่เหมาะสมเพื่อใช้ระบบการจัดการ HSSECQ
- **กำหนดให้**ผู้รับเหมาและหุ้นส่วนของเราต้องปฏิบัติตามข้อกำหนด HSSECQ ของ Valeura

พนักงานและผู้รับเหมาทุกคนของเราต้อง**ทำงานอย่างขยันขันแข็ง**และคำนึงถึงความสมบูรณ์ของทรัพย์สินของเรา สุขภาพ ความปลอดภัย และความมั่นคงของพนักงาน ชุมชน และผู้มีส่วนได้ส่วนเสียอื่น ๆ ผลกระทบต่อสิ่งแวดล้อม และเสริมสร้างความมุ่งมั่นร่วมกันของเราในด้านคุณภาพ

เอกสารแนบที่ 40

ตัวอย่าง Job Safety Analysis Worksheet

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Facility/Platform	Wassana MOPU Ingenium	Location: All decks	Issue Date:	JSA NO. TH-G10-OPT-HSSE-JSA-GEN-002-R2
Activity:	Take Photography and VDO without flash on MOPU			

Risk Assessment Matrix		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Very likely
Consequences	Catastrophic	MED	MED	HIGH	HIGH	HIGH
	Major	MED	MED	MED	HIGH	HIGH
	Moderate	LOW	MED	MED	MED	HIGH
	Minor	LOW	LOW	MED	MED	MED
	Negligible	LOW	LOW	LOW	MED	MED

Risk Level Rating	Approval Authority (By Position)
Low Risk:	Ops Supv [redacted]
Medium Risk:	Field Manager [redacted]
High Risk	Not Approved

Assessed by (At least 3 Assessors Required)				Assessed by			
Name	Position	Signature	Date	Name	Position	Signature	Date
[redacted]			8 APR 2025				
			8 Apr 25				
			08 Apr 2025				

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likelihood	Consequence	Rating			Likelihood (new)	Consequence (new)	Rating (new)
1.Preparation work (Carrying non intrinsically safe equipment on MOPU)	• Slipping, Tripping, Falling	• Personnel Injury	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery • Walk in the access way and escort by AA • Hold handrail when walking on stairway		Unlikely	Minor	Low
	• Noise	• Hearing loss	Likely	Minor	Medium	• Reduce exposure time • Wear Earplugs (or earmuff)		Unlikely	Minor	Low
	• Drop Objects	• Person Injury Property damage	Possible	Minor	Medium	• PPE (hard hat) • Think Before Act		Unlikely	Minor	Low
2.Take VDO and Photograph without flash Confirm no hydrocarbon by gas test before switch on a gas detector.	• Slipping, Tripping, Falling	• Personnel Injury	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery • Walk in the access way and escort by AA • Hold handrail when walking on stairway		Unlikely	Minor	Low
	• Noise	• Hearing loss	Likely	Minor	Medium	• Reduce exposure time • Wear Earplugs (or earmuff)		Unlikely	Minor	Low
	• Drop Objects	• Personnel injury • Property damage	Possible	Major	Medium	• Secure tools and equipment part • Proper container to contain camera / VDO player part.		Unlikely	Minor	Low
	• Ignition / spark	• Fire, Ignition	Possible	Major	Medium	• Perform gas checking at all times when perform VDO & Photo taking • SWA when gas detector alarm		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likelihood	Consequence	Rating			Likelihood (new)	Consequence (new)	Rating (new)
	• Spark from taking VDO and Photographs / Flame detector activated	• MOPU shut down, loss of production	Possible	Major	Medium	• Confirm no flash from camera unit • PTW and MOS as required by AA		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Facility/Platform	Wassana MOPU Ingenium	**Location:** All decks	**Issue Date:** 05 Jun 25	**JSA NO.** TH-G10-OPT-HSSE-JSA-GEN-003-R4
Activity:	PM Safety Equipment			

Risk Assessment Matrix		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Very likely
Consequences	Catastrophic	MED	MED	HIGH	HIGH	HIGH
	Major	MED	MED	MED	HIGH	HIGH
	Moderate	LOW	MED	MED	MED	HIGH
	Minor	LOW	LOW	MED	MED	MED
	Negligible	LOW	LOW	LOW	MED	MED

Risk Level Rating	Approval Authority (By Position)
Low Risk:	Ops Supv [redacted]
Medium Risk:	Field Manager
High Risk	Not Approved

Assessed by (At least 3 Assessors Required)				Assessed by			
Name	Position	Signature	Date	Name	Position	Signature	Date
[redacted]			05 Jun 25				
			05 Jun 25				
			05 Jun 25				

Job Safety Analysis (JSA)

valeura energy

Document no TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
1.Access to portable fire extinguishers.	• Slipping, Tripping, Falling.	• Personnel Injury.	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA or related person. • To always wear the complete PPE. • Walk in walkway routes.		Unlikely	Minor	Low
	• Noise.	• Hearing loss.	Likely	Minor	Medium	• Reduce exposure time. • Wear Earplugs (or earmuff).		Unlikely	Minor	Low
	• Drop Objects.	• Person Injury Property damage.	Possible	Minor	Medium	• Hazard hunt before start work. • Barricaded area.		Unlikely	Minor	Low
2.Remove and install fire extinguishers on station for Inspection and Cleaning.	• Slipping, Tripping, Falling.	• Personnel Injury • Back injury & Ergonomics.	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA or related person. • Hold handrail when walking on stairway.		Unlikely	Minor	Low
	• Noise.	• Hearing loss.	Likely	Minor	Medium	• Reduce exposure time. • Wear Earplugs (or earmuff).		Unlikely	Minor	Low
	• Drop Objects.	• Personnel injury. • Property damage.	Possible	Major	Medium	• Secure tools and equipment part. • Correct posture and manual handling.		Unlikely	Minor	Low
	• Pressure hazard of fire extinguisher cylinders.	• Personnel Injury.	Possible	Major	Medium	• Stay away from line of fire of fire extinguishers. • SWA when gas detector alarm.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• Ensure that the fire extinguisher is in good condition before inspection e.g. free of severe corrosion that could lead to explosion.				
	• Pressure hazard of fire extinguisher cylinders.	• Personnel Injury • Back injury & Ergonomics.	Possible	Major	Medium	• Stay away from line of fire of fire extinguishers. • SWA when gas detector alarm.		Unlikely	Minor	Low
	• Pinch point.	• Hand and finger Injury.	Likely	Minor	Medium	• Wear Mechanix hand gloves. • Task performs by competent person. • Pinch point hazard hunt.		Unlikely	Minor	Low
	• Noise.	• Hearing loss.	Likely	Minor	Medium	• Reduce exposure time. • Wear Earplugs (or earmuff).		Unlikely	Minor	Low
3.Access to portable fire hydrant unit. Visual inspection. Cleaning.	• Slipping, Tripping, Falling.	• Personnel Injury • Back injury & Ergonomics.	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA or related person. • Hold handrail when walking on stairway.		Unlikely	Minor	Low
Tie-in fire hose and Run Fire water pump for water flushing.	• Noise.	• Hearing loss.	Likely	Minor	Medium	• Reduce exposure time. • Wear Earplugs (or earmuff).		Unlikely	Minor	Low
	• Pinch point. • Pressure from fire water system.	• Hand and finger Injury. • Personal Injury.	Likely	Minor	Medium	• Wear Mechanix hand gloves. • Tasks perform by competent person. • Pinch point hazard hunt.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• Inspect connection for loosen or leaks before testing. • Think Before Act.				
4.Remove and install Life Raft.	• Slips, Trip and Falls hazards.	• Personal injury.	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA or related person. • Wear full body safety harness.		Unlikely	Minor	Low
	• Pinch Point.	• Hand and Finger injury.	Likely	Minor	Medium	• Wear safety hand gloves. • Task performs by competent person. • Aware pinch point hazard hunt. • Focus on task at hand.		Unlikely	Minor	Low
	• Dropped Object.	• Personnel injury. • Property damage.	Possible	Major	Medium	• Planning before starting remove and install life raft. • Ensure life raft station that it in safe condition. • Ensure right securing life raft while moving by Crane for remove and install life raft on the station. • Ensure right securing life raft on the station. • Make sure all conditions and secure after completed for installed the life raft.		Unlikely	Minor	Low
	• Line of Fire.	• Personnel injury.	Possible	Moderate	Medium	• Aware about line of fire hazard while performing task.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• Use stops work authority if find unsafe act. or unsafe condition while performing task. • Ensure good communication while performing task. • Keep out of line of fire.				
	• Noise.	• Hearing loss.	Likely	Minor	Medium	• Reduce exposure time. • Wear Earplugs (or earmuff).		Unlikely	Minor	Low
	• Miscommunication .	• Personnel injury. • Property damage.	Likely	Minor	Medium	• Conduct pre-job safety meeting before start task. • Ensure all relevant person have good communication while performing task. • Use stops work authority if find unsafe act. or unsafe condition while performing task.		Unlikely	Minor	Low
5.Remove and install Life buoy and MOB.	• Slips, Trip and Falls hazards.	• Personal injury.	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA or related person. • Wear full body safety harness.		Unlikely	Minor	Low
	• Pinch Point.	• Hand and Finger injury.	Likely	Minor	Medium	• Wear safety hand gloves. • Task performs by competent person. • Aware pinch point hazard hunt. • Focus on task at hand.		Unlikely	Minor	Low
	• Dropped Object.	• Personnel injury.	Possible	Major	Medium	• Planning before starting remove and install Life buoy and MOB.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
		• Property damage.				• Ensure Life buoy and MOB station that it in safe condition. • Ensure right securing Life buoy and MOB while moving for remove and install it on the station. • Ensure right securing Life buoy and MOB on the station. • Make sure all conditions and secure after completed for installed the Life buoy and MOB.				
6.Inspection for Embarkation Ladder.	• Slips, Trip and Falls hazards.	• Personal injury.	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA or related person. • Wear full body safety harness.		Unlikely	Minor	Low
	• Pinch Point.	• Hand and Finger injury.	Likely	Minor	Medium	• Wear safety hand gloves. • Task performs by competent person. • Aware pinch point hazard hunt. • Focus on task at hand.		Unlikely	Minor	Low
	• Line of Fire.	• Personnel injury.	Possible	Moderate	Medium	• Aware about line of fire hazard while performing task. • Use stops work authority if find unsafe act. or unsafe condition while performing task. • Ensure good communication while performing task. • Keep out of line of fire.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
7.Fill-up fresh water in portable eye wash.	• Slips, Trip and Falls hazards.	• Personal injury.	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA or related person.		Unlikely	Minor	Low
	• Pinch Point.	• Hand and Finger injury.	Likely	Minor	Medium	• Wear safety hand gloves. • Task performs by competent person. • Aware pinch point hazard hunt. • Focus on task at hand.		Unlikely	Minor	Low
	• Back pain or muscle pain	• Personal injury.	Possible	Moderate	Medium	• Use buddy system. • Avoid improper posture while performing task. • Stand and sit tall, avoid slouching, and ensure proper ergonomics. • Bend your knees, keep your back straight, and hold portable eye wash close to your body when manual handling. • Ensure good communication while move and install portable eye wash on the station.		Unlikely	Minor	Low
8.Visual inspection of safety equipment. - Electrical Rescue Kits. - Breathing Apparatus. - Damage Control Team Cabinet.	• Slips, Trip and Falls hazards.	• Personal injury.	Possible	Moderate	Medium	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA or related person. • Wear full body safety harness if perform visual inspection safety equipment at height.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likelihood	Consequence	Rating			Likelihood (new)	Consequence (new)	Rating (new)
- Embarkation Ladders. - Emergency Shower Stations. - Eye Wash Stations. - Fire Extinguishers. Fire Hose Reel Stations. - Grab Bags. - Helicopter Crash Cabinet. - Life Raft & Deck Cradle. - Life buoy and MOB. - Oil Spill Kits. - Marin Life Jaket. - Personal Transfer Basket. - Oil Spill Response Equipment. - Full Body Safety Harness. - Deluge Nozzle. - Fire Blanket.	• Pinch Point.	• Hand and Finger injury.	Likely	Minor	Medium	• Wear safety hand gloves. • Task performs by competent person. • Aware pinch point hazard hunt. • Focus on task at hand.		Unlikely	Minor	Low
	• Back pain or muscle pain	• Personal injury.	Possible	Moderate	Medium	• Avoid improper posture while performing task. • Stand and sit tall, avoid slouching, and ensure proper ergonomics. • Bend your knees, keep your back straight, and hold objects close to your body when manual handling.		Unlikely	Minor	Low
9.Housekeeping.	• Pinch point.	• Hand and finger Injury.	Likely	Minor	Medium	• Wear Mechanix hand gloves. • Tasks perform by competent person. • Pinch point hazard hunt.		Unlikely	Minor	Low
	• Contaminate waste.	• Environmental impact.	Likely	Minor	Medium	• Proper waste segregation.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

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Document no TH-GEN-HS-FORM-029-R4

Facility/Platform	Wassana MOPU Ingenium	**Location:** Top Deck of Accommodation	**Issue Date:** 18-Mar-25	**JSA NO.** TH-G10-OPT-HSSE-JSA-GEN-004-R3
Activity:	BA air compressor test run and Re-filling BA air Cylinders			

Risk Assessment Matrix		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Very likely
Consequences	Catastrophic	MED	MED	HIGH	HIGH	HIGH
	Major	MED	MED	MED	HIGH	HIGH
	Moderate	LOW	MED	MED	MED	HIGH
	Minor	LOW	LOW	MED	MED	MED
	Negligible	LOW	LOW	LOW	MED	MED

Risk Level Rating	Approval Authority (By Position)
Low Risk:	Ops Supv [redacted]
Medium Risk:	Field Manager
High Risk	Not Approved

Assessed by (At least 3 Assessors Required)				Assessed by			
Name	Position	Signature	Date	Name	Position	Signature	Date
[redacted]			18-Mar-25	Manoch Prom-a-ree	Deck Foreman	[redacted]	18-Mar-25
			18-Mar-25				
			18-Mar-25				

Job Safety Analysis (JSA)

valeura energy

Document no TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
1.Work preparation Test run BA air compressor	• Slip, Trip and Fall • Pinch point	• Personal injury • Property damage and production loss	Possible	Moderate	Medium	• Aware Slip, trip and fall hazard in place. • maintain the working area without oil/ slippery surface		Unlikely	Minor	Low
	• Noise	• Hearing loss	Likely	Minor	Medium	• Reduce exposure time • Wear Earplugs (or earmuff)		Unlikely	Minor	Low
	• Electric shock	• Personal injury	Likely	Minor	Medium	• Check condition of electrical cable • Electrical cable does not contact to water • Competence person.		Unlikely	Minor	Low
2.Re-filling BA. cylinders	• Pressure hazard of BA cylinders	• Pressure hazard of BA cylinders	Possible	Major	Medium	• Stay away from line of fire of BA Cylinder • SWA when gas detector alarm • Monitoring while pumping air into cylinder		Unlikely	Minor	Low
	• Pressure hose burst • Pressure trap	• Pressure hose burst • Pressure trap	Possible	Major	Medium	• Stand by man at all times while re-filling (Outside re-filling bay) • Area to be barricade • Air hoses to be inspected and in good condition • Keep monitor Pressure indicator		Unlikely	Minor	Low
	• Noise	• Noise	Likely	Minor	Medium	• Reduce exposure time • Wear Earplugs (or earmuff)		Unlikely	Minor	Low
	• Ergonomic (Manual handling)	• Ergonomic (Manual handling)	Unlikely	Moderate	Medium	• Follow ergonomic practice. • Suitable Working time. • Proper motion		Very Unlikely	Moderate	Low

Job Safety Analysis (JSA)

valeura energy

Document no TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• Do not manual handling over limit by Thai Law • Avoid manual lifting, use mechanical lifting aid				
3.Housekeeping	• Slip, Trip and Fall	• Person Injury	Possible	Moderate	Medium	• Aware Slip, trip and fall hazard in place. • Maintain the working area without oil/ slippery surface • Tidy up working area and ensure no obstruction		Unlikely	Minor	Low
	• Pinch point	• Hand and finger Injury	Likely	Minor	Medium	• Task performs by competent person with valid certificate • Pinch point hazard hunt • Wear properly hand gloves • Avoid contacting with pinch point		Unlikely	Minor	Low
	• Drop Objects	• Person Injury • Property damage	Possible	Minor	Medium	• Secure tools and equipment • 2 ways communication during the work • Do no working under the suspended load / keep away form line of fire		Unlikely	Minor	Low
	• Contaminated waste	• Environment impact / effect	Likely	Moderate	Medium	• Used proper containment • Put contaminated waste into hazardous bin • Follow MP's waste management		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no TH GEN HS FORM 029 R4

Facility/Platform	Wassana Field	Location: Cellar & Boat landing	Issue Date:	JSA NO. TH-G10-OPT-HSSE-JSA-GEN-005-R2
Activity:	Taking water samples and fishing for ecological study			

Risk Assessment Matrix		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Very likely
Consequences	Catastrophic	MED	MED	HIGH	HIGH	HIGH
	Major	MED	MED	MED	HIGH	HIGH
	Moderate	LOW	MED	MED	MED	HIGH
	Minor	LOW	LOW	MED	MED	MED
	Negligible	LOW	LOW	LOW	MED	MED

Risk Level Rating	Approval Authority (By Position)
Low Risk	Ops Supv
Medium Risk	Field Manager [redacted]
High Risk	Not Approved

Assessed by (At least 3 Assessors Required)				Assessed by			
Name	Position	Signature	Date	Name	Position	Signature	Date
[redacted]			21 Apr 25.				
			21 Apr 25.				
			21 Apr 25				

Job Safety Analysis (JSA)

valeura energy

Document no TH GEN HS FORM 029 R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likelihood	Consequence	Rating			Likelihood (new)	Consequence (new)	Rating (new)
1.Transfering equipment to the location	• Slipping / tripping / falling	• Personal injury	Likely	Minor	Medium	• Good housekeeping to be maintained. • Be aware of end secure tripping hazard • Maintain a clean workplace free of any obstruction • Cleaning for slippery surface, oily or wet floor • Keep eyes on path. • No carrying with two hands when using stairs. • Always hold the handrail. • Additional precaution and control for using of Lace-Up Safety Boot o Visual inspection before each use: ensure laces are in good condition and hooks are not deformed or sharp. o Laces must be double-knotted and tucked inside boot or under pant leg to reduce exposure. o Avoid lace-up boots in areas with sharp edges, grating, climbing structures, or machinery o Ensure ongoing checks and enforce lace security, especially after breaks or shift changes.		Unlikely	Minor	Low
	• Pinch point • Sharp edges	• Hand, finger and body part Injury	Likely	Moderate	Medium	• Tasks perform by competent person • Sharped edge hazard labels • Wear proper hand gloves (Mechanix, Impact gloves) • Conduct Hazard Hunt to identify pinch point in workplace		Possible	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH.GEN.HS.FORM.029.R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• Do not place hands or any part of body in pinch point or in the line of fire. • Protect sharp / pinch point when work in congested area. • Do not wear ring/ jewellery				
	• Drop Objects • Falling object	• Personal injuries • Property damage	Possible	Minor	Medium	• Tool and equipment are checked and secured properly. • Weather condition present within permission. • Proper communication set up and discussed in the toolbox talks. • Do not step or stand on equipment or unsafe work platform. • Barricade off the working area and/or lower deck • Used drops tool if required.		Unlikely	Minor	Low
2.Install lifting gears (snatch block) onto the temporary scaffolding for taking water samples	• Adverse weather	• Personnel injury, • Property damage	Unlikely	Moderate	Medium	• Observe OWS data, weather, and sea state condition • Apply SWA when a wind speed > 25 Knots		Unlikely	Minor	Low
	• Pinch point • Sharp edges	• Hand, finger and body part Injury	Likely	Minor	Medium	• Tasks perform by competent person • Sharped edge hazard labels • Wear proper hand gloves (Mechanix, Impact gloves) • Conduct Hazard Hunt to identify pinch point in workplace • Wear proper work gloves protection suitable to the tasks / Mechanix Gloves/ Impact gloves if required		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH.GEN.HS.FORM.029.R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• Do not place hands or any part of body in pinch point or in the line of fire. • Protect sharp / pinch point when work in congested area. • Do not wear ring/ jewellery				
	• Slipping / tripping / falling	• Personal injury	Likely	Minor	Medium	• Good housekeeping to be maintained. • Be aware of end secure tripping hazard • Maintain a clean workplace free of any obstruction • Cleaning for slippery surface, oily or wet floor • Keep eyes on path. • No carrying with two hands when using stairs. • Always hold the handrail.		Unlikely	Minor	Low
	• Ergonomic hazard	• Personal injury • Muscle pain	Possible	Minor	Medium	• Follow manual handling method • Eliminate unnecessary bending / reaching. • Suitable Working time. • Load for hand carry less than 25 kg. • Avoid awkward position. • Apply lifting aid.		Unlikely	Minor	Low
	• Drop Objects • Falling object	• Personal injuries • Property damage	Possible	Minor	Medium	• Tool and equipment are checked and secured properly. • Weather condition present within permission. • Proper communication set up and discussed in the toolbox talks.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• No suspension load leaves without attention. • No personnel standing in vicinity of being lifted and dropped. • Safety harness and 100% tie-off required when work at height. • Do not step or stand on equipment or unsafe work platform. • Barricade off the working area and/or lower deck • Used drops tool if required.				
	• Adverse weather	• Personnel injury, • Property damage	Unlikely	Moderate	Medium	• Observe OWS data, weather, and sea state condition • Apply SWA when a wind speed > 25 Knots		Unlikely	Minor	Low
3.Perform water sampling and fishing	• Pinch point • Sharp edges	• Sharp point from fishing equipment and fish	Possible	Minor	Medium	• Wear proper gloves • Put hand in the right place, identify sharp point hazard prior work		Unlikely	Minor	Low
	• Pinch point • Sharp edges	• Hand, finger and body part Injury	Likely	Minor	Medium	• Tasks perform by competent person • Sharped edge hazard labels • Wear proper hand gloves (Mechanix, Impact gloves) • Conduct Hazard Hunt to identify pinch point in work place • Wear proper work gloves protection suitable to the tasks / Mechanix Gloves/ Impact gloves if required • Do not place hands or any part of body in pinch point or in the line of fire.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

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Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• Protect sharp / pinch point when work in congested area. • Do not wear ring/ jewellery				
	• Drop Objects • Falling object	• Personal injuries • Property damage	Possible	Minor	Medium	• Tool and equipment are checked and secured properly. • Weather condition present within permission. • No personnel standing in vicinity of being lifted and dropped. • Safety harness and 100% tie-off required when work at height. • Do not step or stand on equipment or unsafe work platform. • Barricade off the working area and/or lower deck • Used drops tool if required.		Unlikely	Minor	Low
	• Adverse weather	• Personnel injury, • Property damage	Unlikely	Moderate	Medium	• Observe OWS data, weather and sea state condition • Apply SWA when a wind speed > 25 Knots		Unlikely	Minor	Low
4.Remove water sampling equipment and lifting equipment from scaffold	• Ergonomic hazard	• Personal injury • Muscle pain	Possible	Minor	Medium	• Follow manual handling method • Eliminate unnecessary bending / reaching. • Suitable Working time. • Load for hand carry less than 25 kg. • Avoid awkward position. • Apply lifting aid.		Unlikely	Minor	Low
	• Drop Objects • Falling object	• Personal injuries	Possible	Minor	Medium	• Tool and equipment are checked and secured properly.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

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Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
		• Property damage				• Weather condition present within permission. • No personnel standing in vicinity of being lifted and dropped. • Do not step or stand on equipment or unsafe work platform. • Barricade off the working area and/or lower deck • Used drops tool if required.				
	• Sharp edges	• Hand or finger injury	Likely	Moderate	Medium	• Keep out of line of fire. • Focus on task at hand. • Keep hands away from pinch points. • Wear PPE. • Buddy system. • Competent persons perform task. • Good communication in team. • SRT ready for accident case.	•Review L&L_IP injury finger during performs environmental monitoring program for water sampling.	Possible	Minor	MED
	• Slipping / tripping / falling	• Personal injury	Likely	Minor	Medium	• Good housekeeping to be maintained. • Be aware of end secure tripping hazard • Maintain a clean workplace free of any obstruction • Cleaning for slippery surface, oily or wet floor • Keep eyes on path. • No carrying with two hands when using stairs. • Always hold the handrail.		Unlikely	Minor	Low

Job Safety Analysis (JSA)

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Document no TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
	• Adverse weather	• Personnel injury, • Property damage	Unlikely	Moderate	Medium	• Observe OWS data, weather and sea state condition • Apply SWA when a wind speed > 25 Knots		Unlikely	Minor	Low
5.Perform housekeeping.	• Slipping / tripping / falling	• Personal injury	Likely	Minor	Medium	• Good housekeeping to be maintained. • Be aware of end secure tripping hazard • Maintain a clean workplace free of any obstruction • Cleaning for slippery surface, oily or wet floor • Keep eyes on path. • No carrying with two hands when using stairs. • Always hold the handrail.		Unlikely	Minor	Low
	• Pinch point • Sharp edges	• Hand, finger and body part Injury	Likely	Minor	Medium	• Tasks perform by competent person • Sharped edge hazard labels • Wear proper hand gloves (Mechanix, Impact gloves) • Conduct Hazard Hunt to identify pinch point in work place • Wear proper work gloves protection suitable to the tasks / Mechanix Gloves/ Impact gloves if required • Do not place hands or any part of body in pinch point or in the line of fire. • Protect sharp / pinch point when work in congested area. • Do not wear ring/ jewellery		Unlikely	Minor	Low

Job Safety Analysis (JSA)

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Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likelihood	Consequence	Rating			Likelihood (new)	Consequence (new)	Rating (new)
	• Adverse weather	• Personnel injury, • Property damage	Unlikely	Moderate	Medium	• Observe OWS data, weather, and sea state condition • Apply SWA when a wind speed > 25 Knots		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Facility/Platform	Wassana	**Location:** Supply Vessel	**Issue Date:** 15 Dec 2023	**JSA NO.** TH-G10-OPT-HSSE-JSA-GEN-006-R2
Activity:	Run Transfer Pump and Power Pack OSRE for Exercise OSRE			

Risk Assessment Matrix		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Very likely
Consequences	Catastrophic	MED	MED	HIGH	HIGH	HIGH
	Major	MED	MED	MED	HIGH	HIGH
	Moderate	LOW	MED	MED	MED	HIGH
	Minor	LOW	LOW	MED	MED	MED
	Negligible	LOW	LOW	LOW	MED	MED

Risk Level Rating	Approval Authority (By Position)
Low Risk	Ops Supv [redacted]
Medium Risk	Field Manager
High Risk	Not Approved

Assessed by (At least 3 Assessors Required)				Assessed by			
Name	Position	Signature	Date	Name	Position	Signature	Date
[redacted]			20 May 25				
			19 May 25				
			19 May 2023				
			19 MAY 2025				

Job Safety Analysis (JSA)

valeura energy

Document no. TH.GEN.HS.FORM.029.R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
1.Job preparation setup of equipment, Check and prepare Engine prior start up.	• Dropped objects (from manual handing)	• Leg injury • Finger injury	Unlikely	Moderate	Medium	• Secure tools and equipment /parts • Firm grip while carry objects		Very Unlikely	Moderate	Low
	• Slippery (diesel spill/leak to floor)	• Person injury • Environmental impact	Unlikely	Moderate	Medium	• Drip tray to be provided for spillage. • Observation hose diesel while in tank • Prepare soft cleaning pad cleaning		Very Unlikely	Moderate	Low
	• Ergonomic (Manual handling)	• Muscle pain	Unlikely	Moderate	Medium	• Follow ergonomic practice. • Suitable Working time. • Proper motion • Do not manual handling over limit by Thai Law • Avoid manual lifting, use mechanical lifting aid		Very Unlikely	Moderate	Low
	• Slip / Trip / Fall	• Personal injury	Possible	Minor	Medium	• No obstruction of walkway, escapes routes and equipment in working area • Ensure no slippery floor • Keep eye on path • Keep walkway clear of obstruction.		Unlikely	Moderate	Low
	• Pinch point	• Hand /finger injury	Unlikely	Moderate	Medium	• Do not touch load while lifting • Wear hand protection glove • Make sure cover be secure • Focus task at hand.		Very Unlikely	Moderate	Low
	• Sharp edge	• Hand injury • Personal injury	Unlikely	Moderate	Medium	• Cover the sharp edge point by soft material • Wear hand protection gloves		Very Unlikely	Moderate	Low

Job Safety Analysis (JSA)

valeura energy

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Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
	• High ambient temperatures	• Heat stroke	Possible	Moderate	Medium	• Control working time • Provide sufficient drinking water on the job site • Buddy up system • Set up working / not continue work for long time		Very Unlikely	Moderate	Low
Exercise on vessel	• Fall to sea	• Person injury	Unlikely	Moderate	Medium	• Wear work vest all time. • Observe weather condition.		Very Unlikely	Moderate	Low
2.Run Transfer Pump and Power pack OSRE	• Ignition source (engine)	• Fire • Person injury • Property damage	Unlikely	Moderate	Medium	• Place engine at safe location consult operation supervisor • Only competent operator to run the engine. • Pre-use check for safe work condition of engine. • Monition & log the parameters of engine while running for normal condition. • LEL checks to ensure gas-free atmosphere.(if test on platform) • Provide Dry power extinguisher in place. • Engine emergencies stop test. • Watchman at all times running engine.		Very Unlikely	Moderate	Low
	• Flying objects (strong wind)	• Personal injury • Property damage	Unlikely	Moderate	Medium	• Secure tools and equipment /parts /loose objects • Monitor weather forecast • Stop running engine during heaving raining and strong wind		Very Unlikely	Moderate	Low
	• Noise	• Hearing loss	Unlikely	Moderate	Medium	• Wear ear plugs or ear muff		Very Unlikely	Moderate	Low

Job Safety Analysis (JSA)

valeura energy

Document no TH GEN HS FORM 029 R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
	• Rotating machinery	• Loss of limbs • Fingers/hand injuries • Entanglement	Very Likely	Major	High	• Ensure 100% installation of guard protection for rotating part of unit • Warning sign • Keep hand and finger away from line of fire. • Ensure guard of rotating machine is secure.		Very Unlikely	Moderate	Low
	• Smoke from engine	• Irritation breathing system • Personal injury	Unlikely	Moderate	Medium	• Pre-use check for safe work condition of engine. • Monition & log the parameters of engine while running for normal condition • Stay up wind.		Very Unlikely	Moderate	Low
	• Ignition source (engine)	• Fire • Person injury • Property damage	Unlikely	Major	Medium	• Do not top up diesel while running engine • Grounding diesels top up hose and engine while perform top up diesel • Two-way communication with platform CCR or Vessel captain.		Very Unlikely	Moderate	Low
	• Diesel spill/leak to floor	• Person injury • Environmental impact	Unlikely	Moderate	Medium	• Drip tray to be provided for spillage. • Observation hose diesel while in tank • Check condition of diesel hose in good condition, no leak, no damage • Prepare soft cleaning pad cleaning		Very Unlikely	Moderate	Low
	• Pinch point	• Hand /finger injury	Unlikely	Moderate	Medium	• Make sure cover be secure		Very Unlikely	Moderate	Low

Job Safety Analysis (JSA)

valeura energy

Document no TH GEN HS FORM 029 R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
						• Avoid place hand /finger in pinch point area • Wear hand protection glove				
	• Sharp edge	• Hand injury • Personal injury	Unlikely	Moderate	Medium	• Cover the sharp edge point by soft material • Wear hand protection gloves		Very Unlikely	Moderate	Low
4.Housekeeping	• Slip, Trip and Fall	• Person Injury	Possible	Minor	Medium	• Aware Slip, trip and fall hazard in place. • Provide absorbent at the working area and maintain the working area without oil/ slippery surface • Keep tidy the working area without any obstruction • 3 points contact technic		Unlikely	Minor	Low
	• Pinch point	• Hand and finger Injury	Possible	Minor	Medium	• Task performs by competent person • Pinch point hazard hunt • Wear properly hand gloves • Avoid contacting with pinch point		Unlikely	Minor	Low
	• Drop Objects	• Person Injury • Property damage	Possible	Minor	Medium	• Competent person with valid certificate • Secure tools and equipment part • 2 ways communication during work • Do no working under the suspended load / keep away form line of fire		Unlikely	Minor	Low
	• Contaminated waste	• Environment impact / effect	Possible	Minor	Medium	• Used proper containment • Put contaminated waste into hazardous bin • Follow VE waste management		Unlikely	Minor	Low

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Facility/Platform	Wassana MOPU Ingenium	Location: All decks	Issue Date: 27-Apr-25	JSA NO. TH-G10-OPT-HSSE-JSA-GEN-007-R1
Activity:	PM Test Deluge System			

Risk Assessment Matrix		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Very likely
Consequences	Catastrophic	MED	MED	HIGH	HIGH	HIGH
	Major	MED	MED	MED	HIGH	HIGH
	Moderate	LOW	MED	MED	MED	HIGH
	Minor	LOW	LOW	MED	MED	MED
	Negligible	LOW	LOW	LOW	MED	MED

Risk Level Rating	Approval Authority (By Position)
Low Risk	Ops Supv [redacted]
Medium Risk	Field Manager
High Risk	Not Approved

Assessed by (At least 3 Assessors Required)				Assessed by			
Name	Position	Signature	Date	Name	Position	Signature	Date
[redacted]			27-Apr-25	[redacted]			27-Apr-25
			27-Apr-25				
			27-Apr-25				

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likelihood	Consequence	Rating			Likelihood (new)	Consequence (new)	Rating (new)
1.Job preparation setup of equipment.	• Slipping, Tripping, Falling	• Personnel Injury	Possible	Moderate	MED	• Ensure the area is clear of obstruction and the floor is not slippery. • To always wear the complete PPE. • Walk in walkway routes.		Unlikely	Minor	LOW
	• Noise	• Hearing loss	Likely	Minor	MED	• Reduce exposure time. • Wear Earplugs (or earmuff).		Unlikely	Minor	LOW
	• Dropped objects (from manual handing)	• Leg injury • Finger injury	Unlikely	Moderate	MED	• Secure tools and equipment /parts. • Firm grip while carry objects.		Very Unlikely	Moderate	LOW
2.Vessel in the Position alongside and mooring /unmooring.	• High waves • Struck by the bunker hose	• Property damage/loss	Unlikely	Moderate	MED	• Ensure the weather and sea condition is safe and agree with the vessel master to bunkering. • Avoid contact of bunker hose while travelling. • Maintain a good and clear communication with the boat and boat crew.		Very Unlikely	Negligible	LOW
	• Line of fire	• Fatality	Unlikely	Major	MED	• Keep out of line of fire. • Radio communication. • Barricade off loading/lifting area. • Wear proper impact gloves.		Very unlikely	Moderate	LOW
	• Body falls from height	• Man overboard	Unlikely	Moderate	MED	• Work from inside handrail. • Buddy system during mooring operation.		Very unlikely	Moderate	LOW
3.To install bunkering hose and connect from	• Line of fire	• Bone fractures • Bruises	Unlikely	Moderate	MED	• Keep out of line of fire.		Very Unlikely	Moderate	LOW

Job Safety Analysis (JSA)

valeura energy

Document no TH GEN HS FORM 029 R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
MOPU (Deluge system) to supply boat.						• Maintain a clear communication between the crane operator, banksman. and vessel Master. • Tag lines must be used. • Standard PPE must be worn.				
	• Hose falls	• Fatality	Unlikely	Major	MED	• Visually inspect and confirm all lifting equipment are in good condition. • Ensure all lifting equipment have a valid colour code. • Keep out of line of fire. • Securing the bunkering hose.		Very Unlikely	Minor	LOW
	• Vessel loss of control	• Property damage	Unlikely	Moderate	MED	• Weather condition is within standard practices. • Monitor the Weather conditions and report any change. • Continue communication between supply boat and Platform.		Unlikely	Minor	LOW
	• Pinch point	• Hand/finger injury	Unlikely	Moderate	MED	• Keep hands and fingers away from pinch point. • Wear correct PPE and impact gloves. • Practice corrects lifting position.		Unlikely	Minor	LOW
4.Run the pump to pressurize the water into the fire water line to test the deluge system.	• Slipping, Tripping, Falling	• Personnel Injury • Back injury & Ergonomics	Possible	Moderate	MED	• Ensure the area is clear of obstruction and the floor is not slippery. • Walk in the access way and escort by AA. • Hold handrail when walking on stairway.		Unlikely	Minor	LOW

Job Safety Analysis (JSA)

valeura energy

Document no TH GEN HS FORM 029 R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
	• Pinch point • Pressure from fire water system	• Hand and finger Injury • Personal Injury	Likely	Minor	MED	• Wear Mechanix hand gloves. • Tasks perform by competent person. • Pinch point hazard hunt. • Inspect connection for loosen or leaks before testing. • Think Before Act. • Confirm the operation rating of the hose is above the test rating during testing.		Unlikely	Minor	LOW
	• Loss of communication	• Property damaged	Likely	Minor	MED	• Communication to everyone on the platform. • Move materials or equipment that could be damaged by the deluge test out of the area.		Unlikely	Minor	LOW
	• Vessel loss of control	• Property damage	Unlikely	Moderate	MED	• Weather condition is within standard practices. • Monitor the Weather conditions and report any change.		Unlikely	Minor	LOW
5.Visual inspection of all nozzles in the deluge system.	• Slipping, Tripping, Falling	• Personnel Injury	Possible	Moderate	MED	• Ensure the area is clear of obstruction and the floor is not slippery. • Hold handrail when walking on stairway.		Unlikely	Minor	LOW
6.Stow bunker hoses back to MOPU.	• Line of fire	• Bone fractures • Bruises	Unlikely	Moderate	MED	• Keep out of line of fire. • Maintain a clear communication between the crane operator, banksman. and vessel Master. • Tag lines must be used. • Standard PPE must be worn.		Very Unlikely	Moderate	LOW

Job Safety Analysis (JSA)

valeura energy

Document no TH GEN HS FORM 029 R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
	• Bunker hose falls	• Fatality	Unlikely	Major	MED	• Visually inspect and confirm all lifting equipment are in good condition. • Ensure all lifting equipment have a valid colour code. • Keep out of line of fire. • Securing the bunkering hose.		Very Unlikely	Major	LOW
	• Vessel loss of control	• Property damage	Unlikely	Moderate	MED	• Weather condition is within standard practices. • Monitor the Weather conditions and report any change.		Unlikely	Minor	LOW
7.Housekeeping.	• Pinch point	• Hand and finger Injury	Likely	Minor	MED	• Wear Mechanix hand gloves. • Tasks perform by competent person. • Pinch point hazard hunt.		Unlikely	Minor	LOW
	• Slip / Trip / Fall	• Personal injury	Likely	Major	HIGH	• Aware slip, trip and fall hazard in place. • Provide absorbent at the working area and maintain the working area without oil/ slippery surface. • Keep tidy the working area without any obstruction. • 3 points contact technic.		Unlikely	Minor	LOW
	• Drop objects	• Person Injury • Property damage	Possible	Minor	MED	• Competent person with valid certificate. • Secure tools and equipment part. • 2 ways communication during work. • Do no working under the suspended load / keep away form line of fire.		Unlikely	Minor	LOW

Job Safety Analysis (JSA)

valeura energy

Document no TH GEN HS FORM 029 R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
	• Contaminated waste	• Environment impact / effect	Likely	Moderate	MED	• Used proper containment. • Put contaminated waste into hazardous waste bin. • Follow VE's waste management.		Unlikely	Minor	LOW

Job Safety Analysis (JSA)

valeura energy

Document no TH-GEN-HS-FORM-029-R4

Facility/Platform	Wassana MOPU Ingenium	Location: Accommodation	Issue Date: 04 Jun 25	JSA NO. TH-G10-OPT-HSSE-JSA-GEN-009-R0
Activity:	To Apply Residual Insecticide Chemical			

Risk Assessment Matrix		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Very likely
Consequences	Catastrophic	MED	MED	HIGH	HIGH	HIGH
	Major	MED	MED	MED	HIGH	HIGH
	Moderate	LOW	MED	MED	MED	HIGH
	Minor	LOW	LOW	MED	MED	MED
	Negligible	LOW	LOW	LOW	MED	MED

Risk Level Rating	Approval Authority (By Position)
Low Risk:	Ops Supv [redacted]
Medium Risk:	Field Manager
High Risk	Not Approved

Assessed by (At least 3 Assessors Required)				Assessed by			
Name	Position	Signature	Date	Name	Position	Signature	Date
[redacted]			04 Jun 25	[redacted]			04 Jun 25
			04 Jun 25				
			04 Jun 25				

Job Safety Analysis (JSA)

valeura energy

Document no TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likelihood	Consequence	Rating			Likelihood (new)	Consequence (new)	Rating (new)
1. To mix concentrate Insecticide into 5 litre hand pressurized Sprayer using specific liquid measure incorporated in Insecticide container.	• Skin exposure, Eyes Exposure, concentrate insecticide spillage may occur.	• Personal Injury	Possible	Moderate	MED	• Technician must wear Full PPE, Safety Goggles, Cartridge type respirator, Approved nitrile gloves (see MSDS), Tyvex type Chemical Spray suit to give full protection to all parts of the body and underlying clothes.		Unlikely	Minor	LOW
2. To wear Full PPE as per MSDS stipulates To apply Diluted Residual Insecticide Chemical to areas pre-determined with the Campboss, Doctor & Safety Officer.	• Non PPE wearing staff inhaling fumes/vapours and getting small amounts of insecticides onto clothing. Small amounts of Insecticide could be accidently applied to non-target areas.	• Personal Injury	Possible	Moderate	MED	• Signs informing non Pest Control Staff that areas will be treated between certain hours and to keep away whilst treatment takes place. This sign to be made by the Doctor or Safety Officer with a signature and a stamp from the Field Manager so Staff will take notice and adhere to the instructions. • This must be made in different languages, so the multi-national crew are fully aware. Also, the use of Tape barriers to stop staff from going into treatment areas would be advisable as a precaution.		Unlikely	Minor	LOW
3. To ensure that all diluted chemical is used on-site.	• Skin exposure, Eyes Exposure, concentrate insecticide spillage may occur.	• Personal Injury	Possible	Moderate	MED	• Technician must wear Full PPE, Safety Goggles, Cartridge type respirator, Approved nitrile gloves (see MSDS), Tyvex type Chemical Spray suit to give full protection to all parts of the body and underlying clothes.		Unlikely	Minor	LOW

Job Safety Analysis (JSA)

valeura energy

Document no. TH-GEN-HS-FORM-029-R4

Step Task Description	Hazards	Potential Consequences	Initial Risk (without any control measures)			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk (After apply control measures)		
			Likelihood	Consequence	Rating			Likelihood (new)	Consequence (new)	Rating (new)
4. After Applying an Insecticide.	• Improper of handling of Contaminated of PPE and clothing after applying an insecticide will expose to the skin, part of body and area inside.	• Personal Injury	Possible	Moderate	MED	• Proper cleaning procedures should always be followed applying insecticide. • To remove insecticide residues, use a bucket to thoroughly rinse tools or equipment that you used when mixing the insecticide. Pour the rinse water into the insecticide sprayer and dispose of it by applying to a labelled site. Wash non-absorbent gloves and rubber boots thoroughly with hot soapy water. • To prevent exposure to the hands, wash your gloves prior to removing them. • Wash any parts of your body that may have meet the insecticide. • Dispose of clothing saturated with diluted insecticide, or heavily contaminated with the concentrated chemical. Place the clothing in a plastic bag and in the garbage outdoors.		Unlikely	Minor	LOW

THRE360 ENERGY

JOB HAZARD ANALYSIS FORM

ACTIVITY	SECTION / DEPARTMENT	DATE
Offtake Operation WC-049	Deck	13 Jul 2024

JHA NO.	JHA RESPONSIBLE (NAME & JOB TITLE)	REVISION
JHA-JT-24-D-011	SONGWUT PUTTAPONG / CO	0

DESCRIPTION OF THE WORK:

Offtake Operation WC-049

LOCATION OF THE WORK:

Deck

ASSOCIATED DOCUMENTS:

CWP:
IC:

RISK MATRIX

CONSEQUENCE	Rare (1)	Not likely (2)	Possible (3)	Likely (4)	Very Likely (5)
Catastrophic (5)	M5	M10	H15	H20	H25
Major (4)	L4	M8	M12	H16	H20
Serious (3)	L3	L6	M9	M12	H15
Moderate (2)	L2	L4	L6	M8	M10
Slight (1)	L1	L2	L3	L4	M5

PROBABILITY
[Risk=Probability x Consequence]

JOB HAZARD ANALYSIS FORM	ACTIVITY		SECTION / DEPARTMENT	DATE
	Offtake Operation WC-049		Deck	13 Jul 2024
	JHA NO.	**JHA RESPONSIBLE (NAME & JOB TITLE)**		**REVISION**
	JHA-JT-24-D-011	SONGWUT PUTTAPONG / CO		0

No.	DESCRIBE JOB STEP	POTENTIAL HAZARDS	EFFECT	ORIGINAL RISK			CONTROL MEASURES	ACTION BY:	RESIDUAL RISK		
				C	P	R			C	P	RR
1.	Planning & preparation including pre-off take meeting, safety meeting with FSO team, OSV & Mooring master.	Miscommunication & Unfavourable Weather condition.	Personal injury Damage to property.	2	4	M8	- Latest weather forecast to be evaluated and discussed the safe criteria (Refer to VE terminal handbook) for the operation. - Working channel during the operation to be agreed among the team. - Conduct the meeting between the party involved in offtake operation.		2	2	L4
2.	Transfer of off take toolbox and personnel.	Slip, trip, fall. Miscommunication Failure of lifting equipment Drop object	Personal injury Damage to property.	2	4	M8	- Remove and clear all unnecessary and slippery item from the worksite or landing area. - Use only certified equipment during operation. - Certified crane operator. - Crane checklist to be followed.		2	2	L4
3.	Off take tanker approaching FSO	Collision with FSO astern and/or damage to Export Hose. Oil Pollution Unavailability of FSO freefall lifeboat	Personal injury. Property damage. Delay in berthing. Environmental impact.	2	4	M8	- Final approach speed & direction due to prevailing current/wind direction must be discussed between FSO master, mooring master & off take tanker master.) - Mooring master to confirm with off take tanker master that all machinery is in good working condition. - Distance between FSO and offtake tanker to be closely monitored. - Communicate to all crew to use life raft as a primary survival craft instead of lifeboat.		2	2	L4
4.	Tandem Mooring operations.	Pinch point Rope parting Mooring equipment failure OSV M/E Failure	Personal injury. Environmental impact. Property damage.	3	3	M9	- Task step to be brief between FSO and OSV). - FSO, OSV and Off tanker must use only certified equipment during operation. - Ensure all personnel to stay clear from line of fire.		2	2	L4

JOB HAZARD ANALYSIS FORM	ACTIVITY		SECTION / DEPARTMENT	DATE
	Offtake Operation WC-049		Deck	13 Jul 2024
	JHA NO.	**JHA RESPONSIBLE (NAME & JOB TITLE)**		**REVISION**
	JHA-JT-24-D-011	SONGWUT PUTTAPONG / CO		0

No.	DESCRIBE JOB STEP	POTENTIAL HAZARDS	EFFECT	ORIGINAL RISK			CONTROL MEASURES	ACTION BY:	RESIDUAL RISK		
				C	P	R			C	P	RR
							- Follow tandem operation checklist, and 500 m. zone Checklist.				
5.	Transfer export hose to OSV to pass onto off take tanker, Export hose connection.	Improper handling of Export Hose on FSO deck or OSV deck Pinch point Messanger rope parting Oil spill	Property damage. Personal injury. Environmental impact.	2	4	M8	- Task step to be brief between FSO and OSV. - FSO, OSV and Off tanker must use only certified equipment during operation. - Ensure proper container was put under possible dipping point. - Ensure all personnel to stay clear from line of fire.		2	2	L4
6.	Starting COP & cargo discharge operations	Excessive back pressure in export hose. Oil spill.	Environmental impact. Property damage.	3	3	M9	- Cargo pump to be started initially at slow rate - Cargo valve to be line up properly on FSO and offtake tanker. - Monitoring and record all parameter during offtake operation.		2	2	L4
7.	Cargo operation	Hydraulic Failure	Environmental impact.	3	3	M9	Inform Chief officer at once and immediately keep hand pump standby. Reduce system pressure (Framo) and on COP if required.		2	2	L4
		Critical Valve Failure	Unintentional rise of cargo level in another cargo tank.	3	3	M9	Inform Chief officer at once. Investigate alternate line-up and station hand pump as required. If need be, call extra crew on deck for assistance.		2	2	L4

JOB HAZARD ANALYSIS FORM	ACTIVITY		SECTION / DEPARTMENT	DATE
	Offtake Operation WC-049		Deck	13 Jul 2024
	JHA NO.	**JHA RESPONSIBLE (NAME & JOB TITLE)**		**REVISION**
	JHA-JT-24-D-011	SONGWUT PUTTAPONG / CO		0

No.	DESCRIBE JOB STEP	POTENTIAL HAZARDS	EFFECT	ORIGINAL RISK			CONTROL MEASURES	ACTION BY:	RESIDUAL RISK		
				C	P	R			C	P	RR
		FRAMO system failure.	Delay in operation	3	3	M9	- FRAMO system and IGS to be check as per offtake check list.		2	2	L4
		Leak From Cargo Deck Line	Environmental impact. Oil spill.	3	3	M9	Stop discharging from offtake tanker / group and immediately de-pressurise the line. Contain the leak and muster crew for oil spill containment. Sound the emergency alarm.		2	2	L4
		Disability Of Cargo Operator or Chief Officer	Delay in operation	3	3	M9	Summon master and additional officer of watch immediately. Also inform the chief engineer / raise alarm.		2	2	L4
		Offtake tanker distance closing to FSO	Damage to property: Hull damage which may cause oil spill.	3	3	M9	Inform mooring master, chief officer and master. Ask the aft tug, to pull offtake tanker. Monitor the CALM buoy continuously.		2	2	L4
		IGS failure or malfunction.	Damage to property - Tank rupture. Risk of explosion.	3	3	M9	Call Chief officer immediately for reducing COP and advised engine room team to check IGS. Keep monitoring on O2 content during discharging. IGS to be started before discharging to confirm its functionality.		2	2	L4

JOB HAZARD ANALYSIS FORM	ACTIVITY		SECTION / DEPARTMENT	DATE
	Offtake Operation WC-049		Deck	13 Jul 2024
	JHA NO.	**JHA RESPONSIBLE (NAME & JOB TITLE)**		**REVISION**
	JHA-JT-24-D-011	SONGWUT PUTTAPONG / CO		0

No.	DESCRIBE JOB STEP	POTENTIAL HAZARDS	EFFECT	ORIGINAL RISK			CONTROL MEASURES	ACTION BY:	RESIDUAL RISK		
				C	P	R			C	P	RR
		Loss of ship stability.	Damage to the ship hull.	3	3	M9	- Discharging sequence to be follow as per cargo discharge plan. - Loadicator to keep update for ship's stability condition.		2	2	L4
		Improper plan of crew working schedule.	Personal health – Fatigue, stress.	3	3	M9	- Deck watchman to be arranged in advance prior offtake to reduce fatigue during operation. - Watch keeping schedule to be acknowledge by the crew as per part of cargo discharge plan.		2	2	L4
8.	Pour Point Dispersant injection to export hose.	Oil spill. Chemical exposure.	Environmental impact. Personal injury. Property damage.	3	3	M9	- Oil spill response equipment shall be ready near the worksite. - Chemical hazardous & SDS explained to PIC. - Use appropriate equipment for chemical injection. - Wear appropriate PPE.		2	2	L4
9.	Unmooring operations on poop deck and securing of mooring hawser.	Pinch point Messanger rope parting Mooring equipment failure	Personal injury Damage to property.	3	3	M9	- Task step to be brief between FSO and OSV). - FSO, OSV and Off tanker must use only certified equipment during operation. - Ensure all personnel to stay clear from line of fire.		2	2	L4
10.	Securing export hose to port side after unmooring operation.	Pinch point Messanger rope parting	Personal injury Damage to property.	3	3	M9	- Task step to be brief between FSO and OSV). - FSO, OSV and Off tanker must use only certified equipment during operation. - Ensure all personnel to stay clear from line of fire.		2	2	L4

THRE360 ENERGY JOB HAZARD ANALYSIS FORM	ACTIVITY Offtake Operation WC-049		SECTION / DEPARTMENT Deck	DATE 13 Jul 2024
	JHA NO. JHA-JT-24-D-011	JHA RESPONSIBLE (NAME & JOB TITLE) SONGWUT PUTTAPONG / CO		REVISION 0

No.	DESCRIBE JOB STEP	POTENTIAL HAZARDS	EFFECT	ORIGINAL RISK			CONTROL MEASURES	ACTION BY:	RESIDUAL RISK		
				C	P	R			C	P	RR

Safety Representative Involved YES / NO	PREPARED BY	APPROVED BY	CONCLUSION
	HOD	OIM	Residual Risk in the Low Area?
	Name: SONGWUT PUTTAPONG / CO	Name: ASHOK JHA	☒ YES work can proceed ☐ NO Review with OIM
	Signature:	Signature:	

THRE360 ENERGY JOB HAZARD ANALYSIS FORM	ACTIVITY Offtake Operation WC-049		SECTION / DEPARTMENT Deck	DATE 13 Jul 2024
	JHA NO. JHA-JT-24-D-011	JHA RESPONSIBLE (NAME & JOB TITLE) SONGWUT PUTTAPONG / CO		REVISION 0

EXPERIENCE SUMMARY NOTES (any learning value)

JHA TEAM SIGNATURES	Name	Sign	Name	Sign

SECTION 9: SAFETY MANAGEMENT

P-09-01

Job Safety Analysis

SC GROUP	Date: 02/09/2024	Revision: 12	Ref.: P-09-01
	Originator by: SHE Division Manager	Reviewed by: Marine QSHE Manager	Approved by: Deputy Managing Director
	JOB SAFETY ANALYSIS		

RECORD OF CHANGES & REVISION STATUS

Rev. Status	Originator	Description of change
0	Theetas S.	Wholly reviews for compatible with OVMSA
1	Theetas S.	Fully update and New establishes
2	Theetas S.	New SMS Formatting which is revived & reified by ABS Class
3	Theetas S.	Correction wording to item 2,3,5.2,5.5,5.5.1 and update list of generic JSA
4	Theetas S.	Add wording to item 5.1 and add Item 8 : Reference Standard
5	Theetas S.	Add wording to item 5.2 and item 5.8
6	Ongarj S.	Add wording to appendix 7.3
7	Ongarj S.	Change Position EVP to MD and SVP to DMD, delete wording time 5.5.1 : (as per filling system in SMS section 1-vessel documentation)
8	Wasana J.	Change wording to item 5.3 : Hazards Identification the 10 Energy table is given
9	Wasana J.	Appendix 7.3 add column “Date of Review”
10	Wasana J.	Add appendix 7.4 List of JSA - Accommodation barge
11	Wasana J.	Revise the list of generic JSA (add bunkering operation by truck and transfer fuel to other vessel at sea) and add Monthly JSA record form and New SMS Formatting
12	Wasana J.	Add appendix 7.3 List of Generics JSA.

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8. REFERENCE STANDARD 14

SC GROUP	Date : 23/04/2025	Revision : 5	Ref : F-09-SHE/11
	PERMIT TO WORK (PTW)		

VESSEL: SC GALAXY DATE: 22 Sep 2025 PTW No.: D02/25

LOCATION AREA: Upper Fast Deck ☑ DECK ☐ ENGINE

TASK: CUT & WELD GANGWAY CRADLES

INDICATE WORK TO BE COMPLETED (*tick (√) as many as applicable*)

WORKING AT HEIGHTS / OUTBOARD	☑	COMPLETE F-09-SH E/05 PTW WORK AT HEIGHTS CERTIFICATE
WORK REQUIRED ELECTRICAL / MACHANICAL	☐	COMPLETE F-09-SHE/06 PTW ISOLATION CERTIFICATE
WELDING / BURNING / CUTTING/HEATING	☑	COMPLETE F-09-SHE/07 PTW HOT WORK CERTIFICATE
ENTRY INTO CONFINED	☐	COMPLETE F-09-SHE/08 PTW CONFINED SPACE ENTRY CERTIFICATE
DIVING OPERATIONS	☐	COMPLETE F-09-SHE/09 PTW DIVING OPERATIONS CERTIFICATE

SOME TASKS MAY REQUIRE MORE THAN ONE PTW CERTIFICATE; DOUBLE-CHECK WHEN COMPLETING THE CERTIFICATE

3RD PARTIES / AUTHORITIES TO BE NOTIFIED (*tick (√) or indicate N/A, as appropriate*)

Master / Chief Engineer	☑ Yes	☐ N/A	Charterer / Client Representative	☐ YES	☑ N/A
Local Port Authorities / Coastgurd?	☐ YES	☑ N/A	Flag / Class / Insurance Representatives?	☐ YES	☑ N/A

PERMIT VALID FROM;		PERMIT VALID UNTIL;	
DATE;	22 Sep 2025	DATE;	22 Sep 2025
TIME; (in 24hr format – HHMM)	13:00	TIME; (in 24hr format – HHMM)	18:00

VALIDITY OF EACH PERMIT MUST NOT EXCEED 12hrs IN TOTAL

Hazards Identified by Permit Holder

☑ Liquids / Gas Under Pressure	☑ Manual Handling	☐ Chemicals	☐ Electrical
☑ Explosive	☑ Hot Equip / Surfaces	☑ Flying particles	☑ Dropped Objects
☐ Moving / Rotating Machinery	☐ Heavy Lift Operations	☑ Dust / Fumes	☐ Weather / Sea State
☑ Work at Height Lifting Equipment	☐ Adjacent Operations	☐ Safety System Disabled	☐ Confined Space
☐ Working Over Water	☐ Restricted Access / Egress	☑ Non-Routine Task	☑ Slips, trips & falls
☐ Other:			

Precaution to be taken

☑ Toolbox meeting required	☐ Check equipment dead/earthed	☐ Airline connection secured	☐ Work vest/life buoy to be worn
☐ Considers adjacent work	☐ Depressurize	☐ SDS	☐ JSA # 22, 97
☑ Safety observer in place	☐ Provide with suitable spaces	☑ Erect Signs / barriers	
☐ Communications	☐ water Flush/drain	☑ Scaffolding	
☑ Thoroughly ventilated	☑ Work place adequality lit	☐ Lifting Equipment	

PERMIT ISSUED TO; (*name & signature*)

[redacted] RESPONSIBLE PERSON

AUTHORISING PERSON

ON COMPLETION OF WORKS (*tick when actions have been taken*)

HAVE ALL SAFETY CONTROL MEASURES, ISOLATIONS & WORKING RESTRICTIONS BEEN REMOVED?	☑	HAVE ALL RELEVANT 3rd PARTIES & AUTHORITIES BEEN NOTIFIED OF COMPLETION?	N/A
ALL ISSUED PTW CERTIFICATES ARE SIGNED-OFF & CLOSED OUT?	☑	HAVE ALL INVOLVED CREW / STAFF BEEN DE- BRIEFED?	☑

WORK COMPLETED; (*name & signature*)

[redacted] RESPONSIBLE PERSON

AUTHORISING PERSON

Remark: Use SWA when they face the risky situation, unsafe workplace and harmful condition to another people or environment.

HOT WORK CERTIFICATE

DATE: 22 Sep 2025
HOT CERTIFICATE NO.: 01/25
VESSEL: SC GALAXY
REF. PTW NO.: D02/25
LOCATION AREA: Upper Fost Deck
☑ DECK ☐ ENGINE
OPERATION UNIT: Deck & Engine crew

1. DESCRIPTION OF WORK

Work description and location :

Cut & weld gangway cradles

NOTE:
1. All work to cease on sounding of fire alarm or PA announcement. Work area and equipment to be made safe prior to leaving site at any time during the period of the certificate.

2. A qualified gas tester shall conduct gas testing before beginning hot work where there is a potential for flammable gases to be present. The qualified gas tester shall determine the frequency of gas testing based on the potential risk **

2. HAZARD IDENTIFICATION Select by ticking (√) the appropriate boxes

☐ Confined space	☐ Working over water	** Combustible/Toxic gas test ZERO ☑
☐ Noise	☐ Remote start	Oxygen level 20.8% ☑
☐ Liquid under pressure	☑ Falling objects	Gas test carried out by / Time: 12:45
☑ Danger of falling	☐ Toxic/corrosive material	Name / Signature [redacted]
☐ Other, please specify:		

Precautions to be taken:
Barricade working area.

3. Safety Equipment and Personal Protective Equipment Required, select by ticking (√).

☑ Coverall	☑ Safety Boots	☑ Safety Helmet	☑ Welding Gloves
☑ Face Shield	☐ Particulate respirator	☑ Welding Mask	☑ Safety Goggle
☑ Welding Apron	☐ Radio	☑ Gas detector	☑ Fire extinguisher
☐ Flashback arrestors	☑ Hose/Fire blanket	☑ Signs / Barriers	☑ Firewatcher
☐ Work life vest	☐ Lock-out Tag-out	☐ Other, please specify:	

4. ISSUE

RESPONSIBLE PERSON: I declare all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

Name [redacted]

AUTHORISING PERSON: I confirm all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

Name [redacted]

5. COMPLETION

RESPONSIBLE PERSON: I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status.

Name [redacted]

AUTHORISING PERSON: I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status. This certificate is cancelled.

Name	Designation	Signature	Time
[redacted]			

confirm below are verified prior to starting / during work and maintained in place.

WORK CONTROL CHECKLIST *(HOT WORK)*

All crew / workers must confirm each action below.	Crew / Worker(s)	Start work VERIFIER	During work VERIFIER
1. **Hot work** has been evaluated for Isolation of Hazardous Energy (IHE) Requirements. Does hot work require IHE? ☐ Yes ☑ No **If yes:** Complete IHE Work Control Checklist. **If no:** Continue to Step 2.	[redacted]		
2. The **atmosphere** is within allowed limits prior to hot work. Oxygen between 19.5 – 23.5% ✓; LEL less than 1% ✓; H_2S less than 10 ppm (8 hrs) ✓; CO less than 35 ppm (8 hrs) ✓			
3. **Gas testing** frequency has been established.			
4. **Drain, openings and vents** are sealed.			
5. All **combustible materials** have been removed, covered or drenched.			
6. **Firefighting equipment** has been inspected and is at hot work site.			
7. **Heat, slag or sparks** will be contained.			
8. **Dedicated Fire Watch** is in place.			

Stop Work Authority (SWA) if any of the above safeguards are not in place.

Role	Name	Rank	Date	Sign
Crew / Worker(s) by Crew / worker(s)	[redacted]			
Start work verifier by Responsible person				
During work verifier by another person (no self-verification).				

WORK AT HEIGHTS CERTIFICATE

DATE: 11 Sep 2025
WAH CERTIFICATE NO. 01/25
VESSEL: SC OALAKY
REF. PTW NO. D 02/25
LOCATION AREA: Upper Fast Deck
☑ DECK ☐ ENGINE
OPERATION UNIT: Deck & Engine crew

1. DESCRIPTION OF WORK

Reason for Certificate:
Cut & weld gangway cradles 1.5 m height.

NOTE:
All work to cease on sounding of fire alarm or PA announcement. Work area and equipment to be made safe prior to leaving site at any time during the period of the certificate.

2. SAFETY MEASURES IN PLACE tick (√) boxes when completed/checked

Vessel is securely moored & not underway?	☑	Safe means of access & egress to the aloft site is provided?	☑
Person aloft has a spotter at deck/ground level?	☑	Portable ladder/s secured against slipping?	☑
Work site has sufficient, suitable anchor points?	☑	Site is well lit / illuminated? Day light.	☑
Person aloft has correctly donned full safety harness?	☑	Person aloft has auto-inflating lifejacket for work over water?	N/A
Sufficient area below work site is cordoned off?	☑	Adequate lanyards / fall arrest systems in use?	☑
For work on-board / in vicinity of vessels, MOB rescue boat & response crew on stand-by?	N/A	For all work over water, rescue & medical equipment available at site?	☑
Scaffolding / work stages are inspected & certified prior to use?	☑	Cradles / Boson's chairs & all associated rigging are in good working condition & correctly rigged prior to use?	☑

Other (state);

3. Safety Equipment and Personal Protective Equipment Required, select by ticking (√).

☑ Coverall	☑ Safety Boots	☑ Safety Helmet	☑ Impact Gloves
☑ Safety Glasses	☑ Fall Arrest	☐ Radio	☑ Signs / Barriers
☐ Floatation Device	☐ Lock-out Tag-out	☐ Other;	

4. ISSUE

RESPONSIBLE PERSON I declare all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

Name	Rank	Signature	Time
[redacted]			

AUTHORISING PERSON I confirm all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

Name	Rank	Signature	Time
[redacted]			

5. COMPLETION

RESPONSIBLE PERSON I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status.

Name	Rank	Signature	Time
[redacted]			

AUTHORISING PERSON I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status. This certificate is cancelled.

Name	Rank	Signature	Time
[redacted]			

ect the type of work performed and confirm that the following items have been verified prior to arting/during work and remain in place.

WORK CONTROL CHECKLIST *(WORK AT HEIGHTS)*

All crew / workers must confirm each action below	Crew / Worker(s)	Start work VERIFIER	During work VERIFIER
1. Fall protection equipment (fall arrest and fall restraint) is certified, inspected and rated for the task, including fall distance.	[redacted]		
2. **Rescue plan** has been reviewed with work crew and rescue equipment is available.			
3. **Fall protection equipment** is adjusted to fit the worker.			
4. **Work crew** agreed to be 100% tied off to the identified, approved anchorage Point(s).			
5. **Fall path** is clear of obstructions or mitigations have been implemented to address hazards.			
6. **Potential dropped objects** have been identified and mitigated.			
7. **Work crew** has agreed that no team member will work at height alone.			

Stop Work Authority (SWA) if any of the above safeguards are not in place.

Role	Name	Rank	Date	Sign
Crew / Worker(s) by Crew / worker(s)	[redacted]			
Start work verifier by Responsible person				
During work verifier by Another person (no self-verification).				

TOOLBOX MEETING

Vessel Name: ชื่อเรือ SC GALAXY	**Date:** วันที่ 22 Sep 2025
Location: สถานที่ Surat Jetty	**Time:** เวลา 12:30 - 13:00

Description of work to be performed (รายละเอียดของงานที่จะดำเนินการ):

- Scaffolding setting
- Cutting metal by gas cutter.
- Weld metal structure

JSA reviewed (การทบทวน JSA): **JSA's Topic** (หัวข้อ JSA): - JSA # 22 CUTTING DECK STRUCTURE - JSA # 94 WELDING DECK STRUCTURE	☑ **Yes** (มี)	☐ **No** (ไม่มี)
Procedure Review (ทบทวนขั้นตอนในการปฏิบัติงาน): **Refer to** (อ้างถึง): - P-09-02 : Permit to work - P-09-05 : PPE - P-09-06 : Personal Safety	☑ **Yes** (มี)	☐ **No** (ไม่มี)
Permit to work (ใบอนุญาตในการทำงาน): **Type** (ประเภท): - Hot work - Work at height.	☑ **Yes** (มี)	☐ **No** (ไม่มี)

Duty of each one (หน้าที่ของแต่ละคน)

Name	Duty	Name	Duty
[redacted]			

TOOLBOX MEETING

Risks/ Hazards Identified (ความเสี่ยง/ อันตราย):

- Hand & finger injury
- Strain
- Dropped objects
- Slip/trip/fall
- Fire explosion
- Burn
- Sore eyes
- Smoke of welding rod.
- Electrocution
- Heat stroke.

Comments of meeting (ข้อเสนอแนะจากการประชุม):

- Barricade area BA working
- Fire fighting @ site + monitor
- PPE for all related draw.
- Fall arrestor.
- 15-30 min break.

Meeting members (ผู้เข้าร่วมประชุม):

Name	Signature	Name	Signature
[redacted]			

Person in charge (PIC): ผู้ดำเนินการประชุม	**Name**	**Title**
Authorising person (Permits task to go ahead): ผู้อนุมัติ	[redacted]	

TASK (1) งาน	HAZARD ID (2) หมวดหมู่ความเป็นอันตราย	HAZARD (3) อันตราย	EXISTING CONTROL (4) มาตรการควบคุมที่มีอยู่	RANKING (5) ความเสี่ยง S	P	R	ADDITIONAL CONTROL MEASURES (6) มาตรการควบคุมเพิ่มเติม	RE-RANKIN S	P	R
	- Chemical	- Acetylene leak	- Ensure the caps remain on. - Lay the gas hose on deck or fasten overhead	2	B	2B				
2) Cutting of deck structures *SHE(MO) LES 2022-09 The crew's was injured as the blade of the angle grinder.*	- Temperature	- Burns - Sore Eye	- Full leather apron, gauntlets & face shied to be worn. - First Aid Kit readily available. - Direction of cutting torch to be away from the body parts. - Check what / who on the other side of anything to be cut and ensure clear. - Use proper eye protection while performing the task.	2	B	2B				
	- Pressure	- Fire /Explosion	- Obtain Permit-to-work (PTW) approved by Master / Shore management (SEE SOEM for Procedures), mark off area to working and don't cut outside area. - Ensure the hot-work & adjacent area is free from all combustible materials. - No Incompatible works are carried out within the hot work area. - Ensure any adjacent areas gas freed and never cut above fuel tanks that have not been passed as clean and gas free.	2	B	2B				

The Residual Risk Matrix

The Matrix will determine if the Risk is LOW, MEDIUM or HIGH

Severity	Probability A	B	C	D	E
1	1A	1B	1C	1D	1E
2	2A	2B	2C	2D	2E
3	3A	3B	3C	3D	3E
4	4A	4B	4C	4D	4E
5	5A	5B	5C	5D	5E

No. JSA 22/ GX 092025 **Job :** CUTTING OF DECK STRUCTURES BY GAS CUTTING

Vessel Name : SC GALAXY **Date :** 18 Sep 2025 **Location :** Sawat Jetty

Visibility : Good. **Wind (Direction / Speed) :** NNE - / 7 kn

Sea (Wave) : Calm 0.1-0.2 m. **Current (Direction / Speed) :** 0.0-0.2 kn / SSE

TASK (1) งาน	HAZARD ID (2) หมวดหมู่ความเป็นอันตราย	HAZARD (3) อันตราย	EXISTING CONTROL (4) มาตรการควบคุมที่มีอยู่	RANKING (5) ความเสี่ยง S	P	R	ADDITIONAL CONTROL MEASURES (6) มาตรการควบคุมเพิ่มเติม	RE-RANKING (7) S	P	R
1) Preparing gas cutting equipment for the task	- Motion	- Hand & finger Injury - Strain Injury	- Permit to work - Toolbox meeting & JSA - Aware of pinch points. - Carry gas hose appropriately. - Check the ways is clear before pushing and moving gas cylinder trolleys. - Use trolleys and lifting equipment to move heavy gas cylinders, when having to handle manually keep them upright and roll them around their base.	2	B	2B				
	- Gravity	- Dropped Cylinders - Slip / trip / Fall	- Ensure gas cylinders secured in trolley or at work site in upright position away from other operations. - Ensure no obstruction or trip hazards.	3	B	3B	- Display warning signs at gas cylinders when perform task near other operations. - Separate acetylene and oxygen cylinders.	3	A	3A
	- Pressure	- Fire explosion	- Ensure the cylinders are in good condition.	3	A	3A				

TASK (1) งาน	HAZARD ID (2) หมวดหมู่ความเป็นอันตราย	HAZARD (3) อันตราย	EXISTING CONTROL (4) มาตรการควบคุมที่มีอยู่	RANKING (5) ความเสี่ยง			ADDITIONAL CONTROL MEASURES (6) มาตรการควบคุมเพิ่มเติม	RE-RANKIN		
				S	P	R		S	P	R
3) Completion of the work *IMCA Safety Flash 18/18* *(5) Unplanned stored pressure release; worker struck by gas cylinder-company fined*	- Motion - Gravity	- Hand & finger Injury - Slip / trip / Fall	- Handle with care. - Aware of pinch points. - Carry gas hose appropriately. - Lay the gas hose on deck without obstruction on the passageway. - Ensure all cable hoses & tools are stored to its designated location. - Ensure the work area is clean & tidy upon completion of work.	2 2	B B	2B 2B				

ASK (1) งาน	HAZARD ID (2) หมวดหมู่ความเป็นอันตราย	HAZARD (3) อันตราย	EXISTING CONTROL (4) มาตรการควบคุมที่มีอยู่	RANKING (5) ความเสี่ยง			ADDITIONAL CONTROL MEASURES (6) มาตรการควบคุมเพิ่มเติม	RE-RANKING (7)		
				S	P	R		S	P	R
			- Hot work tools (Hose/Cutter) in good working condition. - Fire Extinguisher readily available. - Fire attendant is stand-by while perform the hot-work task. - Fire blanket is provided to fixed equipment where shifting is impracticable. - Flash back arrestor (FBA) is provided for the cutting torch & gas cylinder. - Do not over pressurize the gas cylinder; provide proper gauge to monitor. - Conduct Fire drill in regularly manner, so as all crew all familiar of emergency. - Do not use Lighter to flame-up the cutting torch.								

SC GROUP | Date : 15/03/2024 | Revision : 5 | Ref : F-09-SHE/04
JOB SAFETY ANALYSIS
Meeting members
Name | Signature | Name | Signature
[redacted]
Original: Vessel, Copy: SHE, Retention: 2 years
Page 6 of 6

GROUP	Date : 15/03/2024	Revision : 5	Ref : F-09-SHE/04
	JOB SAFETY ANALYSIS	

gency Preparedness

ergency/Contingency that might be occurred :	**Type of Shipboard Contingency Plan requires :**
1) Fire on board.	1) Fire fighting procedure.
2) Injury from work.	2) First aid / EMS
3)	3)
4)	4)
5)	5)

JSA Review (Closed Task)

TASK	HAZARD ID	HAZARD	EXISTING CONTROL
		JSA reviewed & closed out Satisfactory	

Prepared By:	[redacted]	**Date :**	22 Sep 2025
Approved By:	[redacted]	**Date :**	22 Sep 2025

TASK (1) งาน	HAZARD ID (2) หมวดหมู่ความเป็นอันตราย	HAZARD (3) อันตราย	EXISTING CONTROL (4) มาตรการควบคุมที่มีอยู่	RANKING (5) ความเสี่ยง S	P	R	ADDITIONAL CONTROL MEASURES (6) มาตรการควบคุมเพิ่มเติม	RE-RANKING S	P	R
2) Welding of deck Structures	- Temperature	- Sore Eyes - Burns - Fire /Explosion	- Use proper eye protection while performing the task and don't weld for prolonged periods, take appropriate breaks. - Full coveralls & face shield to be worn. - First Aid Kit readily available. - Only to be carried out by qualified personnel. - Be aware of hot surfaces post welding and use water to cool or keep area cordoned off to prevent other workers coming in contact with hot surfaces. - Be mindful of sparks and where they land, do not weld close to people working with paint or chemicals and close off any holes vents pipes and openings nearby where sparks and slag can fall and create burns and fire elsewhere in the vessel.	2	B	2B				
	- Chemical	- irritated eyes - Suffocated by smoke of welding rod	- Use proper eye protection while performing the task and don't weld for prolonged periods, take appropriate breaks. - Full coveralls & face shield to be worn.	2	C	2C	- Worker should be stay over the wind while perform welding. - Supply air by blower.	2	B	2B

The Residual Risk Matrix

The Matrix will determine if the Risk is LOW, MEDIUM or HIGH

Severity	Probability A	B	C	D	E
1	1A	1B	1C	1D	1E
2	2A	2B	2C	2D	2E
3	3A	3B	3C	3D	3E
4	4A	4B	4C	4D	4E
5	5A	5B	5C	5D	5E

JSA No. JSA 97/ GX 09 2025 **Job :** WELDING OF DECK STRUCTURES

Vessel Name : SC GALAXY **Date :** 11 Sep 2025 **Location :** Sawat Jetty

Visibility : Good. **Wind (Direction / Speed) :** NNE / 4 kn

Sea (Wave) : Calm 0.1-0.2 m **Current (Direction / Speed) :** SSE / 0.0-0.2 kn

TASK (1) งาน	HAZARD ID (2) หมวดหมู่ความเป็นอันตราย	HAZARD (3) อันตราย	EXISTING CONTROL (4) มาตรการควบคุมที่มีอยู่	RANKING (5) ความเสี่ยง S	P	R	ADDITIONAL CONTROL MEASURES (6) มาตรการควบคุมเพิ่มเติม	RE-RANKING (7) S	P	R
1) Preparing welding equipment for the task	- Motion	- Hand & finger Injury	- Handle with care. - Aware of pinch points.	2	B	2B				
SHE(MO)_LES_2022-09 The crew's was injured as the blade of the angle grinder.	- Gravity	- Slip / trip / Fall	- Ensure welding leads are out of the way and not a trip hazard. - Ensure welding machine not an obstruction.	2	B	2B				

TASK (1) งาน	HAZARD ID (2) หมวดหมู่ความเป็นอันตราย	HAZARD (3) อันตราย	EXISTING CONTROL (4) มาตรการควบคุมที่มีอยู่	RANKING (5) ความเสี่ยง			ADDITIONAL CONTROL MEASURES (6) มาตรการควบคุมเพิ่มเติม	RE-RANKING		
				S	P	R		S	P	R
3) Completion of Welding task	- Motion	- Hand & finger Injury	- Handle with care. - Aware of pinch points.	2	B	2B				
SHE(MO)_LES_2018-10 Left little finger injury (MTC)	- Gravity	- Slip / trip / Fall	- Ensure welding leads are out of the way and not a trip hazard. - Ensure welding machine not an obstruction.	2	B	2B				

TASK (1) งาน	HAZARD ID (2) หมวดหมู่ความเป็นอันตราย	HAZARD (3) อันตราย	EXISTING CONTROL (4) มาตรการควบคุมที่มีอยู่	RANKING (5) ความเสี่ยง			ADDITIONAL CONTROL MEASURES (6) มาตรการควบคุมเพิ่มเติม	RE-RANKING (7)		
				S	P	R		S	P	R
	- Electrical	- Electrocution	- Obtain Permit-to-work (PTW) approved by Master / Shore management. - Ensure the hot-work area & adjacent area is free from all combustible / Flammable materials, gas freed. - No Incompatible works are been carried out within the hot work area (painting chemical work. - Fire Extinguisher readily available. - Fire attendant is stand-by while perform the hot-work task. - Fire blanket is provided to fixed equipment where shifting is impracticable. - Conduct Fire drill in regularly manner, so as all crew all familiar of emergency. - Ensure all welding cables are in good working condition. - Ensure the welding machine is earthed properly with working piece. - DO NOT carry out welding in wet condition. - Carry out by trained personnel. - First Aid Kit available.	2	B	2B				

Meeting members

Name	Signature	Name	Signature
[redacted]			

gency Preparedness

ergency/Contingency that might be occurred :	Type of Shipboard Contingency Plan requires :
1) Fire on board.	1) Fire fighting procedure
2) Injury from work.	2) First aid / EMS.
3)	3)
4)	4)
5)	5)

JSA Review (Closed Task)

TASK	HAZARD ID	HAZARD	EXISTING CONTROL
	JSA reviewed & closed out Satisfactory		

Prepared By:	[redacted]	Date :	11 Sep 2025
Approved By:		Date :	11 Sep 2025

เอกสารแนบที่ 41

ตัวอย่าง Work Permit

valeura energy — HOT WORK PERMIT
ใบอนุญาตการทำงานที่ก่อให้เกิดประกายไฟ

Permit No. / ใบอนุญาตหมายเลข **HW - 17600**

Section 1 : SPECIFICATION OF WORK (Prepared by PA and Reviewed by AA)

Location / สถานที่ : AFT Port Void Tank [Maintenance Workshop]	Platform / แท่นผลิต : WHS MOPU	Date (D/M/Y) / วันที่ (ว/ด/ป) : 03/12/2025	From Time / จากเวลา : 6.00 — To Time / ถึงเวลา : 18.00
Description of work / รายละเอียดงานที่จะทำ : Surface Prepatation by pneumatic grinding machine for AFT Port Void Tank		Equipment to be worked on / อุปกรณ์ที่จะทำงาน : AFT Void Tank	Work Order No. / ใบสั่งงานหมายเลข :
Associated Permit / Certificate / ใบอนุญาตการทำงาน / ใบรับรองการทำงานที่เกี่ยวข้อง	CW # ______ HW # 17600	SP # 25777 EL # 25483	CSE # 0982 JSA No. TH-WSN-TC9-JSA 029
Requested by / ขอโดย [redacted] Signature / ลายเซ็นต์	Job Title / ตำแหน่ง : Project engineer	Isolation Required ☐ Yes ☑ NO; MOS Required ☐ Yes ☑ NO	☐ Long Term ICC ☐ ICC No ______ ☐ Others ______

Section 2 : HAZARDS and CONTROL (Prepared by PA)

Section 2A : HAZARDS IDENTIFICATION การชี้บ่งอันตราย

Chemical and Biological Hazard	Physical and Electrical Hazard	Fire and Explosion Hazard	Mechanical and Other Hazard
☑ Liquid or gas	☑ Temperature (hot / cold, steam)	☑ Flammable materials	☑ Moving machinery
☐ Engine exhaust	☑ Adverse weather	☑ Opened / Naked flames	☑ Pinch point
☑ Toxic materials	☐ Inadequate lighting	☑ Flying particles	☑ Manual handling
☑ Air contamination	☐ Radioactive materials	☐ Electrical spark / Static	☑ Sharpness object
☐ Corrosive materials	☐ Noise	☐ Pyrophoric and ignition sources	☐ Falling / Dropped Object
☑ Dust / Debris / Welding fume	☐ Electrical shock		☑ Miscommunication
☐ Inert Gas	☐ Leak / Trap Pressure		☑ Slip / Trip and Fall
☐ Contact with Fungus / Virus / Bacteria			☑ Multiple or conflict work

Others (specify) อันตรายอื่นๆ (ระบุ) 1) ______ 2) ______ 3) ______ 4) ______ 5) ______

Section 2B : HAZARD CONTROL (Req.box ticked by PA and Confirm box cross checked by AA)

Chemical and Biological Hazard Controls (Req. / Confirm)	Physical and Electrical Hazard Controls (Req. / Confirm)	Fire and explosion hazard Controls (Req. / Confirm)	Mechanical and Other hazard Controls (Req. / Confirm)
☑ Rubber gloves / Chemical gloves	☑ Leather gloves / Electrical gloves	☑ Fire Extinguisher	☐ Isolation
☐ Leather gloves / Welding gloves	☑ Posting warning signs / Tag	☐ Fire blankets	☑ Posting warning signs / Tag
☐ PVC / Chemical apron	☑ Barricading	☐ Notify F&G and ESD inhibits by E/I (specify)	☑ Barricading
☐ Full chemical suit	☐ Radiation monitoring	☐ Inert gas purged	☑ Suitable access and egress
☑ Chemical / Fume mask or respirator	☑ Ear plugs / Muffs	☐ Water flushed	☐ Depressurized
☑ Dust protection mask	☑ Provide enough for drinking water	☑ Gas test	☑ Buddy system
☐ Face shield	☐ Install lighting devices	☑ Free of flammable / combustible materials	☑ Pre job meeting / communication
☑ Safety Glasses / Goggles	☐ Earthing / Grounding	☑ Fire watcher standby	☐ Full body safety harness
☑ Ventilated	☐ Isolation	☐ Drains / sewers within meters sealed	☑ Weather condition monitoring
☑ Gas / Radiation test	☑ Weather condition monitoring	☐ Isolation	☐ Use SIMOPS matrix
☐ Others (specify) 1) ______ 2) ______	☐ Others (specify) 1) ______ 2) ______	☐ Earthing / Grounding	☑ Others (specify) 1) Leather Gloves 2) ______
		☐ Others (specify) 1) ______ 2) ______	

PTW AUDIT — A. Is correct type and scope of work and approval? ☐ Yes / ใช่ ☐ No / ไม่ใช่ — B. Work site correct control hazards Section 2B? ☐ Yes / ใช่ ☐ No / ไม่ใช่ — Additional comments / ความคิดเห็นเพิ่มเติม :

Section 3 : GAS TEST LOG (Use additional sheet if required) (Note: Authorized Gas Tester (AGT) ONLY)

Authorized Gas Tester (Print Name) / ผู้ทำการตรวจวัดก๊าซ (เขียนชื่อบรรจง): Jirawat — Gas tester has been calibrated? ☑ Yes/ใช่ ☐ No/ไม่ใช่ — Continuous gas test required? ☑ Yes/ใช่ ☐ No/ไม่ใช่ — Retest Every 1 hours & After break

Type (Limits)	Initial Test	2nd Test	3rd Test	4th Test	5th Test	6th Test	7th Test	8th Test	9th Test	10th Test	11th Test	12th Test	13th Test	14th Test	15th Test	16th Test	17th Test	18th Test	19th Test	20th Test
O2 % (20.9%) ออกซิเจน																				
LEL % (0% LEL) ก๊าซติดไฟ																				
H2S (< 5.0 ppm) ไฮโดรเจนซัลไฟด์																				
CO (< 25 ppm) คาร์บอนมอนนอกไซด์																				
Mercury (Hg) (< 0.025 mg/m³) สารปรอท																				
Benzene (0 ppm) เบนซีน																				
Other (Specify) อื่นๆ (ระบุ)																				
Authorized Gas Tester - Signed ผู้ตรวจวัดก๊าซ - ลายเซ็นต์																				
Time Taken เวลาที่ตรวจวัดก๊าซ																				
Date / Month วันที่ / เดือน																				

Section 4 : PTW APPROVAL การอนุมัติใบอนุญาตในการทำงาน

Position / ตำแหน่ง	Name / ชื่อ	Signed / ลายเซ็นต์	Date (D/M/Y) / วันที่ (ว/ด/ป)	Time / เวลา
Field Manager / ผู้จัดการแท่นผลิต (For Hot Work, Diving Operation and Confined Space Entry)	[redacted]		3 DEC 2025	0630
Operation Supervisor หัวหน้างานปฏิบัติการผลิต			3 Dec 25	5.30
Safety Tech / Delegate เจ้าหน้าที่ความปลอดภัย / ผู้ได้รับมอบหมาย			02 DEC 25	2245 hrs.
Affected Area Authority (AAA) / ผู้ควบคุมพื้นที่อื่นๆ ที่ได้รับผลกระทบจากการทำงานนี้				
Area Authority (AA) / ผู้ควบคุมพื้นที่				

Section 5 : PTW ACCEPTANCE (Accepted by PA)

Performing Authority (PA) / หัวหน้าผู้ปฏิบัติงาน Name / ชื่อ ______ Signed / ลายเซ็นต์ ______ Date (D/M/Y) / วันที่ (ว/ด/ป) : ______ Time / เวลา : ______

Section 6 : PTW REVALIDATION

Off going Performing Authority	End shift checked by AA	From Time	From Date	To Time	To Date	PTW register	Oncoming Performing Authority	Affected Area Authority	Area Authority	Remark

Section 7 : PTW AUDIT

It is the responsibility of the FM/Ops Supv./NYC MOPU team lead or delegated person to perform an audit for activities associated with life-saving rules. For PTW audit other works should be performed by AA, E&IO, Safety Tech, or a delegate person.

Name / ชื่อ	Signed / ลายเซ็นต์	Date (D/M/Y) / วันที่ (ว/ด/ป)	Time / เวลา

Section 8 : SANCTION FOR TEST

The sanction test has been requested? ☐ Yes / ใช่ ☐ No / ไม่ใช่
If yes, the Isolation Confirmation Certificate (ICC) # ______

Section 9 : PTW CLOSE OUT (Closed by PA/AA)

Performing Authority / หัวหน้าผู้ปฏิบัติงาน
Work site inspection completed? ☐ Yes / ใช่ ☐ No / ไม่ใช่
Work site housekeeping completed and area returned to normal? ☐ Yes / ใช่ ☐ No / ไม่ใช่
Name / ชื่อ ______ Signed / ลายเซ็นต์ ______ Date / วันที่ ______ Time / เวลา ______

Area Authority / ผู้ควบคุมพื้นที่
Work site inspection completed? ☐ Yes / ใช่ ☐ No / ไม่ใช่
Work site housekeeping completed and area returned to normal? ☐ Yes / ใช่ ☐ No / ไม่ใช่
Remark or comments / หมายเหตุหรือข้อเสนอแนะระหว่างปฏิบัติงาน ______
The work is CONTINUED by Permit # ______
Name / ชื่อ ______ Signed / ลายเซ็นต์ ______ Date / วันที่ ______ Time / เวลา ______

Section 10 : RECORD OF WORK COMPLETION / บันทึกสำหรับงานสำเร็จ

(Registered by Safety Tech)
Name / ชื่อ ______ Signed / ลายเซ็นต์ ______ Date / วันที่ ______ Time / เวลา ______

1. Original at Work site — 2. First copy at Operation Workstation — 3. Second copy at Safety Tech — Revised by May 2025

Please see comment and recommendation in next page

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valeura energy — COLD WORK PERMIT
ใบอนุญาตการทำงานที่ไม่ก่อให้เกิดประกายไฟ

Permit No. / ใบอนุญาตหมายเลข **CW - 25189**

Section 1 : SPECIFICATION OF WORK (Prepared by PA and Reviewed by AA)

Location / สถานที่ : ENGINE ROOM / LOWER DECK	Platform / แท่นผลิต : WASSANA MOPU	Date (D/M/Y) / วันที่ (ว/ด/ป) : 3-12-2025	From Time / จากเวลา : 06.00 — To Time / ถึงเวลา : 18.00
Description of work / รายละเอียดงานที่จะทำ : 400 PM HRS GENERATOR NO 7		Equipment to be worked on / อุปกรณ์ที่จะทำงาน : GENERATOR NO 7	Work Order No. / ใบสั่งงานหมายเลข : 6654221
Associated Permit / Certificate	CW # ______ HW # ______	SP # ______ EL # ______	CSE # ______ JSA No. TH-G10-OPT-MM-JSA-PM-033-R
Requested by / ขอโดย [redacted] Signature / ลายเซ็นต์	Job Title / ตำแหน่ง : MECH	Isolation Required ☑ Yes ☐ NO; MOS Required ☐ Yes ☑ NO	☐ Long Term ICC ☑ ICC No 35742 ☐ Others ______

Section 2 : HAZARDS and CONTROL (Prepared by PA)

Section 2A : HAZARDS IDENTIFICATION การชี้บ่งอันตราย

Chemical and Biological Hazard	Physical and Electrical Hazard	Fire and Explosion Hazard	Mechanical and Other Hazard
☐ Liquid or gas	☑ Temperature (hot / cold, steam)	☐ Flammable materials	☐ Moving machinery
☑ Engine exhaust	☑ Adverse weather	☐ Opened / Naked flames	☑ Pinch point
☐ Toxic materials	☑ Inadequate lighting	☐ Flying particles	☑ Manual handling
☐ Air contamination	☐ Radioactive materials	☐ Electrical spark / Static	☐ Sharpness object
☐ Corrosive materials	☐ Noise	☐ Pyrophoric and ignition sources	☐ Falling / Dropped Object
☑ Dust / Debris / Welding fume	☐ Electrical shock		☑ Miscommunication
☐ Inert Gas	☐ Leak / Trap Pressure		☑ Slip / Trip and Fall
☐ Contact with Fungus / Virus / Bacteria			☐ Multiple or conflict work

Others (specify) อันตรายอื่นๆ (ระบุ) 1) ______ 2) ______ 3) ______ 4) ______ 5) ______

Section 2B : HAZARD CONTROL (Req.box ticked by PA and Confirm box cross checked by AA)

Chemical and Biological Hazard Controls (Req. / Confirm)	Physical and Electrical Hazard Controls (Req. / Confirm)	Fire and explosion hazard Controls (Req. / Confirm)	Mechanical and Other hazard Controls (Req. / Confirm)
☐ Rubber gloves / Chemical gloves	☐ Leather gloves / Electrical gloves	☐ Fire Extinguisher	☑ Isolation
☐ Leather gloves / Welding gloves	☐ Posting warning signs / Tag	☐ Fire blankets	☐ Posting warning signs / Tag
☐ PVC / Chemical apron	☐ Barricading	☐ Notify F&G and ESD inhibits by E/I (specify)	☐ Barricading
☐ Full chemical suit	☐ Radiation monitoring	☐ Inert gas purged	☐ Suitable access and egress
☐ Chemical / Fume mask or respirator	☑ Ear plugs / Muffs	☐ Water flushed	☐ Depressurized
☑ Dust protection mask	☐ Provide enough for drinking water	☐ Gas test	☑ Buddy system
☐ Face shield	☐ Install lighting devices	☐ Free of flammable / combustible materials	☑ Pre job meeting / communication
☑ Safety Glasses / Goggles	☐ Earthing / Grounding	☐ Fire watcher standby	☐ Full body safety harness
☐ Ventilated	☑ Isolation	☐ Drains / sewers within meters sealed	☑ Weather condition monitoring
☐ Gas / Radiation test	☑ Weather condition monitoring	☐ Isolation	☐ Use SIMOPS matrix
☐ Others (specify) 1) ______ 2) ______	☐ Others (specify) 1) ______ 2) ______	☐ Earthing / Grounding	☐ Others (specify) 1) ______ 2) ______
		☐ Others (specify) 1) ______ 2) ______	

PTW AUDIT — A. Is correct type and scope of work and approval? ☐ Yes / ใช่ ☐ No / ไม่ใช่ — B. Work site correct control hazards Section 2B? ☐ Yes / ใช่ ☐ No / ไม่ใช่ — Additional comments / ความคิดเห็นเพิ่มเติม :

Section 3 : GAS TEST LOG (Use additional sheet if required) (Note: Authorized Gas Tester (AGT) ONLY)

Authorized Gas Tester (Print Name) / ผู้ทำการตรวจวัดก๊าซ (เขียนชื่อบรรจง): ______ — Gas tester has been calibrated? ☐ Yes/ใช่ ☐ No/ไม่ใช่ — Continuous gas test required? ☐ Yes/ใช่ ☐ No/ไม่ใช่ — Retest Every ______ hours & After break

Type (Limits)	Initial Test	2nd Test	3rd Test	4th Test	5th Test	6th Test	7th Test	8th Test	9th Test	10th Test	11th Test	12th Test	13th Test	14th Test	15th Test	16th Test	17th Test	18th Test	19th Test	20th Test
O2 % (20.9%) ออกซิเจน																				
LEL % (0% LEL) ก๊าซติดไฟ																				
H2S (< 5.0 ppm) ไฮโดรเจนซัลไฟด์																				
CO (< 25 ppm) คาร์บอนมอนนอกไซด์																				
Mercury (Hg) (< 0.025 mg/m³) สารปรอท																				
Benzene (0 ppm) เบนซีน																				
Other (Specify) อื่นๆ (ระบุ)																				
Authorized Gas Tester - Signed ผู้ตรวจวัดก๊าซ - ลายเซ็นต์																				
Time Taken เวลาที่ตรวจวัดก๊าซ																				
Date / Month วันที่ / เดือน																				

Section 4 : PTW APPROVAL การอนุมัติใบอนุญาตในการทำงาน

Position / ตำแหน่ง	Name / ชื่อ	Signed / ลายเซ็นต์	Date (D/M/Y) / วันที่ (ว/ด/ป)	Time / เวลา
Field Manager / ผู้จัดการแท่นผลิต (For Hot Work, Diving Operation and Confined Space Entry)	[redacted]		3 DEC 2025	0630
Operation Supervisor หัวหน้างานปฏิบัติการผลิต			3 Dec 25	5.20
Safety Tech / Delegate เจ้าหน้าที่ความปลอดภัย / ผู้ได้รับมอบหมาย			02 DEC 25	2222 hrs.
Affected Area Authority (AAA) / ผู้ควบคุมพื้นที่อื่นๆ ที่ได้รับผลกระทบจากการทำงานนี้				
Area Authority (AA) / ผู้ควบคุมพื้นที่				

Section 5 : PTW ACCEPTANCE (Accepted by PA)

Performing Authority (PA) / หัวหน้าผู้ปฏิบัติงาน Name / ชื่อ ______ Signed / ลายเซ็นต์ ______ Date (D/M/Y) / วันที่ (ว/ด/ป) : ______ Time / เวลา : ______

Section 6 : PTW REVALIDATION

Off going Performing Authority	End shift checked by AA	From Time	From Date	To Time	To Date	PTW register	Oncoming Performing Authority	Affected Area Authority	Area Authority	Remark

Section 7 : PTW AUDIT

It is the responsibility of the FM/Ops Supv./NYC MOPU team lead or delegated person to perform an audit for activities associated with life-saving rules. For PTW audit other works should be performed by AA, E&IO, Safety Tech, or a delegate person.

Name / ชื่อ	Signed / ลายเซ็นต์	Date (D/M/Y) / วันที่ (ว/ด/ป)	Time / เวลา

Section 8 : SANCTION FOR TEST

The sanction test has been requested? ☐ Yes / ใช่ ☐ No / ไม่ใช่
If yes, the Isolation Confirmation Certificate (ICC) # ______

Section 9 : PTW CLOSE OUT (Closed by PA/AA)

Performing Authority / หัวหน้าผู้ปฏิบัติงาน
Work site inspection completed? ☐ Yes / ใช่ ☐ No / ไม่ใช่
Work site housekeeping completed and area returned to normal? ☐ Yes / ใช่ ☐ No / ไม่ใช่
Name / ชื่อ ______ Signed / ลายเซ็นต์ ______ Date / วันที่ ______ Time / เวลา ______

Area Authority / ผู้ควบคุมพื้นที่
Work site inspection completed? ☐ Yes / ใช่ ☐ No / ไม่ใช่
Work site housekeeping completed and area returned to normal? ☐ Yes / ใช่ ☐ No / ไม่ใช่
Remark or comments / หมายเหตุหรือข้อเสนอแนะระหว่างปฏิบัติงาน ______
The work is CONTINUED by Permit # ______
Name / ชื่อ ______ Signed / ลายเซ็นต์ ______ Date / วันที่ ______ Time / เวลา ______

Section 10 : RECORD OF WORK COMPLETION / บันทึกสำหรับงานสำเร็จ

(Registered by Safety Tech)
Name / ชื่อ ______ Signed / ลายเซ็นต์ ______ Date / วันที่ ______ Time / เวลา ______

1. Original at Work site — 2. First copy at Operation Workstation — 3. Second copy at Safety Tech — Revised by May 2025

Please see comment and recommendation in next page

valeura energy

SPARK POTENTIAL AND ELECTRICAL WORK PERMIT
ใบอนุญาตการทำงานที่อาจก่อให้เกิดประกายไฟ และงานไฟฟ้า

Permit No. / ใบอนุญาตหมายเลข: EL - 25492

Section 1 : SPECIFICATION OF WORK รายละเอียดของงาน (Prepared by PA and Reviewed by AA เตรียมโดยหัวหน้าผู้ปฏิบัติงานและตรวจสอบโดยผู้ควบคุมพื้นที่)

Location / สถานที่: Top Deck of Accommodation | Platform / แท่นผลิต: MOPU Ingenium | Date (D/M/Y) / วันที่ (ว/ด/ป): 03 December 25 | From Time / จากเวลา: 0600 | To Time / ถึงเวลา: 1800

Description of work / รายละเอียดงานที่จะทำ: Run BA air compressor and refill BA air cylinder | Equipment to be worked on / อุปกรณ์ที่จะทำงาน: BA air compressor and BA air cylinders | Work Order No. / ใบสั่งงานหมายเลข: TH-GLO-OPT-HSSE-JSA-GEN-004-R3

Associated Permit / Certificate ใบอนุญาตการทำงาน / ใบรับรองการทำงานที่เกี่ยวข้อง: CW #: HW #: SP #: EL #: CSE #: JSA No.:

Requested by / ขอโดย: [redacted] | Job Title / ตำแหน่ง: Deck Foreman | Isolation Required ☐ Yes ☑ NO | Long Term ICC ☐ ICC No: | MOS Required ☐ Yes ☑ NO | Others:

Signature / ลายเซ็นต์: [redacted]

Section 2 : HAZARDS and CONTROL อันตรายและการป้องกันควบคุม (Prepared by PA เตรียมโดยหัวหน้าผู้ปฏิบัติงาน)

Section 2A : HAZARDS IDENTIFICATION การชี้บ่งอันตราย

Chemical and Biological Hazard อันตรายทางด้านเคมีและชีวภาพ	Physical and Electrical Hazard อันตรายทางด้านกายภาพและไฟฟ้า	Fire and Explosion Hazard อันตรายทางด้านไฟไหม้ และระเบิด	Mechanical and Other Hazard อันตรายทางกลและเครื่องมือเครื่องใช้ และอื่นๆ
☐ Liquid or gas ของเหลวหรือก๊าซ	☐ Temperature (hot / cold, steam) อุณหภูมิ (ร้อน / เย็น, ไอน้ำ)	☐ Flammable materials สารไวไฟ	☑ Moving machinery เครื่องจักรเคลื่อนไหว
☐ Toxic materials สารเป็นพิษ/สารเป็นอันตราย	☐ Adverse weather สภาพอากาศแปรปรวน	☐ Flying particles การปลิวของเศษวัสดุ / ประกายไฟ	☑ Manual handing การยกของด้วยมือคน
☐ Corrosive materials สารกัดกร่อน	☐ Radioactive materials สารกัมมันตภาพรังสี	☐ Pyrophoric and ignition sources วัสดุที่ไวต่อการลุกไหม้/ติดไฟง่าย	☑ Falling / Dropped Object วัสดุตกหล่น
☐ Inert Gas ก๊าซเฉื่อย	☐ Electrical shock ไฟฟ้าช็อต กระแสไฟฟ้าดูด		☑ Slip / Trip and Fall ลื่น, สะดุดล้มหัก
	☐ Contact with Fungus / Virus / Bacteria สัมผัสกับเชื้อรา / ไวรัส / แบคทีเรีย		

☐ Engine exhaust ควันเครื่องยนต์/ไอเสีย; ☐ Air contamination การปนเปื้อนในอากาศ; ☑ Dust / Debris / Welding fume ฝุ่น / เศษผง / ควันเชื่อม; ☐ Noise เสียง; ☑ Leak / Trap Pressure แรงดันรั่วซึม / ดักไว้

☐ Opened / Naked flames การเปิดใช้งานเปลวไฟ; ☐ Electrical spark / Static ไฟฟ้า / ไฟฟ้าสถิต; ☐ Inadequate lighting แสงสว่างไม่เพียงพอ; ☐ Pinch point จุดบีบ, จุดกระแทก; ☑ Sharpness object วัสดุมีคม; ☑ Miscommunication การสื่อสารผิดพลาด; ☐ Multiple or conflict work การทำงานหลายพื้นที่พร้อมกัน หรือขาดที่ปรึกษาดูแล

Others (specify) อื่นๆ (ระบุ): 1) 2) 3) 4) 5)

Section 2B : HAZARD CONTROL การป้องกันควบคุมอันตราย (Req.box ticked by PA and Confirm box cross checked by AA ช่อง Req. ทำโดยหัวหน้างานผู้ปฏิบัติงาน และช่อง Confirm ตรวจสอบโดยผู้ควบคุมพื้นที่)

Chemical and Biological Hazard Controls การป้องกันควบคุมอันตรายทางด้านเคมี และชีวภาพ	Physical and Electrical Hazard Controls การป้องกันควบคุมอันตรายทางด้านกายภาพ และไฟฟ้า	Fire and explosion hazard Controls การป้องกันควบคุมอันตรายทางด้านไฟไหม้ และระเบิด	Mechanical and Other hazard Controls การป้องกันควบคุมอันตรายทางกลและเครื่องมือเครื่องใช้ และอื่นๆ
Req. Confirm	Req. Confirm	Req. Confirm	Req. Confirm
☐ ☐ Rubber gloves / Chemical gloves ถุงมือยางป้องกันสารเคมี	☐ ☐ Leather gloves / Electrical gloves ถุงมือหนัง	☐ ☐ Fire Extinguisher ถังดับเพลิง	☐ ☐ Isolation การปลดระบบ
☐ ☐ Leather gloves / Welding gloves ถุงมือหนัง ถุงมือเชื่อม	☑ ☐ Posting warning signs / Tag สติ๊กเกอร์เตือน	☐ ☐ Fire blankets ผ้าห่มดับไฟ	☑ ☐ Posting warning signs / Tag สติ๊กเกอร์เตือน
☐ ☐ PVC / Chemical apron เสื้อ PVC ป้องกันสารเคมี	☑ ☐ Barricading ติดกั้นบริเวณ	☐ ☐ Notify F&G and ESD inhibits by E/I (specify) ติดต่อระบบตรวจจับไฟไหม้และก๊าซรั่วไหล	☑ ☐ Barricading ติดกั้นบริเวณ
☐ ☐ Full chemical suit ชุดป้องกันสารเคมี	☐ ☐ Radiation monitoring การวัดค่ารังสีแสงอาทิตย์	☐ ☐ Inert gas purged การไล่ก๊าซเฉื่อยเพื่อป้องกันไฟไหม้	☑ ☐ Suitable access and egress มีทางเข้าออกที่เหมาะสม
☐ ☐ Chemical / Fume mask or respirator หน้ากากป้องกันสารเคมี / ควันเชื่อม	☑ ☐ Ear plugs / Muffs ที่อุดหู / ที่ครอบหูอุดเสียง	☐ ☐ Water flushed น้ำล้างบริเวณที่เกิดเปรอะเปื้อน	☑ ☐ Depressurized การระบายแรงดันเครื่องใช้ออกก่อน
☐ ☐ Dust protection mask หน้ากากป้องกันฝุ่น	☑ ☐ Provide enough for drinking water การจัดหาน้ำดื่มให้เพียงพอต่อการใช้งาน	☐ ☐ Gas test การวัดก๊าซ	☑ ☐ Buddy system ทำงานแบบคู่
☐ ☐ Face shield หน้ากากเต็มใบหน้า	☐ ☐ Install lighting devices ติดตั้งอุปกรณ์ให้แสงสว่างเพิ่มเติม	☐ ☐ Free of flammable / combustible materials ปราศจากวัสดุติดไฟ / วัสดุไวไฟ	☑ ☐ Fire job meeting / communication ประชุมก่อนเริ่มงาน / สื่อสารชัดเจน
☑ ☐ Safety Glasses / Goggles แว่นตานิรภัย / แว่นตาครอบตา	☑ ☐ Earthing / Grounding การต่อสายดิน	☐ ☐ Fire watcher standby คนเฝ้าระวังไฟ	☑ ☐ Full body safety harness เข็มขัดนิรภัยแบบเต็มตัว
☐ ☐ Ventilated การถ่ายเทอากาศ	☐ ☐ Isolation การปลดระบบ	☑ ☐ Drains / sewers within meters sealed ระบบท่อระบายน้ำที่อยู่ใกล้จุดทำงานถูกปิดผนึก	☐ ☐ Weather condition monitoring การติดตามสภาพอากาศ
☐ ☐ Gas / Radiation test ตรวจแก๊ส / ติดตามรังสี	☐ ☐ Weather condition monitoring การติดตามสภาพอากาศ	☐ ☐ Isolation การปลดระบบ	☐ ☐ Use SIMOPS matrix วิเคราะห์ SIMOP
☐ ☐ Others (specify) อื่นๆ (ระบุ) 1) 2)	☑ ☐ Others (specify) อื่นๆ (ระบุ) 1) Confirm pressure 2) Bleed off pressure	☐ ☐ Earthing / Grounding การต่อสายดิน	☑ ☐ Others (specify) อื่นๆ (ระบุ) 1) Impact Gloves 2)
		☐ ☐ Others (specify) อื่นๆ (ระบุ) 1) 2)	

A. Is correct tools and pieces of work and equipment available and in good condition? เครื่องมือและอุปกรณ์ที่ใช้งานมีพร้อมใช้งานและอยู่ในสภาพดีหรือไม่ — Yes / ใช่ ☐ No / ไม่ใช่

B. Work site has been cleaned and prepared for safe work? พื้นที่ทำงานได้ถูกเตรียมพร้อมและทำความสะอาดเพื่อความปลอดภัยหรือไม่ — Yes / ใช่ ☐ No / ไม่ใช่

Additional comments / ความคิดเห็นเพิ่มเติม: _____

PTW AUDIT

Section 3 : GAS TEST LOG (Use additional sheet if required) บันทึกการตรวจวัดก๊าซ (ใช้สำรวจการปรับเทียบเพิ่มเติมหากต้องการ) (Note: Authorized Gas Tester (AGT) ONLY ผู้ตรวจวัดก๊าซต้องผ่านการอบรมการตรวจวัดก๊าซเท่านั้น)

Authorized Gas Tester (Print Name) ผู้ทำการตรวจวัดก๊าซ (ชื่อเต็มตัวบรรจง): _____ | Gas tester has been calibrated? เครื่องวัดก๊าซได้รับการปรับเทียบแล้ว ☐ Yes/ใช่ ☐ No/ไม่ใช่ | Continuous gas test required? ทำการตรวจวัดก๊าซต่อเนื่อง ☐ Yes/ใช่ ☐ No/ไม่ใช่ | Retest Every _____ hours & After break ทำการตรวจซ้ำ และหลังการพักเบรค

Type (Limits)	Initial Test	2nd Test	3rd Test	4th Test	5th Test	6th Test	7th Test	8th Test	9th Test	10th Test	11th Test	12th Test	13th Test	14th Test	15th Test	16th Test	17th Test	18th Test	19th Test	20th Test
O2 % (20.9%) ออกซิเจน																				
LEL % (0% LEL) ก๊าซติดไฟ																				
H2S (< 5.0 ppm) ไฮโดรเจนซัลไฟด์																				
CO (< 25 ppm) คาร์บอนมอนอกไซด์																				
Mercury (Hg) (< 0.025 mg/m³) ปรอทไอ																				
Benzene (0 ppm) เบนซีน																				
Other (Specify) อื่นๆ (ระบุ) _____																				
Authorized Gas Tester - Signed ผู้ตรวจวัดก๊าซ - ลายเซ็นต์																				
Time Taken เวลาที่ตรวจวัดก๊าซ																				
Date / Month วันที่ / เดือน																				

No gas test require at the area.

Section 4 : PTW APPROVAL การอนุมัติใบอนุญาตในการทำงาน

Position / ตำแหน่ง	Name / ชื่อ	Signed / ลายเซ็นต์	Date (D/M/Y) / วันที่ (ว/ด/ป) :	Time / เวลา
Field Manager / ผู้จัดการแท่นผลิต (For Hot Work, Diving Operation and Confined Space Entry / สำหรับงานที่ต้องใช้เปลวประกายไฟ, งานประดาน้ำ และงานในที่มีอับอากาศ)	[redacted]		3 DEC 2025	0524
Operation Supervisor หัวหน้างานปฏิบัติการผลิต			3 Dec 25	5.30
Safety Tech / Delegate เจ้าหน้าที่ความปลอดภัย / ผู้ได้รับมอบหมาย			02 DEC 25	2218 hrs.
Affected Area Authority (AAA) / ผู้ควบคุมพื้นที่อื่นๆ ที่ได้รับผลกระทบจากการทำงานนี้				
Area Authority (AA) / ผู้ควบคุมพื้นที่				

Section 5 : PTW ACCEPTANCE การยอมรับใบอนุญาตทำงาน (Accepted by PA / ยอมรับโดยหัวหน้าผู้ปฏิบัติงาน)

Performing Authority (PA) / หัวหน้าผู้ปฏิบัติงาน Name / ชื่อ _____ Signed / ลายเซ็นต์ _____ Date (D/M/Y) / วันที่ (ว/ด/ป) : _____ Time / เวลา : _____

Section 6 : PTW REVALIDATION การขยายเวลาอนุญาตในการทำงาน

Off going Performing Authority หัวหน้าผู้ปฏิบัติงานผู้ส่งมอบงาน	End shift checked by AA ตรวจเช็คพื้นที่หลังผู้ปฏิบัติงานโดยผู้ควบคุมพื้นที่	From ตั้งแต่ Time เวลา	From ตั้งแต่ Date วันที่	To ถึง Time เวลา	To ถึง Date วันที่	PTW register ผู้บันทึก	Oncoming Performing Authority หัวหน้าผู้ปฏิบัติงานผู้รับมอบงาน	Affected Area Authority ผู้ควบคุมบริเวณที่ได้ผลกระทบ	Area Authority ผู้ควบคุมพื้นที่	Remark หมายเหตุ

Section 7 : PTW AUDIT

It is the responsibility of the FM/Ops Supv./NYC MOPU team lead or delegated person to perform an audit for activities associated with life-saving rules. For PTW audit other works should be performed by AA, E&O, Safety Tech, or a delegate person.

FM/Ops Supv./NYC MOPU team lead หรือผู้ที่ได้รับมอบหมาย ทำการ Audit งานที่เกี่ยวข้องกับ Life-saving rules. งานอื่น ๆ ทำการ Audit โดย AA, E&O, Safety Tech หรือผู้ที่ได้รับมอบหมาย

Name / ชื่อ	Signed / ลายเซ็นต์	Date (D/M/Y) / วันที่ (ว/ด/ป)	Time / เวลา

Section 8 : SANCTION FOR TEST

The sanction test has been requested? / มีการทดสอบระหว่างการติดระบบ? ☐ Yes / ใช่ ☐ No / ไม่ใช่

If yes, the Isolation Confirmation Certificate (ICC) # _____

ถ้าใช่, ใบรับรองการติดและการปลดหมายเลข #

Section 9 : PTW CLOSE OUT การสิ้นสุดใบอนุญาตทำงาน (Closed by PA/AA มีความเห็นโดยหัวหน้าผู้ปฏิบัติงาน / ผู้ควบคุมพื้นที่)

Performing Authority / หัวหน้าผู้ปฏิบัติงาน

Work site inspection completed? ได้ตรวจสอบพื้นที่ปฏิบัติงานแล้ว? ☐ Yes / ใช่ ☐ No / ไม่ใช่

Work site housekeeping completed and area returned to normal? พื้นที่การทำงานและอาคารเรียบร้อยและคืนสู่สภาพการทำงานปกติ? ☐ Yes / ใช่ ☐ No / ไม่ใช่

Name / ชื่อ _____ Signed / ลายเซ็นต์ _____ Date / วันที่ _____ Time / เวลา _____

Area Authority / ผู้ควบคุมพื้นที่

Work site inspection completed? ได้ตรวจสอบพื้นที่ปฏิบัติงานแล้ว? ☐ Yes / ใช่ ☐ No / ไม่ใช่

Work site housekeeping completed and area returned to normal? พื้นที่การทำงานและอาคารเรียบร้อยและคืนสู่สภาพการทำงานปกติ? ☐ Yes / ใช่ ☐ No / ไม่ใช่

Remark or comments / หมายเหตุหรือข้อเสนอแนะระหว่างปฏิบัติงาน _____

The work is CONTINUED by Permit # / งานถูกทำงานต่อโดยใบอนุญาตหมายเลข _____

Name / ชื่อ _____ Signed / ลายเซ็นต์ _____ Date / วันที่ _____ Time / เวลา _____

Section 10 : RECORD OF WORK COMPLETION / บันทึกสำหรับงานสำเร็จ

(Registered by Safety Tech บันทึกงานเสร็จโดย เจ้าหน้าที่ความปลอดภัย)

Name / ชื่อ _____ Signed / ลายเซ็นต์ _____ Date / วันที่ _____ Time / เวลา _____

1. Original at Work site | 2. First copy at Operation Workstation | 3. Second copy at Safety Tech | Revised by May 2025

Please see comment and recommendation in next page /ข้อคิดเห็นและคำแนะนำ หรือข้อเสนอแนะเพิ่มเติมด้านหลัง

valeura energy

SPECIAL TASK WORK PERMIT
ใบอนุญาตการทำงานพิเศษ

Permit No. / ใบอนุญาตหมายเลข: SP - 25737

Section 1 : SPECIFICATION OF WORK รายละเอียดของงาน (Prepared by PA and Reviewed by AA เตรียมโดยหัวหน้าผู้ปฏิบัติงานและตรวจสอบโดยผู้ควบคุมพื้นที่)

Location / สถานที่: AFT Port Void Tank [Maintenance Work shop | Platform / แท่นผลิต: MA> MOPU | Date (D/M/Y) / วันที่ (ว/ด/ป): 3/12/2025 | From Time / จากเวลา: 6.00 | To Time / ถึงเวลา: 18.00

Description of work / รายละเอียดงานที่จะทำ: Open/close manhole / Ventilation Vessel. | Equipment to be worked on / อุปกรณ์ที่จะทำงาน: AFT Port Void Tank Maintenance Work shop | Work Order No. / ใบสั่งงานหมายเลข: TH-NSN-TCS-2217-026

Associated Permit / Certificate ใบอนุญาตการทำงาน / ใบรับรองการทำงานที่เกี่ยวข้อง: CW #: 17660 HW #: SP #: 25737 EL #: 25483 CSE #: 0982 JSA No.:

Requested by / ขอโดย: [redacted] | Name / ชื่อ: Jakkawan | Job Title / ตำแหน่ง: Project engineer | Isolation Required ☐ Yes ☑ NO | Long Term ICC ☐ ICC No: | MOS Required ☐ Yes ☑ NO | Others:

Signature / ลายเซ็นต์: [redacted]

Section 2 : HAZARDS and CONTROL อันตรายและการป้องกันควบคุม (Prepared by PA เตรียมโดยหัวหน้าผู้ปฏิบัติงาน)

Section 2A : HAZARDS IDENTIFICATION การชี้บ่งอันตราย

Chemical and Biological Hazard อันตรายทางด้านเคมีและชีวภาพ	Physical and Electrical Hazard อันตรายทางด้านกายภาพและไฟฟ้า	Fire and Explosion Hazard อันตรายทางด้านไฟไหม้ และระเบิด	Mechanical and Other Hazard อันตรายทางกลและเครื่องมือเครื่องใช้ และอื่นๆ
☑ Liquid or gas ของเหลวหรือก๊าซ	☐ Temperature (hot / cold, steam) อุณหภูมิ (ร้อน / เย็น, ไอน้ำ)	☐ Flammable materials สารไวไฟ	☑ Moving machinery เครื่องจักรเคลื่อนไหว
☐ Toxic materials สารเป็นพิษ/สารเป็นอันตราย	☐ Adverse weather สภาพอากาศแปรปรวน	☑ Inadequate lighting แสงสว่างไม่เพียงพอ	☑ Manual handing การยกของด้วยมือคน
☐ Corrosive materials สารกัดกร่อน	☐ Radioactive materials สารกัมมันตภาพรังสี	☑ Dust / Debris / Welding fume ฝุ่น / เศษผง / ควันเชื่อม	☑ Falling / Dropped Object วัสดุตกหล่น
☐ Inert Gas ก๊าซเฉื่อย	☑ Electrical shock ไฟฟ้าช็อต กระแสไฟฟ้าดูด	☐ Pyrophoric and ignition sources วัสดุที่ไวต่อการลุกไหม้/ติดไฟง่าย	☑ Slip / Trip and Fall ลื่น, สะดุดล้มหัก
	☐ Contact with Fungus / Virus / Bacteria สัมผัสกับเชื้อรา / ไวรัส / แบคทีเรีย	☐ Leak / Trap Pressure แรงดันรั่วซึม / ดักไว้	

☐ Engine exhaust ควันเครื่องยนต์/ไอเสีย; ☐ Air contamination การปนเปื้อนในอากาศ; ☐ Noise เสียง

☐ Opened / Naked flames การเปิดใช้งานเปลวไฟ; ☑ Electrical spark / Static ไฟฟ้า / ไฟฟ้าสถิต; ☐ Pinch point จุดบีบ, จุดกระแทก; ☐ Sharpness object วัสดุมีคม; ☐ Miscommunication การสื่อสารผิดพลาด; ☐ Multiple or conflict work การทำงานหลายพื้นที่พร้อมกัน หรือขาดที่ปรึกษาดูแล

Others (specify) อื่นๆ (ระบุ): 1) 2) 3) 4) 5)

Section 2B : HAZARD CONTROL การป้องกันควบคุมอันตราย (Req.box ticked by PA and Confirm box cross checked by AA ช่อง Req. ทำโดยหัวหน้างานผู้ปฏิบัติงาน และช่อง Confirm ตรวจสอบโดยผู้ควบคุมพื้นที่)

Chemical and Biological Hazard Controls การป้องกันควบคุมอันตรายทางด้านเคมี และชีวภาพ	Physical and Electrical Hazard Controls การป้องกันควบคุมอันตรายทางด้านกายภาพ และไฟฟ้า	Fire and explosion hazard Controls การป้องกันควบคุมอันตรายทางด้านไฟไหม้ และระเบิด	Mechanical and Other hazard Controls การป้องกันควบคุมอันตรายทางกลและเครื่องมือเครื่องใช้ และอื่นๆ
Req. Confirm	Req. Confirm	Req. Confirm	Req. Confirm
☐ ☐ Rubber gloves / Chemical gloves ถุงมือยางป้องกันสารเคมี	☐ ☐ Leather gloves / Electrical gloves ถุงมือหนัง	☐ ☐ Fire Extinguisher ถังดับเพลิง	☐ ☐ Isolation การปลดระบบ
☐ ☐ Leather gloves / Welding gloves ถุงมือหนัง ถุงมือเชื่อม	☑ ☐ Posting warning signs / Tag สติ๊กเกอร์เตือน	☐ ☐ Fire blankets ผ้าห่มดับไฟ	☑ ☐ Posting warning signs / Tag สติ๊กเกอร์เตือน
☐ ☐ PVC / Chemical apron เสื้อ PVC ป้องกันสารเคมี	☑ ☐ Barricading ติดกั้นบริเวณ	☐ ☐ Notify F&G and ESD inhibits by E/I (specify) ติดต่อระบบตรวจจับไฟไหม้และก๊าซรั่วไหล	☑ ☐ Barricading ติดกั้นบริเวณ
☑ ☐ Full chemical suit ชุดป้องกันสารเคมี	☐ ☐ Radiation monitoring การวัดค่ารังสีแสงอาทิตย์	☐ ☐ Inert gas purged การไล่ก๊าซเฉื่อยเพื่อป้องกันไฟไหม้	☑ ☐ Suitable access and egress มีทางเข้าออกที่เหมาะสม
☑ ☐ Chemical / Fume mask or respirator หน้ากากป้องกันสารเคมี / ควันเชื่อม	☑ ☐ Ear plugs / Muffs ที่อุดหู / ที่ครอบหูอุดเสียง	☐ ☐ Water flushed น้ำล้างบริเวณที่เกิดเปรอะเปื้อน	☑ ☐ Depressurized การระบายแรงดันเครื่องใช้ออกก่อน
☑ ☐ Dust protection mask หน้ากากป้องกันฝุ่น	☑ ☐ Provide enough for drinking water การจัดหาน้ำดื่มให้เพียงพอต่อการใช้งาน	☑ ☐ Gas test การวัดก๊าซ	☑ ☐ Buddy system ทำงานแบบคู่
☑ ☐ Face shield หน้ากากเต็มใบหน้า	☐ ☐ Install lighting devices ติดตั้งอุปกรณ์ให้แสงสว่างเพิ่มเติม	☑ ☐ Free of flammable / combustible materials ปราศจากวัสดุติดไฟ / วัสดุไวไฟ	☑ ☐ Fire job meeting / communication ประชุมก่อนเริ่มงาน / สื่อสารชัดเจน
☑ ☐ Safety Glasses / Goggles แว่นตานิรภัย / แว่นตาครอบตา	☑ ☐ Earthing / Grounding การต่อสายดิน	☑ ☐ Fire watcher standby คนเฝ้าระวังไฟ	☑ ☐ Full body safety harness เข็มขัดนิรภัยแบบเต็มตัว
☐ ☐ Ventilated การถ่ายเทอากาศ	☐ ☐ Isolation การปลดระบบ	☑ ☐ Drains / sewers within meters sealed ระบบท่อระบายน้ำที่อยู่ใกล้จุดทำงานถูกปิดผนึก	☑ ☐ Weather condition monitoring การติดตามสภาพอากาศ
☑ ☐ Gas / Radiation test ตรวจแก๊ส / ติดตามรังสี	☐ ☐ Weather condition monitoring การติดตามสภาพอากาศ	☐ ☐ Isolation การปลดระบบ	☑ ☐ Use SIMOPS matrix วิเคราะห์ SIMOP
☐ ☐ Others (specify) อื่นๆ (ระบุ) 1) 2)	☑ ☐ Others (specify) อื่นๆ (ระบุ) 1) Gas detector. 2)	☑ ☐ Earthing / Grounding การต่อสายดิน	☑ ☐ Others (specify) อื่นๆ (ระบุ) 1) Leather Gloves 2)
		☐ ☐ Others (specify) อื่นๆ (ระบุ) 1) 2)	

A. Is correct tools and pieces of work and equipment available and in good condition? เครื่องมือและอุปกรณ์ที่ใช้งานมีพร้อมใช้งานและอยู่ในสภาพดีหรือไม่ — Yes / ใช่ ☐ No / ไม่ใช่

B. Work site has been cleaned and prepared for safe work? พื้นที่ทำงานได้ถูกเตรียมพร้อมและทำความสะอาดเพื่อความปลอดภัยหรือไม่ — Yes / ใช่ ☐ No / ไม่ใช่

Additional comments / ความคิดเห็นเพิ่มเติม: _____

PTW AUDIT

Section 3 : GAS TEST LOG (Use additional sheet if required) บันทึกการตรวจวัดก๊าซ (ใช้สำรวจการปรับเทียบเพิ่มเติมหากต้องการ) (Note: Authorized Gas Tester (AGT) ONLY ผู้ตรวจวัดก๊าซต้องผ่านการอบรมการตรวจวัดก๊าซเท่านั้น)

Authorized Gas Tester (Print Name) ผู้ทำการตรวจวัดก๊าซ (ชื่อเต็มตัวบรรจง): Tirawut | Gas tester has been calibrated? เครื่องวัดก๊าซได้รับการปรับเทียบแล้ว ☑ Yes/ใช่ ☐ No/ไม่ใช่ | Continuous gas test required? ทำการตรวจวัดก๊าซต่อเนื่อง ☑ Yes/ใช่ ☐ No/ไม่ใช่ | Retest Every 1 hours & After break ทำการตรวจซ้ำ และหลังการพักเบรค

Type (Limits)	Initial Test	2nd Test	3rd Test	4th Test	5th Test	6th Test	7th Test	8th Test	9th Test	10th Test	11th Test	12th Test	13th Test	14th Test	15th Test	16th Test	17th Test	18th Test	19th Test	20th Test
O2 % (20.9%) ออกซิเจน																				
LEL % (0% LEL) ก๊าซติดไฟ																				
H2S (< 5.0 ppm) ไฮโดรเจนซัลไฟด์																				
CO (< 25 ppm) คาร์บอนมอนอกไซด์																				
Mercury (Hg) (< 0.025 mg/m³) ปรอทไอ																				
Benzene (0 ppm) เบนซีน																				
Other (Specify) อื่นๆ (ระบุ) _____																				
Authorized Gas Tester - Signed ผู้ตรวจวัดก๊าซ - ลายเซ็นต์																				
Time Taken เวลาที่ตรวจวัดก๊าซ																				
Date / Month วันที่ / เดือน																				

Section 4 : PTW APPROVAL การอนุมัติใบอนุญาตในการทำงาน

Position / ตำแหน่ง	Name / ชื่อ	Signed / ลายเซ็นต์	Date (D/M/Y) / วันที่ (ว/ด/ป) :	Time / เวลา
Field Manager / ผู้จัดการแท่นผลิต (For Hot Work, Diving Operation and Confined Space Entry / สำหรับงานที่ต้องใช้เปลวประกายไฟ, งานประดาน้ำ และงานในที่มีอับอากาศ)	[redacted]		3 DEC 25	0630
Operation Supervisor หัวหน้างานปฏิบัติการผลิต			3 Dec 25	5.30
Safety Tech / Delegate เจ้าหน้าที่ความปลอดภัย / ผู้ได้รับมอบหมาย			02 DEC 25	2243 hrs.
Affected Area Authority (AAA) / ผู้ควบคุมพื้นที่อื่นๆ ที่ได้รับผลกระทบจากการทำงานนี้				
Area Authority (AA) / ผู้ควบคุมพื้นที่				

Section 5 : PTW ACCEPTANCE การยอมรับใบอนุญาตทำงาน (Accepted by PA / ยอมรับโดยหัวหน้าผู้ปฏิบัติงาน)

Performing Authority (PA) / หัวหน้าผู้ปฏิบัติงาน Name / ชื่อ _____ Signed / ลายเซ็นต์ _____ Date (D/M/Y) / วันที่ (ว/ด/ป) : _____ Time / เวลา : _____

Section 6 : PTW REVALIDATION การขยายเวลาอนุญาตในการทำงาน

Off going Performing Authority หัวหน้าผู้ปฏิบัติงานผู้ส่งมอบงาน	End shift checked by AA ตรวจเช็คพื้นที่หลังผู้ปฏิบัติงานโดยผู้ควบคุมพื้นที่	From ตั้งแต่ Time เวลา	From ตั้งแต่ Date วันที่	To ถึง Time เวลา	To ถึง Date วันที่	PTW register ผู้บันทึก	Oncoming Performing Authority หัวหน้าผู้ปฏิบัติงานผู้รับมอบงาน	Affected Area Authority ผู้ควบคุมบริเวณที่ได้ผลกระทบ	Area Authority ผู้ควบคุมพื้นที่	Remark หมายเหตุ

Section 7 : PTW AUDIT

It is the responsibility of the FM/Ops Supv./NYC MOPU team lead or delegated person to perform an audit for activities associated with life-saving rules. For PTW audit other works should be performed by AA, E&O, Safety Tech, or a delegate person.

FM/Ops Supv./NYC MOPU team lead หรือผู้ที่ได้รับมอบหมาย ทำการ Audit งานที่เกี่ยวข้องกับ Life-saving rules. งานอื่น ๆ ทำการ Audit โดย AA, E&O, Safety Tech หรือผู้ที่ได้รับมอบหมาย

Name / ชื่อ	Signed / ลายเซ็นต์	Date (D/M/Y) / วันที่ (ว/ด/ป)	Time / เวลา

Section 8 : SANCTION FOR TEST

The sanction test has been requested? / มีการทดสอบระหว่างการติดระบบ? ☐ Yes / ใช่ ☐ No / ไม่ใช่

If yes, the Isolation Confirmation Certificate (ICC) # _____

ถ้าใช่, ใบรับรองการติดและการปลดหมายเลข #

Section 9 : PTW CLOSE OUT การสิ้นสุดใบอนุญาตทำงาน (Closed by PA/AA มีความเห็นโดยหัวหน้าผู้ปฏิบัติงาน / ผู้ควบคุมพื้นที่)

Performing Authority / หัวหน้าผู้ปฏิบัติงาน

Work site inspection completed? ได้ตรวจสอบพื้นที่ปฏิบัติงานแล้ว? ☐ Yes / ใช่ ☐ No / ไม่ใช่

Work site housekeeping completed and area returned to normal? พื้นที่การทำงานและอาคารเรียบร้อยและคืนสู่สภาพการทำงานปกติ? ☐ Yes / ใช่ ☐ No / ไม่ใช่

Name / ชื่อ _____ Signed / ลายเซ็นต์ _____ Date / วันที่ _____ Time / เวลา _____

Area Authority / ผู้ควบคุมพื้นที่

Work site inspection completed? ได้ตรวจสอบพื้นที่ปฏิบัติงานแล้ว? ☐ Yes / ใช่ ☐ No / ไม่ใช่

Work site housekeeping completed and area returned to normal? พื้นที่การทำงานและอาคารเรียบร้อยและคืนสู่สภาพการทำงานปกติ? ☐ Yes / ใช่ ☐ No / ไม่ใช่

Remark or comments / หมายเหตุหรือข้อเสนอแนะระหว่างปฏิบัติงาน _____

The work is CONTINUED by Permit # / งานถูกทำงานต่อโดยใบอนุญาตหมายเลข _____

Name / ชื่อ _____ Signed / ลายเซ็นต์ _____ Date / วันที่ _____ Time / เวลา _____

Section 10 : RECORD OF WORK COMPLETION / บันทึกสำหรับงานสำเร็จ

(Registered by Safety Tech บันทึกงานเสร็จโดย เจ้าหน้าที่ความปลอดภัย)

Name / ชื่อ _____ Signed / ลายเซ็นต์ _____ Date / วันที่ _____ Time / เวลา _____

1. Original at Work site | 2. First copy at Operation Workstation | 3. Second copy at Safety Tech | Revised by May 2025

Please see comment and recommendation in next page /ข้อคิดเห็นและคำแนะนำ หรือข้อเสนอแนะเพิ่มเติมด้านหลัง

THRE360 ENERGY

Permit No. HWP: 00320

HOT WORK PERMIT

1. Permit Holder: CHOK TANKE

2. Company: CET

3. Initial Permit Validation Period:
From: 0700 hours. To: 1900 hours. Date: 02 DEC 2025

4. Location:

[ ] Port Fwd	[ ] Stbd Fwd	[ ] E-House	[ ] Engine Room	[ ] Monkey Island
[ ] Port Mid Ships	[ ] Stbd Mid Ships	[ ] Cargo Pump Room	[ ] Accommodation	[ ] Steering Flat
[ ] Port Aft	[ ] Stbd Aft	[ ] Process	[ ] Cargo Tank	[ ] Forecastle Area
[ ] Poop Deck	[ ] Ballast Tank	[ ] Turret	[ ] Hydraulic Room	[ ] Boat Deck
[ ] Bow Thruster Room	[ ] Heli-Deck	[ ] Galley	[ ] Utility Module	
[ ] Engine Room Workshop	[x] Main Deck	[ ] HPU Room	Other Details:	

5. Equipment To be Worked On / Tag Number:
PNEUMATIC CHIPPING TOOL

6. Work Description:
[ ] Flame - CHIPPING & PAINTING ON DECK
[x] Non-Flame

7. Tools To Be Used:
[ ] Test Equipment [ ] Battery [ ] Electrical [ ] Cutting / Grinding [ ] Welding [x] Chipping
Other:

8. Hazards / Dangers:

[ ] Liquids / Gas Under Pressure	[ ] Crush	[x] Chemicals	[ ] Electrical
[ ] Flammable Materials	[ ] Working Over Water	[ ] Adjacent Operations	[x] Dropped Objects
[x] Flames / Arcs / sparks	[ ] Work at Height	[x] Dust / Fumes	[x] Weather / Sea State
[ ] Hot Equip / Surfaces	[ ] Restricted Access / Egress	[ ] Safety System Disabled	[ ] Confined Space
[ ] Open Drains	[ ] Heavy Lift Operations	[ ] Pressure Testing	[x] Slips / Trips / Falls
[ ] Moving / Rotating Machinery	[x] Manual Handling	[ ] Gas Vents	[ ] Pipe work open

Other:

9. Preparation:

[ ] Process / Mechanical Isolations	[ ] Depressurize	[x] Fire Extinguisher -Type: DP.
[ ] Electrical Isolations	[ ] Purge / Flush	[ ] Fire Watch
[ ] ESD / F&G Overrides	[ ] Drain	[ ] Fire Hose (charged)
[ ] DCS Overrides	[ ] Lifting Equipment	[ ] Cover Drains
[ ] Confined Space Certificate	[x] Communications	[ ] Ventilation
[x] Job Hazard Analysis # DK-120	[ ] Additional Lighting	[ ] Earth lead connected
[x] Tool Box Meeting	[ ] Scaffolding	[ ] Erect Habitat
[ ] P A Announcement	[x] Erect Signs / Barriers	[ ] Fire Blanket

Additional requirements:

10. Additional PPE Required:

[ ] Safety Harness / Fall arrester	[x] Goggles	[ ] Life Jacket	[ ] Emergency Escape Breathing Device
[x] Face Shield	[x] Hearing protection	[x] Respiratory Protection	[x] Gloves (Type) NITRILE COATED.
[ ] Other			

Permit No. HWP: 00320

11. Associated Isolation & Confined Space Certificates:

Type:	Number:	Status:

12. Potential Conflicting Permits / Simultaneous Operations

Type:	Number:	Status:

13. Additional Signing By Department Supervisors (If Ticked):

Production Supervisor	Required?	Maintenance Supervisor	Required?	Marine Supervisor	Required?

14. Area Supervisor approval
This work does not conflict with other activities. It is safe to commence this work if all conditions of this permit are adhered to. If conditions change during the validity of this permit, work will be suspended and the permit reviewed.

15. OIM Authority
I have reviewed all the precautions associated with this permit and the work may proceed provided all the conditions of the permit are adhered to.

16. Permit Holder's Acceptance
I have read and agree to work within the conditions of this permit. If these conditions change, work shall be suspended. I am also aware of the actions to be taken in the event of a general alarm.

[redacted]

17. Permit Registration PCR
Time: 0700 Date: 02 DEC 2025 Sign:

18. Transferral of Permit Holder:
I have read and agree to work within the conditions of this permit. If these change, work shall be suspended. I am also aware of the actions to be taken in the event of a general alarm.
Name Date/Time: Sign:

19. Permit Revalidation (12 hour maximum):

Date:	03.DEC 25	04 DEC 25
Valid From:	0700	0700
Valid To:	1900	1900
Production Supv. sign:		
Maintenance Supervisor sign:		
Marine Supervisor sign:	[redacted]	
OIM sign:		
Permit Holder sign on:		
Issued by PCR Sign:		
Permit Holder sign off:		
PCR sign off:		

20. Gas Testing:
Gas **MONITORING** required? [x] Yes [ ] No Detector No:
Continuous gas **MONITORING**? [ ] Yes [ ] No
Gas **TESTING** required? [ ] Yes [ ] No #46BRN

Authorised Gas Tester Name:	Results % LEL	%O2	%H2S	%CO2	Date/Time
AS PER GAS MONITORING RECORD.					

21. Group Sign On
Name Sign:
1 [redacted]
2
3
4
5

Completion (Sign Off)
All work is **COMPLETE** [x] **INCOMPLETE** [ ]
Permit Holder
Name: [redacted]
Sign:
Date: 04 DEC 2025 Time: 1800
The worksite has been left in a safe and tidy condition
[x] Yes [ ] No

22. Close Out Area Supervisor:
I have consulted with the permit holder and acknowledge the status of this permit and accept the equipment back into my control.
Time: 1800 Date: 04 DEC 2025 Sign:

23. Close Out OIM:
I am satisfied that the status of the equipment and isolations concerned have been left in a safe condition.
Time: 1800 Date: 04 DEC 2025 Sign:

24. Permit De-Registered by PCR
Time: 1800 Date: 04 DEC 2025 Sign:

HOT WORK CERTIFICATE

DATE: 13 Sep 2025 HOT CERTIFICATE NO: 13/2025

VESSEL: SC SUMMER REF. PTW NO: SC SM 05/25

LOCATION AREA: MAIN DECK ☑ DECK ☐ ENGINE

OPERATION UNIT: HYDRAULIC PIPE

1. DESCRIPTION OF WORK

Work description and location :

– Welding and cutting HYDRAULIC PIPE

NOTE:
1. All work to cease on sounding of fire alarm or PA announcement. Work area and equipment to be made safe prior to leaving site at any time during the period of the certificate.
2. A qualified gas tester shall conduct gas testing before beginning hot work where there is a potential for flammable gases to be present. The qualified gas tester shall determine the frequency of gas testing based on the potential risk **

2. HAZARD IDENTIFICATION Select by ticking (√) the appropriate boxes

☐ Confined space	☐ Working over water	** Combustible/Toxic gas test ZERO ☑
☑ Noise	☐ Remote start	Oxygen level 20.8% ☑
☐ Liquid under pressure	☐ Falling objects	Gas test carried out by / Time: 1600
☑ Danger of falling	☐ Toxic/corrosive material	Name / Signature: Mr. khunsuek J.
☐ Other, please specify:		

Precautions to be taken:

– Require Observe person for assistane

3. Safety Equipment and Personal Protective Equipment Required, select by ticking (√).

☑ Coverall	☑ Safety Boots	☑ Safety Helmet	☑ Welding Gloves
☑ Face Shield	☐ Particulate respirator	☑ Welding Mask	☑ Safety Goggle
☑ Welding Apron	☑ Radio	☐ Gas detector	☑ Fire extinguisher
☐ Flashback arrestors	☐ Hose/Fire blanket	☑ Signs / Barriers	☑ Firewatcher
☐ Work life vest	☐ Lock-out Tag-out	☐ Other, please specify:	

4. ISSUE

RESPONSIBLE PERSON: I declare all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

Name	Designation	Signature	Time
[redacted]			

MASTER

5. COMPLETION

RESPONSIBLE PERSON: I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status.

Name	Designation	Signature	Time
[redacted]			

MASTER

Please confirm below are verified prior to starting / during work and maintained in place.

WORK CONTROL CHECKLIST *(HOT WORK)*

All crew / workers must confirm each action below.	Crew / Worker(s)	Start work VERIFIER	During work VERIFIER
1. **Hot work** has been evaluated for Isolation of Hazardous Energy (IHE) Requirements. Does hot work require IHE? ☐ Yes ☑ No **If yes:** Complete IHE Work Control Checklist. **If no:** Continue to Step 2.	✓	✓	✓
2. The **atmosphere** is within allowed limits prior to hot work. Oxygen between 19.5 – 23.5%; LEL less than 1%; H_2S less than 10 ppm (8 hrs); CO less than 35 ppm (8 hrs)	✓	✓	✓
3. **Gas testing** frequency has been established.	✓	✓	✓
4. **Drain, openings and vents** are sealed.	✓	✓	✓
5. All **combustible materials** have been removed, covered or drenched.	✓	✓	✓
6. **Firefighting equipment** has been inspected and is at hot work site.	✓	✓	✓
7. **Heat, slag or sparks** will be contained.	✓	✓	✓
8. **Dedicated Fire Watch** is in place.	✓	✓	✓

Stop Work Authority (SWA) if any of the above safeguards are not in place.

Role	Name	Rank	Date	Sign
Crew / Worker(s) by Crew / worker(s)	[redacted]	2/E	13 Sep 25	[redacted]
Start work verifier by Responsible person	[redacted]	C/O	13 Sep 25	[redacted]
During work verifier by another person (no self-verification).	[redacted]	Master	13 Sep 25	[redacted]

SECTION 9: SAFETY MANAGEMENT

P-09-02

Permit To Work

RECORD OF CHANGES & REVISION STATUS

Rev. Status	Originator	Description of change
0	Ongarj S.	Wholly reviews for compatible with OVMSA
1	Ongarj S.	Fully update and New establishes
2	Ongarj S.	New SMS Formatting which is revived & reified by ABS Class
3	Ongarj S.	Revise section 4, section 5.1.2, 5.1.3, 5.2.5, 5.3, 5.5.2
4	Ongarj S.	Delete this paragraph item 5.5.4
5	Ongarj S.	Add wording to item 5.1.5, 5.3.1 and Item 8: Reference Standard
6	Ongarj S.	Add the authorizing person item 4
7	Ongarj S.	Revise item 5.2, 5.4, 5.5, 5.7, item 6
8	Ongarj S.	Add form F-09-SHE/31 Work Control Checklist – De-Isolation-Bilingual
9	Ongarj S.	Add the information and Related Form F-09-SHE/32Lock Out – Tag Out (LOTO) Log
10	Wasana J.	Revise section 5.1.1, 5.1.3, 5.5.2 and Add item 5.7.3 Permit to work special equipment matrix
11	Wasana J.	Revise the document's format.
12	Wasana J.	- Revise the document's format F-09-SHE/05, F-09-SHE/06, F-09-SHE/07, F-09-SHE/08, F-09-SHE/09 (Work Control Checklist form – To be included in Certificates form) - Revise section 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7 - Add section 5.8 Permit to work special equipment and PPE matrix. - Add appendix E-09-02/01 Permit to work flowchart

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เอกสารแนบที่ 42

ตัวอย่าง Toolbox Meeting

HSSE training and event participation form

valeura energy

Subject	HSSE Weekly Meeting				
Venue	G10 Wassana MOPU Ingenium - CCR Room				
Date	22 Nov 25	Start	Day: 0600 AM Night: 0600 PM	End	Day: 0640 AM Night: 0630 PM

No.	Name	Last name	Position	Company	Signature
1	Witchu	Kusolsiri	Field Manager	Valeura Energy	[redacted]
2	Manop	Mamee	Operation Supervisor	Valeura Energy	
3	Wisit	Damsanit	Safety Technician	Connect Energy	
4	Gomes	Nookamsuan	Radio Operator	Connect Energy	
5	Anuphap	Srisroy	Sr. CCR Operator	Connect Energy	
6	Maharat	Witee	Sr. CCR Operator	Connect Energy	
7	Suwan	Lomduang	Production Operator	Connect Energy	
8	Tawat	Maneekat	Production Operator	Connect Energy	
9	Surawit	Nuklay	Production Operator	Connect Energy	
10	Apisit	Mahoran	EIO	Connect Energy	
11	Jeerayut	Thepkhamdee	EIO	Connect Energy	
12	Mongkolchai	Saengsawang	EIO	Connect Energy	
13	Suntipap	Laothongsan	Mechanic Technician	Connect Energy	
14	Paisan	Kongcharoensuk	Mechanic Technician	Connect Energy	
15	Somchai	Suwannaroj	Material Man	SCM	
16	Manoch	Prom-a-ree	Deck Foreman	Connect Energy	
17	Vichai	Phimonrat	Crane Operator	Connect Energy	
18	Chainan	Tipsang	Deck Crew	Connect Energy	
19	Suriya	Dueramae	Deck Crew	Connect Energy	
20	Suriya	Chubua	Deck Crew	Connect Energy	
21	Wichawut	Phaendee	Medic	ISOS	
22	Chatchawan	Thongprasoet	Brownfield Project Supervisor	Valeura Energy	
23	Jakkawarn	Kun-Art	Project Engineer	TCS	
24	Prat	Puengsiri	Safety Officer	TCS	
25	Vinai	Sangchan	Technician	Viking	
26	Attawut	Sempratob	"	Viking	

Prepared by	[redacted]
Date	

HSSE training and event participation form

valeura energy

Subject	HSSE Weekly Meeting				
Venue	G10 Wassana MOPU Ingenium - Mess Room				
Date	22 Nov 2025	Start	0700 AM	End	0715 AM

No.	Name	Last name	Position	Company	Signature
1	Chanon	Jaikaruna	Cook/Campboss	Sodexo	[redacted]
2	Pongsak	Kawmodjod	Cook	Sodexo	
3	Athitep	Prommoon	Steward	Sodexo	
4	Samsudin	Singhat	Steward	Sodexo	
5	Niasan Ausree	Sulongku	Steward	Sodexo	

Prepared by	[redacted]
Date	

FSO JAKA TARUB TOOLBOX MEETING MINUTES

Date: 24-Nov-2025	**Supervisor:** C/Off Songwut P.	**Signature:**

Attendees

Name:	Signature:	Name:	Signature:

Completed scope (past-24 hours) & learnings:

- Dismantle scaffolding on A-Deck Stbd side in progress.
- Weekly oil spill locker inventory.
- Fabricated an aluminum sheet for the galley table and the crew's laundry shelf table.
- Monkey island deck descaling and painting are in progress.
- 4W's cargo heater pressure-tested due to suspected steam-tube leakage, 4S cargo heater failed the test.
- Internal transferred cargo from 3W's to 4S COT with demulsifier injected 100 Ltrs.

Planned work for the shift / day:

- Box back and secure the 4P and 4S cargo heaters after pressure testing."
- Dismantle scaffolding on A-Deck Stbd side in progress.
- Continued descaling and painting on the monkey island deck and cargo tank dome in progress.
- EIA 2025 Information and FSO photo request by VE HSSE department.

HSE concern related to Planned Work:

- Ensure using appropriate PPE for specific tasks.
- Weather conditions are closely monitored, and tasks can be stopped when the weather is not permitted.
- Discuss and identify hazards and control measures in the Job hazard analysis included the PTW.
- Stop Work Authority, empower you to invest and STOP any unsafe act or any unsafe condition that you have observed.

Other work activities which could conflict or impact on the Planned Work:

N/A

Any other matters of importance:

N/A

SC GROUP	Date : 01/08/2019	Revision : 2	Ref : F-09-SHE/03
	TOOLBOX MEETING		

Vessel Name: SC SUMMER ชื่อเรือ	**Date: 27 November 2025** วันที่
Location: Nong Yao Oil Field สถานที่	**Time: 0600 - 0630** เวลา

Description of work to be performed (รายละเอียดของงานที่จะดำเนินการ):

- Transfer MGO & FW to platform.
- Lifting Activity Cargo operation

JSA reviewed (การทบทวน JSA): **JSA's Topic** (หัวข้อ JSA): - JSA 88_TRANSFER FW & MGO TO OFFSHORE INSTALLATION - JSA 46_LIFTING ACTIVITY CARGO OPERATION	☒ **Yes** (มี)	☐ **No** (ไม่มี)
Procedure Review (ทบทวนขั้นตอนในการปฏิบัติงาน): **Refer to** (อ้างถึง): -Company SMS safety procedure MO(SHE) -Guidelines for offshore marine operations	☒ **Yes** (มี)	☐ **No** (ไม่มี)
Permit to work (ใบอนุญาตในการทำงาน): **Type** (ประเภท):	☐ **Yes** (มี)	☒ **No** (ไม่มี)

Duty of each one (หน้าที่ของแต่ละคน)

Name	Duty	Name	Duty
[redacted]	OOW		
	OOW		
	Bosun		
	A/B		
	A/B		
	A/B		

Original : Vessel , Copy : Nil , Retention : 2 years

SC GROUP	Date : 01/08/2019	Revision : 2	Ref : F-09-SHE/03
	TOOLBOX MEETING		

Risks/ Hazards Identified (ความเสี่ยง/ อันตราย):

-Collision with FSO, Platform /Property damage.
-Collision with platform, Fuel hose part due to Bad Weather/Main Engine Failure/Steering Gear Failure/Bow Thruster Failure.
-Oil spill/Pollution
-Hand/Back injury during operation.
-Residue oil in the hose with pressure.
-Man Overboard

Comments of meeting (ข้อเสนอแนะจากการประชุม):

-Strictly follow procedure and aware Risks/ Hazards Identified
-SWA if unsafe criteria
-Being worn proper full PPE all the times
-Avoid and awareness of pinch point area
-Keep close look out to worked mates
-Prepare oil tray and check oil in hose before connect/disconnect.
-Think Incident Free (Safety Campaign Q2-2022)

Meeting members (ผู้เข้าร่วมประชุม):

Name	Signature	Name	Signature
Mr. Siravit L.	[redacted]		
Mr. Mongkol S.			
Mr. Thanayot S.			
Mr. Weerawat A.			
Mr. Rattapol I.			

	Name	Title
Person in charge (PIC): ผู้ดำเนินการประชุม	[redacted]	C/O
Authorising person (Permits task to go ahead): ผู้อนุมัติ		Master

Original : Vessel , Copy : Nil , Retention : 2 years

Page 2 of 2

SC GROUP	Date : 02/09/2024	Revision : 9	Ref : P-09-03
	Originator by : SHE Division Manager	Reviewed by : Marine QSHE Manager	Approved by : Deputy Managing Director
	SAFETY MEETING		

SECTION 9 : SAFETY MANAGEMENT

P-09-03

Safety Meeting

RECORD OF CHANGES & REVISION STATUS		
Rev. Status	**Originator**	**Description of change**
0	Theetas S.	Wholly reviews for compatible with OVMSA .
1	Theetas S.	Fully update and New establishes.
2	Theetas S.	New SMS Formatting which is revived & reified by ABS Class.
3	Theetas S.	Correct wording to item 5.3.
4	Theetas S.	Add new Item 8 Reference Standard.
5	Ongarj S	Correct wording.
6	Ongarj S.	Correct wording to item 5.1, 5.2.1 and 5.3.
7	Suriya B.	Review procedure and Change Position EVP/SVP to MD/DMD and correct wording item 5.2.1 from “ONCE a year on board” to “at least twice annually” and item 8.
8	Ohm J.	Revise Safety Meeting Agenda (add Re-visit SMS).
9	Wasana J.	Revise the document's format.

SC GROUP	Date : 02/09/2024	Revision : 9	Ref : P-09-03
	Originator by : SHE Division Manager	Reviewed by : Marine QSHE Manager	Approved by : Deputy Managing Director
	SAFETY MEETING		

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SC GROUP	Date : 23/04/2025	Revision : 5	Ref : F-09-SHE/11

PERMIT TO WORK (PTW)

VESSEL: SC GALAXY DATE: 22 Sep 2025 PTW No.: D02/25

LOCATION AREA: Upper Fast Deck ☑ DECK ☐ ENGINE

TASK: CUT & WELD GANGWAY CRADLES

INDICATE WORK TO BE COMPLETED *(tick (√) as many as applicable)*

WORKING AT HEIGHTS / OUTBOARD	☑	COMPLETE F-09-SH E/05 PTW WORK AT HEIGHTS CERTIFICATE
WORK REQUIRED ELECTRICAL / MACHANICAL	☐	COMPLETE F-09-SHE/06 PTW ISOLATION CERTIFICATE
WELDING / BURNING / CUTTING/HEATING	☑	COMPLETE F-09-SHE/07 PTW HOT WORK CERTIFICATE
ENTRY INTO CONFINED	☐	COMPLETE F-09-SHE/08 PTW CONFINED SPACE ENTRY CERTIFICATE
DIVING OPERATIONS	☐	COMPLETE F-09-SHE/09 PTW DIVING OPERATIONS CERTIFICATE

SOME TASKS MAY REQUIRE MORE THAN ONE PTW CERTIFICATE; DOUBLE-CHECK WHEN COMPLETING THE CERTIFICATE

3RD PARTIES / AUTHORITIES TO BE NOTIFIED *(tick (√) or indicate N/A, as appropriate)*

Master / Chief Engineer	☑ Yes ☐ N/A	Charterer / Client Representative	☐ YES ☑ N/A
Local Port Authorities / Coastgurd?	☐ YES ☑ N/A	Flag / Class / Insurance Representatives?	☐ YES ☑ N/A

PERMIT VALID FROM;		PERMIT VALID UNTIL;	
DATE;	22 Sep 2025	DATE;	22 Sep 2025
TIME; *(in 24hr format – HHMM)*	13:00	TIME; *(in 24hr format – HHMM)*	18:00

VALIDITY OF EACH PERMIT MUST NOT EXCEED 12hrs IN TOTAL

Hazards Identified by Permit Holder

☑ Liquids / Gas Under Pressure	☑ Manual Handling	☐ Chemicals	☐ Electrical
☑ Explosive	☑ Hot Equip / Surfaces	☑ Flying particles	☑ Dropped Objects
☐ Moving / Rotating Machinery	☐ Heavy Lift Operations	☑ Dust / Fumes	☐ Weather / Sea State
☑ Work at Height Lifting Equipment	☐ Adjacent Operations	☐ Safety System Disabled	☐ Confined Space
☐ Working Over Water	☐ Restricted Access / Egress	☑ Non-Routine Task	☑ Slips, trips & falls
☐ Other:			

Precaution to be taken

☑ Toolbox meeting required	☐ Check equipment dead/earthed	☐ Airline connection secured	☐ Work vest/life buoy to be worn
☐ Considers adjacent work	☐ Depressurize	☐ SDS	☐ JSA # 22, 97
☑ Safety observer in place	☐ Provide with suitable spaces	☑ Erect Signs / barriers	
☐ Communications	☐ water Flush/drain	☑ Scaffolding	
☑ Thoroughly ventilated	☑ Work place adequality lit	☐ Lifting Equipment	

PERMIT ISSUED TO; *(name & signature)*

[redacted]

RESPONSIBLE PERSON

AUTHORISING PERSON

ON COMPLETION OF WORKS *(tick when actions have been taken)*

HAVE ALL SAFETY CONTROL MEASURES, ISOLATIONS & WORKING RESTRICTIONS BEEN REMOVED?	☑	HAVE ALL RELEVANT 3rd PARTIES & AUTHORITIES BEEN NOTIFIED OF COMPLETION?	N/A
ALL ISSUED PTW CERTIFICATES ARE SIGNED-OFF & CLOSED OUT?	☑	HAVE ALL INVOLVED CREW / STAFF BEEN DE- BRIEFED?	☑

WORK COMPLETED; *(name & signature)*

[redacted]

RESPONSIBLE PERSON

AUTHORISING PERSON

Remark: Use SWA when they face the risky situation, unsafe workplace and harmful condition to another people or environment.

SC GROUP	Date : 23/04/2025	Revision : 5	Ref : F-09-SHE/07

PTW Hot Work Certificate and Work Control Checklist

HOT WORK CERTIFICATE

DATE: 22 Sep 2025 HOT CERTIFICATE NO.: 01/25

VESSEL: SC GALAXY REF. PTW NO.: D02/25

LOCATION AREA: Upper Fast Deck ☑ DECK ☐ ENGINE

OPERATION UNIT: Deck & Engine crew

1. DESCRIPTION OF WORK

Work description and location :

Cut & weld gangway cradles

NOTE:
1. All work to cease on sounding of fire alarm or PA announcement. Work area and equipment to be made safe prior to leaving site at any time during the period of the certificate.

2. A qualified gas tester shall conduct gas testing before beginning hot work where there is a potential for flammable gases to be present. The qualified gas tester shall determine the frequency of gas testing based on the potential risk **

2. HAZARD IDENTIFICATION Select by ticking (√) the appropriate boxes

☐ Confined space	☐ Working over water	** Combustible/Toxic gas test ZERO	☑
☐ Noise	☐ Remote start	Oxygen level 20.8%	☑
☐ Liquid under pressure	☑ Falling objects	Gas test carried out by	Time: 12:45
☑ Danger of falling	☐ Toxic/corrosive material	Name	Signature
☐ Other, please specify:		[redacted]	

Precautions to be taken:

Barricade working area.

3. Safety Equipment and Personal Protective Equipment Required, select by ticking (√).

☑ Coverall	☑ Safety Boots	☑ Safety Helmet	☑ Welding Gloves
☑ Face Shield	☐ Particulate respirator	☑ Welding Mask	☑ Safety Goggle
☑ Welding Apron	☐ Radio	☑ Gas detector	☑ Fire extinguisher
☐ Flashback arrestors	☑ Hose/Fire blanket	☑ Signs / Barriers	☑ Firewatcher
☐ Work life vest	☐ Lock-out Tag-out	☐ Other, please specify:	

4. ISSUE

RESPONSIBLE PERSON — I declare all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

[redacted]

AUTHORISING PERSON — I confirm all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

[redacted]

5. COMPLETION

RESPONSIBLE PERSON — I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status.

[redacted]

AUTHORISING PERSON — I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status. This certificate is cancelled.

[redacted]

Date : 23/04/2025	Revision : 5	Ref : F-09-SHE/07

PTW Hot Work Certificate and Work Control Checklist

confirm below are verified prior to starting / during work and maintained in place.

WORK CONTROL CHECKLIST *(HOT WORK)*

All crew / workers must confirm each action below.	Crew / Worker(s)	Start work VERIFIER	During work VERIFIER
1. **Hot work** has been evaluated for Isolation of Hazardous Energy (IHE) Requirements. Does hot work require IHE? ☐ Yes ☑ No **If yes:** Complete IHE Work Control Checklist. **If no:** Continue to Step 2.	[redacted]		
2. The **atmosphere** is within allowed limits prior to hot work. Oxygen between 19.5 – 23.5% ✓ LEL less than 1% ✓ H_2S less than 10 ppm (8 hrs) ✓ CO less than 35 ppm (8 hrs) ✓			
3. **Gas testing** frequency has been established.			
4. **Drain, openings and vents** are sealed.			
5. All **combustible materials** have been removed, covered or drenched.			
6. **Firefighting equipment** has been inspected and is at hot work site.			
7. **Heat, slag or sparks** will be contained.			
8. **Dedicated Fire Watch** is in place.			

Stop Work Authority (SWA) if any of the above safeguards are not in place.

Role	Name	Rank	Date	Sign
Crew / Worker(s) by Crew / worker(s)	[redacted]			
Start work verifier by Responsible person				
During work verifier by another person (no self-verification).				

Date : 23/04/2025	Revision : 5	Ref : F-09-SHE/05

PTW Work at Heights Certificate and Work Control Checklist

WORK AT HEIGHTS CERTIFICATE

DATE: 11 Sep 2025

WAH CERTIFICATE NO. 01/25

VESSEL: SC GALAXY

REF. PTW NO. D 02/25

LOCATION AREA: Upper East Deck

☑ DECK ☐ ENGINE

OPERATION UNIT: Deck & Engine crew

1. DESCRIPTION OF WORK

Reason for Certificate:
Cut & weld gangway cradles 1.5 m height.

NOTE:
All work to cease on sounding of fire alarm or PA announcement. Work area and equipment to be made safe prior to leaving site at any time during the period of the certificate.

2. SAFETY MEASURES IN PLACE tick (√) boxes when completed/checked

Vessel is securely moored & not underway?	☑	Safe means of access & egress to the aloft site is provided?	☑
Person aloft has a spotter at deck/ground level?	☑	Portable ladder/s secured against slipping?	☑
Work site has sufficient, suitable anchor points?	☑	Site is well lit / illuminated? Day light.	☑
Person aloft has correctly donned full safety harness?	☑	Person aloft has auto-inflating lifejacket for work over water?	N/A
Sufficient area below work site is cordoned off?	☑	Adequate lanyards / fall arrest systems in use?	☑
For work on-board / in vicinity of vessels, MOB rescue boat & response crew on stand-by?	N/A	For all work over water, rescue & medical equipment available at site?	☑
Scaffolding / work stages are inspected & certified prior to use?	☑	Cradles / Boson's chairs & all associated rigging are in good working condition & correctly rigged prior to use?	☑
Other (state);			

3. Safety Equipment and Personal Protective Equipment Required, select by ticking (√).

☑ Coverall	☑ Safety Boots	☑ Safety Helmet	☑ Impact Gloves
☑ Safety Glasses	☑ Fall Arrest	☐ Radio	☑ Signs / Barriers
☐ Floatation Device	☐ Lock-out Tag-out	☐ Other;	

4. ISSUE

RESPONSIBLE PERSON I declare all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

Name	Rank	Signature	Time
[redacted]			

AUTHORISING PERSON I confirm all safety & control measures required by this certificate have been properly carried out in accordance with company procedure.

[redacted]

5. COMPLETION

RESPONSIBLE PERSON I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status.

[redacted]

AUTHORISING PERSON I declare all safety & control measures required by this certificate have been removed and the site/system is returned to normal operating status. This certificate is cancelled.

[redacted]

SC GROUP	Date : 23/04/2025	Revision : 5	Ref : F-09-SHE/05
	PTW Work at Heights Certificate and Work Control Checklist		

ɜct the type of work performed and confirm that the following items have been verified prior to ɹarting/during work and remain in place.

WORK CONTROL CHECKLIST *(WORK AT HEIGHTS)*			
All crew / workers must confirm each action below	**Crew / Worker(s)**	**Start work VERIFIER**	**During work VERIFIER**
1. Fall protection equipment (fall arrest and fall restraint) is certified, inspected and rated for the task, including fall distance.	[redacted]		
2. **Rescue plan** has been reviewed with work crew and rescue equipment is available.			
3. **Fall protection equipment** is adjusted to fit the worker.			
4. **Work crew** agreed to be 100% tied off to the identified, approved anchorage Point(s).			
5. **Fall path** is clear of obstructions or mitigations have been implemented to address hazards.			
6. **Potential dropped objects** have been identified and mitigated.			
7. **Work crew** has agreed that no team member will work at height alone.			
Stop Work Authority (SWA) if any of the above safeguards are not in place.			

Role	Name	Rank	Date	Sign
Crew / Worker(s) by Crew / worker(s)	[redacted]			
Start work verifier by Responsible person				
During work verifier by Another person (no self-verification).				

GROUP	Date : 01/08/2019	Revision : 2	Ref : F-09-SHE/03
	TOOLBOX MEETING		

Vessel Name: ชื่อเรือ SC GALAXY	**Date:** วันที่ 22 Sep 2025
Location: สถานที่ Sawat Jetty	**Time:** เวลา 12:30 - 13:00

Description of work to be performed (รายละเอียดของงานที่จะดำเนินการ):
- Scaffoldre setting
- Cutting metal by gas cutter.
- Weld metal structure

JSA reviewed (การทบทวน JSA): **JSA's Topic** (หัวข้อ JSA): - JSA # 22 CUTTING DECK STRUCTURE - JSA # 97 WELDING DECK STRUCTURE	☑ **Yes** (มี)	☐ **No** (ไม่มี)
Procedure Review (ทบทวนขั้นตอนในการปฏิบัติงาน): **Refer to** (อ้างถึง): - P-09-02 : Permit to work - P-09-05 : PPE - P-09-06 : Personal Safety	☑ **Yes** (มี)	☐ **No** (ไม่มี)
Permit to work (ใบอนุญาตในการทำงาน): **Type** (ประเภท): - Hot work - Work at height.	☑ **Yes** (มี)	☐ **No** (ไม่มี)

Duty of each one (หน้าที่ของแต่ละคน)

Name	Duty	Name	Duty
[redacted]	Safety Officer		
	C/E		
	BOSUN		
	~~[illegible]~~ AB		
	A/B		
	2/E		
	O/L		

SC GROUP	Date : 01/08/2019	Revision : 2	Ref : F
	TOOLBOX MEETING		

Risks/ Hazards Identified (ความเสี่ยง/ อันตราย):

- Hand & finger injury
- Strain
- Dropped objects
- Slip/trip/fall
- Fire explosion
- Burn
- Sore eyes
- Smoke of welding rod.
- Electro cution
- Heat stroke.

Comments of meeting (ข้อเสนอแนะจากการประชุม):

- Barricade area BA working
- Fire fighting @ site + monitor
- PPE for all related crew.
- Fall arrestor.
- 15-30 min break.

Meeting members (ผู้เข้าร่วมประชุม):

Name	Signature	Name	Signature
[redacted]			

	Name	Title
Person in charge (PIC): ผู้ดำเนินการประชุม	[redacted]	
Authorising person (Permits task to go ahead): ผู้อนุมัติ		

er.

เอกสารแนบที่ 43

ตัวอย่างรายงานการสอบสวนอุบัติเหตุ

Wassana Safety Technician (Shared)

From: [redacted]
Sent: Tuesday, June 3, 2025 15:09
To: OIM Jaka; Wassana Field Manager (Shared)
Cc: Tanarat Kanchanachinto; Mark Da Silva; Wassana Operation Supervisor (Shared); Steven Law; Angus McGregor; Wassana Safety Technician (Shared); Eddie Keesuwan; Kritsana Tongsakul; Suriyan Punngam; Chief Officer Jaka; Suchada Jirawan; Thanagon Thurisut; Suziheryanti Zamri; Hafiz Ismail; Kiran Kamath; Min Ting Han
Subject: [External] RE: Incident Report: IR-JT-25-001: Observed loss of containment from connection point of the export hose when hose passed from OTT to FSO port bow for securing on completion of offtake operation. CLOSED
Attachments: IR-JT-25-001 Loss of containment from export hose - CLOSED.pdf

Dear All,

Please see attached incident report for your records.

We closed the report as all recommended corrective actions been acted upon.

Please revert if you have any queries.

Best Regards

[redacted]

THRE360 ENERGY

[redacted]

Subject: Incident Report: Observed loss of containment from connection point of the export hose when hose passed from OTT to FSO port bow for securing on completion of offtake operation. Part-2

Dear All,

Please see attached Part-2 of the investigation report.

Please revert if you have any queries.

Best regards,

[redacted]

THRE360 ENERGY

[redacted]

Subject: Incident Report: Observed loss of containment from connection point of the export hose when hose passed from OTT to FSO port bow for securing on completion of offtake operation. Part-1

Dear All,

Please see attached incident report: Observed loss of containment from connection point of the export hose when hose passed from OTT to FSO port bow for securing on completion of offtake operation. Part-1.

Part-2 of the investigation report to follow soon.

Best regards,

[redacted]

THRE360 ENERGY

REPORT NUMBER: Vessel: FSO Jaka Tarub | IR-JT-25-01 | **PART 1**

Brief Description of Incident: Observed loss of containment from connection point of the export hose when hose passed from OTT to FSO port bow for securing on completion of offtake WC-045.

SECTION A – REPORTING REQUIREMENTS

Level 1 Incident	Level 2 Incident	Level 3 Incident	Level 4 Incident	Level 5 Incident
Tick the boxes that best describe the actual and potential outcome. Reporting and investigation requirements are based on the potential: may not need external report. RED: External report required				
• Fatality	• Multiple Lost Time Injuries (LTI) • Person missing (including persons overboard) • Non-Occupational Illness of epidemic nature	• Lost Time Injury (LTI) • Non-Occupational Illness requiring Medivac	• First Aid Case • Person overboard & recovered • Restricted Work Case (RWC) • Medical Treatment Case (MTC)	• A Near Miss that could have caused Injury, illness or damage to the environment or asset or company reputation but did not
• Oil spill overboard >15,000bbls	• Oil spill overboard > 1000bbls • Chemical Spill Overboard > 7 bbls	• Oil spill overboard • Chemical Spill Overboard	• Contained Oil Spill • Contained Chemical Spill	
	• Hydrocarbon gas leak causing shutdown > 2 days	• Hydrocarbon gas leak causing shutdown > 3 hrs	• Hydrocarbon gas leak	
• Major fire or Explosion	• Fire causing Asset Damage	• Fire extinguished onboard (Operations affected)	• Fire immediately extinguished onboard (Operations unaffected)	
	• Security incident requiring increase of MARSEC Level 3	• Security incident requiring increase of MARSEC Level 2		
• Major asset damage (> US$ 1,000,000)	• Significant asset damage (US$ 100,000 to US$ 1,000,000) • Damage causing shutdown > 4 days	• Asset Damage (US$ 10,000 to US$ 100,000) • Damage causing shutdown > 1 day • Damage rendering safety critical equipment inoperable • Damage rendering operational critical equipment inoperable	• Minor asset damage (< US$ 10,000)	
• International media coverage	• Local media involvement			
Actual Outcome ☐	☐	X	☐	☐
Realistic Potential ☐	☐	X	☐	☐

TYPE OF INCIDENT (and Classification)

Near Miss		**Medical Treatment Case**		**Asset Damage**		**Contained Spill**	
Medical Treatment (non-occupational/ work related)		**Restricted Workday Case**		**Unplanned Operation Event**		**Discharge to Environment: Oil/ Chemical/ Gas**	X
First Aid Case		**Lost Time Injury**		**Equipment Breakdown/ Malfunction**		**Ship Security (ISPS)**	
Fire or Explosion							

SECTION B – DETAILS

Facility Location	Wassana Oilfield		**Was ER Plan Initiated?**	~~YES~~ / NO	
Incident Location / Work Area	Overside – FSO port bow		**Date & Time of Incident**	14-Mar-25	1300 lt.
Site / Address / Well Name	-		**Date & Time Reported**	14-Mar-25	1310 lt.
Facility Person in Charge (Name & Title FPSO = OIM / MSV = Master)	Ashok Jha	OIM	**Permit Type & No.**	NA	NA
Supervisor (Name & Title)			**Location of Incident**	Overside – FSO Port bow	
Report Prepared by (Name & Title)	Ashok Jha	OIM	**Name of Witness/s**	Bosun: Naret, P/P Man: Banhan A/B: Apichat, A/B: Tawachai	
Facility Safety Officer (Name & Title)	Prutthawat P.	C/Off			
Swell (Height (M), Period (sec), Direction)	Swell – SE x 1.0 m, 6 sec		**Visibility**	10 miles	
Significant Wave Height (Height (M), Period (sec), Direction)	Sig. wave – SE x 1.0 m, 6 sec		**Wind Gusts (Knots)**	17 kts	
Wind Sustained (Knots, Direction)	Wind: ESE x 15 kts		**Surface Current (Speed & Direction)**	SE x 0.5 kts	
Vessel Movement (Pitch, Roll and Heave)	0.1/0.1/Nil				

Factual Description of Incident

After completion of Offtake WC-045 on 14-Mar-25, we were informed by the Mooring Master (MM) onboard the offtake tanker that the export hose was disconnected from the manifold at 1236 hrs. The crew of the offtake tanker supervised by the MM will prepare the export hose by sealing the flange to ensure there's no leak before being lowered into the water and towed by support vessel SC Universe to the FSO bow. From this point, it was made fast to FSO bow at 1300 hrs. Soon after the Bosun onboard Jaka Tarub, observed some form of leakage from the connection point at the camlock and blind flange area, which he observed was not secured properly. This resulted in a small amount of residual hydrocarbons forming a small oil sheen which quickly dissipated and caused no visible pollution.

Immediate Actions Taken to Make Safe

Immediately, the SC Universe was called to pick up the export hose on her deck. Two FSO crew and Tool basket were sent to SC Universe, inspected export hose and found camlock was not sealed properly. The camlock was sealed properly to avoid further leaks. Mooring master and FM were informed of the situation.

SECTION C – FLUID ESCAPE

Material spilled	Wassana Crude	Volume	8-10 ltr	Release continuing : No		Rate of release		**NA**
Rate & direction of movement	Localised near hose		Wind speed & direction	SE x 15 kts		Current speed & direction		**SE x 0.5 kts**
Average wave height & period	1.0 m		Visibility	10 nm	Precipitation	nil	Temperature	32 deg C
Length of time of release (hours / minutes): About 1 Hr								
Details of any immediate environmental / safety threat: Small localized oil sheen								

SECTION D – OCCUPATIONAL INJURY / ILLNESS

Given Name		Surname		D.O.B.		Occupation	
Years of experience in position		Length of time on this facility		Employer			
Normal hours of work		Days onboard		Hours into shift		Medivac YES / NO	
Nature of injury / illness							
Treatment given	N.A.						
Person giving treatment		Classification: ☐ Medical (non-work related) ☐ FAC ☐ MTC ☐ RWC ☐ LTI ☐ Other (please specify)					

Nature of Injury

Abrasions / Scratches		Concussion / Internal Injury		Freezing / Frostbite / Hypothermia		Puncture wound	
Amputation		Dislocation		Heat stress and strain		Effect of radiation	
Asphyxia / Drowning		Effects of Electricity		Numbness		Sprain / strain	
Burns-heat		Eye Injury		Permanent Disability		Tooth Injury	
Burns-chemical		Fatality		Physical Shock		Other Injury	
Bruises / Contusions		Fracture		Poisoning			

Injured Body Part

Injury linked to entire body		Feet / Toes		Hand / Fingers		Head / Face / Neck	
Lower limbs (Legs)		Shoulder to Groin / Hip		Upper Limbs (Arms)		Lumbar	
Respiratory		Internal					

REPORT NUMBER: Vessel: FSO Jaka Tarub | IR-JT-25-01 | **PART 2**

SECTION E – DEFINE THE EVENT

What was the actual event? *Be careful not to confuse it with a cause / outcome or threat.*

After completion of Offtake WC-045 on 14-Mar-25, we were informed by the Mooring Master (MM) onboard the offtake tanker that the export hose was disconnected from the manifold at 1236 hrs. The crew of the offtake tanker supervised by the MM will prepare the export hose by sealing the flange to ensure there's no leak before being lowered into the water and towed by support vessel SC Universe to the FSO bow. From this point, it was made fast to FSO bow at 1300 hrs. Soon after the Bosun onboard Jaka Tarub, observed some form of leakage from the connection point at the camlock and blind flange area, which he observed was not secured properly. This resulted in a small amount of residual hydrocarbons forming a small oil sheen which quickly dissipated and caused no visible pollution

SECTION F – IDENTIFY FAILED CONTROLS

What controls would normally have prevented the event (e.g. guard over pulleys)? Consider engineering, procedures, training, behavior etc.	How did these controls fail (e.g. guard not replaced after maintenance)?
Inspecting the O ring, aligning the blind flange in the center, and tightening the camlock properly would have prevented leakage from the connection	Human Error - Incorrect alignment and/or checking visually that the sealing faces were properly made up.
The butterfly valve at the end of the export hose was not	Butterfly valve has been on order via PR 00541, created on
closing tight. This was reported by mooring Master after	19-sep-24, but has long lead time.
Offtake WC-043 (13-Dec-2024)	

SECTION G – WHY DID THE CONTROLS FAIL?

Equipment	Environmental	Human	Procedures
1. Maintenance	12. Housekeeping	19. Instructions given.	29. Work procedures.
2. Electrical failure	13. Accessibility	20. Interpretation of instructions	30. Work permits.
3. Mechanical failure	14. Weather	21. Compliance to instructions	31. Checks/ inspections
4. Design	15. Lighting	22. Supervision	32. Audits
5. Layout	16. Hazard labeling/ signage	23. Planning	33. Other procedural factors
6. Tools (wrong type/ faulty)	17. Ventilation	24. Training/ experience	
7. Specifications	18. Other environmental factors	25. Speeding/ hurrying	
8. Operating instructions		26. Fatigue	
9. Isolation systems		27. PPE	
10. Fire/ explosion control.		28. Other human factors	
11. Other equipment factors			

Select from the list of underlying causes above and provide describe how they helped cause the control to fail.

Factor	Details of Failure
22	Supervision during the closing of the blind flange not carried out properly. This resulted in misalignment
	Of the blind flange, and not tightening the camlock properly. This was the only barrier left.
11	The butterfly valve at the end of the export hose was not closing tight due to existing defect. However, the blind flange is the intended positive isolation barrier that is required to lower the hose to the sea.
33	The existing procedure leaves the crude oil in the export hose after completion of discharge. To maintain the flow property of the crude oil, 100 litre of chemical PPD (Pore point dispersant) is injected.

SECTION H – CORRECTIVE ACTIONS

Factor	Details of corrective actions addressing above failures *(Recommendations will be tracked in Incident Register)*	By Whom	By Date	Priority
22	To raise awareness with the Mooring Masters for the critical nature and importance of closing flange correctly, by way of standing instruction / checklist from VE.	VE	15-04-25	1
22	The above corrective action to be discussed during the pre-offtake briefing	FSO OIM	Next Offtake	2
11	Renew the butterfly valve and the camlock at the earliest. This will provide two barriers to hose containment.	T60	30-04-25	1
33	To review the feasibility of keeping the export hose empty after	VE/T60	30-04-25	2
	the offtake by blowing through with Nitrogen.			
31	To raise awareness with the support vessel for the critical nature of hose containment when towing of hose from OTT to FSO.	FSO OIM	Next offtake briefing	1

SECTION I – ONSHORE REVIEW

Incident causation factors and corrective actions have been reviewed and agreed

Facility Superintendent	Name:	**Eddie**	Signature:	[redacted]	Date:	**21-Mar-25**
HSEQ Manager	Name:	**Segar Chindamani**	Signature:	[redacted]	Date:	**21-Mar-25**
Operations Manager	Name:	**Mark Da Silva**	Signature:	[redacted]	Date:	**21-Mar-25**

SECTION J – CLOSE OUT (Confirmation Corrective Actions Implemented)

OIM	Name:	**Sanjay**	Signature:	[redacted]	Date:	03-Jun-2025
Facility Superintendent	Name:	**Eddie**	Signature:	[redacted]	Date:	03-Jun-2025
HSEQ Manager	Name:	**Segar Chindamani**	Signature:	[redacted]	Date:	03-Jun-2025
Operations Manager	Name:	**Mark Da Silva**	Signature:	[redacted]	Date:	03-Jun-2025

REPORT NUMBER: Vessel: FSO Jaka Tarub | IR-JT-25-01 | **PART 1**

Brief Description of Incident: Observed loss of containment from connection point of the export hose when hose passed from OTT to FSO port bow for securing on completion of offtake WC-045.

SECTION A – REPORTING REQUIREMENTS

Level 1 Incident	Level 2 Incident	Level 3 Incident	Level 4 Incident	Level 5 Incident
Tick the boxes that best describe the actual and potential outcome. Reporting and investigation requirements are based on the potential: may not need external report. RED: External report required				
• Fatality	• Multiple Lost Time Injuries (LTI) • Person missing (including persons overboard) • Non-Occupational Illness of epidemic nature	• Lost Time Injury (LTI) • Non-Occupational Illness requiring Medivac	• First Aid Case • Person overboard & recovered • Restricted Work Case (RWC) • Medical Treatment Case (MTC)	• A Near Miss that could have caused Injury, illness or damage to the environment or asset or company reputation but did not
• Oil spill overboard >15,000bbls	• Oil spill overboard > 1000bbls • Chemical Spill Overboard > 7 bbls	• Oil spill overboard • Chemical Spill Overboard	• Contained Oil Spill • Contained Chemical Spill	
	• Hydrocarbon gas leak causing shutdown > 2 days	• Hydrocarbon gas leak causing shutdown > 3 hrs	• Hydrocarbon gas leak	
• Major fire or Explosion	• Fire causing Asset Damage	• Fire extinguished onboard (Operations affected)	• Fire immediately extinguished onboard (Operations unaffected)	
	• Security incident requiring increase of MARSEC Level 3	• Security incident requiring increase of MARSEC Level 2		
• Major asset damage (> US$ 1,000,000)	• Significant asset damage (US$ 100,000 to US$ 1,000,000) • Damage causing shutdown > 4 days	• Asset Damage (US$ 10,000 to US$ 100,000) • Damage causing shutdown > 1 day • Damage rendering safety critical equipment inoperable • Damage rendering operational critical equipment inoperable	• Minor asset damage (< US$ 10,000)	
• International media coverage	• Local media involvement			
Actual Outcome ☐	☐	X	☐	☐
Realistic Potential ☐	☐	X	☐	☐

TYPE OF INCIDENT (and Classification)

Near Miss		**Medical Treatment Case**		**Asset Damage**		**Contained Spill**	
Medical Treatment (non-occupational/ work related)		**Restricted Workday Case**		**Unplanned Operation Event**		**Discharge to Environment: Oil/ Chemical/ Gas**	X
First Aid Case		**Lost Time Injury**		**Equipment Breakdown/ Malfunction**		**Ship Security (ISPS)**	
Fire or Explosion							

SECTION B – DETAILS

Facility Location	Wassana Oilfield		**Was ER Plan Initiated?**	~~YES~~ / NO	
Incident Location / Work Area	Overside – FSO port bow		**Date & Time of Incident**	14-Mar-25	1300 lt.
Site / Address / Well Name	-		**Date & Time Reported**	14-Mar-25	1310 lt.
Facility Person in Charge (Name & Title FPSO = OIM / MSV = Master)	Ashok Jha	OIM	**Permit Type & No.**	NA	NA
Supervisor (Name & Title)			**Location of Incident**	Overside – FSO Port bow	
Report Prepared by (Name & Title)	Ashok Jha	OIM	**Name of Witness/s**	Bosun: Naret, P/P Man: Banhan A/B: Apichat, A/B: Tawachai	
Facility Safety Officer (Name & Title)	Prutthawat P.	C/Off			
Swell (Height (M), Period (sec), Direction)	Swell – SE x 1.0 m, 6 sec		**Visibility**	10 miles	
Significant Wave Height (Height (M), Period (sec), Direction)	Sig. wave – SE x 1.0 m, 6 sec		**Wind Gusts (Knots)**	17 kts	
Wind Sustained (Knots, Direction)	Wind: ESE x 15 kts		**Surface Current (Speed & Direction)**	SE x 0.5 kts	
Vessel Movement (Pitch, Roll and Heave)	0.1/0.1/Nil				

Factual Description of Incident

After completion of Offtake WC-045 on 14-Mar-25, we were informed by the Mooring Master (MM) onboard the offtake tanker that the export hose was disconnected from the manifold at 1236 hrs. The crew of the offtake tanker supervised by the MM will prepare the export hose by sealing the flange to ensure there's no leak before being lowered into the water and towed by support vessel SC Universe to the FSO bow. From this point, it was made fast to FSO bow at 1300 hrs. Soon after the Bosun onboard Jaka Tarub, observed some form of leakage from the connection point at the camlock and blind flange area, which he observed was not secured properly. This resulted in a small amount of residual hydrocarbons forming a small oil sheen which quickly dissipated and caused no visible pollution.

Immediate Actions Taken to Make Safe

Immediately, the SC Universe was called to pick up the export hose on her deck. Two FSO crew and Tool basket were sent to SC Universe, inspected export hose and found camlock was not sealed properly. The camlock was sealed properly to avoid further leaks. Mooring master and FM were informed of the situation.

SECTION C – FLUID ESCAPE

Material spilled	Wassana Crude	Volume	8-10 ltr	Release continuing : No		Rate of release		**NA**
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Length of time of release (hours / minutes): About 1 Hr								
Details of any immediate environmental / safety threat: Small localized oil sheen								

SECTION D – OCCUPATIONAL INJURY / ILLNESS

Given Name		Surname		D.O.B.		Occupation	
Years of experience in position		Length of time on this facility		Employer			
Normal hours of work		Days onboard		Hours into shift		Medivac YES / NO	
Nature of injury / illness							
Treatment given	N.A.						
Person giving treatment		Classification: ☐ Medical (non-work related) ☐ FAC ☐ MTC ☐ RWC ☐ LTI ☐ Other (please specify)					

Nature of Injury

Abrasions / Scratches		Concussion / Internal Injury		Freezing / Frostbite / Hypothermia		Puncture wound	
Amputation		Dislocation		Heat stress and strain		Effect of radiation	
Asphyxia / Drowning		Effects of Electricity		Numbness		Sprain / strain	
Burns-heat		Eye Injury		Permanent Disability		Tooth Injury	
Burns-chemical		Fatality		Physical Shock		Other Injury	
Bruises / Contusions		Fracture		Poisoning			

Injured Body Part

Injury linked to entire body		Feet / Toes		Hand / Fingers		Head / Face / Neck	
Lower limbs (Legs)		Shoulder to Groin / Hip		Upper Limbs (Arms)		Lumbar	
Respiratory		Internal					

REPORT NUMBER: Vessel: FSO Jaka Tarub | IR-JT-25-01 | **PART 2**

SECTION E – DEFINE THE EVENT

What was the actual event? *Be careful not to confuse it with a cause / outcome or threat.*

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SECTION F – IDENTIFY FAILED CONTROLS

What controls would normally have prevented the event (e.g. guard over pulleys)? Consider engineering, procedures, training, behavior etc.	How did these controls fail (e.g. guard not replaced after maintenance)?
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closing tight. This was reported by mooring Master after	19-sep-24, but has long lead time.
Offtake WC-043 (13-Dec-2024)	

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Equipment	Environmental	Human	Procedures
1. Maintenance	12. Housekeeping	19. Instructions given.	29. Work procedures.
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8. Operating instructions		26. Fatigue	
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SECTION H – CORRECTIVE ACTIONS

Factor	Details of corrective actions addressing above failures *(Recommendations will be tracked in Incident Register)*	By Whom	By Date	Priority
22	To raise awareness with the Mooring Masters for the critical nature and importance of closing flange correctly, by way of standing instruction / checklist from VE.	VE	15-04-25	1
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11	Renew the butterfly valve and the camlock at the earliest. This will provide two barriers to hose containment.	T60	30-04-25	1
33	To review the feasibility of keeping the export hose empty after	VE/T60	30-04-25	2
	the offtake by blowing through with Nitrogen.			
31	To raise awareness with the support vessel for the critical nature of hose containment when towing of hose from OTT to FSO.	FSO OIM	Next offtake briefing	1

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Incident causation factors and corrective actions have been reviewed and agreed

Facility Superintendent	Name:	**Eddie**	Signature:	[redacted]	Date:	**21-Mar-25**
HSEQ Manager	Name:	**Segar Chindamani**	Signature:	[redacted]	Date:	**21-Mar-25**
Operations Manager	Name:	**Mark Da Silva**	Signature:	[redacted]	Date:	**21-Mar-25**

SECTION J – CLOSE OUT (Confirmation Corrective Actions Implemented)

OIM	Name:		Signature:		Date:	/ /
Facility Superintendent	Name:	**Eddie**	Signature:		Date:	/ /
HSEQ Manager	Name:	**Segar Chindamani**	Signature:		Date:	/ /
Operations Manager	Name:	**Mark Da Silva**	Signature:		Date:	/ /

INCIDENT CLASSIFICATION

☐ NEAR MISS ☐ Injury _____ ☒ Property Damage ☐ Other_____

Vessel Name: SC Nata Report No. _____ Date of Incident: 11th July 2025

Subject: Mooring rope entangled with Portside propeller.

SECTION 1 – Description of Incident (รายละเอียดของเหตุการณ์)

1. Investigation Beginning Date (วันที่เริ่มการสอบสวน): 13 July 2025	1.1 Investigation Completion Date (วันที่สอบสวนเสร็จสิ้น): 13 July 2025

2. Who was Investigated (ผู้ถูกสอบสวน): Capt. Teekatas Charoensook

3. Investigation Team (ทีมผู้ดำเนินการสอบสวน)	Name (ชื่อ)	Company (บริษัท)	Title (ตำแหน่ง)
3.1 Team Leader: (หัวหน้าทีมสอบสวน)	[redacted]	SCM	QSHE Manager
3.2 Team Member 1 ทีมผู้ร่วมสอบสวน (1)		SCM	SHE Division Manager
3.3 Team Member 2 ทีมผู้ร่วมสอบสวน (2)			
3.4 Team Member 3 ทีมผู้ร่วมสอบสวน (3)			
3.5 Team Member 4 ทีมผู้ร่วมสอบสวน (4)			

4. Investigation of Incident (รายละเอียดจากการสอบสวนอุบัติการณ์)

On 11 July 2025

After the vessel transfer passenger and cargo and proceed to mooring buoy. (Wassana field)

Weather condition
Wind direction: WNW, Speed 21-23 knots.
Sea: WSW

Scenario of incident

1200 Hrs: The vessel approached Mooring Buoy SW
1230 Hrs: The deck crew report to bridge that they are heaving up the mooring rope with high tension, then observe the mooring rope snap with the bow fender's bolt.

1240 Hrs: Vessel has been moving ahead to reduce the tension of mooring rope whereas vessel heading against with the wind direction and crew observe the remains of mooring rope (rope eye) was close to port side astern.
1242 Hrs: Immediately the clutch of both main engines was disengaged to prevent the rope entangle.
1242 - 1300 Hrs: The vessel drifting out of the buoy then observe the mooring rope was parted. The master order shut down both main engines.
1300 - 1345 Hrs: Identifying the damage and safety for restart both of M/E, found the remaining parted rope was entangled with port side propeller.
1345 Hrs: The master informed DPA and all concerns party.
1512 Hrs: The master decided to bring the vessel back to Songkhla anchorage due to being unable to start port side engine and one engine is unsafe condition to operation.
1553 Hrs: The client accepted a request from the master.
1600 Hrs: Vessel departs from Wassana Oil field with 1 M/E (Starboard side) to SKL to remove the entangle.

Facts and finding (from Investigation team)

On 11 July 2025, following the successful completion of both passenger and cargo transfer operations to the offshore platform, the vessel proceeded to Mooring Buoy SW for standby as per instructions.

At approximately 1200 Hrs, the vessel approached the designated mooring buoy under strong wind and high sea conditions. By 1230 Hrs, the deck crew reported to the bridge that they were in the process of heaving up the mooring rope. During this operation, it was observed that the mooring rope was under high tension. Shortly thereafter, the mooring rope contact with the bolt of the bow fender. Then the crew connect the messenger line with the mooring rope and slack for rectify.

In response to the high tension and to minimize further risk, the vessel was carefully maneuvered ahead with the bow heading into the wind to relieve strain on the mooring line. While this maneuver was ongoing, the crew reported that the eye of the mooring rope had drifted toward the port quarter of the vessel.

Recognizing the immediate hazard of rope entanglement with the propulsion system, the Master promptly ordered both main engine clutches to be disengaged. This preventive action was taken to eliminate the risk of fouling the propellers. Despite this, the vessel subsequently drifted clear of the buoy, and the mooring rope was later confirmed to have completely parted.

As a precautionary safety measure, the Master instructed a complete shutdown of both main engines. The deck and engine crew then commenced a thorough inspection and damage assessment to evaluate the readiness of the vessel for engine restart.

Upon inspection, it was discovered that the parted mooring rope had become entangled with the port side propeller, rendering the port main engine inoperable.

At 1345 Hrs, the Master formally notified the Designated Person Ashore (DPA) and all relevant stakeholders of the situation, in accordance with the vessel's Safety Management System (SMS) protocol.

After investigation found that:

After completing cargo and passenger transfer, the vessel proceeded to stand by at Mooring Buoy SW. During the heaving up of the mooring rope, the rope was under high tension and contacted the bow fender bolt. After the crew connect the messenger line with the mooring rope that is stuck for rectify. The rope later drifted aft and found the rope parted became entangled with the port side propeller, rendering the port main engine inoperable.

What went wrong:

Man / Human

- *Don't continue to monitor the mooring rope.*

  1. During the mooring rope retrieval operation, insufficient attention was paid to potential obstructions in the surrounding area, causing the rope to get caught on the fender bolt.
  2. Overlook the unforeseen submerged loop of mooring rope.

- *The number of crew members on rope operations is insufficient.*

  1. There were only two crew members working at the bow of the ship, and one of them had to use the radio to communicate with the bridge all the time, so he could not focus on collecting the mooring ropes. This left only one crew member who could work. In addition, the ropes were more tension, so two crew members were not enough.

Environment

- *Wind and sea condition.*

  1. The mooring rope was under high tension due to the strong wind and high sea condition while slacking the mooring rope made the rope move to aft of vessel port side.

5. Pictures / Drawing

Situation

VESSEL APPROCH TO MOORING BUOY

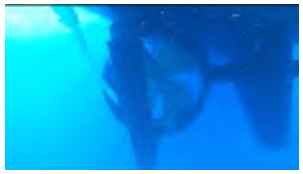
ROPE SNAP WITH THE BOW FENDER

CONNECTED MESSENGER LINE & STOP BOTH MAIN ENGINE

VESSEL SLIGHTLY DRIFT OUT OF BUOY & FOUND ROPE WAS PARTED

Rope was parted

Remained mooring rope on board



Port propeller condition

Rope recovered from propeller

6. Permit to Work (ใบอนุญาตทำงาน)	
6.1 Permit Required Operation? (งานนี้ต้องการใบอนุญาตในการทำงานหรือไม่)	☐ Yes ☒ No
6.2 Permit Issued? (ได้ออกใบอนุญาตในการทำงานหรือไม่)	☐ Yes ☒ No
6.3 Permit Type (ประเภทของใบอนุญาตทำงาน)	6.4 Permit No. (ใบอนุญาตทำงานหมายเลข)
6.5 Permit Type (ประเภทของใบอนุญาตทำงาน)	6.6 Permit No. (ใบอนุญาตทำงานหมายเลข)

If Permit issued, please attach with the completed incident report. (หากมีการออกใบอนุญาตในการทำงานให้แนบเอกสารมาด้วย)

SECTION 2 – MEDICAL INFORMATION (ข้อมูลทางการแพทย์)

7. Name of Patent (ชื่อพนักงาน)	8.EmergencyContact (เบอร์ติดต่อฉุกเฉิน)
9. Job Position (ตำแหน่งงาน)	10.Company of Employee (บริษัท)
11. BIO Data:	
12. Medical Treatment given at site (การรักษาพยาบาลที่ได้รับในที่ทำงาน)	
12.1 Person giving treatment (ผู้ให้การรักษาพยาบาล)	Title (ตำแหน่ง)
12.2 Required to be moved? (ต้องเคลื่อนย้ายผู้ป่วยหรือไม่) ☐ Yes ☐ No	
12.3 Did blood or potentially infectious material exposure occur? (สามารถติดต่อทางเลือดหรือแพร่เชื้อได้หรือไม่) ☐ Yes ☐ No	
12.4 Sent to doctor? (ได้พบแพทย์หรือไม่) ☐ Yes ☐ No	If yes – Doctor's name and address (ถ้าพบแพทย์ ระบุชื่อ ที่อยู่)
12.5 Sent to hospital? (ได้ส่งโรงพยาบาลหรือไม่) ☐ Yes ☐ No	If yes – Hospital's name and address (ถ้าใช่ ระบุชื่อโรงพยาบาล ที่อยู่)
12.6 Medication Prescribed? (ได้รับการจ่ายยาหรือไม่) ☐ Yes ☐ No	If yes – Name and dosage (ถ้าใช่ ระบุชื่อยาและขนาด)

12.7 Body Part Injured (ส่วนของร่างกายที่ได้รับบาดเจ็บ)

☐ Left Side (ด้านซ้าย)	☐ Ears (หู)	☐ Back (ด้านหลัง)	☐ Arm (แขน)	☐ Face, Head, Neck (ใบหน้า, หัว, ลำคอ)
☐ Right Side (ด้านขวา)	☐ Finger, Hand (นิ้ว, มือ)	☐ Chest, Trunk (หน้าอก, ลำตัว)	☐ Shoulder (ไหล่)	☐ Foot, Toes, Ankle (เท้า, นิ้วเท้า, ข้อเท้า)
☐ Internal (บาดเจ็บภายใน)	☐ Eyes (ดวงตา)	☐ Knee, Leg (หัวเข่า, ขา)	☐ Hip (สะโพก)	☐ Respiratory System (ระบบหายใจ)

SECTION 3 – ASSET DAMAGE INFORMATION (ข้อมูลทรัพย์สินเสียหาย)

13. Asset Damage Initial Cost Estimate Baht : ทรัพย์สินเสียหาย (ประมาณการความเสียหายเบื้องต้น,บาท)

Mooring rope is about 20 meters.

SECTION 4 – ROOT CAUSES [CHECK BOXES] สาเหตุที่แท้จริง (เลือกในช่อง)

SUBSTANDARD ACTS (การปฏิบัติที่ไม่เป็นไปตามมาตรฐาน)

☐ Operating equipment without authority/training (ใช้เครื่องมือ อุปกรณ์โดยไม่ได้รับอนุญาตหรือการฝึกหัด)	☐ Failure to follow procedures, policies, practice (ไม่ปฏิบัติตามขั้นตอนการปฏิบัติงาน นโยบาย หรือข้อปฏิบัติที่ถูกต้อง)
☐ Failure to warn (ไม่ได้มีการแจ้งเตือน)	☐ Using equipment improperly (ใช้อุปกรณ์เครื่องมือไม่เหมาะสม)
☐ Failure to secure (ไม่ได้ผูกรัด จัดเก็บที่ดี)	☐ Improper loading (ทำการโหลดบรรทุกไม่ถูกต้องเหมาะสม)
☐ Operating at improper speed (ใช้งานอุปกรณ์ในรอบความเร็วที่ไม่เหมาะสม)	☐ Improper placement (การจัดวางไม่ถูกต้องเหมาะสม)
☐ Making safety device inoperable (ทำให้อุปกรณ์เพื่อความปลอดภัยไม่ทำงาน)	☐ Improper lifting (ทำการยกของไม่ถูกต้อง)
☐ Removing safety device (นำเอาอุปกรณ์เพื่อความปลอดภัยออก)	☐ Improper position for task (ตำแหน่งการทำงานไม่ถูกต้องเหมาะสม)
☐ Using defective equipment (ใช้อุปกรณ์ เครื่องมือที่ชำรุดเสียหาย)	☐ Horse play (การเล่นสนุกขณะทำงาน)
☐ Failure to use required PPE (ไม่ใช้หรือสวมใส่อุปกรณ์ป้องกันร่างกาย)	☐ Under the influence of drugs or alcohol (มึนเมาสุราหรือสารเสพย์ติด)
☐ Servicing equipment in operation (ทำการซ่อมทำเครื่องมือ อุปกรณ์ในขณะที่เครื่องยังทำงาน)	☐ Inadequate risk assessment [JSA, Security, etc.] (การประเมินความเสี่ยงไม่เพียงพอ) [JSA, Security, etc.]
☒ Failure to check and monitor (ไม่ทำการตรวจสอบหรือเฝ้าติดตาม)	☐ Other อื่นๆ [ระบุ] _____

SC GROUP | Date : 23/04/2025 | Revision : 5 | Ref : F-08-SHE/02
INCIDENT INVESTIGATION REPORT

SUBSTANDARD CONDITIONS (สภาวการณ์ที่ไม่เป็นไปตามมาตรฐาน)

☐ Inadequate guards or barriers (เครื่องป้องกันไม่ถูกต้องเหมาะสม)	☐ Noise exposure (ทำงานในพื้นที่เสียงดัง)
☐ Inadequate or improper protective equipment (อุปกรณ์ป้องกันไม่ถูกต้องหรือไม่เพียงพอ)	☐ Inadequate instructions or procedures (ขั้นตอนการปฏิบัติงานหรือคำแนะนำไม่เพียงพอ)
☐ Defective tools, equipment, or material (อุปกรณ์ เครื่องมือชำรุดเสียหาย)	☐ Congestion or restricted action (พื้นที่ทำงานกำจัด คับแคบ)
☐ Poor housekeeping, disorder (พื้นที่ทำงานสกปรก รก ไม่เป็นระเบียบ)	☐ Temperature/climate exposures (อุณหภูมิหรือสภาพอากาศ)
☐ Inadequate warning systems (การแจ้งเตือนไม่เพียงพอ)	☐ Inadequate ventilation (การระบายอากาศไม่เพียงพอ)
☐ Fire or explosion hazards (อันตรายจากไฟหรือการระเบิด)	☐ Radiation exposure (ทำงานในพื้นที่ที่มีการแผ่รังสี)
☐ Inadequate or excessive illumination (ความสว่างไม่เพียงพอหรือมากเกินไป)	☒ Other อื่นๆ [ระบุ] Strong wind (more than 20 knots)
☐ Hazardous environmental conditions [gases, dust, fumes, etc.] (สภาวะแวดล้อมที่มีอันตราย) [แก๊ส, ฝุ่น, ควัน, อื่นๆ.]	

PERSONAL FACTORS (ปัจจัยอันเกิดจากตัวบุคคล)

☐ Inadequate physical capability (สมรรถภาพทางร่างกายไม่เหมาะสม)	☐ Mental stress (ภาวการณ์บีบคั้นทางด้านจิตใจ)
☐ Inadequate mental capacity (สมรรถภาพทางจิตใจไม่เหมาะสม)	☐ Improper motivation (การสร้างแรงจูงใจไม่ถูกต้อง)
☐ Lack of knowledge (ขาดความรู้)	☐ Communication/language difficulties (มีปัญหาทางการสื่อสาร ภาษา)
☐ Lack of skill (ขาดทักษะ)	☐ Physical stress (ภาวการณ์บีบคั้นทางด้านร่างกาย)
☐ Other อื่นๆ [ระบุ] ……..	

JOB FACTORS (ปัจจัยอันเกิดจากงาน)

☐ Inadequate leadership/supervision (ผู้ดูแลหรือหัวหน้างานไม่เพียงพอ)	☐ Inadequate maintenance (การซ่อมบำรุงรักษาไม่เพียงพอ)
☐ Inadequate engineering/design (การออกแบบไม่ถูกต้องเหมาะสม)	☐ Inadequate tools/equipment (เครื่องมือและอุปกรณ์ไม่เหมาะสมหรือเพียงพอ)
☐ Inadequate purchasing (การจัดซื้อไม่เหมาะสมเพียงพอ)	☐ Inadequate work standards (การทำงานไม่ได้มาตรฐาน)
☐ Wear and tear (การเสื่อมสภาพ)	☐ Abuse and misuse (การใช้เครื่องมือไม่ถูกต้อง)

SECTION 5 – ROOT CAUSES [WRITTEN DESCRIPTION] (สาเหตุที่แท้จริง (เขียนระบุรายละเอียด)

14. Root Causes:(สาเหตุที่แท้จริง)

- Failure to check and monitor
  While retrieving the mooring rope do not closely monitor the rope make it overlooked any hazards or obstacles that might obstruct the rope path.

SC GROUP	Date : 23/04/2025	Revision : 5	Ref : F-08-SHE/02
	INCIDENT INVESTIGATION REPORT		

SECTION 6 – CORRECTIVE ACTIONS TO PREVENT RECURRENCE (การแก้ไขและป้องกันไม่ให้เกิดเหตุซ้ำ)

CORRECTIVE AND PREVENTIVE ACTION[S] (ข้อปฏิบัติที่ต้องแก้ไข ปรับปรุง และการป้องกันไม่ให้เกิดซ้ำ)	RESPONSIBLE PARTY (ผู้รับผิดชอบ)	Due Date (วันครบกำหนด)	Close Out (ดำเนินการแล้วเสร็จ)
Distribute immediate safety information to all offshore vessels in fleet.	QSHE	14 Jull 2025	14 Jull 2025
Immediately removed the rope was stuck in the port side propeller.	Master / Tech	12 Jul 2025	12 Jul 2025
Reinforce procedures on rope tension monitoring and pre-heaving in toolbox meeting for rope operation including conduct toolbox meeting and safety training on mooring risk zones.	Master / SHE	13 Jul 2025	13 Jul 2025
Provide an onboard meeting emphasize to all crew members to understand the hazards of unforeseen object.	Master / SHE	31 Jul 2025	Waiting next port call
Conduct a thorough Job Safety Analysis before mooring operations. Identify potential hazards such as rope overload, hardware failure, and weather conditions.	Master	All mooring operation	-
Ensure effective bridge-to-deck communication throughout the operation.	Master	All operation	-
Lesson learnt sharing to all vessels in fleet.	SHE	11 Aug 2025	in process
The reason learnt will be communicated to all crew and officers during the pre-sea briefing.	QSHE	31 Jul 2025	Next pre-sea brief

Incident Report Completed by: (รายงานจัดทำโดย) Mr. Krittawan Kaewnuam	Position: (ตำแหน่ง) SHE Division manager (offshore)
Date:(วันที่) 21 July 2025	Sign: (ลายเซ็น)

SECTION 7 – SUGGESTION/COMMENT FROM DEPARTMENT MANAGER (ข้อเสนอแนะหรือข้อคิดเห็นของผู้จัดการฝ่าย)

- When performing any rope work, it is necessary to see the entire floating rope or messenger line to ensure that no part of the underwater rope becomes entangled in any underwater structure when the vessel is in operation. If the rope cannot be seen, the work should be stopped immediately.
- If you are not sure or hesitant about performing a task, you should stop the task first to consider and review the task to ensure that you can perform the task correctly and safely.

Incident Report Approved By: (รายงานอนุมัติโดย) Capt. Wasana Jermsutjarit	Position: (ตำแหน่ง) QSHE Manager
Date: (วันที่) 22 July 2025	Sign: (ลายเซ็น)

SC GROUP	Date : 01/02/2021	Revision : 4	Ref : F-08-SHE/01
	INITIAL INCIDENT REPORT		

Vessel Name : …SC NATA…… Report No : ……02/2025…….. Date : ……11th July 2025……..

Subject: ……Mooring rope entangled with Portside Propeller……..……

SECTION 1 – INITIAL INCIDENT CLASSIFICATION

☐ Injury	☐ Illness	☒ Property Damage	☐ Near miss
○ FAC ○ MTC ○ RWC ○ LTI ○ Fatality	Name.		Type.
	Nature of Injury. Nil	Nature of Damage Mooring rope parted	Nature of loss Nil

SECTION 2 – GENERAL INFORMATION

1.Date of Incident: (วันที่เกิดอุบัติการณ์) 11th April 2025	2.Place of Incident: Wassana Field (South west Mooring buoy) (สถานที่เกิดเหตุ)
3.Time of Incident: (เวลาที่เกิด) 12:42 Hrs.	4. Activity Incident : (งานที่ทำในขณะเกิดเหตุ) mooring operation with mooring buoy

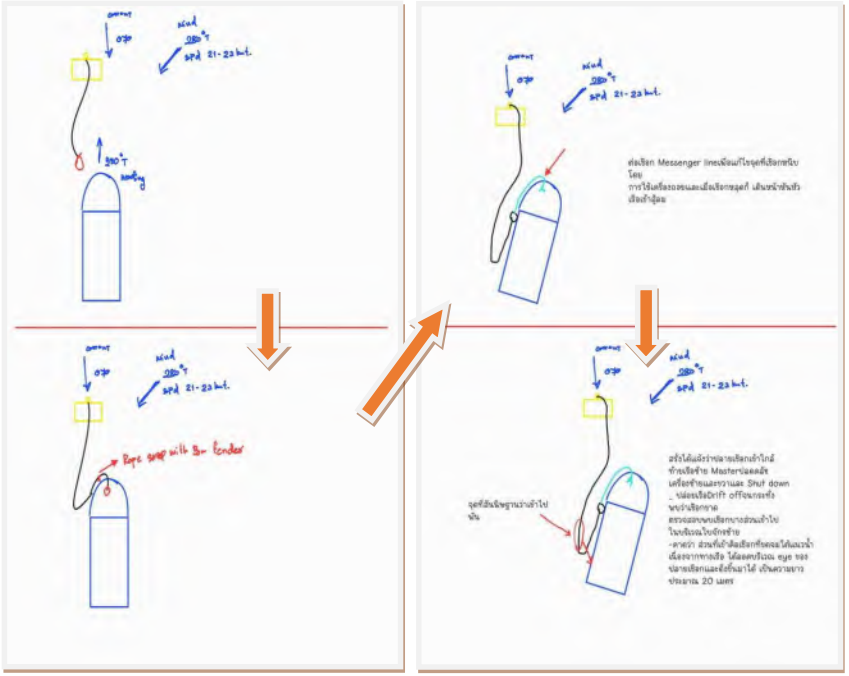
SECTION 3 – INCIDENT INFORMATION

5. Description of Incident (Refer to attachment if insufficient space) รายละเอียดของเหตุการณ์ (อ้างถึงเอกสารแนบหากพื้นที่ไม่พอ)

Weather : **1.** Current direction from 250 degree.
2. Wind direction from 280-290 drgree with speed 21-23 knots.

1200 lt : Vessel approached to Mooring buoy SW
1230 lt : Deck crew report to bridge that they heaving up the mooring rope with high tension then observe that the mooring rope snap with Bow fender's bolt.
1240 lt : During to moving ahead to reduce the tension of mooring rope and to heading vessel against with wind direction then observe the remain of mooring rope was close to Port side astern.
1242 lt : Clutch of both M/E was disengaged immediately to prevent the rope entangle.
1242-1300 lt : Vessel was drifting off from the buoy then observed the mooring rope parted. Both M/E was shut down by Master's order .
1300-1345 lt : Identifying the damage and safety for restart both of M/E, found the remained parted rope was entangled with port side propeller.
1345 lt : Master informed to all concerns party.

6. Pictures / Drawings of Incident



Report by : Name ……Capt.Teekatas Charoensook…. Company ……SCM…….. Rank ……Master……..

Witness (พยานที่ 1) Name …… Mr.Teeranop Kulsantear..... Company …….. SCM …… Rank ……Second Officer.....

Witness (พยานที่ 2) Name ……Mr.Ekkachai Ponpho..... Company ……..SCM …… Rank ……Bosun….....

เอกสารแนบที่ 44

KPI Monthly Report

VEGOT G10/48-2025 HSSE Performance Annual Report

WASSANA FIELD

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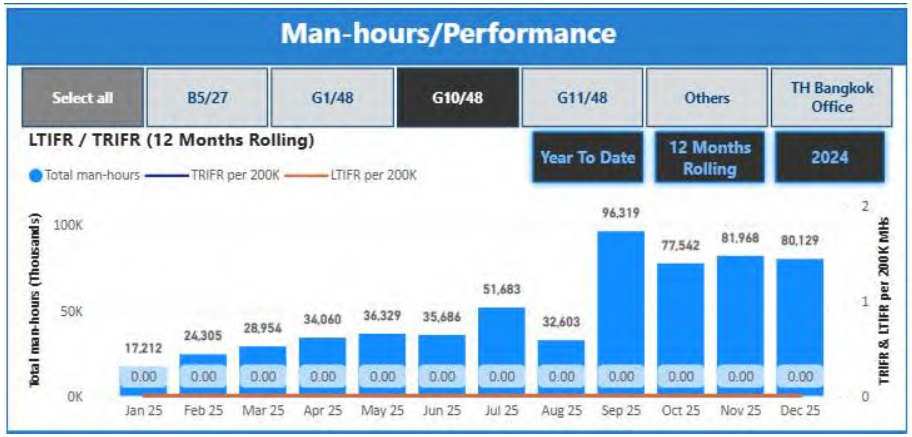
HSSE Performance and Statistics

G10/48 Wassana

Total Man Hours from last LTI (12th Oct 2022) = 1,651,248

Case description LTI (12th Oct 2022) : IP has foreign object on his left eye.



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HSSE Performance and Statistics

HSSE HOC

HSSE KPI & Performance Dashboard - Power BI

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HSSE Performance and Statistics

Incident Summary

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HSSE Performance and Statistics

Stop Work Authority (SWA)

VE KISS: we keep it safe and sustainable champion of the month

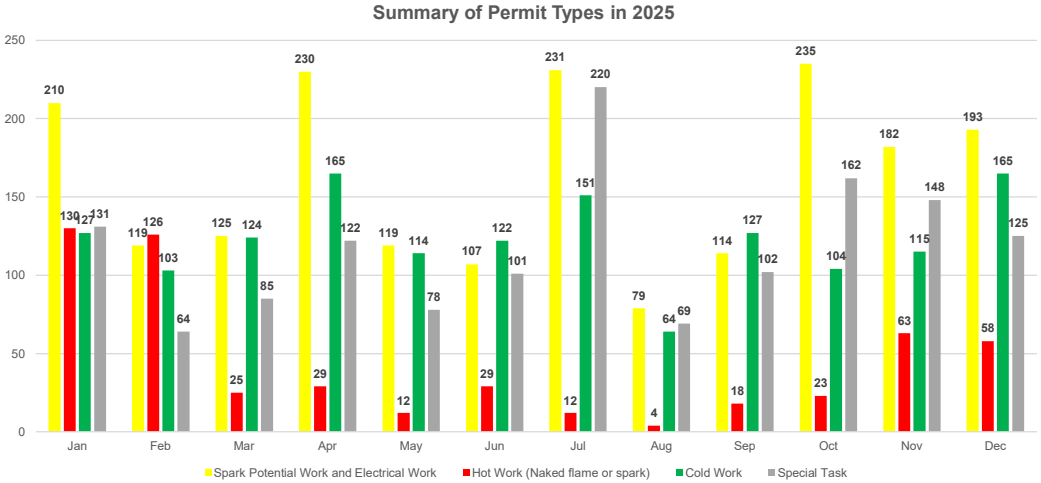
[redacted]

Wassana - Offshore Emergency Drill Record

2025 Emergency Response & Preparedness Exercise Plan

No.	Exercise Incident Scenarios	Number of plan	Total Completed	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Search and Rescue (Injured Person)	2	8												
2	Platform abandonment / evacuation (Abandon MOPU due to Fire/Explosion / Grounding / Floating / Collision / Excessive list / In heavy weather)	12	15												
3	Fire / Explosion (Fire in Galley, Accommodation, Process)	12	18												
4	Gas leak (H_2S; LEL)	2	2												
5	Medivac injured or sick person (CPR / AED / Choking / Bleeding / Burn and Scalds / Electric shock / Eye injuries / Heat stroke / Fractures and Dislocations / Shock / Sprains and Strains)	2	7												
6	Oil spill response	4	1												
7	Pirates /Terrorists /Refugees /Trespassers.	1	1												
8	Personnel basket transfer (Crane Emergency load lowering drill)	1	1												
9	Subsea pipeline leak	1	0												
10	Electrical shock / Black out	2	1												
11	Man overboard / Crew missing	2	2												
12	Typhoon Evacuation (Tabletop)	1	1												
13	Offshore-BKKCRT-Connect ER drill exercise (TBA)		1												
14	Structure failure	1	3												
15	Crane Failure	1	1												
16	Rescue man down at height (TBA)		4												
17	RPU/WS well complication /blowout (TBA)		2												
18	Business continuity plan (BCP) scenario-based tabletop exercise (TBA)		0												
19	Lifeboat launching and recovery	4	5												
20	Helicopter crash (Helicopter loss of balance and crash helideck / Helicopter fall into the sea)	4	3												
	Total	52	76	5	8	10	3	7	4	6	7	12	4	5	5
			146	5	8	10	3	7	4	6	7	12	4	5	5

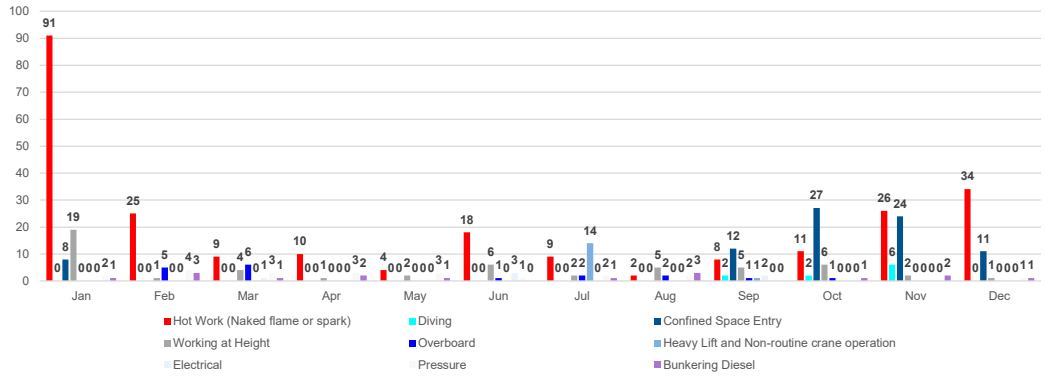
Wassana - Permit To Work Record and Analysis



Summary of Permit Types	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Spark Potential Work and Electrical Work	210	119	125	230	119	107	231	79	114	235	182	193
Hot Work (Naked flame or spark)	130	126	25	29	12	29	12	4	18	23	63	58
Cold Work	127	103	124	165	114	122	151	64	127	104	115	165
Special Task	131	64	85	122	78	101	220	69	102	162	148	125
Total	598	412	359	546	323	359	614	216	361	524	508	541

Wassana - Permit To Work Record and Analysis

Summary of PTW Audit for High Risk and Focus in 2025



Summary of PTW Audit for High Risk and Focus	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hot Work (Naked flame or spark)	91	25	9	10	4	18	9	2	8	11	26	34
Diving	0	0	0	0	0	0	0	0	2	2	6	0
Confined Space Entry	8	0	0	0	0	0	0	0	12	27	24	11
Working at Height	19	1	4	1	2	6	2	5	5	6	2	1
Overboard	0	5	6	0	0	1	2	2	1	1	0	0
Heavy Lift and Non-routine crane operation	0	0	0	0	0	0	14	0	1	0	0	0
Electrical	0	0	1	0	0	3	0	0	2	0	0	0
Pressure	2	4	3	3	3	1	2	2	0	0	0	1
Bunkering Diesel	1	3	1	2	1	0	1	3	0	1	2	1
Total	**121**	**38**	**24**	**16**	**10**	**29**	**30**	**14**	**31**	**48**	**60**	**48**

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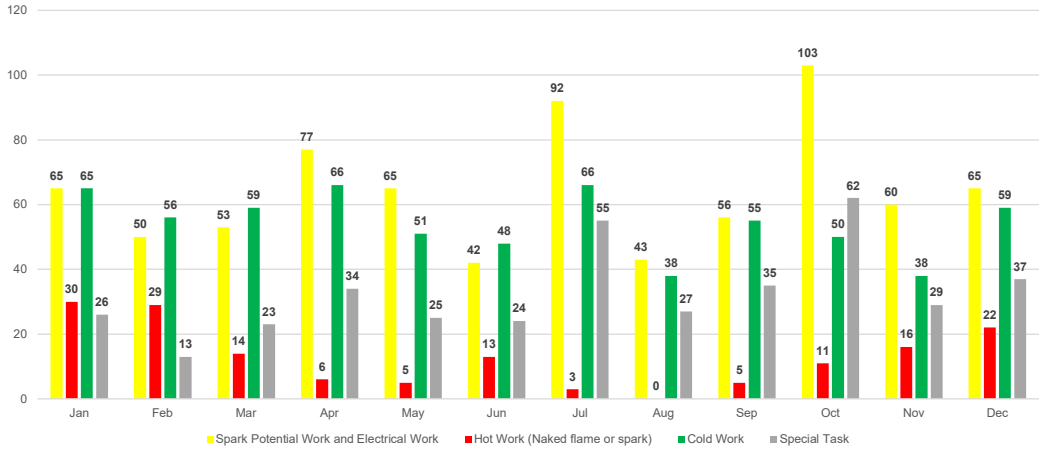
Wassana - Permit To Work Record and Analysis

Summary of Close out in 2025



Summary of Close out	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Spark Potential Work and Electrical Work	65	50	53	77	65	42	92	43	56	103	60	65
Hot Work (Naked flame or spark)	30	29	14	6	5	13	3	0	5	11	16	22
Cold Work	65	56	59	66	51	48	66	38	55	50	38	59
Special Task	26	13	23	34	25	24	55	27	35	62	29	37
Total	**186**	**148**	**149**	**183**	**146**	**127**	**216**	**108**	**151**	**226**	**143**	**183**

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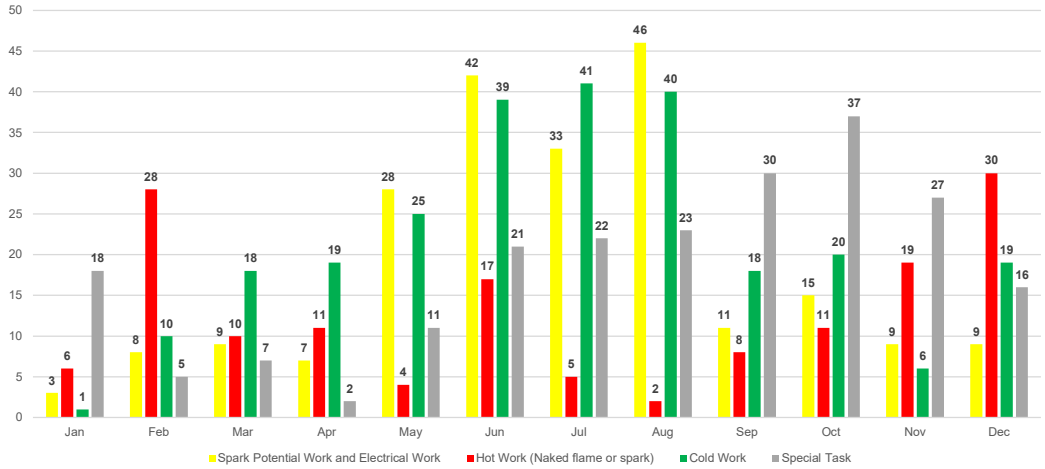
Wassana - Permit To Work Record and Analysis

Summary of Audit in 2025



Summary of Audit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Spark Potential Work and Electrical Work	3	8	9	7	28	42	33	46	11	15	9	9
Hot Work (Naked flame or spark)	6	28	10	11	4	17	5	2	8	11	19	30
Cold Work	1	10	18	19	25	39	41	40	18	20	6	19
Special Task	18	5	7	2	11	21	22	23	30	37	27	16
Total	**28**	**51**	**44**	**39**	**68**	**119**	**101**	**111**	**67**	**83**	**61**	**74**

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HSSE Performance Highlights

Weekly Safety Commitment

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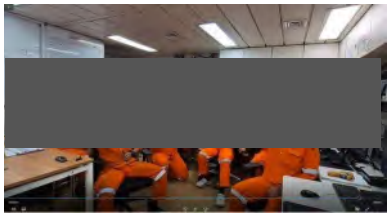
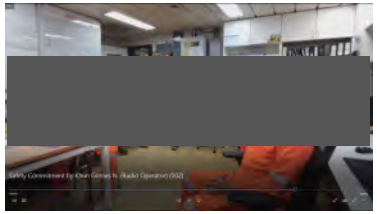
Weekly Safety Commitment

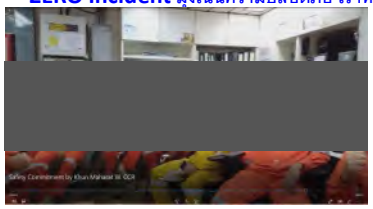
Weekly Commitment by Deck crew
" ประเมินความเสี่ยงก่อนทำงาน ตระหนักถึงความปลอดภัย ใส่ใจในกฎระเบียบ "



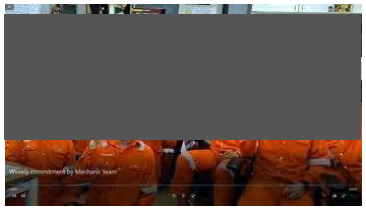
Weekly Commitment by Khun Gomes Nookamsuan (Radio Operator).
" มีสติก่อนทำ เน้นย้ำอันตราย มุ่งหมายความปลอดภัย "



Weekly Commitment by Khun Maharat Witee (Sr. CCR Operator)
" **ZERO Incident** มุ่งเน้นความปลอดภัย เราทำได้ "



Weekly Safety Commitment by Mechanic team.
" คิด วิเคราะห์ ทำตามแผน เป้าหมายสำเร็จได้ "



Good Stop Work Authority practices.

Approximate time 09:49 AM, Crane Operator perform offloading one container (Container Number CON01-01-009) from supply boat by main winch and detail of this container in shipping manifest are SWL = 5.00 tons and Weight = 5.00 tons.

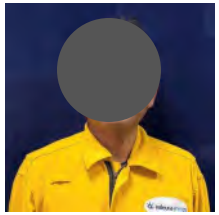
Crane Operator immediately exercise stop work authority and lowering the container on the deck floor of supply boat because he noticed actual weight of the container on main winch that shown on crane monitor screen is 5.7 tons that over from SWL and Weight in the manifest.

Crane Operator informed this to Deck Foreman and Safety Technician.

Safety Technician informed this stop work to Operation Supervisor and Field Manager.

Good safety practice.
1. Crane Operator doble check weight of cargo that correct with manifest (every cargo) before offloading from supply boat to MOPU.
2. Crane Operator aware about stop work authority.
3. Crane operator follow lifting requirements.

Below photo is Crane Operator Who has exercise stop work authority.



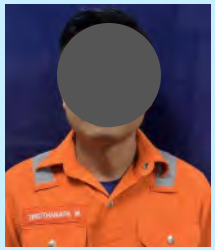
Mr. Vichai Phimonrat
Crane Operator

The Best Stop Work report of the Month

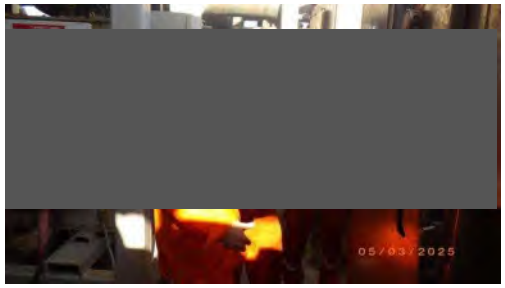
Award of The Month	July 2025
Name of Employer:	Connect Energy (Thailand) Co.,Ltd
Position	Crane Operator
Award Winner	Vichai Pimonrat
Stop Work Exercise	On 18 July 2025, While performing crane inspection, I found many broken wires rope in one strand of one rope lay of crane boom wire rope sling. Immediately exercised stop work and reported this to Deck Foreman and Operation Supervisor. Operation Supervisor reported about this to Field Manager and HWO Supervisor to temporary stop work for replacement new crane boom sling, everyone agreed. Mechanic Technician immediately brought a new wire rope sling to replaced it. Stop work exercise is first priority when find unsafe act or unsafe condition.

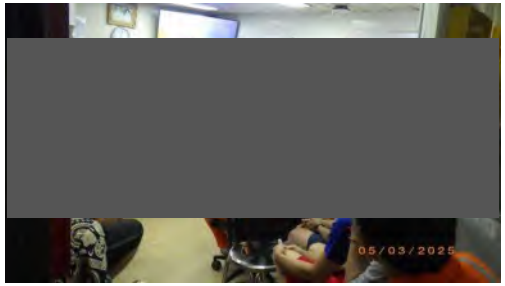
The Best Stop Work report of the Month

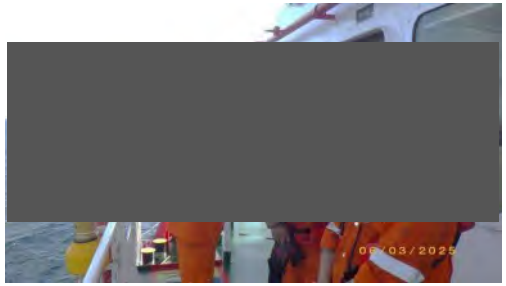
Award of The Month	July 2025
Name of Employer:	Valeura Energy
Position	Field Manager
Award Winner	Terdthanath Wongsrikaew
Stop Work Exercise	HWO team have plan to perform valve change out (annulus a) of Well.WSA-22 (additional task after completed HWO operation on Well.WSA-20), by HWO Supervisor coordinated with Field Manager and Operation Supervisor for discussion on this after reviewed for all step, of task, equipment, scenario and well control. Field Manager exercised stop work before issue PTW and informed HWO Supervisor that we have limited about safety barrier due to it have only one safety barrier and it is not safe for operator who will perform this task and it not safe for production of MOPU, including limited of working space at the Well.WSA-22. HWO Supervisor and Operation Supervisor agreed and followed as suggested by Field Manager. This task was cancelled as discussion by Field Manager, Operation Supervisor and HWO Supervisor.



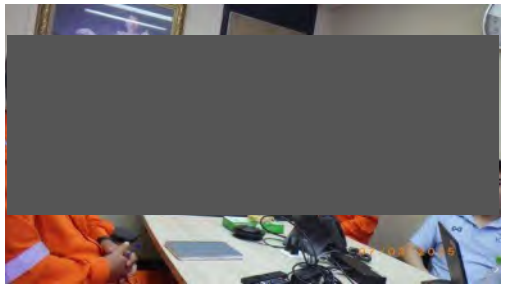
Management Visit

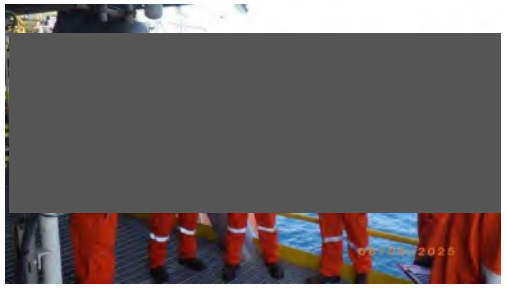


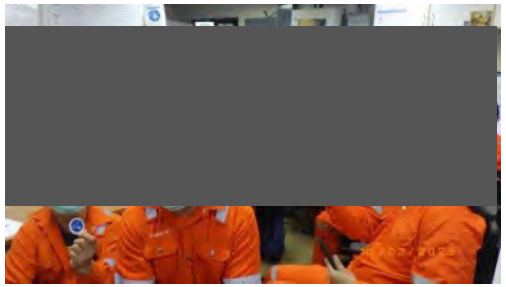




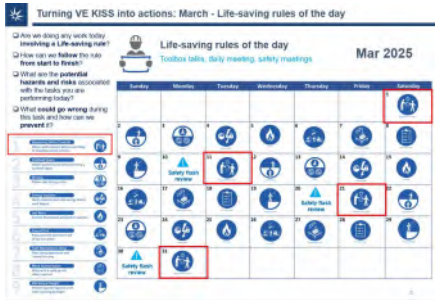
2025 Wassana ISO Initial Audit

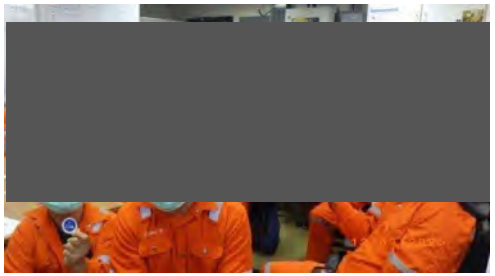






Rollout Life-Saving Rules

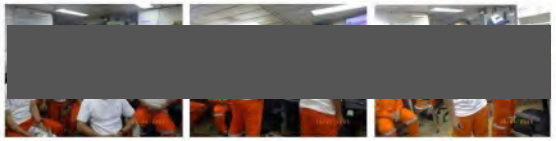




Life Saving Rules Go-Live Wassana Field

Discussion LSR in morning meeting

LSR T-shirt



Identify the life-saving rules related to the job at work site.

Promote LSR with TNS team

HSSE Performance Highlights

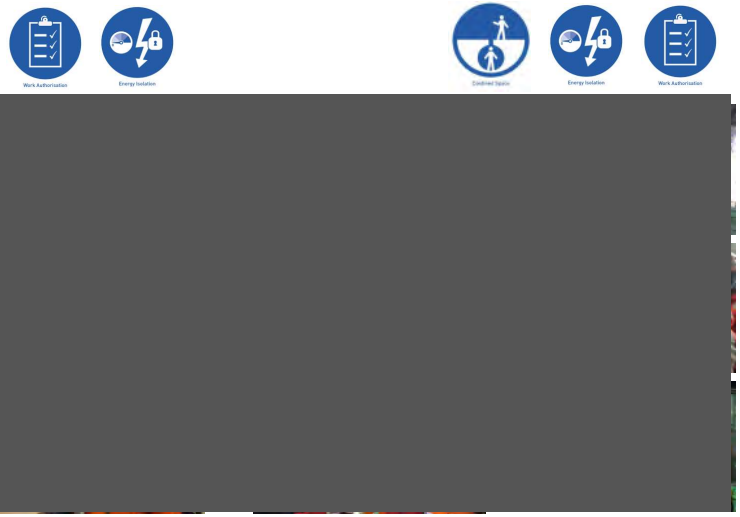
Life Saving Rules Go-Live Wassana Field

[redacted]

HSSE Performance Highlights

[redacted]

HSSE Performance Highlights



[redacted]

back to basics
life-saving rules

active engagement and onsite verification

HSSE Performance Highlights

[redacted]

HSSE Performance Highlights

[redacted]

HSSE Performance Highlights

[redacted]

HSSE Performance Highlights

The confined space entry for tank cleaning and subsequent hot work for tank repair has been successfully completed incident-free, in full accordance with the MOPU CLASS findings. The work was carried out by the Brownfield & Wassana team.

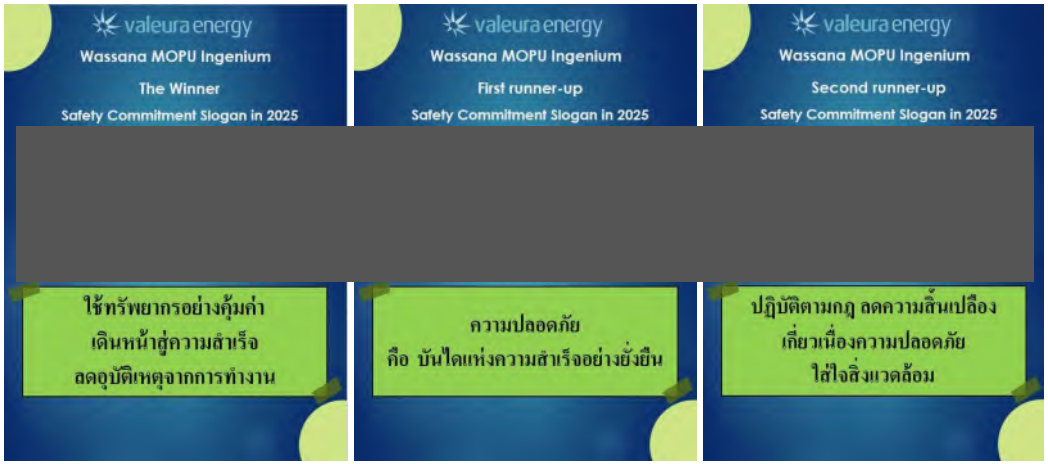
HSSE Performance Highlights

Basic CPR Training

[redacted]

HSSE Performance Highlights

2025 Wassana Safety Commitment Slogan Contest



HSSE Performance Highlights

2025 Ecological and Environmental Study

HSSE Performance Highlights

- HSSE Annual Audit at FSO Jaka Tarub on 12 Jun 25

HSSE Performance Highlights

- HSSE Annual Audit at MOPU Ingenium on 13 Jun 25

HSSE Performance Highlights

- Management Visit at MOPU Ingenium on 17 Jun 25

HSSE Performance Highlights

- Sr.Management Visit at FSO Jaka Tarub on 18 Jun 25

HSSE Performance Highlights

- Arsenic Awareness Training

HSSE Performance Highlights

- DMF HSE Audit at FSO Jaka Tarub.

HSSE Performance Highlights

- DMF HSE Audit at MOPU Ingenium.

[redacted]

HSSE Performance Highlights

- Senior Management site visit at MOPU Ingenium on 13 Aug 25

[redacted]

HSSE Performance Highlights

- Senior Management site visit at FSO Jaka Tarub on 13 Aug 25

[redacted]

HSSE Performance Highlights

- DMF Officer visited on MOPU Ingenium (Onsite verification by frontline supervisor).

[redacted]

HSSE Performance Highlights

- 10th Anniversary Wassana Oil Field, Gulf of Thailand

[redacted]

HSSE Performance Highlights

Wassana Field Achieve 1,000 Days Without Lost Time Injury (LTI)

[redacted]

HSSE Performance Highlights

2025 Green Routines Sustainability Campaign

[redacted]

HSSE Performance Highlights

Health Campaign - Wassana Field

[redacted]

เอกสารแนบที่ 45

Wassana EHS Training Matrix 2025

Master List of HSSE Training Matrix_Identified by job function

valeura energy

Course No.	Position	Basic Offshore Safety Training (BOST)_TPTI	Basic Offshore Safety Training For Infrequent Travellers (BOSIT)_TPTI	Tropical Basic Offshore Safety Induction & Emergency Training (T-BOSIET)_OPITO	Further Offshore Training (FOT)_TPTI	Tropical Further Offshore Emergency Training (T-FOET)_OPITO	Further Offshore Emergency Training (FOET)_OPITO	Basic Working at Height & Rescue (WaH+R)	Basic Scaffolding for Oil and Gas (SCAFF)	Scaffolding Inspection	Offshore Emergency Response Team Member (OERTM)	Further Offshore Emergency Response Team Member (FOERTM)	Offshore Emergency Response Team Leader (OERTL)	Further Offshore Emergency Response Team Leader (FOERTL)	Basic Offshore Crane Operator
	No	1.1	1.2	1.3	2.1	2.2	2.3	3	4.1	4.2	5	6	7	8	9
	References	National Competency Standards													
	Initial Training duration	3 D	1D	3 D	n/a	n/a	n/a	3 D	5 D		4 D	n/a	3 D	n/a	5 D
	RefresherTraining duration	n/a	n/a	n/a	2 D	1D	1D	n/a				n/a		n/a	
	Refresher frequency	n/a	n/a	n/a	3 Yrs.	4 Yrs.	4 Yrs.	n/a	3 Yrs.		n/a	2 Yrs.	n/a	2 Yrs.	n/a
Offshore															
1	Supv.: AI Rep.	R		O[1]	R[1]	R[1]	R[1]	O	O						
2	Supv.: WO/ WSS/ Drilling	R		O[1]	R[1]	R[1]	R[1]	O	O						
3	Supv.: Ops Lead (WSN)	R		O[1]	R[1]	R[1]	R[1]	O	O						
4	Supv.: MOPU Team Lead (NYC)	R		O[1]	R[1]	R[1]	R[1]	O	O						
5	Supv.: Construction/Installation	R		O[1]	R[1]	R[1]	R[1]	O	O						
6	Maintenance Lead	R		O[1]	R[1]	R[1]	R[1]	O	O		O	O			O[4]
7	E&I O Technician	R		O[1]	R[1]	R[1]	R[1]	R[7]	R6		O	O			O[4]
8	Operator	R		O[1]	R[1]	R[1]	R[1]	O	R6		O	O			O[4]
9	Mechanical Technician	R		O[1]	R[1]	R[1]	R[1]	R[7]	R6	O[4]	O	O			O[4]
10	Safety Technician	R		O[1]	R[1]	R[1]	R[1]	O	O	R	O	O			
11	Radio Operator	R		O[1]	R[1]	R[1]	R[1]				O	O			
12	Deck Foreman	R		O[1]	R[1]	R[1]	R[1]	R	R	R	O	O			R
13	Crane Operator	R		O[1]	R[1]	R[1]	R[1]	R	R		O	O			R
14	Deck crew	R		O[1]	R[1]	R[1]	R[1]	R	R		O	O			
15	Matman/ Wellsite Geo / Storeman	R		O[1]	R[1]	R[1]	R[1]		O						
16	Medic	R		O[1]	R[1]	R[1]	R[1]								
Onshore															
14	All Positions	R[4]	R[3]	O[1]	R[1]	R[1]	R[1]								
15	Maid and Security														
SRT															
16	Storeman														
17	Safety Technician (ST)														
18	Medic (MD)														
19	HLO & HCA														
20	First Response Team (FRT)														
21	COXSWAIN														
ERT (MOPU only)															
22	On-scene commander														
23	Fire Team Leader										R	R	R	R	
24	Fire Fighter										R	R			
25	COXSWAIN														

Course No.	Position	Safety Officer, Executive level	Safety Officer, Supervisory level	Safety Health and Workplace Environment Comm. (SHWEC) Member	Safety Health and Workplace Environment (SHWE) for new employed or who assigned to change work location and scope of work to technical	Confined Space Entry_Combined	Advance First Aid	Electrical safety	Radioactivity (Ionizing & Non-Ionizing)_Awareness Level	Radioactive Safety Officer (RSO)_Basic Level	Basic Fire Fighting	Offshore Crane Operator Training	Lifting & Rigging (L&R) / Rigger/ Signal man	Global Maritime Distress Safety System (GMDSS)	Fast Rescue Boat
	No	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	References	TH LAW										API		MARINE	
	Initial Training duration	12 Hrs.	12 Hrs.	12 Hrs.	6 Hrs./ 3 Hrs.	3 D+	2 D	3 Hrs.	2 Hrs.	5 D	1D	3 D	3 D		
	RefresherTraining duration	n/a	n/a	n/a	n/a	n/a	1 D	n/a	n/a		n/a	n/a	n/a		
	Refresher frequency	n/a	n/a	n/a	n/a	5 Yrs.	2 Yrs.	n/a	n/a	n/a	n/a	4 Yrs.	4 Yrs.		
Offshore															
1	Supv.: AI Rep.		R	O[5]	O[6]	R	R	R	O[2]						
2	Supv.: WO/ WSS/ Drilling		R	O[5]	O[6]		R	R	O[2]						
3	Supv.: Ops Lead (WSN)		R	O[5]	O[6]	R	R	R	O[2]						
4	Supv.: MOPU Team Lead (NYC)		R	O[5]	O[6]	R	R	R	O[2]	R				R	
5	Supv.: Construction/Installation		R	O[5]	O[6]		R	R	O[2]						
6	Maintenance Lead			O[5]	O[6]		R	R	O[2]				R		
7	E&I O Technician			O[5]	O[6]		R	R	O[2]			O[4]	R[8]		
8	Operator			O[5]	O[6]				O[2]			O[4]	R[8]		
9	Mechanical Technician			O[5]	O[6]				O[2]			O[4]	R		R[6]
10	Safety Technician			O[5]	O[6]	R	R	O	O[2]	R[2]			O[3]		
11	Radio Operator			O[5]	O[6]										
12	Deck Foreman		R	O[5]	O[6]	R						R	R		
13	Crane Operator			O[5]	O[6]	R						R	R		
14	Deck crew			O[5]	O[6]	R							R		
15	Matman/ Wellsite Geo / Storeman			O[5]	O[6]				O[2]						
16	Medic			O[5]	O[6]		R		O[2]					R[6]	
Onshore															
14	All Positions			O[5]	O[6]		O[7]				R[5]				
15	Maid and Security				O[6]		O[7]				R[5]				
SRT															
16	Storeman														
17	Safety Technician (ST)														
18	Medic (MD)														
19	HLO & HCA														
20	First Response Team (FRT)														
21	COXSWAIN														
ERT (MOPU only)															
22	On-scene commander														
23	Fire Team Leader														
24	Fire Fighter														
25	COXSWAIN														

Course No.	Position	Emergency Load Lowering (ELL)	Oil Spill Response (IMO Level1)	Oil Spill Response (IMO Level 2) + (IMO Level 3)	Major of Emergency Management	Thailand Emergency Response Plan (Oil Spill, Typhoon and MERP)	Helicopter Landing Officer	Helideck Assistant	COXSWAIN	QHSSECQ and ISO9001, ISO14001 & ISO 45001	Acc., Inc. Investigation Reporting System (AIIR) + Synergi	Control Of Substance Hazard to Health (COSHH)	Dangerous Goods Handling and Transportation (DGHT)	EIA	HAZOP	Isolation (LoTo)	Job Safety Analysis (JSA)	Permit to Work (PTW)	Security Management	Waste Management
	No	24	25	26	27	28	29	30	31	32	33	32	33	34	35	36	37	38	39	40
	References	VE-ERP								VE-KPP_Awareness										
	Initial Training duration	1 D	3 D	3 D/ 2D	3 D	2 Hrs.	2 D	1 D	4 D	1 Hr.	1 Hr.	1 Hr.	1 Hr.	1 Hr.	1 Hr.	1 Hr.	1 Hr.	1 Hr.	1 Hr.	1 Hr.
	RefresherTraining duration	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1 D	n/a	n/a
	Refresher frequency	n/a	n/a	n/a	n/a	n/a	2 Yrs	1 Yr	3 Yrs	n/a	n/a	n/a	n/a	n/a	n/a	2 Yrs.	n/a	2 Yrs.	n/a	n/a
Offshore																				
1	Supv.: AI Rep.									R	R	R		R	R	R	R	R	O	R
2	Supv.: WO/ WSS/ Drilling									R	R	R		R	R	R	R	R	O	R
3	Supv.: Ops Lead (WSN)	R								R	R	R		R	R	R	R	R	O	R
4	Supv.: MOPU Team Lead (NYC)									R	R	R		R	R	R	R	R	O	R
5	Supv.: Construction/Installation									R	R	R		R	R	R	R	R	O	R
6	Maintenance Lead	R								R	R	R		R	R	R	R	R	O	R
7	E&I O Technician	R6								R	O	R		R	O	R	R	R	O	R
8	Operator	O								R	O	R		R	O	R	R	R	O	R
9	Mechanical Technician	R								R	O	R		R	O	R	R	R	O	R
10	Safety Technician									R	R	R	O	R	O	R	R	R	R	R
11	Radio Operator									R	O	R		R		R	R	R	O	R
12	Deck Foreman	R								R	O	R		R		R	R	R	O	R
13	Crane Operator	R								R	O	R		R		R	R	R	O	R
14	Deck crew	R								R	O	R		R		R	R	R	O	R
15	Matman/ Wellsite Geo / Storeman									R	O	R	O	R		O	R	O	O	R
16	Medic									R	O	R	O	R			R	O	O	R
Onshore																				
14	All Positions									O	O								O	O
15	Maid and Security																		O	O
SRT																				
16	Storeman		O		O	R														
17	Safety Technician (ST)		R	R	O	R														
18	Medic (MD)				O	R														
19	HLO & HCA				O	R	R	R					R							
20	First Response Team (FRT)		R	O	O	R														
21	COXSWAIN		R		O	R			R											
ERT (MOPU only)																				
22	On-scene commander		R		R															
23	Fire Team Leader																			
24	Fire Fighter																			
25	COXSWAIN		R		O	R			R											

Remark:
= Not required
R = Required
R[1] = To refresh the training will be depened on the initial training certification, i.e. Initial trained BOST_TPTI so, the refresher is going to be FOT_TPTI
R[2] = Only for Safety Tech/ QHSSE Eng at Nongyao Field
R[3]= For Infrequent Travellers which refer to persons who go offshore not more than 4 times per year and should not be exceeding 72 hours each trip.
R[4]= To be required if travlling offshore more than 4 times per year and should not be exceeding 72 hours each trip.
R[5] = It is required for at least 40% of all staff/manatory for the prerequisite of Confined Space Entry course
R[6] = Applicable to Nongyao-C MOPU
R[7] = Applicable to Nongyao- C and Wassana MOPU
R[8] = Applicable to Jasmine/Manora/Nongyao
O = Optional
O[1] = For staff who are assigned to work international offshore
O[2] = Only for Nongyao offshore crews
O[3] = To be trained one time (no refresher)
O[4] = Only for Jasmine/Manora/Nongyao crews who are listed in the required group
O[5] = For staff who are responsible for Safety, Health and Working Environment Committee (SHWEC)
O[6] = For who new employed or who assigned to change work location and scope of work to technical
O[7] = For Onshore staff who are assigned as BKK Floor warden
S = Special assigned by personal from OM suggestions

SCAFFOLD

INTERNAL

No	Courses	Training Services Providers	References
1	Basic Offshore Safety Training (BOST)	TPTI	DMF-TPTI
2	Further Offshore Training (FOT)	TPTI	DMF-TPTI
3	Basic Working at Height & Rescue (WaH+R)	TPTI	DMF-TPTI
4	Basic Scaffolding for Oil and Gas (SCAFF)	TPTI	DMF-TPTI
5	Offshore Emergency Response Team Member (OERTM)	TPTI	DMF-TPTI
6	Further Offshore Emergency Response Team Member (FOERTM)	TPTI	DMF-TPTI
7	Offshore Emergency Response Team Leader (OERTL)	TPTI	DMF-TPTI
8	Further Offshore Emergency Response Team Leader (FOERTL)	TPTI	DMF-TPTI
9	Basic Offshore Crane Operator	TPTI	DMF-TPTI
10	Safety Officer, Executive level	LS, Shawpat, NPC S&E	TH Laws
11	Safety Officer, Supervisory level	LS, Shawpat, NPC S&E	TH Laws
12	Safety Health and Workplace Environment Comm. (SHWEC) Member	LS, Shawpat, NPC S&E	TH Laws
13	Safety Health and Workplace Environment,New employee (SHWE) for new/ promoted Emp.	LS, Shawpat, NPC S&E	TH Laws
14	Confined Space Entry_Combined	Shawpat, NPC S&E, 3M, PISTC	TH Laws
15	Advance First Aid	Shawpat, NPC S&E, ISOS, PISTC, Red-Cross	TH Laws
16	Electrical safety	LS, Shawpat, NPC S&E, PISTC	TH Laws
17	Radioactivity (Ionizing & Non-Ionizing)_Awareness Level	Thailand Institue of Nuclear Technology (TINT)	TH Laws
18	Radioactive Safety Officer (RSO)_Basic Level	Thailand Institue of Nuclear Technology (TINT)	TH Laws
19	Basic Fire Fighting	Shawpat, NPC S&E, PISTC	
20	Crane Operator/ Crane Competency Assessment	LS, TOS, 3M	TH Laws
21	Lifting & Rigging (L&R)/ Rigger/ Signal man	LS, TOS, 3M	TH Laws
22	Emergency Load Lowering (ELL)	LS, TOS, 3M	VE-REQ
23	Oil Spill Response (IMO Level1)	OSCT, IESG, OSRL (SIN)	VE-REQ
24	Oil Spill Response (IMO Level2 & 3)	OSCT, IESG, OSRL (SIN)	VE-REQ
25	Major of Emergency Management	LS, PISTC, WILDGREESE	VE-REQ
26	Thailand Emergency Response Plan (Oil Spill, Typhoon and MERP)	HSSE	VE-REQ
27	Helicopter Landing Officer	TPTI & PISTC	Laws
28	Helideck Assistant	TPTI & PISTC	Laws
29	COXSWAIN	TPTI & PISTC	Laws
30	Operation Management Standard (OMS) and ISO9001, ISO14001 & 45001_Awareness	HSSE	VE-REQ
31	Incident Investigation Reporting System (IIR) +IMS	HSSE	VE-REQ
32	Control Of Substance Hazard to Health (COSHH)_Basic Level	HSSE	VE-REQ
33	Dangerous Goods Handling and Transportation (DGHT)_Basic Level	HSSE	VE-REQ
34	EIA_Awareness	HSSE	VE-REQ
35	HAZOP	HSSE	VE-REQ
36	Isolation (LoTo)	HSSE	VE-REQ
37	Job Safety Analysis (JSA)	HSSE	VE-REQ
38	Permit to Work (PTW)	HSSE	VE-REQ
39	Security Management	HSSE	VE-REQ
40	Waste Management	HSSE	VE-REQ

INTERNAL

เอกสารแนบที่ 46

Drill/Exercise Report 2025

Pre-incident Plan Form

valeura energy

OFFSHORE DRILL FREQUENCY AT LEAST ONE PER MONTH (WEATHER PERMITTING)

Report of Emergency Exercise: Fire Drill.

The type of drill is required for Fire/ Explosion on basis, together with other drill types.

Type A

- ☐ **Aircraft/ Vessel incident**
- ☐ **Evacuation**
- ☐ **Medical emergency/ Man overboard**
- ☐ **Typhoon**

Type B

- ☐ **Well problem/ Blowout/**
- ☐ **Evacuation.**
- ☐ **Abnormal weather/ Natural Disaster**
- ☐ **Subsea Pipeline leak**

Type C

- ☐ **Equipment/ Structure failure**
- ☐ **Security/ Bomb threat**
- ☐ **Oil Spill/ HAZMAT**
- ☐ **Refugees**

Type D

- ☐ **Personal basket failure/ Man overboard.**
- ☐ **Missing person**
- ☒ **Search and Rescue**
- ☐ **Bad weather**

DATE: 06 January 2025	**LOCATION:** Wassana MOPU Ingenium		**SAFETY TECH / ENG ON DUTY:** Wisit Damsanit
DATE OF LAST DRILL: 02 January 2025	**TIME STARTED:** 16:57 hrs.	**TIME FINISHED:** 17:10 hrs.	**TOTAL PARTICIPANTS:** Total 44 pax

OBJECTIVES & RESOURCES OF DRILL:

1. Fire Team A (attack team) and Team B (searching team) to familiarize themselves with the situation.
2. Guide personnel onboard in understanding how to manage the situations.
3. Practice communication and utilization of safety equipment and devices.
4. Build fluency and proficiency in the use of SCBA sets.

SPECIFIC DETAILS OF SIMULATION (SCENARIO):

Operator noticed fire at ABB pump, then the Operator take nearby portable fire extinguisher and spraying into fire, but the Operator cannot control the fire.

The Operator activate ESD in area and inform situation to CCR Operator, then The CCR Operator activated emergency alarm and announced emergency, then instructing all crews to proceed to their muster stations.

Timeline	Detail
16:57 hrs.	Operator noticed fire at ABB pump, then the Operator take nearby portable fire extinguisher and spraying into fire, but the Operator cannot control the fire.
16:58 hrs.	The Operator activated ESD in area and inform situation to CCR Operator, then The CCR Operator activated emergency alarm and announced emergency, then instructing all crews to proceed to their muster stations.
17:03 hrs.	Headcount completed (PORT & STBD muster stations, medical task team, Attack team (A) and Searching Team (B)) and reported total POBs are 44 pax, no missing person.
17:03 hrs.	Attack team (A) fully equipped with fire suit and SCBA.
17:04 hrs.	Searching team (B) fully equipped with fire suit and SCBA and wait way-forward from CCR Operator.
17:04 hrs.	Field Manager reported the situation to Operation Manager.
17:04 hrs.	Attack team (A) proceeded to ABB pump and control fire by fire hydrant.
17:06 hrs.	Attack team (A) reported CCR Operator that fire is under control.
17:08 hrs.	CCR Operator inform Attack team (A) double check surrounding area to ensure no fire at other area., no liquid spill or damage on other equipment and area before back to fire team station.
17:09 hrs.	Attack team (A) back to fire team station.
17:10 hrs.	Drill is over.
17:15 hrs.	De-briefing.

Pre-incident Plan Form

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LOCATION OF SIMULATED OCCURRENCE: Wassana MOPU Ingenium

PICTURES:

[redacted]

[redacted]

NOTE:

- Complete reverse side of form. Attach copies of completed Muster Accounting Forms for all muster areas with listed no-shows.
- Attach copy of Safety and Good Operations meeting held to review drill.

(See Other Side)

OPERATION ACTIONS OBSERVATION:

YES	NO	REACT TEAM ACTIVITIES	YES	NO	MUSTER POINT ACTIVITIES
☒	☐	Reporting To Emergency Stations	☒	☐	Checklist Utilization
☒	☐	Checklist Utilization	☒	☐	Establishing Communication Coordination
☒	☐	Establishing Communication/Coordination	☒	☐	Head Count and Buddy System
☒	☐	Head Count and Buddy System	☒	☐	Reporting Personnel Count
☒	☐	Reporting Personnel Count	☒	☐	Identifying Missing Person(s)
☒	☐	Equipment Familiarization	☒	☐	Lifeboat Preparation
☒	☐	Situation Reporting	☐	☒	Re-assigning Personnel to Alternative Lifeboats
☐	☒	Obtaining Medical Assistance	☐	☒	Alternative Situations
☒	☐	Working In Conjunction with Field Boat			*CHECKED BY*: Somchai Suwannaroj
☐	☒	Rescue Boat Launch and Recovery			Phakdee Sriprapai
☒	☐	Planning Search and Rescue			
☐	☒	Simulated Rescue			
☒	☐	Simulated Equipment Usage			
☐	☒	Alternative Situations			
		CHECKED BY: Kongton Nakaget			
		FACILITY/ OPERATIONS CREW ACTIVITIES			
☒	☐	Reporting To Emergency Stations			
☒	☐	Checklist Utilization			
☒	☐	Establishing Communication/Coordination			
☒	☐	Reporting Personnel Count			
☒	☐	Simulate Emergency Duties			
☐	☒	Alternative Situations			
		CHECKED BY: Phairat Ngampradablert			

COMMENTS:

Good Practices.
1. All personnel were intent and enthusiastic about this situation of the drill.
2. Attack team (A) and Searching team (B) familiarized with the situation and familiarized with safety equipment and devices.
3. Emergency drill has smoothly, there were no issues during the drill because everyone gave importance to safety along with the drill.
4. Staging Area Manager communicated and updated status of Attack team (A) and Searching team (B) with Operations Section Chief while both of team equipped with fire suit and SCBA.
5. Searching team (B) assisted Attack team (A) to fully equipped with fire suit and SCBA first (To increase efficiency and be able to get to the scene of the situation faster).
6. All POBs at muster stations familiarized with life jacket.
7. Field Manager held debriefing session.

Pre-incident Plan Form

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OFFSHORE DRILL FREQUENCY AT LEAST ONE PER MONTH (WEATHER PERMITTING)

Report of Emergency Exercise: Fire and Crew missing Drill.

The type of drill is required for Fire/ Explosion on basis, together with other drill types.

Type A

- ☐ **Aircraft/ Vessel incident**
- ☐ **Evacuation**
- ☒ **Medical emergency/ Man overboard**
- ☐ **Typhoon**

Type B

- ☐ **Well problem/ Blowout/**
- ☐ **Evacuation.**
- ☐ **Abnormal weather/ Natural Disaster**
- ☐ **Subsea Pipeline leak**

Type C

- ☐ **Equipment/ Structure failure**
- ☐ **Security/ Bomb threat**
- ☐ **Oil Spill/ HAZMAT**
- ☐ **Refugees**

Type D

- ☐ **Personal basket failure/ Man overboard.**
- ☒ **Missing person**
- ☒ **Search and Rescue**
- ☐ **Bad weather**

DATE: 10 Apr 25	**LOCATION:** Wassana MOPU Ingenium		**SAFETY TECH / ENG ON DUTY:** Chalermporn Laomala
DATE OF LAST DRILL: 31 March 2025	**TIME STARTED:** 16:48 hrs.	**TIME FINISHED:** 17:15 hrs.	**TOTAL PARTICIPANTS:** Total 45 pax

OBJECTIVES & RESOURCES OF DRILL:

1. Fire Team A (attack team) and Team B (searching team) to familiarize themselves with the situation.
2. Guide personnel onboard in understanding how to manage the situations.
3. Practice communication and utilization of safety equipment and devices.
4. Build fluency and proficiency in the use of SCBA sets.
5. To ensure Medical Task Team understand the duties of each person and to ensure first aid equipment is ready to use.

SPECIFIC DETAILS OF SIMULATION (SCENARIO):

A smoke detector in Zone 4 detected smoke and triggered an alarm, alerting personnel. The CCR confirmed the smoke detection and announced an emergency to all personnel via the general alarm. However, the Storeman did not report to the assembly point because they tripped and fell in front of the store room.

Timeline	Detail
16:48 hrs.	CCR Operator activated emergency alarm and announced emergency, then instructing all crews to proceed to their muster stations.
16:59 hrs.	Headcount completed (PORT & STBD muster stations, medical task team, Attack team (A) and Searching Team (B)) and reported total POBs are 44 pax(Total 45 pax), missing 1 person.
17:02 hrs.	Field Manager reported the situation to Operation Manager.
17:02 hrs.	Fire team (A) and Fire team (B) fully equipped with fire suit and SCBA.
17:03 hrs.	CCR assign Fire team (A) proceeded to Lower deck of accommodation.
17:04 hrs.	CCR assigned Fire Team (B) to proceed to the storeroom to search for one missing person.
17:05 hrs.	The CCR instructed the Medical task team to prepare to receive IP at the clinic for first aid treatment.
17:06 hrs.	Fire Team (B) reported back to the CCR, confirming that they found the Storeman, who had sustained an injury to his right leg, and they will transfer IP to Clinic.
17:07 hrs.	Fire team (A) reported CCR Operator that fire is under control.
17:09 hrs.	CCR Operator inform Attack team (A) double check surrounding area to ensure no fire at other area., no liquid spill or damage on other equipment and area before back to fire team station.
17:10 hrs.	Fire team (A) and Fire team (B) back to fire team station.
17:15 hrs.	The medical task team provided initial first aid to the injured person and then reported back to the CCR.
17:15 hrs.	Drill is over.
17:30 hrs.	De-briefing.

Pre-incident Plan Form

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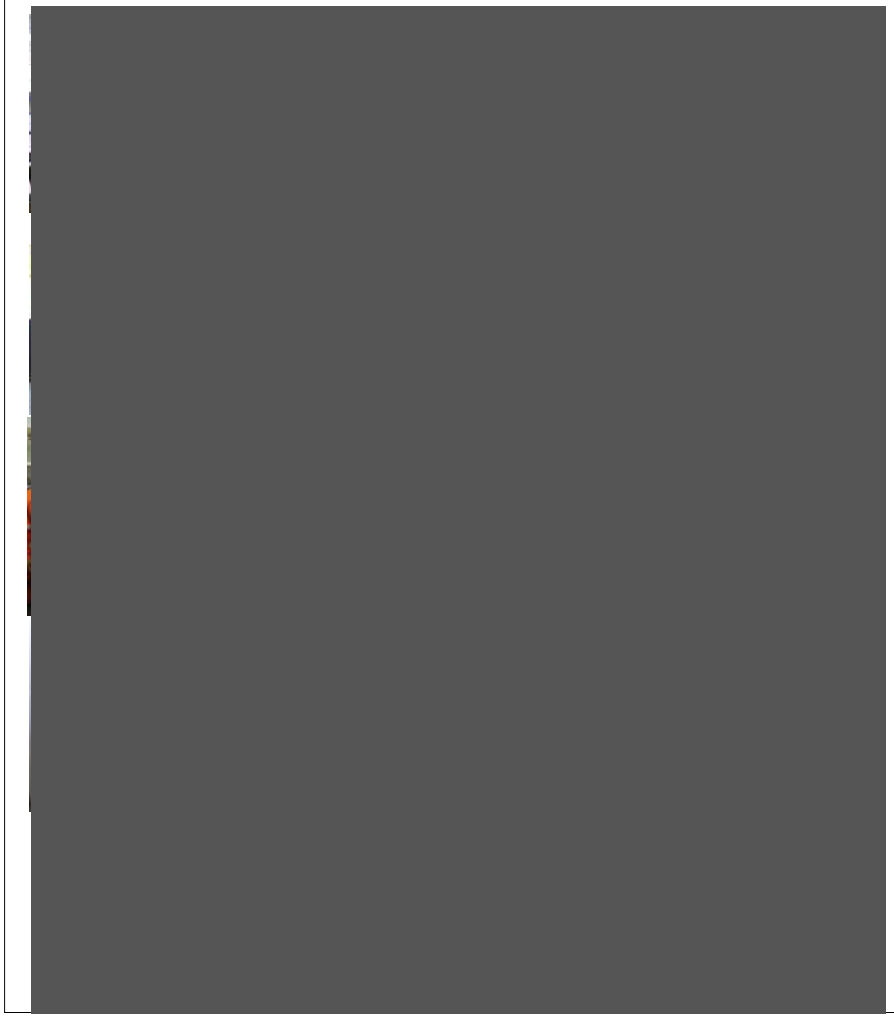
LOCATION OF SIMULATED OCCURRENCE: Wassana MOPU Ingenium

PICTURES:



NOTE:

- Complete reverse side of form. Attach copies of completed Muster Accounting Forms for all muster areas with listed no-shows.
- Attach copy of Safety and Good Operations meeting held to review drill.

(See Other Side)

OPERATION ACTIONS OBSERVATION:

YES	NO	REACT TEAM ACTIVITIES	YES	NO	MUSTER POINT ACTIVITIES
☒	☐	Reporting To Emergency Stations	☒	☐	Checklist Utilization
☒	☐	Checklist Utilization	☒	☐	Establishing Communication Coordination
☒	☐	Establishing Communication/Coordination	☒	☐	Head Count and Buddy System
☒	☐	Head Count and Buddy System	☒	☐	Reporting Personnel Count
☒	☐	Reporting Personnel Count	☒	☐	Identifying Missing Person(s)
☒	☐	Equipment Familiarization	☒	☐	Lifeboat Preparation
☒	☐	Situation Reporting	☒	☐	Re-assigning Personnel to Alternative Lifeboats
☒	☐	Obtaining Medical Assistance	☐	☒	Alternative Situations
☐	☒	Working In Conjunction with Field Boat			*CHECKED BY*: Apisit M. / Teerapong R.
☐	☒	Rescue Boat Launch and Recovery			
☒	☐	Planning Search and Rescue			
☒	☐	Simulated Rescue			
☒	☐	Simulated Equipment Usage			
☐	☒	Alternative Situations			
		CHECKED BY: Mongkolchai Saengsawang			
		FACILITY/ OPERATIONS CREW ACTIVITIES			
☒	☐	Reporting To Emergency Stations			
☒	☐	Checklist Utilization			
☒	☐	Establishing Communication/Coordination			
☒	☐	Reporting Personnel Count			
☒	☐	Simulate Emergency Duties			
☐	☐	Alternative Situations			
		CHECKED BY: Phairat N.			

COMMENTS:

Good Practices.

1. The Muster Checker can effectively resolve issues on the spot, especially when objects obstruct the muster point.
2. The Operations Supervisor can provide excellent command in responding to emergencies.
3. All POBs at muster stations familiarized with life jacket.
4. Debriefing session was held by Field Manager.

Suggestions for next emergency drill.

1. The T-card for the HWO team has two duplicate entries.
2. The firefighting suits in the fire cabinet is arranged alternately.

Pre-incident Plan Form

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OFFSHORE DRILL FREQUENCY AT LEAST ONE PER MONTH (WEATHER PERMITTING)

Report of Emergency Exercise: Muster Drill

The type of drill is required for Fire/ Explosion on basis, together with other drill types.

Type A

- ☐ **Aircraft/ Vessel incident**
- ☒ **Evacuation**
- ☐ **Medical emergency/ Man overboard**
- ☐ **Typhoon**

Type B

- ☐ **Well problem/ Blowout/**
- ☐ **Evacuation.**
- ☐ **Abnormal weather/ Natural Disaster**
- ☐ **Subsea Pipeline leak**

Type C

- ☐ **Equipment/ Structure failure**
- ☐ **Security/ Bomb threat**
- ☐ **Oil Spill/ HAZMAT**
- ☐ **Refugees**

Type D

- ☐ **Personal basket failure/ Man overboard.**
- ☐ **Missing person**
- ☐ **Search and Rescue**
- ☐ **Bad weather**

DATE: 14 Jul 2025	**LOCATION:** Wassana MOPU Ingenium		**SAFETY TECH / ENG ON DUTY:** Chalermporn Laomala
DATE OF LAST DRILL: 12 Jul 2025	**TIME STARTED:** 06.21 hrs.	**TIME FINISHED:** 06.35 hrs.	**TOTAL PARTICIPANTS:** Total 46 pax

OBJECTIVES & RESOURCES OF DRILL:

- There were more than 25 % crew changes.
- To guideline for all personnel onboard (regular crew, Experteam, ECM and Aggreko crew) to understanding how to manage the situations and mustering to muster stations.

SPECIFIC DETAILS OF SIMULATION (SCENARIO):

To preparing to all personnel onboard (regular crew members and service contractors) about emergency response plan and mustering to muster station in case of emergency occur.

CCR Operator activate emergency alarm and announcement emergency to all personnel onboard to proceed to their muster stations. And perform report headcount from each muster station to CCR.

Timeline	Detail
06.21 hrs.	CCR Operator activated emergency alarm and announced emergency to all personnel onboard to proceed to their muster stations.
06.28 hrs.	Headcount completed (PORT & STBD muster stations, Medical task team, Attack team (A) and Searching Team (B)) and reported total POBs are 50 pax, no missing person.
06.30 hrs.	Drill is over.
06.10 hrs.	De-briefing.

LOCATION OF SIMULATED OCCURRENCE: Wassana MOPU Ingenium

Pre-incident Plan Form

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PICTURES:

NOTE:

- Complete reverse side of form. Attach copies of completed Muster Accounting Forms for all muster areas with listed no-shows.
- Attach copy of Safety and Good Operations meeting held to review drill.

(See Other Side)

OPERTION ACTIONS OBSERVATION:

YES	NO	REACT TEAM ACTIVITIES	YES	NO	MUSTER POINT ACTIVITIES
☒	☐	Reporting To Emergency Stations	☒	☐	Checklist Utilization
☒	☐	Checklist Utilization	☒	☐	Establishing Communication Coordination
☒	☐	Establishing Communication/Coordination	☒	☐	Head Count and Buddy System
☒	☐	Head Count and Buddy System	☒	☐	Reporting Personnel Count
☒	☐	Reporting Personnel Count	☐	☐	Identifying Missing Person(s)
☐	☐	Equipment Familiarization	☒	☐	Lifeboat Preparation
☒	☐	Situation Reporting	☐	☐	Re-assigning Personnel to Alternative Lifeboats
☐	☐	Obtaining Medical Assistance	☐	☐	Alternative Situations
☐	☐	Working In Conjunction with Field Boat			*CHECKED BY*: Khun Jeerayut T.
☐	☐	Rescue Boat Launch and Recovery			Khun Apisit M.
☐	☐	Planning Search and Rescue			
☐	☐	Simulated Rescue			
☐	☐	Simulated Equipment Usage			
☐	☐	Alternative Situations			
		CHECKED BY: Chalermporn L.			
		FACILITY/ OPERATIONS CREW ACTIVITIES			
☒	☐	Reporting To Emergency Stations			
☒	☐	Checklist Utilization			
☒	☐	Establishing Communication/Coordination			
☒	☐	Reporting Personnel Count			
☒	☐	Simulate Emergency Duties			
☐	☐	Alternative Situations			
		CHECKED BY: Manop M.			

COMMENTS:

- The master checker must give orders to all crew members for headcount and efficiency.

OFFSHORE DRILL FREQUENCY AT LEAST ONE PER MONTH (WEATHER PERMITTING)

Report of Emergency Exercise: Fire and Abandon Ship Drills.

The type of drill is required for Fire/ Explosion on basis, together with other drill types.

Type A
- ☐ **Aircraft/ Vessel incident**
- ☒ **Evacuation**
- ☐ **Medical emergency/ Man overboard**
- ☐ **Typhoon**

Type B
- ☐ **Well problem/ Blowout/**
- ☐ **Evacuation.**
- ☐ **Abnormal weather/ Natural Disaster**
- ☐ **Subsea Pipeline leak**

Type C
- ☐ **Equipment/ Structure failure**
- ☐ **Security/ Bomb threat**
- ☐ **Oil Spill/ HAZMAT**
- ☐ **Refugees**

Type D
- ☐ **Personal basket failure/ Man overboard.**
- ☐ **Missing person**
- ☐ **Search and Rescue**
- ☐ **Bad weather**

DATE:	LOCATION:		SAFETY TECH / ENG ON DUTY:
25 October 2025	MOPU Ingenium		Wisit Damsanit
DATE OF LAST DRILL:	**TIME STARTED:**	**TIME FINISHED:**	**TOTAL PARTICIPANTS:**
17 October 2025	1648 hrs.	1710 hrs.	Total 42 pax

OBJECTIVES & RESOURCES OF DRILL:
1. Ensure Fire Teams are familiar themselves with the situation.
2. Ensure all personnel onboard are familiar with the escape techniques and mustering to muster stations.
3. Ensure all personnel onboard are understand alternative muster stations and evacuation routes.
4. Ensure all personnel onboard understand how to control the situation.
5. Ensure all personnel practice communication and utilize correct safety equipment and devices.
6. Familiarize all personnel with Abandon Ship.

SPECIFIC DETAILS OF SIMULATION (SCENARIO):

Flame detector (FD-02) and Gas Detector (GD-10 and GD-12) at Stage Separator B (20-V-01B) zone detected fire and activated alarm signal to fire control panel in Central Control Room (CCR). Then CCR Operator follow emergency response plan.

Timeline	Detail
1648 hrs.	Flame detector (FD-02) and Gas Detector (GD-10 and GD-12) at Stage Separator B (20-V-01B) zone detected fire and activated alarm signal to fire control panel in Central Control Room (CCR).
1648 hrs.	Sea water lift pump was automatic activated and deluges spraying water at all process area.
1648 hrs.	CCR Operator activated emergency alarm and announced emergency, then instructing all personnel to proceed to their muster stations.
1649 hrs.	Logistic Section Chief contact with Southern Nova Captain for inform situation on MOPU Ingenium. (simulate communication)
1649 hrs.	Logistic Section Chief contact with SC Universe Captain to standby in MOPU Ingenium zone. (simulate communication)
1652 hrs.	CCR Operator performed Process shutdown (PSD).
1652 hrs.	Field Manager reported the situation to Operation Manager.
1652 hrs.	Headcount completed and confirmed 42 pax, (STBD muster stations, Medical task team, Alpha Team and Bravo Team, and Incident commander team at CCR).
1654 hrs.	Alpha Team fully equipped with fire suit and SCBA proceeded to Stage Separator B (20-V-01B) zone for response fire situation as commandeered by OSC.
1654 hrs.	Bravo Team fully equipped with fire suit and SCBA standby and wait way-forward from OSC.
1658 hrs.	Alpha Team reported to OSC that fire is out of control.
1659 hrs.	OSC informed Alpha Team back to station, including Bravo Team to prepare for abandon ship at STBD muster station.
1659 hrs.	OSC informed to Medical task team proceeded to STBD muster station and prepare for abandon Ship.
1703 hrs.	Logistic Section Chief contact with Southern Nova Captain that all POBs on MOPU Ingenium will Abandon Ship. (simulate communication)

1703 hrs.	Field Manager announced and activated abandon alarm, and all POBs prepared for Abandon Ship at STBD Lifeboat.
1704 hrs.	Coxswain reported the STBD lifeboat being unavailable.
1705 hrs.	Muster Checker informed to all POBs prepared to alternative muster stations at PORT Lifeboat for Abandon Ship.
1707 hrs.	The drill is over.
1710 hrs.	De-briefing.

LOCATION OF SIMULATED OCCURRENCE: MOPU Ingenium

PICTURES:

[redacted]

[redacted]

NOTE:

- Complete reverse side of form. Attach copies of completed Muster Accounting Forms for all muster areas with listed no-shows.
- Attach copy of Safety and Good Operations meeting held to review drill.

(See Other Side)

OPERATION ACTIONS OBSERVATION:

YES	NO	REACT TEAM ACTIVITIES	YES	NO	MUSTER POINT ACTIVITIES
☒	☐	Reporting To Emergency Stations	☒	☐	Checklist Utilization
☒	☐	Checklist Utilization	☒	☐	Establishing Communication Coordination
☒	☐	Establishing Communication/Coordination	☒	☐	Head Count and Buddy System
☒	☐	Head Count and Buddy System	☒	☐	Reporting Personnel Count
☒	☐	Reporting Personnel Count	☒	☐	Identifying Missing Person(s)
☒	☐	Equipment Familiarization	☒	☐	Lifeboat Preparation
☒	☐	Situation Reporting	☒	☐	Re-assigning Personnel to Alternative Lifeboats
☐	☒	Obtaining Medical Assistance	☒	☐	Alternative Situations
☐	☒	Working In Conjunction with Field Boat			*CHECKED BY*: Phakdee Sriprapai
☐	☒	Rescue Boat Launch and Recovery			Jeerayut Thepkhamdee
☐	☒	Planning Search and Rescue			
☐	☒	Simulated Rescue			
☒	☐	Simulated Equipment Usage			
☒	☐	Alternative Situations			
		CHECKED BY: Phairat Ngampradablert			
		FACILITY/ OPERATIONS CREW ACTIVITIES			
☒	☐	Reporting To Emergency Stations			
☒	☐	Checklist Utilization			
☒	☐	Establishing Communication/Coordination			
☒	☐	Reporting Personnel Count			
☒	☐	Simulate Emergency Duties			
☒	☐	Alternative Situations			
		CHECKED BY: Pongsut Madbu			

COMMENTS:

Good Practices:
1. Achieved the objectives of the drills.
2. The emergency drills smoothly, there were no problems or issues during the drill because everyone gave importance to safety along with the drills.

Suggestions:
1. Staging Area Manager suggested to modify the B.A. Entry control board as a detachable board from the fire team cabinet. - Done
2. Everyone agreed to call OSC instead of CCR for all emergencies situations. - Done
3. Fire Team Leader suggested to build a roof at the fire team station because to prevent flooding on floor (after or during adverse weather condition such as raining etc.) and it can cause of delay and obstacle to fire team member while wearing fire suit and SCBA set. - On decisions of relevant person.

OFFSHORE DRILL FREQUENCY AT LEAST ONE PER MONTH (WEATHER PERMITTING)

Report of Emergency Exercise: Fire and Abandon Ship Drills.

The type of drill is required for Fire/ Explosion on basis, together with other drill types.

Type A

- ☐ **Aircraft/ Vessel incident**
- ☒ **Evacuation**
- ☐ **Medical emergency/ Man overboard**
- ☐ **Typhoon**

Type B

- ☐ **Well problem/ Blowout/**
- ☐ **Evacuation.**
- ☐ **Abnormal weather/ Natural Disaster**
- ☐ **Subsea Pipeline leak**

Type C

- ☐ **Equipment/ Structure failure**
- ☐ **Security/ Bomb threat**
- ☐ **Oil Spill/ HAZMAT**
- ☐ **Refugees**

Type D

- ☐ **Personal basket failure/ Man overboard.**
- ☐ **Missing person**
- ☐ **Search and Rescue**
- ☐ **Bad weather**

DATE:	**LOCATION:**		**SAFETY TECH / ENG ON DUTY:**
02 December 2025	MOPU Ingenium		Wisit Damsanit
DATE OF LAST DRILL:	**TIME STARTED:**	**TIME FINISHED:**	**TOTAL PARTICIPANTS:**
30 November 2025	1645 hrs.	1701 hrs.	Total 57 pax

OBJECTIVES & RESOURCES OF DRILL:

1. Ensure Fire Teams are familiar themselves with the situation.
2. Ensure all personnel onboard are familiar with the escape techniques and mustering to muster stations.
3. Ensure all personnel onboard understand how to control the situation.
4. Ensure all personnel practice communication and utilize correct safety equipment and devices.
5. Familiarize all personnel with Abandon Ship.

SPECIFIC DETAILS OF SIMULATION (SCENARIO):

Flame detector (FD-04) and Gas Detector (GD-15., GD-17., GD-18 and GD-19) at Hydrocyclone Unit zone detected fire and activated alarm signal to fire control panel in Central Control Room (CCR). Then CCR Operator follow emergency response plan.

Timeline	Detail
1645 hrs.	Flame detector (FD-04) and Gas Detector (GD-15., GD-17., GD-18 and GD-19) at Hydrocyclone Unit zone detected fire and activated alarm signal to fire control panel in Central Control Room (CCR).
1645 hrs.	CCR Operator activated emergency alarm and announced emergency, then instructing all personnel to proceed to their muster stations.
1647 hrs.	Logistic Section Chief contact with SC Universe Captain to standby in MOPU Ingenium zone. (simulate communication)
1647 hrs.	CCR Operator performed Process shutdown (PSD).
1647 hrs.	Sea water lift pump was automatic activated and deluges spraying water at all process area.
1648 hrs.	Headcount completed and confirmed 57 pax, (STBD muster stations, Medical task team, Alpha Team and Bravo Team, and Incident commander team at CCR).
1649 hrs.	Alpha Team fully equipped with fire suit and SCBA proceeded to Hydrocyclone Unit zone for response fire situation as command by OSC.
1649 hrs.	Bravo Team fully equipped with fire suit and SCBA standby and wait way-forward from OSC.
1650 hrs.	Field Manager reported the situation to Operation Manager.
1652 hrs.	Alpha Team reported to OSC that fire is out of control.
1653 hrs.	OSC informed Alpha Team back to station, including Bravo Team to prepare for abandon ship at STBD muster station.
1653 hrs.	OSC informed to Medical task team proceeded to STBD muster station and prepare for abandon Ship.
1653 hrs.	Logistic Section Chief contact with SC Universe Captain that all POBs on MOPU Ingenium prepared Abandon Ship. (simulate communication)
1656 hrs.	Field Manager announced and activated abandon alarm, and all POBs prepared for Abandon Ship at STBD Lifeboat.
1701 hrs.	The drill is over.
1705 hrs.	De-briefing.

LOCATION OF SIMULATED OCCURRENCE: MOPU Ingenium

PICTURES:

[redacted]

[redacted]

NOTE:

- Complete reverse side of form. Attach copies of completed Muster Accounting Forms for all muster areas with listed no-shows.
- Attach copy of Safety and Good Operations meeting held to review drill.

(See Other Side)

OPERATION ACTIONS OBSERVATION:

YES	NO	REACT TEAM ACTIVITIES	YES	NO	MUSTER POINT ACTIVITIES
☒	☐	Reporting To Emergency Stations	☒	☐	Checklist Utilization
☒	☐	Checklist Utilization	☒	☐	Establishing Communication Coordination
☒	☐	Establishing Communication/Coordination	☒	☐	Head Count and Buddy System
☒	☐	Head Count and Buddy System	☒	☐	Reporting Personnel Count
☒	☐	Reporting Personnel Count	☒	☐	Identifying Missing Person(s)
☒	☐	Equipment Familiarization	☒	☐	Lifeboat Preparation
☒	☐	Situation Reporting	☐	☒	Re-assigning Personnel to Alternative Lifeboats
☐	☒	Obtaining Medical Assistance	☐	☒	Alternative Situations
☐	☒	Working In Conjunction with Field Boat			*CHECKED BY*: Phakdee Sriprapai
☐	☒	Rescue Boat Launch and Recovery			Jeerayut Thepkhamdee
☐	☒	Planning Search and Rescue			
☐	☒	Simulated Rescue			
☒	☐	Simulated Equipment Usage			
☒	☐	Alternative Situations			
		CHECKED BY: Ratthawut Klumkoon			
		FACILITY/ OPERATIONS CREW ACTIVITIES			
☒	☐	Reporting To Emergency Stations			
☒	☐	Checklist Utilization			
☒	☐	Establishing Communication/Coordination			
☒	☐	Reporting Personnel Count			
☒	☐	Simulate Emergency Duties			
☒	☐	Alternative Situations			
		CHECKED BY: Manop Mamee			

COMMENTS:

Good Practices:
1. Achieved the objectives of the drills.
2. The emergency drills smoothly, there were no problems or issues during the drill because everyone gave importance to safety along with the drills.

Suggestions:
Suggested to assign special duty to key person (personnel of MOPU regular crew) of each Lifeboat for control situation inside lifeboat in case of abandon ship such as Medic takes care of the mental health and illness of the crew members and Safety Technician takes care about emergency food and fresh water etc.

DRILL TITLE:	*Fire drill (Fire in Engine room).*	**DATE / TIME:**	*05-Oct-2025 / 1145 - 1200LT*
FACILITY:	*FSO JAKA TARUB*	**DRILL DURATION:**	*15 Mins*

Brief Description of the drill scenario: (Simulated only)

1145: Continuous alarm sounded raised, followed by PA announcement by the Master: “Fire in Engine Room Drill” (3 times).

1146: All crew mustered at their designated Muster Stations with emergency equipment. Each Party conducted a headcount and reported to the Command Center. The Command Center instructed all Parties to respond to the engine room fire according to their duties.

1147: Roving Party informed the Command Center that the Electrician had cut off electrical power and shut down the engine room ventilation system.

1149: Emergency Party 2 prepared for firefighting. 2 firefighters donned BA sets, both with a pressure 200 bar. Fire hoses were prepared, and Second Engineer reported to the Command Center that the team was ready. Emergency Party 1 stand-by as the backup team.

1150: The Command Center instructed Emergency Party 2 to enter the engine room to search for and fight the fire. The Roving Party started the Emergency Fire Pump. Emergency party 1 standby fire hose on deck during emergency fire pump started.

1153: Firefighting Team 2 reported to Second Engineer that the fire was found minor fire at inlet pipeline of Power Pack no.5. and shut inlet valve, then extinguish the fire with a portable extinguisher.

1158: Firefighting team informed Second Engineer that the fire was under control and no fire remained.

1159: Second Engineer confirmed that there were no remaining hotspots and reported the situation as under control to the Command Center.

1200: The Command Center called off the fire drill.

DRILL EVALUATION (By Master/ Marine Supervisor)		
Please mark appropriate box and if answer is NO give details in comments section	**YES**	**NO**
Was a debriefing held?	√	
Did all personnel muster correctly and all stations report to Bridge?	√	
Was mustering completed in timely manner, i.e., 2 to 3 minutes maximum?	√	
Did personnel muster wearing correctly donned lifejackets?	*N/A*	
Was all emergency equipment ready for use and in good working condition?	√	
Were personnel familiar with use of required emergency equipment and specific duties?	√	
Were communications between Emergency Squads and Bridge satisfactory?	√	
Did personnel understand and follow procedures satisfactorily?	√	
ADDITIONAL QUESTIONS FOR ENCLOSED SPACE DRILLS		
Is PPE required for entry been checked?	*N/A*	
Is communication equipment and procedure been checked for entry?	*N/A*	
Is instrument uses for measuring the atmosphere in enclosed space been checked?	*N/A*	
Is rescue equipment and procedures been checked?	*N/A*	
Are rescuers familiar with first aid and resuscitations techniques?	*N/A*	
ADDITIONAL QUESTIONS FOR POLLUTION RELATED DRILLS		
Was Initial Report prepared and forwarded efficiently to DPA & Main Office?	*N/A*	
Was sampling / recording spilled product conducted satisfactorily?	*N/A*	

IMPROVEMENT OPPORTUNITY / NON-CONFORMANCE IDENTIFIED	Action By	Date

[redacted]

OIM

[redacted]

Master / Marine Supervisor

NOTE:

Ensure POB list is attached for Muster Drill
Separate Records MUST be completed for each drill carried out
An entry must be made in Bridge Logbook noting title and duration of drill including lifeboat lowered to water
Improvement opportunity / Non-conformance that needs onshore assistance shall go through CAR process for approval

DRILL & EXERCISE LOG

DRILL TITLE:	*Oil spill Drill (Hose Burst, Cargo Pipe Fracture or Cargo Overflow)*	**DATE / TIME:**	*05-Oct-2025 / 1130 - 1145 LT*
FACILITY:	*FSO JAKA TARUB*	**DRILL DURATION:**	*15 Mins.*

Brief Description of the drill scenario: (Simulator only)

1130: Master raised the emergency alarm followed by a PA announcement: “Oil spill drill 3 times.”

1131: All crew mustered at their designated Muster Stations. Party Leaders conduct headcounts and report to the Command Center confirming all crew muster except duty crew.

1133: Command Center instructed Party Leaders to brief their respective teams on their emergency response duties as oil spill during cargo overflow.

1135: Chief Officer conducted a briefing for all crew members, explaining procedures for responding to pollution incidents, Identify and isolate the source of the overflow. Activate the SOPEP. Contain the spill using scupper plugs, oil absorbent pads, booms, and sawdust to prevent oil from entering the sea. Close all scuppers and overboard valves in the affected area. Record all actions and report to relevant authorities (Port, Company, and Coastal State). Clean up and recover spilled oil.

1145: Master called off the drill and order to secure all related equipment back.

DRILL & EXERCISE LOG

DRILL EVALUATION (By Master/ Marine Supervisor)		
Please mark appropriate box and if answer is NO give details in comments section	**YES**	**NO**
Was a debriefing held?	√	
Did all personnel muster correctly and all stations report to Bridge?	√	
Was mustering completed in timely manner, i.e., 2 to 3 minutes maximum?	√	
Did personnel muster wearing correctly donned lifejackets?		√
Was all emergency equipment ready for use and in good working condition?	√	
Were personnel familiar with use of required emergency equipment and specific duties?	√	
Were communications between Emergency Squads and Bridge satisfactory?	√	
Did personnel understand and follow procedures satisfactorily?	√	
ADDITIONAL QUESTIONS FOR ENCLOSED SPACE DRILLS		
Is PPE required for entry been checked?	*N/A*	
Is communication equipment and procedure been checked for entry?	*N/A*	
Is instrument uses for measuring the atmosphere in enclosed space been checked?	*N/A*	
Is rescue equipment and procedures been checked?	*N/A*	
Are rescuers familiar with first aid and resuscitations techniques?	*N/A*	
ADDITIONAL QUESTIONS FOR POLLUTION RELATED DRILLS		
Was Initial Report prepared and forwarded efficiently to DPA & Main Office?	*N/A*	
Was sampling / recording spilled product conducted satisfactorily?	√	

IMPROVEMENT OPPORTUNITY / NON-CONFORMANCE IDENTIFIED	Action By	Date

[redacted]

OIM

[redacted]

Master / ~~Marine Supervisor~~

NOTE:

Ensure POB list is attached for Muster Drill
Separate Records MUST be completed for each drill carried out
An entry must be made in Bridge Logbook noting title and duration of drill including lifeboat lowered to water
Improvement opportunity / Non-conformance that needs onshore assistance shall go through CAR process for approval

DRILL TITLE :	Table-top drill – Typhoon Evacuation	**DATE / TIME :**	*30-Oct-2025 / 0830 -1130 LT*
FACILITY:	FSO JAKA TARUB	**DRILL DURATION :**	180 Mins

Preamble

The tabletop drill for typhoon evacuation was conducted on this occasion by the VE, following a recommendation from the DMF.

The participating parties included:

- VE as the Crisis Response Team (CRT) located in Bangkok
- SRT (Site Response Team) - Wassana and Nongyao FM
- FSO *Jaka Tarub*
- FSO *Aurora*
- PSV(s) standing by onsite field

The drill scenario commenced with Situation Inject 1, activated by OWS (Khun Pativej) via email on 30 September 2025 at 08:30 hrs LT (GMT+7). The exercise will continue with subsequent injects up to Situation Inject 5, each scheduled at 30 minutes interval.

The detailed scenario timeline is as follows:

Scenario Timeline	Tabletop Exercise Timeline		Actions	Onsite
	Storm Forecast (OWS)	SRT and CRT Exercise		
28 Sep	Situation Inject 1	08.30 am	SRT – Review Typhoon guideline – Prepare information (POM, all support resources) – Discussion between NY and WAS – SRT update OM	NY MS-team → BKK HSSE team 1 WAS MS-team → BKK HSSE team 2
29 Sep	Situation Inject 2	09.00 am		
30 Sep	Situation Inject 3	09.30 am	Activated CRT (ECC)	
01 Oct	Situation Inject 4	10.00 am		
02 Oct	Situation Inject 5	10.30 am		

Tabletop Drill Progression – FSO *Jaka Tarub*

A. On 28-Sep-2025 (Situation Inject 1)

Exercise Exercise Exercise

FSO activities: Preparation Stage

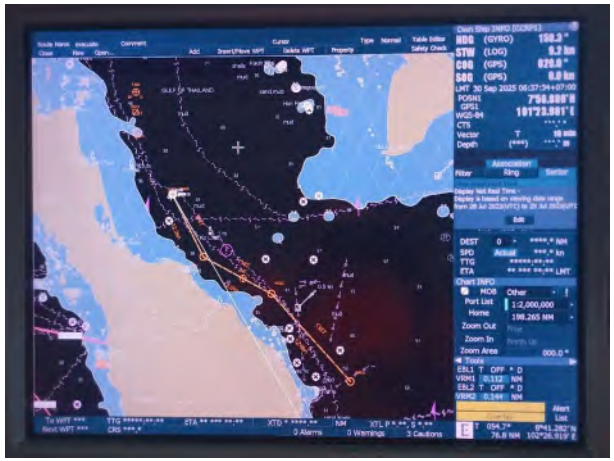
a. Check and confirm that all tools and equipment required for floating hose disconnection are in the forward toolbox.
b. Ensure the D/G, power pack, COP, and valves are in satisfactory condition, in case the loading and produced water hoses, including export hoses, need to be flushed.
c. Ensure all loose equipment and materials on deck and within the accommodation are properly lashed and securely fastened.
d. Secure all watertight doors and compartments in preparation for rough weather.
e. Ensure all communication equipment is in satisfactory working condition.
f. Ensure the ship's stability meets the requirements for seaworthiness.
g. Ensure that all consumable (fuel, lub. oil, water) are sufficient in case required for sailing to shelter areas.

ROB

- DO : 500 MT (20 MT/day during sailing)
- LO : Sufficient

- Water : 200 MT (20 MT/day with RO Plan capacity 25 MT/day)

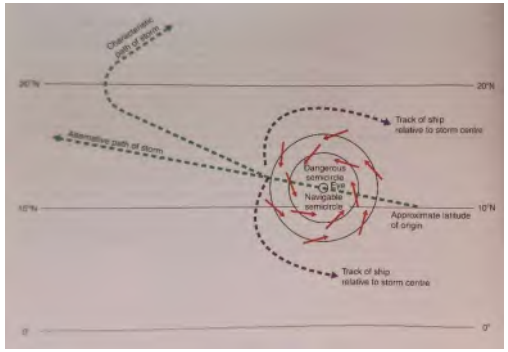
h. Please confirm satisfactory condition of all navigational equipment and ensure a passage plan to the shelter area is ready for immediate use.
   - Shelter area : Northern Malaysia (SE from Wassana)
   - Distance : 251 NM
   - Steaming time : 21 hrs with speed 12 kts



i. POB = 25 pax
j. Check to ensure that provisions are sufficient for next 30 days.
k. Conduct QRH release briefing for crew members.
l. QRH tension (max) = 50 tonnes
m. Criteria based on the CALM Hoses Disconnection Procedure Rev.3

(Actual)	(Forecast condition)		Action
Hawser tension (tonnes)	Significant wave - Hs (m)	Wind speed (knots)	
> 60 tonnes (Manual local release)	> 3.5	> 30	Production shutdown and flush loading, produce water, loading and export hoses.
> 100 tonnes	> 3.5	> 30	All hoses disconnected.
150 tonnes 3 times in one hour	> 4	> 30	Disconnect FSO from Calm buoy
200 tonnes 1 time	> 4	> 30	Disconnect FSO from Calm buoy

Safe distance to center of TS is at least 200 NM radius. Navigable track for northern hemisphere is on portside of semicircle to southeasterly (SE-ly).



B. On 29-Sep-2025 (Situation Inject 2)

Exercise Exercise Exercise

a. POB = 25 pax
b. All crew evacuation via FSO Jaka Tarub
c. FSO skeleton crew = none (pax)
d. FSO non-essential crew = none (pax)
e. Received non-essential personnel from MOPU = none (pax)
f. Provision is sufficient for next 29 days.
g. The toolbox is in place and ready to use for hose disconnection.
h. All deck machinery was tested and found in satisfactory condition.
i. All machinery in engine room including the main engine was tested and found in satisfactory condition.
j. All loose items on deck & accommodation lashed & secured.
k. Communication will be maintained via email, VHF radio, and VoIP phones.
l. Ship stability was approved as categorized in the principles of ship stability and seaworthiness.
m. Consumables:

ROB

DO : 490 MT (20 MT/day during sailing)
LO : Sufficient
Water : 210 MT (20 MT/day with RO Plan capacity 25 MT/day)

n. QRH tension (max) = 60 tonnes

C. On 30-Sep-2025 (Situation Inject 3)

Exercise Exercise Exercise

a. POB = 25 pax
b. All crew evacuation via FSO Jaka Tarub
c. FSO skeleton crew = none (pax)

d. FSO non-essential crew = none (pax)
e. Received non-essential personnel from MOPU = none (pax)
f. Provision is sufficient for next 28 days.
g. Consumables:

ROB

DO : 480 MT (20 MT/day during sailing)
LO : Sufficient
Water : 215 MT (20 MT/day with RO Plan capacity 25 MT/day)

a. QRH tension (max) = 70 tonnes
b. All machinery in engine room, including the main engine were retested and found in satisfactory condition.

D. On 01-Oct-2025 (Situation Inject 4)

Exercise Exercise Exercise

a. POB = 25 pax
b. All crew evacuation via FSO Jaka Tarub
c. FSO skeleton crew = none (pax)
d. FSO non-essential crew = none (pax)
e. Received non-essential personnel from MOPU = none (pax)
h. Provision is sufficient for next 27 days.
i. FSO crew is preparing to disconnect and secure equipment. Waiting for the shutdown instruction from MOPU.
j. Oil production was shutdown.
k. Produce water and loading hoses are ready to be flushed.
l. Produce water and loading hoses were flushed and clear from oil.
m. FM advised the OIM of FSO *Jaka Tarub* to disconnect both hoses, as practicable, once readiness was confirmed.
f. Produce water and loading hoses were disconnected.
g. QRH hydraulic system has been pressurized. The securing pin was unpinned. FSO is ready to disconnect from the CALM buoy.
n. Main engine is on standby and ready to start anytime.
h. All navigation equipment is in satisfactory working conditions, and the route plan on ECDIS was activated.

- Shelter area : Northern Malaysia (SE from Wassana)
- Distance : 251 NM
- Steaming time : 21 hrs with speed 12 kts

i. FSO was disconnected from CALM buoy on 01-Oct-2025/1600 hrs LT.
Passing 500-meter exclusive zone on 01-Oct-2025/1612 hrs LT.
M/E Full away on 01-Oct-2025/1630 hrs LT.
j. Consumables:

ROB

DO : 470 MT (20 MT/day during sailing)
LO : Sufficient
Water : 220 MT (20 MT/day with RO Plan capacity 25 MT/day)

E. On 02-Oct-2025 (Situation Inject 5)

Exercise Exercise Exercise

a. POB = 25 pax

b. Provision is sufficient for next 26 days.

c. FSO was passed Thailand Gulf and entering South China Sea at 02-Oct-2025/0200 hrs LT.
FSO are away from center of TS more than 150 NM.

GPS Pos. : 06°00.00'N 103°15.00'E
Speed : 12.0 kts
ETA : 02-Oct-2025 at 14.30 hrs. (UTC +8)
Status : FSO and crew onboard are in safe condition.

d. FSO are away from center of TS more than 200 NM.

GPS Pos. : 04°30.00'N 104°00.00'E
Speed : 12.0 kts
ETA : 02-Oct-2025 at 14.30 hrs (UTC +8)
Status : FSO and crew onboard are in safe condition.

e. FSO are away from center of TS more than 250 NM.

GPS Pos. : 04°18.00'N 104°06.00'E
SBE/EOSP : 02-Oct-2025 at 14.00 hrs (UTC +8)
Status : FSO and crew onboard are in safe condition.

Consumables:

ROB

DO : 450 MT (20 MT/day during sailing)
LO : Sufficient
Water : 225 MT (20 MT/day with RO Plan capacity 25 MT/day)

Drill is over

DRILL EVALUATION (By Master/ Marine Supervisor)		
Please mark appropriate box and if answer is NO give details in comments section	**YES**	**NO**
Was a debriefing held?	√	
Did all personnel muster correctly and all stations report to Bridge?	*N/A*	
Was mustering completed in timely manner, i.e., 2 to 3 minutes maximum?	√	
Did personnel muster wearing correctly donned lifejackets?	*N/A*	
Was all emergency equipment ready for use and in good working condition?	*N/A*	
Were personnel familiar with use of required emergency equipment and specific duties?	*N/A*	
Were communications between Emergency Squads and Bridge satisfactory?	*N/A*	
Did personnel understand and follow procedures satisfactorily?	√	
ADDITIONAL QUESTIONS FOR ENCLOSED SPACE DRILLS		
Is PPE required for entry been checked?	*N/A*	

Is communication equipment and procedure been checked for entry?	*N/A*	
Is instrument uses for measuring the atmosphere in enclosed space been checked?	*N/A*	
Is rescue equipment and procedures been checked?	*N/A*	
Are rescuers familiar with first aid and resuscitations techniques?	*N/A*	
ADDITIONAL QUESTIONS FOR POLLUTION RELATED DRILLS		
Was Initial Report prepared and forwarded efficiently to DPA & Main Office?	*N/A*	
Was sampling / recording spilled product conducted satisfactorily?	*N/A*	

IMPROVEMENT OPPORTUNITY / NON-CONFORMANCE IDENTIFIED	Action By	Date

OIM

Master / Marine Supervisor

NOTE:

Ensure POB list is attached for Muster Drill
Separate Records MUST be completed for each drill carried out
An entry must be made in Bridge Logbook noting title and duration of drill including lifeboat lowered to water
Improvement opportunity / Non-conformance that needs onshore assistance shall go through CAR process for approval

DRILL TITLE:	*Rescue Boat / MOB drill.*	**DATE / TIME:**	*16-Nov-25 / 1100-1120 LT*
FACILITY:	*FSO JAKA TARUB*	**DRILL DURATION:**	*20 Mins.*

Brief Description of the drill scenario:

1100: The Master activated the emergency general alarm, followed by three prolonged blasts. A public address announcement was made “Man Overboard Drill” three times.

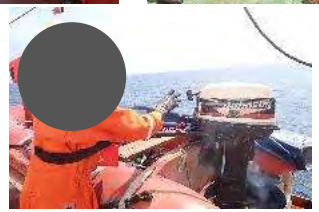
1102: The Officer of the Watch (OOW) activated the Man Overboard (MOB) button on the ECDIS, broadcasted an urgency message on the appropriate communication channels, and hoisted the signal flag “Oscar (O)” (simulation only).

1105: All crew members promptly mustered at their designated emergency stations. Each party leader conducted a headcount of their respective teams and reported to the Master that all personnel were accounted for, except the duty crew.

1108: The Chief Officer provided a thorough briefing on the rescue procedures to be followed during an actual man overboard event. A visual inspection of the rescue boat hull was carried out. The outboard engine was started and tested, the rescue boat davit testing. 4

and all rescue-related equipment was checked and confirmed to be in good working condition. Once all checks and procedures were satisfactorily completed

1120: Master called off the drill.



DRILL EVALUATION (By Master/ Marine Supervisor)		
Please mark appropriate box and if answer is NO give details in comments section	**YES**	**NO**
Was a debriefing held?	√	
Did all personnel muster correctly and all stations report to Bridge?	√	
Was mustering completed in timely manner, i.e., 2 to 3 minutes maximum?	√	
Did personnel muster wearing correctly donned lifejackets?	√	
Was all emergency equipment ready for use and in good working condition?	√	
Were personnel familiar with use of required emergency equipment and specific duties?	√	

Were communications between Emergency Squads and Bridge satisfactory?	√	
Did personnel understand and follow procedures satisfactorily?	√	
ADDITIONAL QUESTIONS FOR ENCLOSED SPACE DRILLS		
Is PPE required for entry been checked?	*N/A*	
Is communication equipment and procedure been checked for entry?	*N/A*	
Is instrument uses for measuring the atmosphere in enclosed space been checked?	*N/A*	
Is rescue equipment and procedures been checked?	*N/A*	
Are rescuers familiar with first aid and resuscitations techniques?	*N/A*	
ADDITIONAL QUESTIONS FOR POLLUTION RELATED DRILLS		
Was Initial Report prepared and forwarded efficiently to DPA & Main Office?	*N/A*	
Was sampling / recording spilled product conducted satisfactorily?	*N/A*	

IMPROVEMENT OPPORTUNITY / NON-CONFORMANCE IDENTIFIED	Action By	Date

[redacted]

OIM

[redacted]

Master / ~~Marine Supervisor~~

NOTE:

Ensure POB list is attached for Muster Drill
Separate Records MUST be completed for each drill carried out
An entry must be made in Bridge Logbook noting title and duration of drill including lifeboat lowered to water
Improvement opportunity / Non-conformance that needs onshore assistance shall go through CAR process for approval

เอกสารแนบที่ 47

เอกสารการให้บริการทางการแพทย์

โดยบริษัท International SOS Services (Thailand) Limited

MEDICAL EVACUATION RESPONSE PLAN (MERP)

Client: Valeura Energy (Thailand) Ltd. – Wassana

MOPU Ingenium

Project Membership No.: 03APAA095659

Location:

Wassana field, Offshore Gulf of Thailand

Latitude: 07 56'33 N

Longitude: 101 22' 50 E

Created Date: 06.05.2015

Updated Date: 14th Nov 2025 **Version: 7.6**

WORLDWIDE REACH. HUMAN TOUCH.

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This document contains information related to emergency response planning and actions for onshore projects.

This Medical Evacuation Response Plan is subject to change in light of experience and feedback and it is the responsibility of all potential users, including but not only any Medic or Physician deployed, to review the plan on arrival on board and contact Intl.SOS if any difficulties seem likely in making use of the plan.

This is not a First Phase Evacuation plan and does not include responsibilities for all necessary activities related to onshore incident management whether or not patients and casualties are involved (e.g. H_2S emergency, riot / insurrection, man overboard, epidemic quarantine, etc.).

Author

This document was prepared by the Project Access team, Consulting Knowledge Centre.

Reviewers

This document was issued for review to:

Name	Date
BKK MERP Team	20 November 2023

Correspondence

All correspondence regarding this report should be directed to:

Punyaroj Nidhidatipong	Business Development Manager
International SOS Tel: +6681 376 4882	[redacted]

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Acronyms and Definitions

AP	**Authorised Person:** The representative identified to act on behalf of a company if a medical emergency involving one of its employees occurs on-site. We recommend that the company nominates several employees to act on its behalf. International SOS must be able to contact one of your company's APs at all times. The AP is always called for financial authorisation prior to International SOS performing a billable service. Throughout the course of the case, we will provide routine updates to keep the AP fully informed of the status and progress of events. We may also contact him/her for advice on how your company would like a case to be handled.
BDM	**Business Development Manager:** International SOS' sales staff who liaises with the client for business and account maintenance issues.
RCD	**Response Centre Doctor:** International SOS' duty physician rostered for 24 hours to take medical calls.
Definitive Care Facility	**Hospital/Clinic** where patients can be admitted for specialised and comprehensive medical care, with the ultimate aim of providing final medical treatment for the patient's condition.
First Phase Evacuation	**First Phase Evacuation:** A plan that is developed and managed by Valeura Energy (Thailand) Ltd. – Wassana , and entails the movement of the patient from the MOPU Ingenium (Mobile Offshore Production Unit) to a patient handover point.
In-Transit Care Facility	**Hospital/Clinic** where patients can be admitted for stabilisation prior to onward movement to the nearest level of upgraded care or the definitive care facility.
MD	**Medical Director:** International SOS' on-duty physician rostered 24 hours to oversee medical assistance, and to be notified of all potential or impending medical transports and disembarkations.
Patient Handover Point	**Patient Handover Point:** A pre-identified location from where the patient will be entrusted to International SOS, for future care, treatment and case monitoring. This pre-identified location is mutually agreed upon by the client and International SOS, prior to MERP mobilisation.
ROMIF	**Release of Medical Information Form:** This form is used for 2 purposes: 1. It enables a medical professional to release medical data to International SOS. 2. It allows International SOS to release medical data to certain identified third parties to assist the patient. Appendix 3: Release of Medical Information Form
Second Phase Evacuation	**Second Phase Evacuation:** This plan is developed and managed by International SOS, and entails the movement of the patient from the patient handover point to the nearest level of upgraded care or the definitive care facility.

1. Objectives of this Document

A Medical Evacuation Response Plan (MERP) explains the Second Phase Evacuation plan, i.e. the movement of the ill/injured employee from the patient handover point to the nearest level of upgraded care or the definitive care facility. It also includes references to the First Phase Evacuation plan that Valeura Energy (Thailand) Ltd. – Wassana has on-site.

This document is colour coded to clearly explain who does what, i.e.:

	Valeura Energy (Thailand) Ltd. – Wassana to verify First Phase Evacuation data in the MERP on a regular basis and update International SOS.
	Remote site medical services contracted by International SOS for MOPU Ingenium, to be provided by Intl.SOS and authorised by **Valeura Energy (Thailand) Ltd. – Wassana**
	International SOS to document, verify, retain and update Second Phase Evacuation data in the MERP.

Disclaimer: *This document addresses only medical emergencies. It does not cover other types of emergency planning, such as fires, security breaches or threats, disaster response, environmental issues, etc. Planning for medical emergencies should be integrated with these other types of planning as part of a master global emergency response plan.*

2. Summary of MERP

Mobile Offshore Production Unit (MOPU) Ingenium is the processing facility, which is currently located offshore of Songkhla, Thailand for carrying out offshore operational activities at Wassana field, Offshore Gulf of Thailand. There 50 personnel present on-board. In addition, **Intl.SOS has deployed two medics on-board.**

For **First Phase of Evacuation**, patient will be transferred from MOPU Ingenium location to the Songkhla port or Songkhla Navy Airport (patient handover point) via support vessel or helicopter, activated by Wassana Field Manager.

Valeura Energy (Gulf of Thailand) Ltd is responsible for the first phase evacuation including the helicopter activation.

The medical escort team is based in Bangkok Hospital Hatyai. For incidents where patients have to be transferred via helicopter, International SOS Bangkok Assistance Centre will activate, brief and coordinate the medical escort team. Please refer to Escort medic activation flowchart, as below, for detailed process.

Travel time from project location to Songkhla port via support vessel is approximately 9-12 hrs.
Flying time from project location to Songkhla airport via helicopter is 45 minutes

There is stretcher on board, which can be winched.

For second phase of evacuation, Intl.SOS will transfer the patient from Songkhla port to an in-transit medical facility in Songkhla. If and when required, patient will be transferred to a definitive care facility in Bangkok or Singapore using an air ambulance or commercial airlines as recommended by Intl.SOS. The movement will occur via the transport provider identified by International SOS as most suitable. Further repatriation can also be organised, if required.

โรงพยาบาลกรุงเทพ BANGKOK HOSPITAL หาดใหญ่ • HATYAI
INTERNATIONAL SOS

Medical Escort Activation Flowchart for Bangkok Hospital Hatyai

Intl.SOS to contacts Nurse Supervisor via dedicated phone number 24/7 (Mobile phone +66 (0) 74 272 834 or +66 (0) 74 272 807) to activate the medical escort and provided medical information to Nurse Supervisor.

↓

Nurse Supervisor notify the case to Emergency doctor on duty and activates medical escort (s) and equipment within 10 minutes after receives the first call from Intl.SOS

↓

Intl.SOS to provide Nurse Supervisor contact detail (point of contact) to Valeuraenergy.

1. Malai Wongsiriworakul, Passenger/ Flight Coordinator Songkhla Base
   Mobile: +66 92 260 2390; Email: TH.SKL-Hangar@valeuraenergy.com
2. Korrakot Sinanan, Passenger/ Flight Coordinator Songkhla Base
   Mobile: +66 65 726 7558; Email: TH.SKL-Hangar@valeuraenergy.com

↓

Intl.SOS to provide contact detail of Passenger/ Flight Coordinator Songkhla Base to Nurse Supervisor to contact of the arrangement to meet the helicopter.

↓

Medical escort teams from BKK Hatyai Hospital are ready to serve at
- Bangkok Hospital Hatyai's helipad within 30 minutes
- Songkhla Hanga heli-base within 60 minutes

3. Responsibilities for First and Second Phase Evacuations

On-Site International SOS Medical Staff – On-Site Response

1. Stabilise and provide initial treatment to the patient according to employer's protocols, and assess further needs.
2. Contact International SOS Bangkok Assistance Centre and discuss the case with the coordinating doctor (CD); also inform the on-duty site manager of the incident and recommendation.
3. Provide patient particulars (including name, nationality, passport details, insurance details, etc.) to the Bangkok Assistance Centre.
4. Forward the completed Medsite Medical Escalation Report, provided in appendix 2.
5. Obtain patient's consent for International SOS to access patient medical records. Forward the completed and signed Release of Medical Information Form (ROMIF), provided in appendix 3.
6. Follow up the first phone call with verbal and written updates, including patient movement.
7. Provide patient escort, if necessary.

Valeura Energy (Thailand) Ltd. – Wassana –First Phase Evacuation

1. Make pre-identified local transport assets and/or local transport providers under company's control available for First Phase Evacuation, according to section 6.
2. It is the responsibility of Valeura Energy (Thailand) Ltd. – Wassana to ensure International SOS is in possession of the latest information related to First Phase Evacuation plan.
3. Manage and implement the First Phase Evacuation plan.
4. Prepare patient's travel necessities, including passport, other travel documents, clothes, etc.
5. Escalate internally, as appropriate.
6. Inform patient's next of kin, as appropriate.
7. Based on appropriate medical verbal/written communication from International SOS, Valeura Energy (Thailand) Ltd. – Wassana to authorise International SOS to activate necessary resources for repatriation or evacuation and/or guarantee medical expenses, as required.

International SOS – Medical Monitoring and Second Phase Evacuation

1. Give medical advice and guidance on diagnosis and treatment to the on-board medic.
2. Assistance Centre doctor to recommend whether the patient should be treated on location or at an in-transit care facility.
3. Assistance Centre doctor to also recommend patient movement considering Valeura Energy (Thailand) Ltd. – Wassana's logistics and First Phase Evacuation plan.
4. Contact the designated AP and discuss the case medically, while highlighting any need for a Second Phase Evacuation.
5. Implement and manage the Second Phase Evacuation plan.
6. Organise admission at an appropriate medical facility for Second Phase Evacuation.
7. Organise onward repatriation, if required and requested, beyond Second Phase Evacuation.
8. Keep APs and Valeura Energy (Thailand) Ltd. – Wassana management updated on the case.

4. Key Information

4.1 International SOS Assistance Centre

Primary International SOS Assistance Centre: **Bangkok Assistance Centre**	**Secondary International SOS Assistance Centre:** **Kuala Lumpur**
Dedicated Tel: +66 2 206 7747 **Email:** Bangkok@internationalsos.com	**Tel:** +603 2787 3173 **E-mail:** kualalumpur@internationalsos.com

4.2 Authorised Person Details

[redacted]

4.3 Case Management Instructions	
Notification of Case:	**1. Work Related Injury (WRI) Disembarkation:** **1.1 Emergency Disembarkation Cases (ED):** Notify AP1 by phone call (AP2, AP3, AP4 if AP1 is not reachable) followed by an email notification to: Notification email address: th.hsse-isos@valeuraenergy.com **1.2 Non-Emergency Disembarkations (NED):** Notify AP1 by phone call (AP2, AP3, AP4 if AP1 is not reachable) followed by an email notification to: Notification email address: th.hsse-isos@valeuraenergy.com ========== **2. Non – WRI (Work Related Injury) Disembarkation:** **2.1 Emergency Disembarkation Cases (ED):** Notify AP1 by phone call (AP2, AP3, AP4 if AP1 is not reachable) followed by an email notification to: Notification email address: th.hsse-isos@valeuraenergy.com **2.2 Non-Emergency Disembarkations (NED):** Notify AP1 by phone call (AP2, AP3, AP4 if AP1 is not reachable) followed by an email notification to: Notification email address: th.hsse-isos@valeuraenergy.com ========== **3. Treatment on Board:** **3.1 Treatment on Board for Work Related Injury (WRI) Cases:** Notify AP1 by phone call follow by an email to Wassana Field Manager only, no need for following update unless disembarkation: Wassana Field Manager: TH.Wassana-fldmgr@ValeuraEnergy.com **3.2 Treatment on Board for Routine Medical Cases (non - WRI):** Email notification to Wassana Field Manager only, no need for following update unless disembarkation Wassana Field Manager: TH.Wassana-fldmgr@ValeuraEnergy.com
Insurance Details:	Liberty Insurance Pte. Ltd
Delegated Authority:	In the event of an Emergency Disembarkation (ED) that necessitates Escort Medical Personnel to provide medical care during the patient's transfer back to onshore, International SOS must first obtain verbal approval from a VE Authorized Person to activate the Escort Medical Personnel. (Refer to the Master Services Agreement under schedule 1-scope of services, Part H: Arrangement Escort Medical Personnel). Once authorization is granted by the VE Authorized Person, International SOS can proceed with the necessary arrangements.

4.3 Case Management Instructions	
Special Instructions / Comments, if any:	N/A
Other Client (Contractors) on MOPU:	N/A
Other Non-Client (Contractors) on MOPU	MOPU: CRAT, DACON, Viking, LS, METROCAT, SODEXO, and Intl.SOS

4.4 Client Contact Details

[redacted]

4.5 Offshore Authority Details

[redacted]

4.6 Intl.SOS Medical Staff

[redacted]

Languages Spoken: Thai & English

5. Location Geography

5.1 MOPU Details

MOPU Ingenium Population:	Approx. 50 personnel
MOPU Ingenium Coordinates:	Wassana field, Offshore Gulf of Thailand Latitude: 07 56'33 N Longitude: 101 22' 50 E
Patient Handover Point:	Songkhla Port / Songkhla Navy Airport
Distance to the Patient Handover Point:	~110 km

5.2 MOPU Description

Mobile Offshore Production Unit (**MOPU**) **Ingenium** is the processing facility, which is currently located offshore of Songkhla, Thailand for carrying out offshore operational activities at Wassana field, Offshore Gulf of Thailand. There are Approx. 50 personnel present on-board. Intl.SOS has deployed two medics on-board.

5.3 Maps

Local view

valeura energy
INTERNATIONAL SOS

Regional view:

6. First Phase Evacuation Details

First Phase Evacuation

For **First Phase of Evacuation**, patient will be transferred from MOPU Ingenium location to the Songkhla port or Songkhla Navy Airport (patient handover point) via support vessel or helicopter, activated by Wassana Field Manager.

Valeura Energy (Gulf of Thailand) Ltd is responsible for the first phase evacuation including the helicopter activation.

The medical escort team is based in Bangkok Hospital Hatyai. For incidents where patients have to be transferred via helicopter, International SOS Bangkok Assistance Centre will activate, brief and coordinate the medical escort team. Please refer to Escort medic activation flowchart, as below, for detailed process.

Travel time from project location to Songkhla port via support vessel is approximately 9-12 hrs.
Flying time from project location to Songkhla airport via helicopter is 45 minutes

There is stretcher on board, which can be winched.

Evacuation Support Logistics *(For MRCC/SAR information, refer section 4.5)*

Wassana Field Marine Transport/ Supply Vessel				
Period	July to September 2025		October to December 2025	
Support Vessel	SC Galaxy (Main vessel)	SC Summer (Sharing Vessel)	SC Universe (Main vessel)	SC Galaxy (Sharing Vessel)
Contact Number	+66 2 1071 738	+66 2 1071 760	+66 2 1071 765	+66 2 1071 738
Type	Anchor Handling Tug Supply Vessel			
Provider	SC Management Co., Ltd.			
Travel time to patient handover point	9-12 hours			
Activation time	15 Minutes			

Helipad information	
Night landing:	Yes
Dimensions:	17 m
Max load:	7.0 t
Aviation navigational beacon and operating frequency:	TBC
Capabilities:	Helideck designed per CAP 437 requirements

Helicopter	
Type:	Agusta Westland AW139
Location:	Songkhla
Provider:	UOA
[redacted]	
Activation Time:	1 hour notice generally
Travel Time to airport:	1 hour 10 minutes
Medical Configuration	TBC
[redacted]	
Night Flight:	Yes, only if medevac call

Airport Information	
Name (ICAO)	Songkhla Navy Airbase (VTSH)
Hours of Operation	Not operational 24 hours (Operates between Sunrise to Sunset)
Airport of entry	Not An Airport of Entry
Telephone	+66 74 311 085

7. Second Phase Evacuation Details

Second Phase Evacuation

For second phase of evacuation, Intl.SOS will transfer the patient from Songkhla port to an in-transit medical facility in Songkhla. If and when required, patient will be transferred to a definitive care facility in Bangkok or Singapore using an air ambulance or commercial airlines as recommended by Intl.SOS. The movement will occur via the transport provider identified by International SOS as most suitable. Further repatriation can also be organised, if required.

Evacuation Support Logistics

Location: Songkhla, Thailand

Ground Transport and In-transit Care Facility		
Provider Name:	Bangkok Hospital Hatyai	Sikarin Hatyai Hospital
Provider Address:	75 Soi 15, Petchkasem Road, Hatyai, Songkhla, Thailand 90110	169 Niphatsongklao, Hatyai, Songkhla, Thailand 90110
Switchboard Details:	+66 74 272 800	+66 74 310 310
Fax:	+66 74 272 840	+66 74 310 344

Airport Information		
Name (ICAO)	Hat Yai Intl Airport (VTSS)	Songkhla Navy Airbase (VTSH)
Hours of Operation	24 hours, with restrictions	Not operational 24 hours (Operates between Sunrise to Sunset)
Airport of entry	Airport of Entry	Not An Airport of Entry
Telephone	+66 74 251 007 (Airport)/ 227 000 (Airport Authority) United offshore aviation: Flight operation officer (SPOC): 074 322 575 Night medevac standby: 098013 8775	+66 74 311 085

Notes on In-transit Care Facilities:

- The in-transit care facility must be mutually pre-agreed upon by International SOS and Valeura Energy (Thailand) Ltd. – Wassana
- The in-transit care facility may not be – and in remote areas usually will not be – the medical facility best suited for the patient's definitive treatment.
- Intl.SOS may have administrative agreements with these hospitals and providers to assist with the admission of patients and guarantee payments; however, this does not mean that these hospitals/providers have been credentialed by Intl.SOS as being up to the international standards. Intl.SOS is in no position to direct local hospitals/providers regarding the treatment and management of the patient, but will make all efforts to secure understanding and cooperation from the local medical team.
- Medical facilities recommended only for initial admission and stabilisation prior to onward transfer for more serious cases may be appropriate for definitive care of less serious cases, but in any case these only represent the best locally available option. Onward referral to a regional definitive care facility will be recommended on a case-by-case basis by the International SOS medical team.

Definitive Care Medical Facilities: Bangkok

Ground Ambulance at Bangkok, Thailand		
Provider Name	**Bumrungrad International Hospital**	**Samitivej Sukhumvit Hospital**
Provider Location	33 SukhumvitRoad, Soi 3 Nana, Nua, Wattana, Bangkok, 10110, Thailand	133 Sukhumvit 49, Klong Tan Nua, Vadhana, Bangkok, 10110, Thailand
Provider Contact Details	**Tel**: +66 2 066 8888/+66 2 011 3000 (IPD)/ +66 2 011 2287-89 (OPD)/ +66 2 011 5166 (Referral)	**Tel**: +66 2 022 2222 / +66 2 022 2900

Definitive Care Facilities in Bangkok
Name: Bumrungrad International Hospital **Address:** 33 SukhumvitRoad, Soi 3 Nana, Nua, Wattana, Bangkok, 10110, Thailand **Tel**: +66 2 066 8888/+66 2 011 3000 (IPD)/ +66 2 011 2287-89 (OPD)/ +66 2 011 5166 (Referral)
Name: Samitivej Sukhumvit Hospital **Address:** 133 Sukhumvit 49, Klong Tan Nua, Vadhana, Bangkok 10110, Thailand **Tel:** +66 2 022 2222 / +66 2 022 2900

Airport Information for Bangkok, Thailand		
Name (ICAO)	**Suvarnabhumi International Airport (VTBS)**	**Don Mueang Intl. Airport (VTBD)**
Hours of Operation	Operates 24/7	
International Clearance Status	Yes	
Telephone	+66 2 132 1888	+66 2 535 1111/ +66 2 535 1515

Definitive Care Medical Facilities: Singapore

Ground Ambulance at Singapore		
Provider Name:	**Comfort Ambulance**	**Carewell Ambulance**
Provider Location:	16, Arrumugam Road, LTC Building D, #02-04, Singapore, 409961	5000 Ang Mo Kio Avenue 5 #05-01D Techplace II , Singapore 569870
Switchboard Details:	Tel: + 65 9747 8509	**Tel**: +65 91801710/ +65 91260150/ +65 68580601/ +65 66511360

Definitive Care Facilities In Singapore
Name: Raffles Hospital Pte Ltd/ RMG **Address:** 585 North Bridge Road, Raffles Hospital #0100, Singapore, 188770 **Tel:** +65 6311 1111 (General); 6311 1555 (A&E); +65 6311 1222 (24 hrs General Appt) / +65 6311 1666 (IPC) **Mobile**: +65 9828 3784 (IPC) **Email:** insurance@raffleshospital.com
Name: Gleneagles Hospital Pte Ltd **Address:** 6A Napier Road, Singapore 258500 **Tel:** +65 6473 7222 (Main 24hrs) / +65 6735 5000 (CPAC); A&E: +65 6470 5688 (24hr Urgent Care) **Email:** gpac@parkwaypantai.com
Name: Mount Elizabeth Hospital Pte Ltd **Address:** 3 Mount Elizabeth, Singapore 228510 **Tel:** +65 6737 2666 (24hrs) / +65 6735 5000 (CPAC 24hrs) / +65 6731 2122; A&E: +65 6731 2218 (24hr Urgent Care) **Email:** mpac@parkwaypantai.com

Airport Information for Singapore		
Name (ICAO)	**Singapore Changi International Airport (WSSS)**	**Seletar Airport (WSSL)**
Hours of Operation	24 hours operational	6:30 am to 11 pm
International Clearance Status	Yes	
Telephone	+65 6595 6868	+65 6513 8967 / +65 9152 8265

Air Ambulance Options

Air Ambulance Option 1: Based at Bangkok		
Type of Aircraft	Cessna Citation Bravo	Hawker 800 / Superking Air 350
Location	Bangkok - Don Mueang Airport	
Activation time	2 - 3 hr	
Flying Time (Bangkok to Hat Yai):	1:20 hours	

Air Ambulance Option 2: Based at Singapore	
Type of Aircraft	Lear 35/Lear 45/ Lear 60/ Challenger 604/ Gulfstream 150/ Gulfstream 550
Location	Singapore
Activation time	1 stretcher
Flying Time (Singapore to Hat Yai):	1hr 13min
Flying Time (Bangkok to Singapore):	Approx 2 hour

Commercial Airline Options		
Evacuation Route:	**Airline Name**	**Flight Duration**
Bangkok - Hat Yai	Thai Airways	Approx. 1h 25m
Hat Yai - Bangkok	Thai Airways	Approx. 1h 25m
Singapore - Hat Yai	Budget Airlines (Tiger etc.)	Approx. 1h 40m
Hat Yai - Singapore	Budget Airlines (Tiger etc.)	Approx. 1h 40m
Bangkok to Singapore	Bangkok Airways / Singapore Airlines / Thai Airways International	Approx. 2 hour 15 min

Noteworthy Points to Consider for Evacuations and Repatriations

- Cross-border travel without passport and entry/exit visa is not permitted by immigration authorities, and this must be present with the patient (or a caretaker, if incapacitated) at all times. Even in a medical emergency, a country may not allow a patient entry if the country immigration regulations do not grant emergency visas for certain nationalities.
- All emergency responses are on a reasonable effort basis; unavoidable delays may occur for several reasons, including aircraft availability, weather conditions or other factors affecting the safety of a flight, or unscheduled airport closures.
- Patient suffering from an infectious disease may not be allowed to travel by health authorities either locally, regionally or internationally.
- Second Phase Evacuation to a place where the patient's language is spoken or where he is culturally more comfortable can be arranged upon request, if this is considered medically safe. Repatriation following an initial evacuation to a centre of medical excellence depends on the patient's fitness to fly, as well as the medical clearance of the patient by the commercial airline's medical department.

Appendix 1: Description of International SOS Services On-Site

Description and qualifications of staff on-site: The MOPU is staffed by International SOS medics.

Description of on-site medical facility: A clinic has been set up at the MOPU (Operation and Accommodation is at the same facility).

Description of medical equipment on-site:

GENERIC NAME/DESCRIPTION	Quantity
Bag valve mask, silicone, adult, reusable	3
Laryngoscope set, Macintosh Blades, reusable	1
Nebuliser	3
Oxygen cylinder, size D approx. 400L	2
Oxygen cylinder, size F approx. 1360L	2
Oxygen cylinder, approx. 7600L	2
Oxygen regulator, pin index, clamp, click flow meter fitting	2
Oxygen Resuscitator Set Adult	3
Suction unit, hand held manual	1
Suction unit, electric, portable with reusable canister	1
Glucometer Machine	3
Pulse oximeter, portable	1
Sphygmomanometer, portable	1
Stethoscope, adult	1
Patella hammer	3
Otoscope/Ophthalmoscope, Diagnostic set, portable	1
Chart Snellen, 3m	1
Thermometer, infrared	2
Torch	1
Weight scales, adult	1
Cardiac monitor defibrillator, biphasic	1
AED, Automated External Defibrillator, basic	1
Collar, rigid, adjustable	1
Head Immobiliser	1
Vacuum mattress	1
Vacuum Splint Set	1
Intravenous stand, stainless steel, mobile, basic	2
Tourniquet, self applicating	1
Couch, examination with cot sides	1
Light, examination, mobile	1
Crash cart	1
Controlled drugs cabinet, lockable	1
Dressing trolley, single draw, large	1
Waste bin, medical, approx 50L	2
Bedpan, adult	2
Refrigerator, pharmacy	1
Thermometer, fridge	1

Register, Controlled drug	1
Eye Magnet	1
Scissors Dressing B/B Curved	1
Scissors, Tuff cut	1
Ring cutter	1
Stretcher, basket	2
Stretcher, basket, restraint straps	2
Stretcher, scoop, metal	1
Spinal Board	1
Spider harness	1
Extrication Device Kendrick	1

International SOS Support Contacts	
Intl.SOS BDM/PAM: Punyaroj Nidhidatipong, Account Manager	**Tel:** +662 2057996 **E-mail:** Punyaroj.nid1@internationalsos.com
Intl.SOS Medic Supervisor: Panuwat Buran, Assistant Operation and Quality Manager	**Tel:** +66 2 205 7940 **E-mail:** Panuwat.Buran@internationalsos.com

Appendix 2: Medsite Medical Escalation Report

Valeura Energy (Gulf of Thailand) Ltd Email: Bangkok@internationalsos.com

1. Call Details, Site Details, Request for Assistance

Case Number:

Date of Patient Presentation:		**Time Presentation:**		
Name of Client, Project, and Project Membership number:				
Intl SOS Membership details and number to be used for this case if not the above:				
Name of Vessel/Rig/Site:				
Name of Site Medical Staff:				
Qualification of Site Medical Staff:				
Site phone number:	Mobile		Other	
Notification Type:	*FIRST NOTIFICATION*			
Reason For Escalation:	Medical Advice		Non-Urgent Referral	
	Urgent Referral		Other	
Crew change options:	Date		**Transport Type**	Surfer
	Time			Helicopter
Request For Assistance:				

2. Patient Details

Full Name of Patient: Male/Female:			
Date of Birth:			
Contact Details:	Mobile Number:		
	Email Address:		
Job Position:			
Name of Patient Employer:			
Passport Number:		**Nationality**	
Location of Passport:			
Date Of Arrival on Site (If relevant):		**Departure date (If relevant):**	
Has patient consented to release to employer (Signed ROMIF):	Yes/No		

3. Other Information (To be completed if patient is not assisted under Intl SOS Membership)

Employer Point of Contact/Patient Manager:	
Contact Number:	
Name of Assistance Company/Insurer managing the case:	
Please confirm Employer has Activated the above Assistance Company/Insurer:	Yes/No

4. Medical Information

Select the relevant Box:	Accident		Illness		Was patient on duty	Yes/No
Known Allergies:					Relevant Vaccinations: *(E.g., Last dose of Tetanus)*	
Chronic Medication:						

For Trauma Patients - Mechanism & Time of Injury. Was the patient using PPE?

(ensure a detailed description of the mechanism of injury & consider all possible injuries):

History & Chronology of Events and Chief Complaint:

Examination:	GCS	
A:	BP	
B:	Pulse	
C:	RR	
General Appearance:	TEMP	
	SATS	
Head and Neck:	HGT	
(If eye related please include visual acuity SNELLEN & Fluorescein)		
Chest/Back:	OTHER	
Abdomen/Back and Perineum:		
Limbs and Periphery:		
Neurological Findings:		

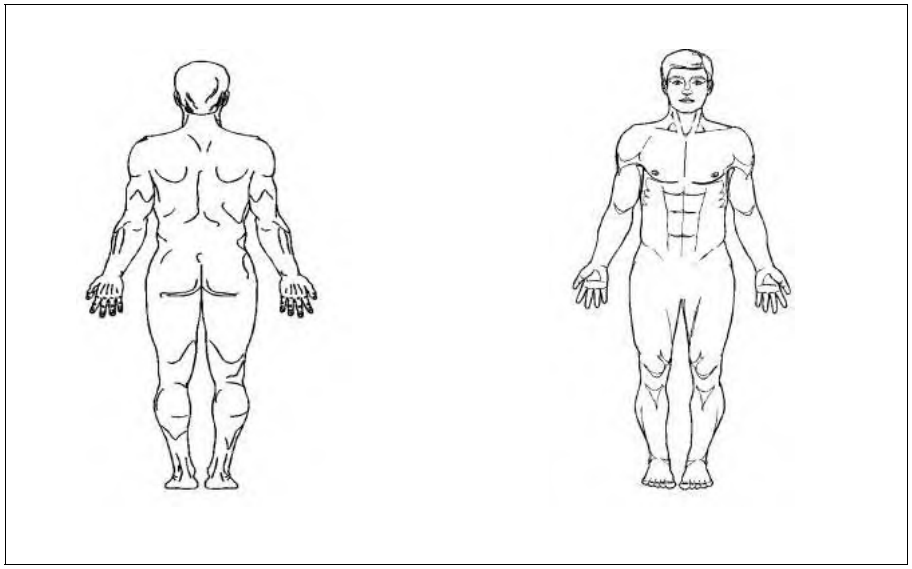
Investigations: Urine General Appearance:	URINE DIP STICK RESULTS	Leukocytes	
		Nitrite	
		Urobilinogen	
		Protein	
		PH	
		Blood	
		Specific Gravity	
		Ketone	
		Bilirubin	
		Glucose	
Malaria Rapid Test Result:	Trop-T Test Result:	Other Test Result: (Attach ECG if completed)	

Provisional & Differential Diagnosis:

Treatment Plan Initiated on Site:

(If work related is this a possible 1st aid vs Medical Treatment Case?)

IMAGES ATTACHED BELOW (Yes/No)



PLEASE ATTACH IMAGES HERE

(OR SEND SUPPORTING PICTURES ON ALL CASES WITH PATIENT CONSENT)

For Assistance Centre Use Only	
Escalated to MD on Duty:	***Yes / No***
Time of Call:	
Coordinating Doctor's Name:	
International SOS' Case Number:	
Medical Assistance Centre Recommendations: Escorted / Unescorted: Receiving Facility:	
Name of MOPU Manager Contacted:	
MOPU Manager's Instructions:	
International SOS to Arrange Ground Transfer:	***Yes / No***
International SOS to Place Guarantee of Medical Expenses:	***Yes / No***
No Assistance Required:	***Yes / No***

Appendix 3: Release of Medical Information Form

International SOS Bangkok Assistance Centre
Tel: +66 2 206 7747
Email: Bangkok@internationalsos.com

AC/CLINIC

AUTHORISATION FOR RELEASE OF MEDICAL INFORMATION

PATIENT INFORMATION

Print Name:		
	First	Last (surname)

Birth Date:		Case #:	
	Day/Month/Year		

TREATING PHYSICIAN IN COUNTRY OF ORIGIN:
(please fill in name, address, e-mail address and telephone number)

TREATING PHYSICIAN IN CURRENT LOCATION:
(please fill in name, address, e-mail address and telephone number)

PURPOSE

This authorisation is to authorise the collection, release, use, storage, processing, amendment and transferring of medical, travel and other personal data for the purpose(s) of providing assistance to me, including arranging medical treatment, assessing and paying and/or obtaining payment for that treatment and assistance; running International SOS' normal business and operations, and to comply with legal obligations and respond to emergencies such as those relating to public health ("Data Collection Purposes").

AUTHORISATION OF DISCLOSURE

I hereby authorise any organisation or person who has or may have information concerning me or my health to furnish **International SOS Bangkok,** including the International SOS Group of Companies and/or their respective representatives and/or agents ("International SOS"), who are acting on behalf of **[Valeura Energy (Thailand) Ltd. – Wassana]**, with:

(a) all relevant medical information pertaining to my medical history (including any condition for which medical advice or treatment was sought, any form of consultation, investigation, prescription or treatment), it being understood that such disclosure must be compliant with applicable local rules, if any (which may where applicable restrict release to medical professionals only);

(b) all relevant information pertaining to my employment history;

(c) a medical certificate completed by any health provider which International SOS may require; and

(d) travel information including all itineraries, ticket information and proof of payment documentation.

(collectively known as "Personal Data")

I understand that information related to sexually transmitted diseases, acquired immunodeficiency syndrome (AIDS), human immunodeficiency virus (HIV), genetic test results, behavioral or mental health services, and treatment for alcohol and drug abuse, shall not be disclosed unless: (i) required by law or (ii) I specifically authorise International SOS to make such disclosure by initialing here. ☐

CONSENT TO USE MEDICAL INFORMATION

I consent to International SOS:

(a) Collecting by using telephone recordings, electronic, paper or other means, processing and using my Personal Data for the Data Collection Purposes;

(b) Subject to local legal requirements (which may where applicable prevent disclosure to non-medical personnel and/or restrict release to medical professionals only) disclosing my Personal Data to :

(i) entities of **[Valeura Energy (Thailand) Ltd. – Wassana],** and/or of other International SOS entities or their respective representatives and/or agents, my personal representatives or family member involved in my care;

(ii) the insurer or other entities which will be directly or indirectly responsible for or involved in payment of relevant medical and other costs,

(c) Transferring my Personal Data outside **[Thailand],** to and from my doctors in my country of origin, and to and from the doctors where I am currently being treated and to other territories that may not have the same level of personal data protection.

AGREED AND ACCEPTED

I understand and agree that :

(a) A copy of International SOS' Customer Personal Data Privacy Statement including information about my rights and instructions on how to fill a complaint and access, correct, restrict access to or delete my Personal Data may be obtained by writing to: Director of Assistance, **International SOS** or may be accessed through the International SOS website at www.internationalsos.com

(b) I have the right to refuse to sign this authorisation, and that if I do refuse, International SOS may be prevented from or limited in providing the services described above and may not be able to assist me.

(c) This authorisation expires one (1) year from the date of signature below.

(d) If I sign this authorisation, I will have the right to withdraw/ revoke it at any time, except to the extent that action has been taken prior to receipt of the withdrawal/ revocation. If I wish to withdraw/ revoke this authorisation, I can write to the Privacy Officer at **dpo@internationalsos.com.**

(e) This authorisation and my Personal Data will be kept no longer than is desirable for the purposes they were collected and, subject to applicable local law, will be destroyed in accordance with the periods set out in International SOS' policy on data retention (published at https://www.internationalsos.com/privacy).

(f) A copy, including photostat, electronic or fax copy of this authorisation, shall be considered as effective and valid as the original and I have specifically authorised its use as such.

Signature of Patient/Legal Representative/ Guardian	Printed Name
Date	Relationship with Patient

Appendix 4: Condition of offshore medical evacuation that requiring medical escorts

Type of Offshore Case Management	1. EMERGENCY MEDEVAC	2. NON EMERGENCY MEDEVAC	3. MEDICAL REFERRAL END OF HITCH	4. TREATMENT ON BOARD
Component of medical escorts	One escort doctor AND/ one or two nurses	One doctor and/or one nurse	Non-medical escort, unescorted	No medical escort required.
Mode of Movement	Emergency evacuation of sick or injured person(s) requiring urgent medical attention at a hospital using unscheduled flight or marine journey. The casualty shall reach hospital within the **response time of 4 hours** usually via dedicated or diverted Chopper or Boat.	Non urgent evacuation of cases for medical attention using the next available option of flight or boat e.g. unscheduled flight the next day light, crew change chopper or boat.	All others that does not fit the definition of 1 & 2 as recommended by topside remote health support	Medical conditions that medication, facility and room are sufficient and capable for treating the patients onboard.
	CONDITION : THE RECOMMENDATION BY TOPSIDE CD IS TOTALLY BASED ON THE CRITICALITY OF THE CASE			
	Threatening to Life, Limbs and Eyes Casualties required immediate evacuation to Tertiary Hospital Care (requiring ICU hospitalization) Time critical/sensitive and evacuation should take whether it is day or night Mandatory for Medical Escort to accompany patient	There is no immediate threatening to Life or Limbs. However delay beyond a window of 24 hour will put the casualty at risk of danger to Life or Limbs or affect the health of others on board. (e.g. communicable diseases). Patient would most likely require in-patient treatment on arrival	There is no threatening to Life or Limbs. Casualty can remain on board and receive treatment However casualty should be disembark on scheduled crew change transport or at the end of hitch. No need for any medical escort medic to accompany casualty Casualty expected to receive outpatient treatment	There is no threatening to Life or Limbs. Enough medicine, monitor and room for treatment

Type of Offshore Case Management	1. EMERGENCY MEDEVAC	2. NON EMERGENCY MEDEVAC	3. MEDICAL REFERRAL END OF HITCH	4. TREATMENT ON BOARD
	Example of cases			
	• **Shock** (Cardiogenic shock, Hypovolaemic shock, Anaphylactic shock, Septic Shock, Spinal Shock) • Acute Myocardial Infarction (heart attack) • Cerebral Vascular Accident (stroke) • Hypertensive emergencies • Sudden hypoxia (could be Pulmonary Embolism) • Sepsis / Septic Shock • Multiple Trauma • Limb/digit Amputations • **Epilepsy (Status Epilepticus)** • **Spinal injury with neurological impairment** • Penetrating Eye Injury • Head Injury, deteriorating GCS • Pelvic Fracture associated with deteriorating vital signs • Severe Burns on the face, hands, feet, and genitalia as well as Major burns (> 9%) in other areas of the body and those associated with inhalational injury are often referred to burn centers for specialized expertise	• Acute Abdomen: rebound Tenderness, guarding ? appendicitis, gastritis • Acute exacerbation of Bronchial asthma unresponsive to treatment • Open fractures • Corneal Injury • Closed fractures of limbs but clinically stable & no neurovascular compromise • Pneumonia (not on O2) • Symptomatic Uncontrolled Diabetes, • Symptomatic Uncontrolled Hypertension • Conjunctivitis • Renal Colic • Unilateral leg swelling with normal SpO2, ECG and no breathing issues • Painful scrotal swelling • Altered behaviour (need to rule out organic cause) , escort medic is needed in the event patient needs sedation during transfer	• Sprained joints ((responding to first aid category treatment) • Back pain (responding to first aid category treatment) • Recurring headache • Toothache / dental caries / gingivitis • Acute Contact Dermatitis (Irritant or Allergic): Generalised • Bronchial Asthma (responding to treatment) • Cellulitis • Asymptomatic Hypertension (BP normalized with initial treatment) • Chickenpox, Measles	• COVID-19 infection (5 day isolation) • Influenza infection (5 day isolation)

Revision History							
Version	**Rev. Date**	**Description**	**Prepared By**	**Reviewed By**	**Date**	**Approved By**	**Date**
1.1	06.05.2015	Draft	GKSC	BKK MERP team	08 05.2015	Dr. Akiko Nomura	08 05.2015
				MERP-MOPU Ingenium-Offshore Songkhla, Thailand-May'15 - v1.1			
1.2	26.05.2015	Updated	GKSC	--	--	--	--
1.3	29.01.2016	Update	GKSC	--	--	--	--
1.4	01.02.2016	Client details	GKSC	--	--	--	--
1.5	02.03.2016	Client details	GKSC	--	--	--	--
1.6	11.03.2016	Medical staffing updates	GKSC	--	--	--	--
1.7	10.03.2017	First phase evacuation	GKSC	--	--	Dr. Yann ROUAUD	10.03.2017
1.8	14.03.2017	Medic Details	GKSC	--	--	--	--
1.9	15.03.2017	AP1 Mobile no. & POC for Supply vessel	GKSC	--	--	--	--
2.0	10.06.2017	AP1 Alternative Mobile No.	GKSC	--	--	--	--
2.1	22.09.2018	Update : AP2 details	GKSC	--	--	--	--
2.2	29.09.2018	Update : AP2 details	GKSC	--	--	--	--
2.3	30.09.2018	Update : NOC Details	GKSC	--	--	--	--
2.4	27.02.2019	Update: AP2 + OIM	PA Support Team, GKSC	--	--	--	--

Revision History							
2.5	01.03.2019	Update: OIM addition	PA Support Team, GKSC	--	--	--	--
2.6	02.07.2019	Update: Notification	PA Support Team, GKSC	--	--	--	--
2.7	26.07.2019	Update: Flowchart	PA Support Team, GKSC	--	--	--	--
2.8	06.12.2019	Update: Client Contact Details	PA Support Team, GKSC	--	--	--	--
2.9	26.06.2020	Update: no medical staffing, APs details	PA Support Team, GKSC	BKK MERP team	25.06.2020	Dr. Jamon Ngoencharee	25.06.2020
3.0	01.07.2020	Update: First Phase Evacuation & Client Contact Details	PA Support Team, GKSC				
3.1	03.07.2020	Update: AP details	PA Support Team, GKSC	--	--	--	--
3.2	25.01.2021	Nurse contact details	PA Support Team, GKSC	--	--	--	--
3.3	07.06.2022	Update: BDM, AP,Client contact etc	PA Support Team, GKSC	--	--	--	--
3.4	15.06.2022	Update: Intl.SOS Medical staff	PA Support Team, GKSC	--	--	--	--
3.5	23.06.2022	Update: Escort Medic details	PA Support Team, GKSC	--	--	--	--
3.6			PA Support Team, GKSC	--	--	--	--
3.7	12 July 2022	Update: client name, logo	PA Support Team, GKSC	--	--	--	--

Revision History							
3.8	13 July 2022	Update: E-mail ID	PA Support Team, GKSC	--	--	--	--
3.9	14 July 2022	Client contact	PA Support Team, GKSC	--	--	--	--
4.0	17 August 2022	Update: Medic	PA Support Team, GKSC	--	--	--	--
4.1	06 December 2022	Update: Logo	PA Support Team, GKSC	--	--	--	--
4.2	07 December 2022	Client Contact	PA Support Team, GKSC	--	--	--	--
4.3	25 July 2023	Updates	PA Support Team, GKSC	BKK MERP team	Dr. Jamon Ngoencharee Aukarin SURIYA		25 July 2023
4.4	08 September 2023	Updates	PA Support Team, GKSC	BKK MERP team	Dr. Jamon Ngoencharee Aukarin SURIYA		08 September 2023
4.5	21 September 2023	Updates: Location	PA Support Team, CKC				
4.6	20 November 2023	Updates: First phase evacuation, client contact, flowchart	PA Support Team, CKC	BKK MERP team	Dr. Jamon Ngoencharee Aukarin SURIYA		20 November 2023
4.7	6th December 2023	Updates: AP1 details + client contact + medical staff details	PA Support Team, CKC	--	--		--
4.8	11th Dec 2023	Updates: client contact	PA Support Team, CKC	--	--		--
4.9	20 December 2023	Update: First phase evacuation	PA Support Team, CKC	--	--		--
5.0	26 December 2023	Update: First phase evacuation & client contact details	PA Support Team, CKC	--	--		--

Revision History						
5.1	05 January 2024	AP2 update	PA Support Team, CKC	--	--	--
5.2	08 January 2024	AP2 update	PA Support Team, CKC	--	--	--
5.3	30 January 2024	Update: AP3 details	PA Support Team, CKC	--	--	--
5.4	31 January 2024	Update: Medic details	PA Support Team, CKC	--	--	--
5.5	23 Feb, 2024	Update: 1st Phase+Borr DSV added	PA Support Team, CKC	--	--	--
5.6	27th Mar, 2024	Update: 1st Phase	PA Support Team, CKC			
5.7	28th Mar, 2024	Update: 1st Phase	PA Support Team, CKC			
5.8	09 May 2024	Update: AP	PA Support Team, CKC			
5.9	13th May, 2024	Update: AP details	PA Support Team, CKC			
6.0	12 June 2024	Update: AP details	PA Support Team, CKC			
6.1	4th July 2024	Update: sec 2 & 6 details + 4.3 (NOC) + 4.4	PA Support Team, CKC			
6.2	19th July, 2024	Update: First phase evac	PA Support Team, CKC			
6.3	26th July, 2024	Update: First Phase Evac	PA Support Team, CKC			
6.4	01st Aug, 2024	Update: Heli POC	PA Support Team, CKC			
6.5	01 Oct, 2024	Update: Flowchart and supply vessel info	PA Support Team, CKC			
6.6	14th Oct, 2024	Update: AP2	PA Support Team, CKC			
6.7	18th October, 2024	Update: Thailand Emergency Duty Roster	PA Support Team, CKC			

Revision History						
		contact list removed				
6.8	30th Oct, 2024	Update: AP2	PA Support Team, CKC			
6.9	5th November 2024	Update: Delegated Authority (sec 4.3)	PA Support Team, CKC			
7.0	22 November 2024		PA Support Team, CKC			
7.1	24 December 2024	Update: Client name and support vessel	PA Support Team, CKC			
7.2	21 February 2025	Update: AP5	PA Support Team, CKC			
7.3	28th Feb, '25	Update: AP5	PA Support Team, CKC			
7.4	23rd June 2025	Update: Support vessel	PA Support Team, CKC			
7.5	01 September 2025	Update: AP5, Helicopter POC, Flowchart	PA Support Team, CKC			
7.6	14th Nov 2025	Update: Flowchart + POC Helicopter + BKK AC tel. no. changed	PA Support Team, CKC			

Medical Evacuation Response Plan

By providing my signature to this document, I commit that I have read, understood and will comply with the instructions provided within this document.

Staff Name	Role / Position	Signature	Date

valeura energy
INTERNATIONAL SOS

Medical Evacuation Response Plan

By providing my signature to this document, I commit that I have read, understood and will comply with the instructions provided within this document.

Staff Name	Role / Position	Signature	Date

เอกสารแนบที่ 48

เอกสารบันทึกการเจ็บป่วยของพนักงาน

THRE360 ENERGY	MEDICAL LOG	FSO JAKA TARUB WASSANA OIL FILED

DETAILS OF CREW TREATED ON BOARD FOR ILLNESS/INJURY
Sep 2025

No.	Name	Rank	Date reported	Specify Illness/Injury with brief details	Treatment Rendered	Remark
1.	[redacted]	2/E	24-Sep-2025	Headache, Mild Cough and Little Sore throat	Kamillosan M Spray x 1 Bottle Difflam lemon x 1 sachet Paracetamol 500 x 5 Tab Iyara - Natural cough syrup x 1 Bottle	

THRE360 ENERGY	MEDICAL LOG	FSO JAKA TARUB WASSANA OIL FILED

DETAILS OF CREW TREATED ON BOARD FOR ILLNESS/INJURY
Oct 2025

No.	Name	Rank	Date reported	Specify Illness/Injury with brief details	Treatment Rendered	Remark
1.	[redacted]	3/E	26-Oct-2025	At 17:00 LT on 25 Oct 2025 Left eye irritation.	Eye wash 100 mg = 1 bottle.	12:00 Lt on 26-Oct-2025 to MOPU clinic.

THRE360 ENERGY	MEDICAL LOG	FSO JAKA TARUB WASSANA OIL FILED

DETAILS OF CREW TREATED ON BOARD FOR ILLNESS/INJURY
Nov 2025

No.	Name	Rank	Date reported	Specify Illness/Injury with brief details	Treatment Rendered	Remark
1.	[redacted]	STEWARD-3	02-Nov-25	Headache, Temp 36.8 C	Paracetamol 500 mg x 6 Tab	
2.		PUMPMAN	12-Nov-25	Arm and hand Pains	Counterpain x 1 Tube	
3.		3/O	14-Nov-25	Mild sore throat Excessive gas in the digestive tract	Air-X x 8 Tab Kamillosan M Spray 15 ml x 1 Bott	
4.		AB	14-Nov-25	Mild sore throat	Difflam lemon (8 tabs/sachet) x 2 Sachet Kamillosan M Spray 15 ml x 1 Bott	
5.		OILER	14-Nov-25	Leg pain	Counter Pain cool 30g x 1 Tube	

SC GROUP	Date : 20/10/2025	Revision : 2	Ref : F-09-SHE/21
	MEDICAL TREATMENT LOG		

Vessel Name ชื่อเรือ:	SC SUMMER	Month เดือน:	NOVEMBER 2025

Date of examination วันที่ให้การรักษา	Time เวลา	Patient name ชื่อ - นามสกุลผู้ป่วย	Symptom อาการ	Details of Treatment รายละเอียดของการรักษา	Medication Administered ชื่อยา และวิธีการให้ยา	Quantity ปริมาณยา	Name of Person Providing Treatment ชื่อ-นามสกุล ผู้ให้การรักษา	Follow-up Actions* การติดตามอาการ
02 NOV 25	0530	[redacted]	COUGH	Given cough syrup	Apache Cough Syrup - Take 1-2 Tablespoons / 3-4 Times	60 ml.	Siravit L.	Monitor for fever
04 NOV 25	0700	[redacted]	COUGH	Given cough syrup	Apche Cough Syrup - Take 1-2 tpsp / 3-4 times	60 ml	Siravit L.	Monitor for fever
23 NOV 25	0245	[redacted]	HEADACHE	Given paracetamol	PRN FOR Headach. 1-2 tablets * Max 4 tablets/day	500 mg x 9	Siravit L.	Review if headace persists

* Please follow up on the patient's condition after medication administration. If the condition improves or returns to normal, please record the follow-up result and the date in the follow-up actions section to close the process.
โปรดติดตามอาการของผู้ป่วยหลังการให้ยา หากอาการดีขึ้นหรือหายเป็นปกติ กรุณาระบุ ผลการติดตามและวันที่ เพื่อสิ้นสุดการติดตาม

Signed by Responsible Person	Signed by Master
[redacted]	M.V. SC SUMMER [redacted] Name: C[redacted]ou MASTER

เอกสารแนบที่ 49

เอกสารการประเมินความเสี่ยงด้านสุขภาพ

Occupational Health Risk Assessment Matrix

Ref: TH-GEN-HS-HS-KPP-0083 Rev R4 Health Surveillance (KPP)

Hazard Rating

The relevant Hazard Rating categories are:

Hazard Rating	Definition (Consequence Category: Harm to people)
1 (Negligible)	Occupational accident resulting in FAC (First Aid Case)
2 (Minor)	Occupational accident or security breach resulting in a MTC (Medical Treatment Case) or RWC (Restrict Work Case)
3 (Moderate)	Occupational accident or security breach resulting in single LTI (Lost Time Incident) and / or serious reportable illness
4 (Major)	Occupational accident or security breach resulting in a single fatality / kidnapping and / or multiple LTIs and / or multiple serious reportable illnesses
5 (Catastrophic)	Occupational accident or security breach resulting in multiple fatalities / kidnappings and / or acute or chronic terminal illness

Control Chart

When the Hazard and Exposure Rating are combined in a Control Chart, they provide a visual representation of the urgency of action required to strengthen controls:

	Exposure Rating →				
Hazard Rating	Very Low (a)	Low (b)	Medium (c)	High (d)	Very High (e)
1	No Immediate Action Required		Third Priority	Second Priority	
2					
3			Second Priority	First Priority for Action	
4		Third Priority			
5					
Exposure Band	**< 0.1 x OEL**	**0.1 x OEL - < 0.5 x OEL**	**0.5 x OEL - 1 x OEL**	**> OEL**	**>> OEL**

Exposure Rating

The exposure rating categories are:

Exposure Rating (Based on assessed effective of controls in place)	Exposure Band	Definition
(a)	<0.1 x OEL	Exposure is negligible
(b)	<0.5 x OEL	Exposure is controlled well below OEL and likely to remain so in accordance with standards
(c)	> 0.5 –1 x OEL	Exposure is currently controlled below OEL to meet standards, but control may be reliant on less robust measures such as personal protective equipment
(d)	> OEL	Exposure is adequately controlled to meet standards and contiguously/regularly exceed OEL
(e)	>> OEL	Exposure is excessive and will almost certainly result in health damage to person exposed

OEL: Occupational Exposure Limit - is an upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material or class of materials. It is typically set by competent national authorities and enforced by legislation to protect occupational safety and health. It can be a tool in risk assessment and in the management of activities involving handling of dangerous substances.

The exposure Rating should take into account measure used to reduce exposure via all relevant routes, e.g., skin contact, hearing effects on muscular-skeletal system, etc. dependent on the hazard. It is easiest to assign a particular Exposure Rating category if measurement data are available, since that data can be compared directly against the OEL. Exposure measurement data are only one indicator of adequacy of control and are not always readily available. The Exposure Rating category should also consider the reliability of the existing measures, including engineering methods, procedures, and personal protective equipment, to reduce exposures. This is done by comparing the controls with standard of good practice using experience and judgment.

Year	Health Risk Matrix-Description of Change
2019	- Revised biological hazard by removed HIV
2020	- Revised biological hazard by added new respiratory infection COVID-19 and hierarchy of control by added COVID-19 protocol
2021	- Revised hazard rating categories in Health Surveillance KPP to conform with Enterprise risk management standard
2022	- Reviewed COVID-19 hazard and exposure rating due to COVID-19 vaccine has been successfully develop & available for public & more effective treatment regimens - Revised biological hazards by add Monkeypox into new respiratory infection outbreak
2023	- Revised hierarchy of control by added BCP plan and outbreak protocol - Revisited office -employee and contractor due to organization change by added VGOT
2024	- Added new offshore Wassana Field
2025	**Updated Jun 2025** - Updated COVID-19 hazard and exposure rating to reflect endemic state - Added new offshore NYC-MOPU into Nong Yao Field - Added H2S to NYC health risk coverage for all positions in NYC, but for Nong Yao coverage is limited to Operator and E&IO only.
	Updated Nov 2025 - The Health Risk Matrix has been reviewed to ensure compliance with the Ministry of Public Health (MOPH), which has issued two new notifications in B.E. 2568 (2025) concerning environmental and occupational diseases. - Effective 1 November 2025: - Notification of the Ministry of Public Health Re: Names or Major Symptoms of Diseases Caused by the Environment, B.E. 2568 (2025) - Notification of the Ministry of Public Health Re: Names or Major Symptoms of Occupational Diseases, B.E. 2568 (2025)

JOB/ HEALTH RISK MATRIX (Occupational Health)

Department	Job Title		Physical Hazards						Chemical Hazards											Biological Hazards					Eronomics, Psychological and Psychological				
Health Risk			Vibration	Sun Light/ Strong Light	Noise	High Temperature	Radiation	Respirable Dust (PM2.5)	Dust/ Welding Dust	Chemical Liquid/ Grease	Chemical Sensitiser/ Vapour	Benzene	Mercury	Lead	Arsenic	H2S	Xylene	Hexane	Chlorine	Bacteria (Cooling Tower)	*E Coli, Salmonella Sp., Staphylococcus aureus., Clostridium perfringens, Clostridium Botulinum*	Blood	Fungus	Infection	Ergonomic	Manual Handling	Work Load Over/ Continuous Work	Pls refer to hierarchy of control 1. Elimination 2. Subsitution 3. Engineering Control 4. Signage/ Warnings/ Administrative control 5. PPE	Health Program
Possible Disease			Vibration Sydrom (white finger)	Skin Cancer	Hearing Loss	Heat Stress & Heat Cramp	Blood Disorder	Pneumoconiosis	Pneumoconiosis / Lungcancer	Dermatitis	Occupationla Asthma	Liver Disorder and Blood Generation Disorder	Chronic Toxic Effect	Lead Poisoning	Arsenic Poisoning	Chemical Posion	Effect nervous system	Effect nerves controlling "peripheral neuropathy"	Effect respiratory system	Legionellosis	Diarrhea	Hepatitis A/B	Tinea Pedis (Athlete's Foot)	COVID-19 & FLU	RSI (Repetitive strain injury)	MSD (muscular-skeleton disorders) & Physical Exertion	Mental Stress	the control in the higher tier in the hierarchy can be more reliable and effective	
Offshore Wassana Field (G10/48)																													
	1	Field Manager	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	2	Operation Supervisor	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	3	Radio Operator	NA.	NA.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	4	Safety Technician	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	NA.	NA.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	5	Sr. Operator CCR	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	3rd Priority	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	6	Production Operator	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	3rd Priority	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	7	Jr. Operator	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	3rd Priority	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	8	E&I & O	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	3rd Priority	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	9	Mechanic Technicain	No Immediate Act.	No Immediate Act.	2nd Priority	3rd Priority	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	3rd Priority	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	10	Deck Foreman	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	3rd Priority	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	11	Crane Operator	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	3rd Priority	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign
	12	Deck Crew	No Immediate Act.	No Immediate Act.	2nd Priority	No Immediate Act.	NA.	No Immediate Act.	NA.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	No Immediate Act.	3rd Priority	No Immediate Act.	3rd Priority	No Immediate Act.	PM mechanic, Insulation (heat), PPE, Awareness (training), safety sign, worker rotation, workplace monitoring, Hydrogen Sulfide mornitor and gas detector, Mornitor health situation, Good Personal hygiene, DMH implement	Annual Health Check Up and Health Awareness & Campaign

INTERNAL

เอกสารแนบที่ 50

รายการตรวจสุขภาพประจำปี พ.ศ. 2568

CONNECT ENERGY

BRIDGING EXPERTISE

HEALTH ANALYSIS 2025-2026 OF CREWS FOR WASSANA MOPU

Presented By

CONNECT ENERGY

THAILAND TEAM

AGENDA

HEALTH ANALYSIS 2025-2026

- Connect health checkup program summary table
- Staff position and age range information
- Status of fitness to work offshore, as assessed by the Occupational Health Physician: % and POB no.
- Body Mass Index (BMI) analysis
- Blood pressure analysis
- Medical examination results and trend comparison (2024 vs. 2025)
    a. Dental examination
    b. Fasting Blood Sugar (FBS)
    c. Cholesterol
    d. BUN and Alkaline Phosphatase
    e. Uric acid
    f. Urine examination
    g. Chest X-ray
    h. Electrocardiogram (EKG)
    i. Exercise Stress Test (EST)
    j. Ultrasound Upper Abdomen
    k. Pulmonary Function Test
    l. Occupational vision test (occupational screening and color blindness)
    m. Audiogram
- Action plan for 2026

Connect health checkup program summary

Connect Energy selected high-quality and reputable hospitals with Occupational Health Physicians to provide medical check-ups for the crew. In year 2025, Connect energy provides physical examinations to all crew members, with 100% completion which is total 34 persons.

Physical Examination Program

No.	Description	Thai	OFFSHORE* Pre Employment		OFFSHORE* Periodic	
			P5 All gender Age<35	P6 All gender Age≥35	P7 All gender Age<35	P8 All gender Age≥35
1	Occupational Physical Examination	ตรวจร่างกายอย่างละเอียดโดยแพทย์อาชีวเวชศาสตร์	x	x	x	x
2	Dental Examination	ตรวจสุขภาพปากและฟันโดยทันตแพทย์	x	x	x	x
3	Vision Test (Visual Acuity, Color Blindness)	ตรวจการมองเห็น, ตาบอดสี				
4	Complete Blood Count (CBC)	ตรวจหาความผิดปกติของเม็ดเลือด	x	x	x	x
5	Blood Group	กรุ๊ปเลือด	x	x	x	x
6	Fasting Blood Sugar (FBS)	ตรวจระดับน้ำตาลในเลือด	x	x	x	x
7	Lipid profile (Cholesterol, HDL, LDL, Triglyceride)	ตรวจไขมันในเลือด	x	x	x	x
8	Serum Glutamic Oxaloacetic Transaminase (SGOT) , Serum Glutamic Pyruvic Transminase (SGPT), Alkaline phosphatase	ตรวจสมรรถภาพการทำงานของตับ	x	x	x	x
9	BUN, Creatinine	ตรวจการทำงานของไต	x	x	x	x
10	Uric acid	ตรวจระดับกรดยูริคในเลือด	x	x	x	x
11	Urine Analysis	ตรวจปัสสาวะ	x	x	x	x
12	Chest X-ray (PA)	ตรวจเอ็กซเรย์ทรวงอก	x	x	x	x
13	Electrocardiogram (EKG)	ตรวจคลื่นไฟฟ้าหัวใจ		x	x	x
14	Exercise Stress Test (EST)	ตรวจสมรรถภาพการทำงานของหัวใจขณะออกกำลังกาย		x		x
15	Ultrasound Upper Addomen	ตรวจอัลตร้าซาวด์ช่องท้องส่วนบน				x
Occupational Health Test						
16	Lung Function Test	ตรวจสมรรถภาพปอด	x	x	x	x
17	Occupational Vision Test (Visual Acuity, Stereopsis, Color Blindness, Visual Field)	ตรวจการมองเห็น, การมองภาพ 3 มิติ, ตาบอดสี, ตรวจลานสายตา	x	x	x	x
18	Audiogram by Audiologist	ตรวจสมรรถภาพการได้ยิน	x	x	x	x
Other required for Offshore staff (Health Risk Based Assessment) **						
19	Lead Level in Blood	ตรวจระดับสารตะกั่วในเลือด	x	x		
20	Inorganic Arsenic and Methylated-Metabolites in Urine (Arsenic Speciation) ***	ตรวจระดับสารหนูอนินทรีย์ร่วมกับเมทิลเลตเมทาโบไลท์ในปัสสาวะ	x	x		
21	Total Inorganic Mercury in Urine	ตรวจปรอทอนินทรีย์ทั้งหมดในปัสสาวะ	x	x		
22	Benzene in Urine	ตรวจระดับสารแปรรูปกรด ที,ที-มิวโคนิคในปัสสาวะ	x	x		

A. List of hospital providers in 2025

1. Sikarin Hatyai Hospital
2. Phyathai 2 Hospital
3. Sikarin Bangna Hospital
4. Bangkok Hospital Hatyai
5. Khonkaen Ram Hospital
6. Phitsanuvej Hospital

B. Number of POB who participated in the program = 34

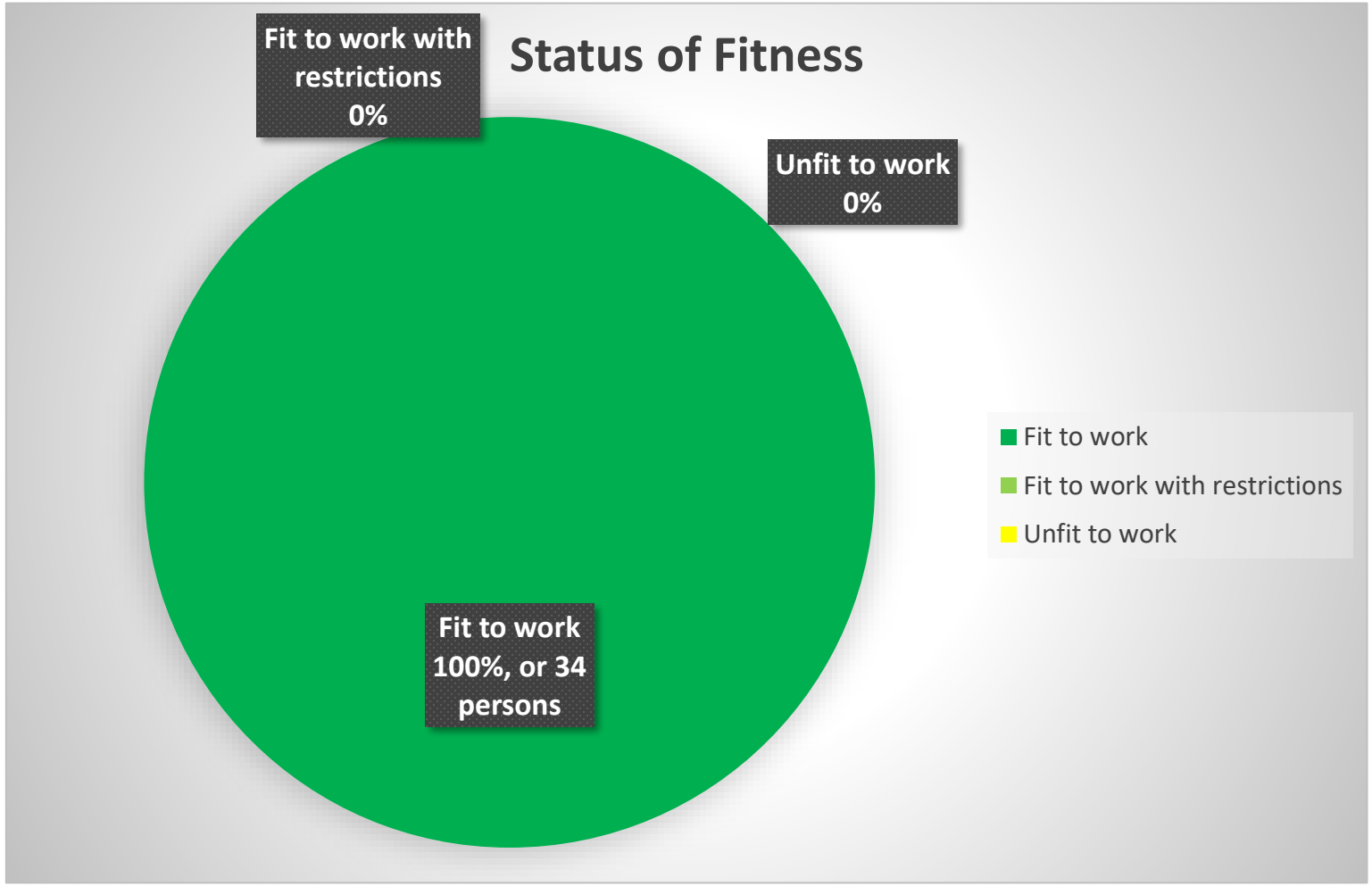
C. Age groups

Ages groups	No. of contractors
≥ 35 years	31
< 35 years	3

Staff position and age range information

No.	Age range	Position											Total
		Crane Operator	Deck Crew	Deck Foreman	E&IO Technician	EHS Officer	Jr. E&IO Technician	Junior Operator	Mechanic Technician	Production Operator	Radio Operator	Senior CCR Operator	
1	25-29												0
2	30-34		1				1	1					3
3	35-39		1			2		1	1	1			6
4	40-44		3		4				2	3	2	2	16
5	45-49	1	1	2	1				1			1	7
6	50-54											1	1
7	55-59	1											1

Status of fitness to work offshore, as assessed by the Occupational Health Physician: % and POB no.



Status of Fit to work	Number
Fit to work	34
Fit with Restriction	0
Unfit to work	0

Remarks: All crew members are 100% fit for work.

เอกสารแนบที่ 51

รายงานการตรวจสอบอาชีวอนามัยและความปลอดภัย

valeura energy

VALUE GROWTH

2024 ISO 9001 14001 AND 45001

INITIAL REVIEW

WASSANA FIELD

8-13 NOV 2024

2024 ISO Initial Review Actual Plan: Wassana Field

Date/Time	Date	Time	Department	Auditee	Place	Auditor
Wassana Day 1	Fri 8 Nov	Evening	Arrive at MOPU		MOPU	Songrach R. Nuttee S.
Wassana Day 2	Sat 9 Nov	Morning	ISO Awareness Training		MOPU	Songrach R. Nuttee S.
		Afternoon	-	-		
Wassana Day 3	Sun 10 Nov	Morning	Medic	Medic	MOPU	Songrach R. Nuttee S.
		Afternoon	Catering (site tour)	Sodexo		
		Evening	ISO Awareness Training			
Wassana Day 4	Mon 11 Nov	Afternoon	Site tour with FM and OS		MOPU	Songrach R. Nuttee S.
Wassana Day 5	Tue 12 Nov	Morning	Site tour	FSO OIM & FSO Operation Team	FSO	Songrach R. Nuttee S.
Wassana Day 6	Wed 13 Nov	Morning	Observation Summary		MOPU	Songrach R. Nuttee S.
		Afternoon	Depart from MOPU			

2024 ISO Internal Review : Wassana Field

Positive Observations

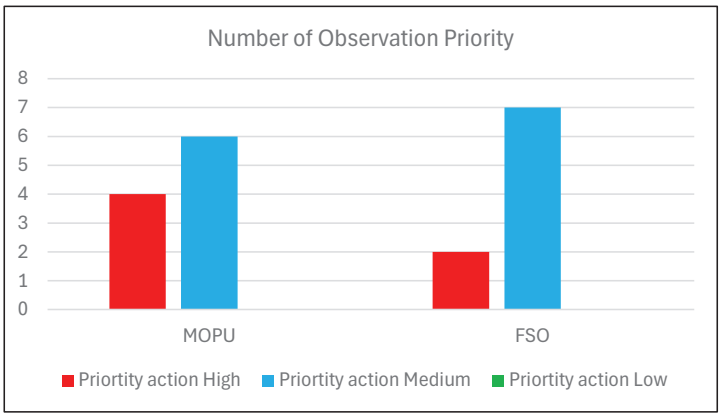
MOPU:

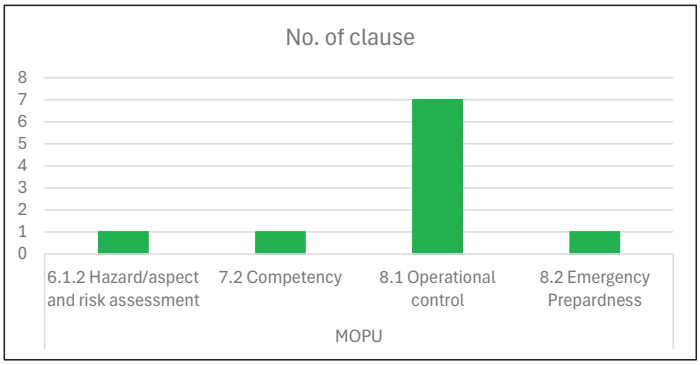
- Good leadership by MOPU management team to expand ISO scope to Wassana
- MOPU Wassana crew have a positive attitude towards product quality, health and hygiene, safety, and environment.
- 100% Support form Wassana team during each interview session
- Having a good management in emergency response real practice

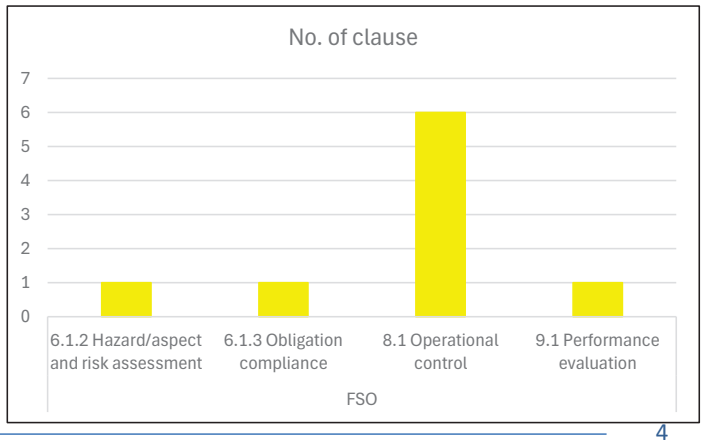
FSO:

- International Safety Management (ISM) Code is in place
- Good participation in safety campaign “I see it, I own it” promoted by Wassana Safety Tech

Executive summary of ISO initial review







2024 ISO Initial Review: MOPU

Observation	Description	Area	Picture	Requirement and Priority
SDS / Chemical handling	• SDS documented is not available in chemicals storage and usage area. • SDS for chemicals used by temporary contractor was not found in SDS inventory. • Some of chemical user were not familiar with the SDS in English and inadequate understanding of SDS instruction	• Well bay area • Laundry material stock • Maintenance workshop	 	8.1 (OHS) High 7.2 (OHS) Medium

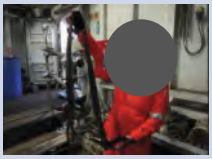
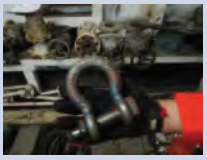
Priority action: High, Medium, and Low

2024 ISO Initial Review: MOPU

Observation	Description	Area	Picture	Requirement
PAD Test	The inspection record and tag for the electrical equipment was not found.	• Office • Accommodation • Workshop • Galley • Clinic	 	8.1 (OHS) High

Priority action: High, Medium, and Low

2024 ISO Initial Review: MOPU

Observation	Description	Area	Picture	Requirement
Lifting Gear	• Found used synthetic webbing sling and lifting gear with no color code are being in use for generator no.4 maintenance job. • Found hand lift had previous color code.	• Generator room • Mud room • Laundry store	  	8.1 (OHS) Medium

Priority action: High, Medium, and Low

2024 ISO Initial Review: MOPU

Observation	Description	Area	Picture	Requirement
Identified hazard and risk assessment (JSA) / Environmental aspect	1. Inadequate identified hazard and risk assessment relevant to their routine activities such as • Store and raw material arrangement, Working at height, Upper object manual handling • Repair / Front line maintenance • Patient evacuation, Pressure cylinder gas operation • Chemical household usage 2. Sampled the JSA no. TH-G10-OPT-PRO-JSA-GEN-006-R0: see task step no.3 remove strainer cleaning; it was found that the dangers of using chemicals was not identified, resulting in determining the appropriate control measures. 3. Lab equipment cleaning point and sampling point were located at well bay (temporary assign), it is risky to drop into sea.	• Storeroom • Maintenance workshop • Clinic • Galley • Well bay	-	6.1.2 (OHS, EMS) Medium

Priority action: High, Medium, and Low

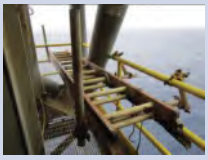
2024 ISO Initial Review: MOPU

Observation	Description	Area	Picture	Requirement
LOTO Car Seals (device used to lock) **Priority action: High, Medium, and Low**	• Locks and tags color code in place is not being followed according to Isolation procedure • Observed key lock no.R028 (red color) was locked with close drain valve while it was locked with Car Seals lock open, resulting in case abnormal process, it cannot be unlocked immediately. • Observed Car Seals lock practice are not similar for each area (tag color code is not same) • Needle valve lock guard are not implemented across the entire area. • Color tag with needle valve lock guard is not standardize in the well bay.	• Maintenance workshop • Well bay	 	8.1 (OHS) High

2024 ISO Initial Review: MOPU

Observation	Description	Area	Picture	Requirement
Long term isolation	• Well No.22, observed that long term tag was used but it has not been registered in the long-term isolation system • Switch gear breaker No.A03K, observed that long term tag was used but it has not been registered in the long-term isolation system	• Well bay • Switch gear room	 	8.1 (OHS) Medium
Water leakage **Priority action: High, Medium, and Low**	• Water leakage was found in the electrical room. Potential risk for electrical short circuit.	Electrical switch gear room		8.1 (OHS) High

2024 ISO Initial Review: MOPU

Observation	Description	Area	Picture	Requirement
Tool equipment	• There was no safeguard in place for the drilling machine. • Observed screwdriver is unsuitable for use but it is still in use. • Nitrogen tank was found in the mechanic workshop room • Observed slide ladder has not been inspected. • Insulation wall is poor condition, resulting in turbulence of microfiber dust in that area. It is risky to inhalation system and skin irritation. • The wall switch plate in the accommodation no.13 is broken	• Maintenance workshop room • Electrical room		8.1 (OHS) Medium

Priority action: High, Medium, and Low

2024 ISO Initial Review: MOPU

Observation	Description	Area	Picture	Requirement
Electrical rescue kit	• Observed electrical rubber gloves missing • No inspection and maintenance record for all electrical rescue device was found.	Electrical rescue kit		8.2 (OHS) Medium

Priority action: High, Medium, and Low

2024 ISO Initial Review: FSO

Observation	Description	Area	Picture	Requirement
JSA	JSA No.JHA-JT-24-D-011 for offtake operation. Found the control measures are not reasonable to reduce hazard risk.	Office	-	6.1.2 (OHS) Medium
Safety Officer Training	Observed Jaka Tarub organization chart, the training certificates and appointment letters for staff who were assigned by position and by duty to be safety officer were not found ❖ By position are safety officer in management level and supervisor level ❖ By duty is safety officer in technical level	Office	-	6.1.3 (OHS) Medium
HOC Analysis	• HOC was counted every month but there is no analysis of the trend of unsafe action and unsafe condition to identify proper incident prevention measures.	Office	-	9.1 (OHS) Medium

Priority action: High, Medium, and Low

2024 ISO Initial Review: FSO

Observation	Description	Area	Picture	Requirement
First aid bag	• No inventory and inspection record were found. • Medical equipment (Pulse oximeter) in the first aid bag is not ready to use. (low battery)	First aid room		8.1 (OHS) High
Oxygen cylinder	Oxygen cylinder was stored in the first aid room, not in use.	First aid room	-	8.1 (OHS) Medium
Waste management	Observed that the waste skip was not covered by canvas, which could allow rainwater to enter the skip.	Main deck	-	8.1 (EMS) Medium
Tool equipment	No whip check safety cable was used when operate pressure hose	Main deck	-	8.1 (OHS) Medium
	Observed ramp at forward is poor condition, it is risky to repeat incident	Main deck	-	8.1 (OHS) High
Synthetic webbing sling	Synthetic webbing sling is poor condition and without color code.	Main deck	-	8.1 (OHS) Medium

Priority action: High, Medium, and Low

เอกสารแนบที่ 52

ใบอนุญาตวิศวกรควบคุมหม้อไอน้ำ

กรมโรงงานอุตสาหกรรม
DEPARTMENT OF INDUSTRIAL WORKS

S.E.D.A.

สมาคมพัฒนาความปลอดภัยและสิ่งแวดล้อมในการทำงาน

หน่วยงานจัดฝึกอบรมที่ได้รับการขึ้นทะเบียน จากกรมโรงงานอุตสาหกรรม เลขที่ 111-100-006

ใบรับรองฉบับนี้ให้ไว้ เพื่อแสดงว่า

[redacted]

ได้ผ่านการอบรมหลักสูตร "ผู้ควบคุมประจำหม้อน้ำ หรือหม้อต้มที่ใช้ ของเหลวเป็นสื่อนำความร้อน"

อบรมภาคทฤษฎีและดูงานภาคสนาม ระหว่างวันที่ 22–24, 27–29 มีนาคม 2560

การรับรองของหน่วยงานจัดสอบมาตรฐาน

วว.TISTR

สถาบันวิจัยวิทยาศาสตร์และเทคโนโลยีแห่งประเทศไทย
(หน่วยงานจัดสอบมาตรฐานที่ได้รับมอบหมายจากกรมโรงงานอุตสาหกรรม)
ขอรับรองว่า ผ่านการสอบมาตรฐาน เมื่อวันที่ 29 มีนาคม 2560

[redacted]

ผู้ว่าการ
สถาบันวิจัยวิทยาศาสตร์และเทคโนโลยีแห่งประเทศไทย

[redacted]

นายกสมาคม

หมายเลขใบรับรองที่ BO : 5657

เอกสารแนบที่ 53

การฝึกปฏิบัติงานการใช้อุปกรณ์ช่วยยก

Thailand – Health, Safety, Security and Environment

Portable Lifting Equipment Operating Practice

Safe Work Practices (SWP)

Document Number:
TH-GEN-HS-HS-SWP-0085

Revision R6

Published

Thailand – Health, Safety, Security and Environment

Portable Lifting Equipment Operating Practice

Safe Work Practices (SWP)

Electronic Version is Current—Uncontrolled Hard Copy Valid Only at the Time of Printing

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Document Type	Safe Work Practices (SWP)
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CHANGE SHEET

Please **update manually** the table below with **Major Changes** since revision R1.

Should not include correction of typos or formatting changes.

Revision:	Date:	Originator:	Description of Change:
0	10 Feb 09	Thanagon T.	– First issued as SOP
0	28 Jul 11	Nuttawut K.	– Converted to SWP – Modified content, added inspection manifest form
R1	Apr 14	Thaweesak P.	– Formatted to EDMS template
R2	31 Mar 15	Natamon N.	– Changed company logo in Appendix 1: Lifting Manifest
R3	21 Jun 16	Thaweesak P.	– Item 4.2.4 Adding: Any CCU where fabricate by metal shall install wooden or rubber chock at bottom of the CCU to prevent metal-metal contact between the CCU and platform deck. The metal- metal contact may possible damage platform deck surface and resulted in corrosion, spark potential when lifting on the area where oil contained and possibly spark and fire.
R4	28 Nov 19	Pakdee A.	– Update of content in (4.1.4) Planning Lifting Operations – Update content in (4.3.1) Personnel Transfer Basket from X-800 to X904
R5	28 May 23	Alisa J.	– Updated logo, cover and header
R6	19 Mar 25	Suchada J.	– The material to secure pallet with the pallet carrier must be the approved polyester not steel. – Cancel the checklist in the APPENDIX 1: CRITICAL LIFT PLAN checklist – Appendix 1: Shipping Manifest – Requirement for routine & non-routine lift

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1 OBJECTIVES

This Safe Work Practice (SWP) is designed to provide guidance to personnel involved regarding safe rigging and lifting practices onshore and offshore in compliance with Company practices.

The specific objectives of this document are to:

- Provide personnel with an understanding of Company requirements regarding onshore and offshore rigging and lifting operations.
- Establish minimum guidelines for safe use, maintenance, and inspection of rigging equipment.
- Establish minimum guidelines for packaging, rigging, lifting, and landing loads.
- Ensure compliance with good safety practices and commitment to attaining the Company's HSSE policy.

The Rigging and Lifting Standard Operating Practices is intended to communicate this practice in a format that is usable and easily understood.

However, there may be certain circumstances not specifically covered in this document where further clarification is required through researching company, technical or official regulatory documents.

2 SCOPE

This SWP applies to all company and contractor personnel at onshore or offshore facilities who, as part of their duty, may be involved in rigging and lifting activities using pedestal-mounted cranes, or who may be involved in operations using temporary cranes or portable or hand equipment.

This document covers rigging and lifting operational practices and pre-use inspections of company and Contractor rigging equipment by personnel previously trained to conduct such inspections.

It does not cover the full inspection or certification requirements for lifting equipment. To meet that requirement, please refer to the Inspection of Lifting Equipment Procedure.

It does not cover Contractor work inside Contractor yards, although company personnel should try to ensure that Contractor working practices are of a standard as high as or higher than the company standard before signing a contract.

3 DEFINITION

CCU	**Cargo Carrying Unit** • Open CCU • Closed CCU Receptacles used to consolidate, protect and transport materials and supplies, such as trash baskets, cargo baskets, food containers, drum racks, gas cylinder racks, cutting bins, sensitive material bins, hazardous waste containers and portable tanks.
CG	Center of Gravity (or CoG)
Competent Person	The person concerned with the testing, examination and certification of lifting equipment and who shall have the registered knowledge and experience to certify with confidence whether it is free from defect and suitable in every way for the duty for which the equipment is required. The competent person shall be certified, to the extent applicable, by a Third Party, or approved by the company
Dynamic Lifts	Lifts made with a crane from a fixed structure (platform) onto a moving structure (boat) or vice versa. All crane lifts on non-fixed (floating) platforms will be considered dynamic lifts.
Dynamic Loading	Loads introduced into the machine or its components during a dynamic lift due to accelerating or decelerating forces.
Heavy Lift	A non-routine lift which is equal to or greater than 80% of the rated capacity of the crane, at either a dynamic or static condition. Rated capacities are as per the Load Chart.
Non-Routine Lift	At a minimum, non-routine lifts are defined as any lifts made over unprotected pressurized equipment where the consequence of a dropped load could result in significant damage or injury to personnel. Additional consideration should be given to non-routine lifts of hazardous materials (acids, flammable liquids, pressurized equipment, etc.)
PIC	Person in Charge (of a Task, Work Area or Facility)
Portable Lifting Equipment (PLE)	Any item used to connect a load to a lifting machine or appliance, but not limited to; Cargo Container Units (CCU), e.g. containers and lifting baskets. Wire rope slings (single and multi-leg) Shackles, eyebolts, turnbuckles Hooks Personnel baskets

	Spreader beams Pallet Carrier Frame Web belt slings Safety stingers (headache ball extension) Chain block Etc.
Stinger	A single length of wire rope equipped with a hook and safety latch on one end and an eye on the other end, which is capable of handling the maximum capacity of the load.
Safe Working Load (SWL)	The maximum mass (as certified by a competent person) that an item of portable lifting equipment may raise, lower or suspend under particular service conditions.

4 GUIDELINE

4.1 PLANNING

4.1.1 PACKING MATERIALS AGAINST MOVEMENT

In the course of offshore operations, cargo in transit and its sea fastening arrangements will be subjected to forces acting in three directions. Such forces can be the result of shock loadings during transfer operations or vessel motions due to rough seas, particularly during bad weather.

Goods being transported by other means will also experience significant forces as a result of vehicle motions or rough handling during transit. Whilst being carried on moving vehicles, goods and their securing arrangements may also be subjected to exceptional loads during emergency incidents.

These forces can result in violent, unexpected movements of the goods both at the time an incident occurs or when the package or Cargo Carrying Unit (CCU) is subsequently opened.

Goods must therefore be adequately secured against potential movement. Failure to recognize and comply with these requirements can result in injury to personnel and material damage.

All packaging must be suitable to prevent any of the contents moving or escaping under adverse weather conditions and rough handling.

The duties of the packer include the following:

- All packages must be suitable, properly labeled and in satisfactory condition
- Packages must be stowed safely and properly secured in the CCU.
- The gross weight of all packages shall be recorded
- Ensure even and safe load distribution and to prevent the maximum permitted gross weight of the CCU being exceeded.
- The CCU must display the appropriate hazard warning labels, marks and signs.

General packing provisions are as follows:

- Polystyrene chip packing and Hessian sacks should not be used due to environmental and safety reasons.
- The preferred packing material is bubble wrap.
- Nylon sacks used to send heavy items by air should be packed into cardboard boxes for static prevention.
- Items weighing more than 25 kg should be labeled as "heavy" for manual handling reasons.
- All sharp and protruding objects should be removed or given extra protection.

During transport, forces such as acceleration, braking, centrifugal and vertical forces act on the load. A prerequisite for safe transport is a suitable CCU with the appropriate structure and necessary load lashing devices. The task of load lashing is to secure the load against the effects of these forces and to prevent slipping, tipping or falling.

- Total certified capacity of the lashing arrangements should be greater than the weight of the items being secured.
- Lashings should be equally distributed across the item.

4.1.2 CORRECT CARGO CARRYING UNIT (CCU) USAGE

To transport cargo safely and prevent incidents from happening, all cargo must be packed in the correct type of CCU:

Cargo	CCU
General Cargo	Open CCU, Closed CCU or Baskets or Pallet Carrier
Gas Bottles	Gas Cylinder Racks
Drums	Drum Racks or Baskets
Construction Material	Open CCU, Closed CCU or Baskets
Fuels/Oils/Chemicals	Tote Tank, Chemical Transit Tank or Aviation Fuel Tanks
Scaffolding Tubes and Boards	Pre-slung and transported in an open CCU or basket. Other associated equipment such as clips to be sacked or containerized.

NOTE: All material should be contained in open CCU properly, any material wider/longer than the open CCU is prohibited.

Pallet Packing

The majority of Company pallets are:

- Made of wood
- The same size (48" by 48")
- Designed with a safe working load (SWL) of 1500kg.

NOTE: If the load on a pallet is not distributed equally on the pallet, the SWL will be reduced.

Pallets shall be inspected before loading to ensure they are in sound condition. If there is any obvious damage, the pallet shall be removed from use.

4.1.3 PROHIBITED PRACTICES

Examples of practices and equipment which may NOT be used offshore include:

Open hooks like this are not allowed.

Pallets loaded like this are dangerous and unacceptable. Items of this nature should be shipped in cargo baskets. Shipping anything wider/longer than the pallet is prohibited.

Ensure all material is secured together and secured to the pallet with proper or approved polyester banding. Soft line, rope and or sash line may NOT be used for securing material to a pallet.

Cargo Nets

All materials shipped from base to facility and back to base must be correctly packed using one of the appropriate Cargo Carrying Units (CCU).

NOTE: Cargo nets may be used to transfer cargo onshore and on the same platform. Cargo nets can be used to transfer cargo between Platform and Boat ONLY IF a Risk Assessment has been performed and with the approval of the Field manager. Certified cargo nets must be inspected by Asset owners.

Fiber Core Slings

Fiber core slings may NOT be used for offshore lifting operations.

Chains

Due to the corrosive environment offshore and the difficulty in conducting accurate and repeatable inspections, chains may NOT be used for lifting operations

4.1.4 PLANNING LIFTING OPERATIONS

The degree of planning will depend upon the type of the lifting operation to be undertaken. All lifts shall be classified as either **routine** or **non-routine**. The classification of the lifting operation as a **routine** or **non-routine** lift is an essential part of the planning activities.

All **non-routine** lifting operations will be planned, as a minimum, by a certified and licensed.

Class "A" Crane Operator. It is important that this person continually review all stages of the

Lifting operation, as there may be factors that change a lifting operation from **routine** to **non-routine**.

The crane operator who plans the lift will identify the types of loads which have an unusual lifting geometry or may be unstable. Such lifts may include:

- Loads with the center of gravity above the lifting points.
- Loads with an offset center of gravity.
- Loads with a narrow or small base.
- Extremely long loads that may tend to rotate.

Routine Lifting Operations

Those lifts that are frequently undertaken and are generally included in normal cargo operations. Before any routine lift, or a series of lifts, a Job Safety Analysis (JSA) and a toolbox meeting shall be conducted with all personnel involved in the lifting operation.

Routine Lifting Operations	Control Measures
• The maximum suitable environmental conditions for lifting will be decided by the crane operator and the boat captain (in consultation with the PIC when required) • Open deck unobstructed operations • Vessel transfers • Load with known weight and center of gravity • Standard rigging arrangements • Installed craneage	1. Lift carried out by a company-approved, certified, and licensed Crane Operator. 2. Utilizing Riggers and Deck Crew who have been trained in lifting and rigging skills. 3. JSA and Toolbox meeting held before lift. 4. Lifting Manifest shall be used to record all lifts. (See Appendix 1) 5. For Brownfield, Well Service and RPU (HWO), a 4-man lift team of the contractors shall be utilized, i.e., crane operator, a signalman, and two riggers.

Non-Routine Lifting Operations

Non-routine lifts shall be planned by the Person In Charge (PIC) and will require a JSA/Risk Assessment, a lifting plan, and a Toolbox meeting shall be held prior to the lift.

Non-Routine Lifting Operations	Control Measures
• Any load with gross weight exceeding 80% of the crane SWL. • Any work done by a temporarily installed Contractor or company craneage. • Non-symmetrically shaped lifts where the center of gravity is not marked on the load. • Loads requiring the use of a crane to place and hold them in a specific position or location. **Exception:** The use of cranes to place and hold the wireline lubricator and BOP on top of the well head.	1. Carried out only by a certified and licensed Class A Crane Operator. 2. Include Riggers and Deck Crew who have been trained in lifting and rigging skills. 3. Include a written critical lifting plan as part of the JSA/Risk Assessment. 4. Toolbox meeting held prior to lift. 5. Lifting Manifest shall be used to record all lifts. (See Appendix 1) 6. For Brownfield, Well Service and RPU (HWO), a 4-man lift team of the

• Containers of cryogenic substances such as liquid Nitrogen, Oxygen, Carbon Dioxide, etc., whose path travels over unprotected process vessels, coolers, heat exchangers, piping, or wellheads. • Loads requiring the use of more than one crane. • Platform structures or parts of platform structures under construction. • Movement of equipment that is liable to become caught or trapped. • Movement of bottled	contractors shall be utilized, i.e., a crane operator, a signalman, and two riggers.

4.1.5 SUPERVISION OF LIFTING OPERATIONS

The degree of supervision is dependent upon the type of lifting operation to be undertaken and is proportionate to the risk. For routine lifting operations, additional dedicated supervision of the operation is not normally required. The Crane Operator or dock foreman shall be in control of the operation. This person will:

- Co-ordinate and control all aspects of the lifting operation, including the toolbox meeting.
- Ensure that all personnel are aware of their specific responsibilities regarding each lift.

4.1.6 UNDERTAKING LIFTING OPERATIONS

Prior to carrying out any lifting operation, selected precautions shall be observed, including the control measures above. These are applicable to all lifting operations and include holding a toolbox meeting where all details of the task are discussed.

In the case of non-routine lifts, the review of the JSA/Risk Assessment and critical lifting plan shall be completed (See Appendix 1). Specific responsibilities detailed at the toolbox meeting will include the identification of “who” does “what” during the lifting operation.

The Crane Operator and the assigned Banksman shall ensure that the following activities are carried out. This list of activities should form the basis of a standing JSA/Risk Assessment procedure for all lifting operations.

1.	Ensure the lifting equipment is certified for current use.
2.	Confirm that the appropriate rigging for the lift is correctly installed, and the lifting sets are not twisted or snagged.
3.	Ensure slings of equal length are used, placed to ensure balance, and correctly choked on tubulars.
4.	Ensure shackle bolts are tight and adequately secured and locked.
5.	Confirm the weight of any load or bundle.
6.	Ensure the hook is positioned above the load’s center of gravity.
7.	Ensure that a clear and effective communication system is employed and understood by all personnel involved with the lifting operation.

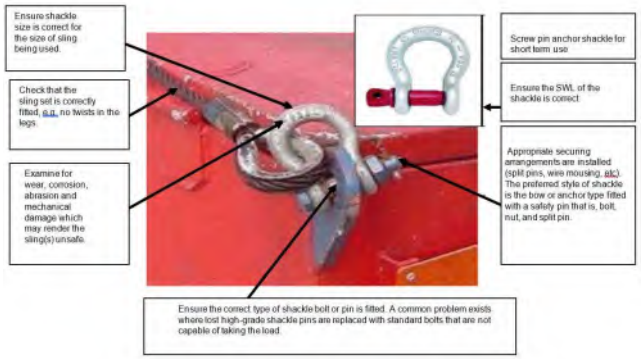
8.	Ensure that adequate lighting in the pick-up and lay-down areas and effective and unobstructed access ways and escape routes exist.
9.	Ensure that the pick-up and lay-down areas are within the crane radius for the load being lifted.
10.	Ensure that the load does not pass over personnel.
11.	Ensure that any restraints to the lift are removed, e.g. hold-down bolts, sea fastenings, etc.

4.2 PRE-USE INSPECTIONS

If an item of equipment is seen to be defective or suspected of being defective either during the pre-use inspection or in service, it must be removed from service immediately and the PIC notified.

If the condemned equipment cannot immediately be destroyed, it shall be quarantined, color coded RED and clearly marked 'NOT TO BE USED". The defect equipment should be returned as early as possible to WH or contractor to repair, replacement or destroyed as soon as deemed appropriate by the onsite supervisor as possible and certainly within one month.

4.2.1 SHACKLE - PRE-USE INSPECTION



4.2.2 WIRE ROPE SLING – PRE/POST-USE INSPECTION

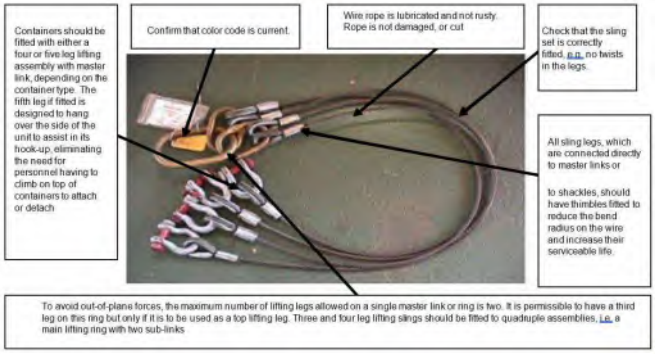
All slings shall be visually inspected each day they are used, and whenever they may have been damaged during a lift.

Recommended Inspection Procedure

Wire rope slings shall be immediately removed form service if any of the following conditions are present:

1. Ten (10) randomly distributed broken wires in one rope lay or five (5) broken wires in one strand in one rope lay.
2. Wear or scraping of one-third the original diameter of outside individual wires.
3. Kinking, crushing, bird caging, or any other damage resulting in distortion of the wire.

4. Evidence of heat damage.
5. Excessive corrosion.
6. End attachments that are cracked, deformed or worn.
7. Sling certification tag is missing or not legible



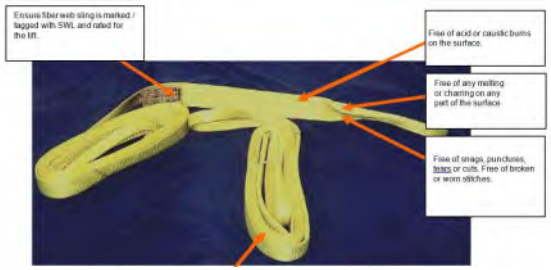
This type 'Lok-a-Loy' connecting link should

NOT BE USED to connect a wire rope sling to any item of equipment.

4.2.3 SYNTHETIC FIBER (WEB) SLING - PRE-USE INSPECTION

Certified Synthetic Fiber (Web) Slings are approved for lifting operations that would otherwise be susceptible to damage from other slinging methods.

NOTE: Synthetic Fiber (Web) Slings shall NOT BE USED for lifting from or to vessels.



The following is a brief guide when using a webbed sling:

- Know the weight of the load.
- Check the weight units – metric tons, short tons, etc.
- Know the SWL of the fiber sling.
- Check that the load is slung correctly.
- Never use slings with a knot.
- Do not use to pull/drag loads.
- Never tie 2 slings together with the eyes.
- Make sure that the slings are located correctly on the load.
- Protect the webbing from all sharp edges during use that could in any way damage the fibers.
- When not in use, slings should be returned to suitable storage location.
- Do not trap slings between load and floor, load on skids or other suitable packing.
- Never drag slings from under a load.

4.2.4 CARGO CARRYING UNITS (CCU)

Types of Cargo Carrying Units (CCU)

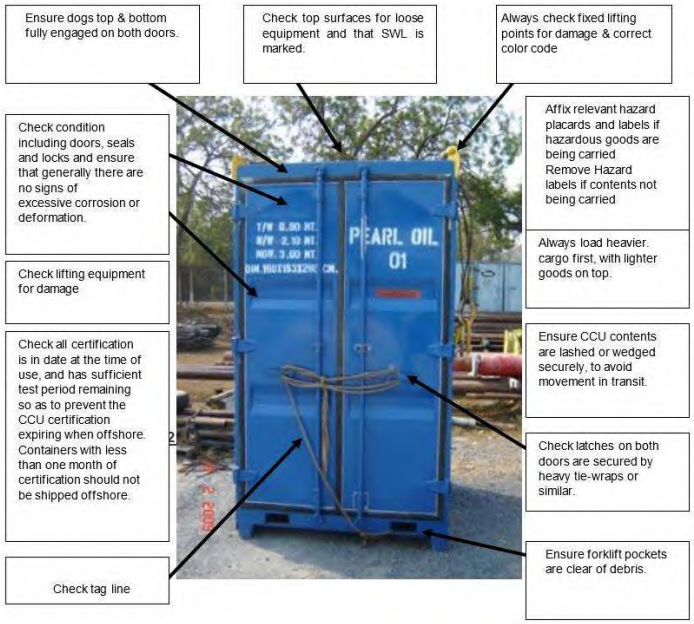
- Container - Standard Closed (Food, Cargo, Explosives, Radioactive source etc.,)
- Chemical Transit Tank, Chemical Transit Tank - Plastic.
- Aviation (jet fuel) Tank, Tote Tank.
- Basket.
- Rubbish skips.

- Drum Racks.
- Gas Cylinder Rack or Carrier.
- Long Basket or Tool Carrier.
- Logging Unit, Power Pack, Toolbox.

Any CCU where fabricate by metal shall install wooden or rubber chock at bottom of the CCU to prevent metal-metal contact between the CCU and platform deck. The metal- metal contact may possibly damage platform deck surface and resulted in corrosion, spark potential when lifting on the area where oil contained and possibly spark and fire.

Examples of CCU

4.2.5 CLOSED CCU - PRE-USE INSPECTION



2 tag lines is required for container lifting.

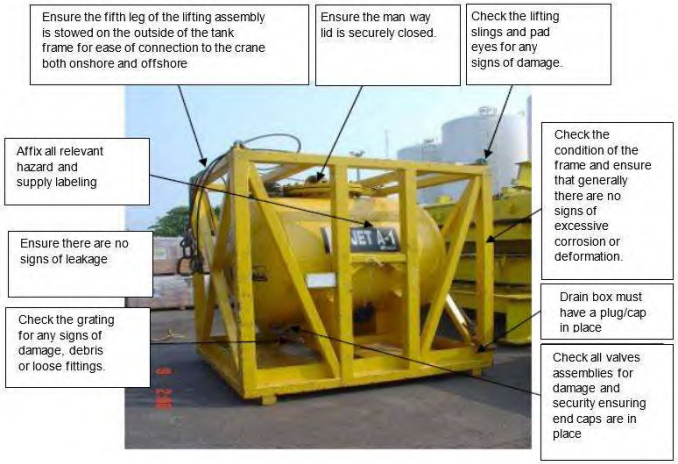
4.2.6 OPEN TOP CCU - PRE-USE INSPECTION

Snagging Hazards for Open Top Containers

Prior to shipping, the person responsible for packing must ensure control measures are in place to prevent snagging of lifting arrangements with contents during cargo operations.

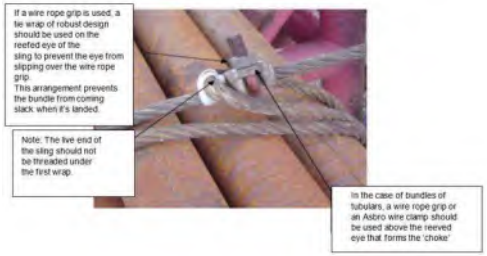
Where there is a risk of lifting sets snagging the cargo, use suitable material to cover the equipment, including cargo nets, tarpaulins, and crating.

4.2.7 OFFSHORE TANKS - PRE-USE INSPECTION (CHEMICALS, OILS, FUELS)



4.2.8 TUBULARS - PRE-USE INSPECTION (DRILL PIPE TUBING)

- Tubulars should always be slung with two slings, each of the same length and of the same SWL. Slings should be placed at equal distance (approximately 25%) from the ends of the load. They should be double wrapped and choked around the tubular.
- In preparing tubulars for transportation, it is good practice to pick up the tubing bundle for a second time to see if more slack can be taken out before fixing wire rope grip or Asbro clamp.
- The number of tubes in each bundle should be such that the middle tubes are gripped and will not slip out of the bundle. Tubulars over 5.5" in diameter should be bundled in 'odd' numbers.
- Only tubulars of the same diameter should be bundled together
- Ensure thread protectors and end caps are securely fastened

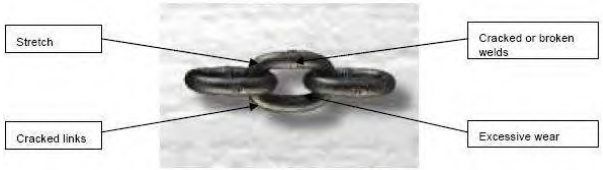


4.2.9 CHAINS PRE-USE INSPECTION

Chains are only used for chain hoists, come-a-longs and on burn baskets.

Due to the corrosive environment offshore and the difficulty of accurate inspection, chains shall not be used for lifting operations in ASSBU facilities.

- If only one link fails, the whole sling fails, unlike a wire rope sling that can have several broken wires before it will fail.
- Chain inspections include 4 areas: (1) Stretch, (2) Cracked or broken welds, (3) Cracked Links, and (4) Excessive wear.

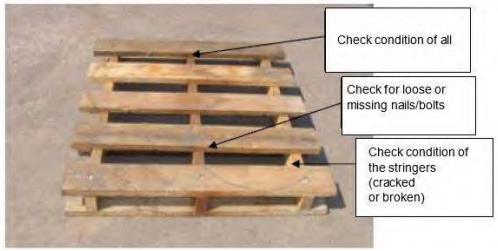


4.2.10 PALLETS PRE-USE INSPECTION

The majority of Company pallets are:

- Made of wood
- A standard size (48" by 48")
- Safe working load (SWL) of 1500kg.

Note that if the load is not distributed equally on the pallet, the SWL will be reduced. Pallets must be inspected before loading drums or sacks to ensure they are in sound condition. If there is any obvious damage (as indicated in the picture), the pallet shall be removed from use.



4.2.11 PALLET CARRIERS PRE-USE INSPECTION

Pallet Carriers are used to carry loaded wooden pallets. Pallet Carriers are composed of a metal frame that has a four-leg bridle sling attached which allows it to be lifted properly.

Proper design and construction are important to ensure pallets are transported safely. The frame and slings must be inspected prior to use, using the same procedure as for other wire rope slings. In addition, the frame needs to be checked for any signs of cracks or distortion.

4.2.12 HOOKS PRE-USE INSPECTION

Hooks are always used as connectors on cranes. They can be connected to slings, shackles and eyebolts. Hooks come in many shapes and sizes.

For added safety, hooks should be equipped with safety latches. Safety latches prevent accidents by positively securing lifting equipment to the hook. If the load is bumped or released suddenly, the latch should prevent the load from jumping off the hook. All crane hooks used shall have an operable latch.

A crane hook that can be closed and locked with a pin or positive locking device eliminating the hook throat opening should be used for personnel lifts. (API 2C, 6th edition, March 2004, Section 7.5.4.3 and API RP 2D Operation and Maintenance of Offshore Cranes, June 2003 Section 3.4.1).

The Rigger is responsible for ensuring the safety latch is in good working condition prior to use.

Note - This type of 'Crosby Shur-loc' hook has a design problem. If a load jumps and causes the hook to double back and strike the sling ferrule, the safety catch can open allowing the load to drop.

Catches of this type should be changed for the modified type that has protective 'ears' on each side of the release to prevent accidental opening.

The Rigger should inspect the hooks for wear and damage before each use. Two main things to look for are:

1 Spreading of the throat opening

To check for spreading, the size of the throat is measured with a rule. If the measurement is more than 5% greater than the nominal size as stated in the manufacturers' manual, the hook should be scrapped. Any elongation of the eye is cause for scrapping the hook.

2 Cracking

Cracking usually occurs along the inside of the shank close to the bend. If any sign of cracks are found, the hook must be scrapped.

4.2.13 EYEBOLTS PRE-USE INSPECTION

Eye bolts must be inspected for four kinds of damage:

- Cracking
- Stripped threads
- Bending
- Distortion of the eye

Straight shank eyebolts can be used ONLY for straight vertical lifts, the direction of force must be directly in line with the shank of the eyebolt.

Shoulder-type eyebolts may be used either for straight lifts or angled lifts of up to 45 degrees from the shank. However, shoulder-type eyebolts sometimes bend if they are mounted improperly.

DROP FORGED STEEL SHOULDER TYPE EYE BOLTS									
Stock Diameter inches	Typical Safe Working Loads Corresponding to Angle of Pull								
	Vertical		75°		60°		45°		< 45°
	lbs.	kg.	lbs.	kg.	lbs.	kg.	lbs.	kg.	
¼	500	227	275	125	175	79	125	67	NOT RECOMMENDED
3/8	1,200	544	660	299	420	190	300	136	
1/2	2,200	998	1210	549	770	349	550	249	
5/8	3,500	1,5872	1,925	873	1,225	556	875	397	
3/4	5,200	2,359	2,860	1,297	1,820	826	1,300	590	
7/8	7,200	3,265	3,960	1,796	2,620	1,143	1,800	816	
1	10,000	4,536	5,600	2,495	3,500	1,588	2,500	1,134	
1 ½	21,400	9,707	11,770	5,339	7,490	3,397	5,350	2,427	

4.2.14 TAG LINES PRE-USE INSPECTION

Tag lines will be used on all lifts to position the load when landing while keeping personnel out of the line of fire should there be a failure of the lifting equipment. When conducting a lift in hazardous conditions, the use of tag lines will allow the operation to be completed safely.

However, these lines can present a severe hazard to an untrained user.

In cases where a tag line may not be considered a safe option, the situation shall be discussed and included on a JSA/JHA and in a tool box meeting.

- Tag lines must be of sufficient length to allow personnel handling cargo to work in a safe position well clear of the immediate vicinity of the load. Recommended size of rope is ¾”
- Tag lines must be made up from single, continuous lengths of manila rope.
- Apart from the knot attaching the line to the cargo, there must be no other joints or knots in the line.

Risks

Additional risks associated with the use of tag lines include the following:

- Potential injuries from dropped objects as a result of personnel handling cargo having to work in closer proximity to suspended loads than would normally be the case.
- Potential injuries resulting from personnel handling cargo being dragged across the handling area, through a heavy load rotating in an uncontrolled manner and the tag line being fouled in limbs or clothing.
- Potential injuries resulting from tag lines being secured to adjacent fixed structures parting and whipping back as a result of a heavy load rotating in an uncontrolled manner

Do's

- Do make sure that at all times personnel handling tag lines work at a horizontal distance from the load equivalent to its height above the handling area, maintaining an angle between the line and the horizontal of not more than 45 deg.
- Do keep all sections of the line, including slack, in front of the body, between the handler and the load.
- Do ensure where two or more persons are handling the same line, ALL must work on the same side of the line. Any slack must be kept in front of the group.
- Do hold the tag line in such a manner that it can be quickly and totally released.
- Do take extra care when using tag lines whilst wearing gloves to ensure that the line does not foul the glove.

Don'ts

- Don't secure or attach tag line in any manner to adjacent structures or equipment. This includes the practice of making a "round turn" on stanchions or similar structures and surging the line to control the load.
- Don't loop tag line around wrists, or other parts of the body.

4.2.15 CHAIN HOIST PRE-USE INSPECTION

The inspection procedure for chain hoists is basically the same whether it is a differential, screw gear, spur gear, air or electric.

- There may be some specific inspection procedures for specific hoists, so always consult the manufacturer's manual.

Pre-Use Inspection Procedure:

1. Braking Mechanism - Check by lifting a load a short distance and then lowering to its original position while checking for slippage or free run.
2. Load Chain - For wear, twists, broken or damaged links. Chain should be clean and free of foreign material or excessive rust. Chain should be properly lubricated.
3. Hook - For wear, heavy nicks, cracks or deformation. The hook must turn freely, and the latch should be operative.

NOTE: Any hook that is twisted or has throat opening in excess of normally indicates overloading or abuse of the hoist and requires an inspection of all other load bearing components for damage.

4.2.16 PAD EYE INSPECTION

All pad eyes will be of an engineered design to ensure suitability for the intended load and service.

To ensure a smooth surface in the direction of the lift, holes in pad eyes fabricated in the shop or fabrication yard shall be drilled, reamed, punched or cut with a mechanically guided torch at right angles to the surface of the metal.

All pad eyes should be inspected for signs of damage, corrosion, cracking of the welds and correct color code. Pad eyes that are no longer required for routine lifting operations and are not required to be routinely recertified shall be disabled from use by:

- Blanking off
- Cutting out the top web of the eye
- Removing completely from service

4.2.17 TROLLEY INSPECTION

Trolleys are mounted on beams with a chain hoist connected to the lower end. They should be inspected on a regular basis for wear or damage. Items to check include:

1. Capacity markings
2. Current color code
3. Assembly bolting
4. Load bar assembly
5. Steel frame condition
6. Wheel bearings
7. Wheels

Particular attention shall be paid to the condition of the beam stops at either end of any beam prior to use. Ensure that they are in good condition and securely fixed.

4.2.18 DRUM LIFTERS

Certified drum lifters of the types shown below are approved for use in company facilities for deck-to-deck lifts ONLY. They are not approved for deck to boat lifts.

NOTE – None of these drum lifters are suitable for drums which have been converted by cutting out the top lid. These modified drums run the risk of structural collapse if lifted by this method with any weight inside.

For drum lifts deck to vessel, web belt slings are not allowed, and baskets must be used.

4.3 PERSONNEL TRANSFER BY BASKET

Personnel transfer may be accomplished by a 'Billy Pugh' personnel basket. A personnel basket is made up of a main ring, netting, upper ring, lifting ring, lifting sling and two steady ropes.

It must be constructed so it is capable of serving as a temporary life raft for the maximum number of persons that it is designed to carry.

4.3.1 PERSONNEL BASKET - PRE-USE INSPECTION

A certified Crane Operator and banksman involved shall take responsibility to ensure the personnel transfer basket is in serviceable condition. Prior to each use, a visual inspection should be undertaken as recommended by the manufacturer.

1) General Damage – Check for any damage or defect on all parts of the unit.
2) Safety Load Line – Visually inspect safety load line when attaching the X-904 to the crane hook.
3) The 4-part Sling – Visually inspect the 4-part sling and all hardware as well as the load line
4) Stabilizer – Visually inspect the fabric covered stabilizer. Look for crimps, broken wires or excessive wear or rust. If any of these problems exist, take the unit out of service immediately and replace the sling.
5) Crane Hook – Inspect crane hook positive locking device for function and physical condition.
6) Top & Bottom Ring – Visually inspect all the load bearing areas of the X-904 for excessive wear or damage,
7) Rigging Lines - Visually inspect the rigging lines (inner and outer).
8) Center Pole – Visually inspect the aluminum center section for damage, cracks, or excessive wear.
9) Quick Release Hook – Inspect the stainless quick release hooks. Regularly spray with a lubricant (i.e.
10) WD-40) to protect from corrosion. If any load bearing area of the X-904 is worn or defective in any way, take the unit out of service immediately.

All inspections should be performed by a qualified person and should always incorporate an operator's pre-use inspection. The following includes the inspection procedures for the X-904 by Billy Pugh.

	Pre-Use	6 Months	2 Years	8 Years
Inspection	✓	✓		
Maintenance			✓	✓

4.4 STANDARD HAND SIGNALS

The Crane Operator is responsible for assigning the Banksman to each lift. It is essential that the Banksman understands what to do during crane operations, as well as what not to do.

All hazardous situations a Crane Operator might encounter cannot be covered by a written set of rules. However, the use of standardized hand signals from a designated Banksman can reduce risks.

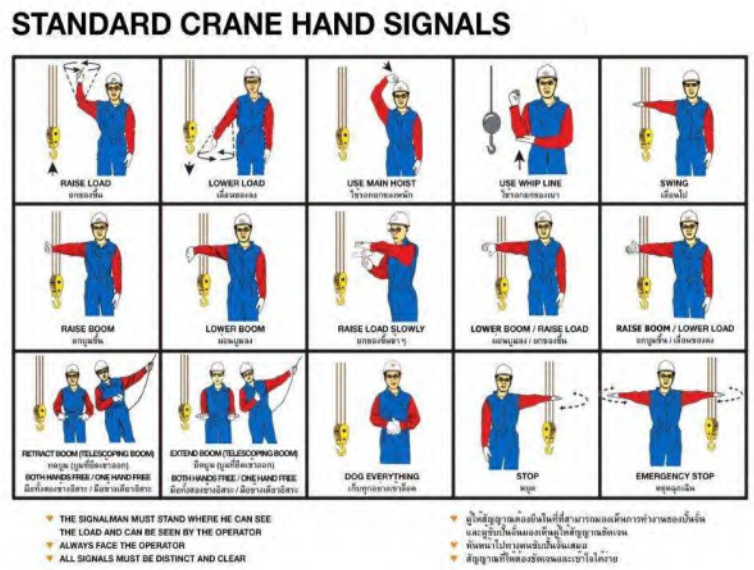
USE STANDARD HAND SIGNALS: "CONFUSION CAUSES ACCIDENTS"

The hand signals shown are standard signals recommended in the API Spec.RP2D with the exception of STOP and EMERGENCY STOP which have been modified for use at company.

- Stop – One hand with clenched fist held up
- Emergency Stop – Both hands clenched together held over the head

In some cases, there may be a need for special signals not covered in the signal charts. In these cases, the special signals used MUST BE AGREED UPON IN ADVANCE BY THE OPERATOR AND THE BANKSMAN. These special signals must not be confused in any way with the standard hand signals.

These hand signals are to be used by the boat deck crews to signal the crane operator.



5

- This operating practice will be updated at specified intervals and agreed improvements included.
- Improvements will be collected from a variety of sources, including onshore and offshore participants in rigging and lifting practices, industry standards.
- The Company welcomes any comments or suggestions on improving this procedure, content or format. Please pass any questions or suggestions directly through your supervisor, or directly to any HSSE Department.
- Refresher training will be provided whenever and wherever required to keep
- personnel involved up-to-date with changes

6 APPENDIX 1: SHIPPING MANIFEST

Manifest _ Jetty-STH-2025-B5-0XXX VE XXX

valeura energy

VALEURA ENERGY
SHIPPING MANIFEST

SHIPPED VIA :
FROM : SATTAHIP BASE
DATE :

Loaded Fuel Oil (LTR) _____ Loaded G Cement (MT) _____
Loaded Fresh Water (MT) _____ Loaded LiteCrete (MT) _____
Loaded Drill Water (MT) _____ Loaded Marble (MT) _____
Loaded Barite (MT) _____ Loaded OBM (Bbls) _____
Loaded Base Oil (Bbls) _____ Loaded Other Bulk _____

SHIPPING MANIFEST :
NO : JASMINE FEO

Origin / Destination	Item	Company	Description	Unit number	icument Referer	Quantity	Unit	Dimension (Cm.) Width	Length	Height	Area, m2 W x L	SWL, (Tons)	Weight, (Tons)
			GRAND TOTAL			0					0.00		0.00

Prepared by: _____
Signature : _____
Date: 08-Jun-08

Verify: _____
Signature: _____
Date: _____

Transport By: _____
Signature: _____
Date: _____

Received by : _____
Signature : _____
Date : _____

Distribution : Original to Receiver. Copies to Sender, Captain vessel and Party concerned.
Receiver check & sign Original and scan\send back to Sender

All Load and PLE condition has been checked and meets standards for C
transport/lifting.
Ref. POTL_HSE-STD 6-13 B6-14TH-POT-A1-QA-PRC-0132-R3
Any load/PLE rejected MUST have owner/receiver notified IMMEDIATE

เอกสารแนบที่ 54

เอกสารขั้นตอนการยกวัสดุ และการตรวจสอบอุปกรณ์

320	320		BV	320	BV	BV			VE	BV
Site	Serial No.	Description/Title	Last Insp Date	Insp Due Date	Remarks	Test Type	Group	Ownership	Name	Insp Result
G10 MOPU	KE-OP-CB-01	Transfer Basket	27/3/2025	26/3/2026		VN - Visual & NDT	Basket	G10		Satisfactory
G10 MOPU	TAHU8010530	Container	27/3/2025	26/3/2026		VN - Visual & NDT	Container	G10		Satisfactory
G10 MOPU	KE1B043	4 leg sling 14mm x 3m. 5T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B038	2 leg sling 13mm x 4m. 3.1T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B039	2 leg sling 13mm x 4m. 3.1T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B041	4 leg sling 12mm x 3m. 4T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1C042	4 leg sling 12mm x 3m. 4T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B042	4 leg sling 12mm x 3m. 4T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B047	4 leg sling 19mm x 3m. 10.5T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B048	4 leg sling 19mm x 3m. 10.5T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B045	4 leg sling 16mm x 3m. 6.5T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1C044	4 leg sling 16mm x 3m. 6.5T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B027	1 leg sling 12mm x 3.6m. 1.7T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B028	1 leg sling 12mm x 3.6m. 1.7T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B029	1 leg sling 12mm x 3.6m. 1.7T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1C022	1 leg sling 8mm x 1m. 0.8T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1C024	1 leg sling 8mm x 1m. 0.8T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE2C025	1 leg sling 8mm x 1m. 0.8T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B032	Safety Stinger, SWL. 8 MT.	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1C033	Safety Stinger, SWL. 8 MT.	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B033	Safety Stinger, SWL. 8 MT.	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B036	Safety Stinger, SWL. 21 MT.	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B035	Safety Stinger, SWL. 14 MT.	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B037	Safety Stinger, SWL. 21 MT.	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B031	Safety Stinger, SWL. 5 MT.	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B091	Webbing sling 10T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B090	Webbing sling 10T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B089	Webbing sling 10T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1C088	Webbing sling 10T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B081	Webbing sling 5T5M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B077	Webbing sling 5T5M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B082	Webbing sling 5T5M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B080	Webbing sling 5T5M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B083	Webbing sling 5T5M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B078	Webbing sling 5T4M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B079	Webbing sling 5T4M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B076	Webbing sling 5T4M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B108	Webbing sling 2T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1C108	Webbing sling 2T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B104	Webbing sling 2T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	KE1B109	Webbing sling 2T	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	720329	Webbing sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	720330	Webbing sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	720331	Webbing sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	720332	Webbing sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory
G10 MOPU	720339	Webbing sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory

INTERNAL

G10 MOPU	720340	Webbing sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	24021139	Webbing sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B084	Webbing sling 6T6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B086	Webbing sling 6T6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B087	Webbing sling 6T6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	23129449	Webbing sling 2T3M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	8240	Round Sling 1T1.6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	8241	Round Sling 1T1.6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	8242	Round Sling 1T1.6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	8243	Round Sling 1T1.6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	8244	Round Sling 1T1.6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	8245	Round Sling 1T1.6M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	103397302	Round Sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	103397305	Round Sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	103397298	Round Sling 1T1M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	03121	Round Sling 1T2M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	03122	Round Sling 1T2M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	03124	Round Sling 1T2M	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B238	Lifting Clamp 2T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B239	Lifting Clamp 2T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B003	Beam Clamp 3T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B004	Beam Clamp 3T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B001	Beam Clamp 2T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B002	Beam Clamp 2T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B005	Beam Clamp 5T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B006	Beam Clamp 5T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B007	Beam Clamp 10T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B008	Beam Clamp 10T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B240	Trifor 3.2T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B241	Trifor 3.2T	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	N/A	Drum Lifter 1T	27/3/2025	26/3/2026	No ID	V - Visual inspection	Lifting Gear	G10	Quarantine
G10 MOPU	N/A	Drum Lifter 1T	27/3/2025	26/3/2026	No ID	V - Visual inspection	Lifting Gear	G10	Quarantine
G10 MOPU	KE1B285	Turn Buckle 15,000 LBS	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B286	Turn Buckle 15,000 LBS	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	S14061151	Hoist, Chain Hoist, SWL 3t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A219	Hoist, Chain Hoist, SWL 3t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A218	Hoist, Chain Hoist, SWL 3t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A217	Hoist, Chain Hoist, SWL 3t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B018	Hoist, Chain Hoist, SWL 5t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B019	Hoist, Chain Hoist, SWL 5t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	114015	Hoist, Chain Hoist, SWL 2t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	114030	Hoist, Chain Hoist, SWL 2t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	114001	Hoist, Chain Hoist, SWL 2t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	114026	Hoist, Chain Hoist, SWL 2t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	111207	Hoist, Chain Hoist, SWL 2t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	191281	Hoist, Chain Hoist, SWL 1t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	111202	Hoist, Chain Hoist, SWL 1t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	111222	Hoist, Chain Hoist, SWL 1t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	191302	Hoist, Chain Hoist, SWL 1t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	191296	Hoist, Chain Hoist, SWL 1t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B020	Hoist, Chain Hoist, SWL 10t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory

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G10 MOPU	KE1B021	Hoist, Chain Hoist, SWL 10t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A011	Hoist, Chain Hoist, SWL 1t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B009	Hoist, Chain Hoist, SWL 0.5t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1C015	Hoist, Chain Hoist, SWL 2t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B283	Hoist, Lever Hoist, SWL 3t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B284	Hoist, Lever Hoist, SWL 3t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A281	Hoist, Lever Hoist, SWL 1.5t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A282	Hoist, Lever Hoist, SWL 1.5t	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	20095V	Hoist, Lever Hoist, SWL 2t	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A223	Hoist, Lever Hoist, SWL 2t	27/3/2025	26/3/2026	Missing Safety Latch	V - Visual inspection	Lifting Gear	G10	Quarantine
G10 MOPU	KE1B271	Eye Bolt 3/4''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B272	Eye Bolt 3/4''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B273	Eye Bolt 3/4''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B274	Eye Bolt 3/4''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B275	Eye Bolt 7/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B276	Eye Bolt 7/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B277	Eye Bolt 7/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B278	Eye Bolt 7/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B252	Eye Bolt 3/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B255	Eye Bolt 3/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B263	Eye Bolt 9/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE2B264	Eye Bolt 9/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE2B265	Eye Bolt 9/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE2B266	Eye Bolt 9/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B267	Eye Bolt 5/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B268	Eye Bolt 5/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B269	Eye Bolt 5/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B270	Eye Bolt 5/8''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B244	Eye Bolt 1/4''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B245	Eye Bolt 1/4''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B246	Eye Bolt 1/4''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B247	Eye Bolt 1/4''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B248	Eye Bolt 3/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B249	Eye Bolt 3/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B250	Eye Bolt 3/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B251	Eye Bolt 3/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B253	Eye Bolt 3/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B256	Eye Bolt 7/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B257	Eye Bolt 7/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B258	Eye Bolt 7/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B259	Eye Bolt 7/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B260	Eye Bolt 7/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B261	Eye Bolt 7/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B262	Eye Bolt 7/16''	27/3/2025	26/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A155	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A156	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A157	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A154	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B133	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B110	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B116	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory

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G10 MOPU	KE1B115	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B111	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B117	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	FN6797	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	FN6808	Shackle, Bolt Type Anchor, 1/2"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A124	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A125	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1D120	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B121	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B120	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A158	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A159	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A121	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A160	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A165	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B123	Shackle, Bolt Type Anchor, 5/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B142	Shackle, Bolt Type Anchor, 1"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A145	Shackle, Bolt Type Anchor, 1"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B154	Shackle, Bolt Type Anchor, 1-1/2"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B155	Shackle, Bolt Type Anchor, 1-1/2"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B156	Shackle, Bolt Type Anchor, 1-1/2"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B146	Shackle, Bolt Type Anchor, 1-1/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A146	Shackle, Bolt Type Anchor, 1-1/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B149	Shackle, Bolt Type Anchor, 1-1/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B148	Shackle, Bolt Type Anchor, 1-1/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B147	Shackle, Bolt Type Anchor, 1-1/8"	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1C158	Shackle, Screw Pin Type Anchor, 0.5T	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B164	Shackle, Screw Pin Type Anchor, 0.5T	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1C169	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1C170	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1C173	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B172	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B159	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B168	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B163	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B169	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B170	Shackle, Screw Pin Type Anchor, 3/8''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B179	Shackle, Screw Pin Type Anchor, 7/16''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B177	Shackle, Screw Pin Type Anchor, 7/16''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B175	Shackle, Screw Pin Type Anchor, 7/16''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B174	Shackle, Screw Pin Type Anchor, 7/16''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B180	Shackle, Screw Pin Type Anchor, 7/16''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B176	Shackle, Screw Pin Type Anchor, 7/16''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B181	Shackle, Screw Pin Type Anchor, 7/16''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B186	Shackle, Screw Pin Type Anchor, 1/2''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B185	Shackle, Screw Pin Type Anchor, 1/2''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B184	Shackle, Screw Pin Type Anchor, 1/2''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B187	Shackle, Screw Pin Type Anchor, 1/2''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B189	Shackle, Screw Pin Type Anchor, 1/2''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B188	Shackle, Screw Pin Type Anchor, 1/2''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B182	Shackle, Screw Pin Type Anchor, 1/2''	27/3/2025	26/3/2026	V - Visual inspection	Lifting Gear	G10	Satisfactory

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G10 MOPU	KE1B183	Shackle, Screw Pin Type Anchor, 1/2''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A210	Shackle, Screw Pin Type Anchor, 7/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1D210	Shackle, Screw Pin Type Anchor, 7/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A212	Shackle, Screw Pin Type Anchor, 7/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B209	Shackle, Screw Pin Type Anchor, 7/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B207	Shackle, Screw Pin Type Anchor, 7/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B217	Shackle, Screw Pin Type Anchor, 7/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A151	Shackle, Screw Pin Type Anchor, 7/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B141	Shackle, Screw Pin Type Anchor, 7/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B200	Shackle, Screw Pin Type Anchor, 3/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B205	Shackle, Screw Pin Type Anchor, 3/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B198	Shackle, Screw Pin Type Anchor, 3/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B201	Shackle, Screw Pin Type Anchor, 3/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B133	Shackle, Screw Pin Type Anchor, 3/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B194	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B195	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A192	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B190	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B196	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1C193	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A191	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B193	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A193	Shackle, Screw Pin Type Anchor, 5/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B223	Shackle, Screw Pin Type Anchor, 1-1/2''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B224	Shackle, Screw Pin Type Anchor, 1-1/2''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B225	Shackle, Screw Pin Type Anchor, 1-1/2''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B222	Shackle, Screw Pin Type Anchor, 1-1/2''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B218	Shackle, Screw Pin Type Anchor, 1-1/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B219	Shackle, Screw Pin Type Anchor, 1-1/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B220	Shackle, Screw Pin Type Anchor, 1-1/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B221	Shackle, Screw Pin Type Anchor, 1-1/4''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A214	Shackle, Screw Pin Type Anchor, 1-1/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B214	Shackle, Screw Pin Type Anchor, 1-1/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A215	Shackle, Screw Pin Type Anchor, 1-1/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A216	Shackle, Screw Pin Type Anchor, 1-1/8''	27/3/2025	26/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A062	Webbing sling 2T6M	27/3/2025		Found damage as body	V - Visual inspection	Lifting Gear	G10	Rejected
G10 MOPU	KE1D066	Webbing sling 3T3M	27/3/2025		Found damage as body	V - Visual inspection	Lifting Gear	G10	Rejected
G10 MOPU	N/A	Webbing sling 2T2M	27/3/2025		Found damage as body	V - Visual inspection	Lifting Gear	G10	Rejected
G10 MOPU	N/A	Webbing sling 1T2M	27/3/2025		Found damage as body	V - Visual inspection	Lifting Gear	G10	Rejected
G10 MOPU	N/A	Webbing sling 2T1M	28/3/2025		Found damage as body	V - Visual inspection	Lifting Gear	G10	Rejected
G10 MOPU	N/A	Webbing sling 2T1M	28/3/2025		Found damage as body	V - Visual inspection	Lifting Gear	G10	Rejected
G10 MOPU	KE1A093	Webbing sling 2T1M	28/3/2025		Found damage as body	V - Visual inspection	Lifting Gear	G10	Rejected
G10 MOPU	WN-001	Tool Box, Aluminum Lamp Box	28/3/2025	27/3/2026		VN - Visual & NDT	Container	G10	Satisfactory
G10 MOPU	WN-002	Tool Box, Aluminum Lamp Box	28/3/2025	27/3/2026		VN - Visual & NDT	Container	G10	Satisfactory
G10 MOPU	63-C-03	Skid, Air Compressor	28/3/2025	27/3/2026		VN - Visual & NDT	PLE	G10	Satisfactory
G10 MOPU	KE1C124	Shackle, Bolt Type Anchor, 5/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B124	Shackle, Bolt Type Anchor, 5/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A118	Shackle, Bolt Type Anchor, 5/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B135	Shackle, Bolt Type Anchor, 7/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A136	Shackle, Bolt Type Anchor, 7/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A139	Shackle, Bolt Type Anchor, 7/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory

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G10 MOPU	KE1A141	Shackle, Bolt Type Anchor, 7/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B139	Shackle, Bolt Type Anchor, 7/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A126	Shackle, Bolt Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B132	Shackle, Bolt Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B127	Shackle, Bolt Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A129	Shackle, Bolt Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A140	Shackle, Bolt Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B131	Shackle, Bolt Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B129	Shackle, Bolt Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B198	Shackle, Screw Pin Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B205	Shackle, Screw Pin Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A204	Shackle, Screw Pin Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B204	Shackle, Screw Pin Type Anchor, 3/4"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A184	Shackle, Screw Pin Type Anchor, 1/2"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1A197	Shackle, Screw Pin Type Anchor, 5/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE1B208	Shackle, Screw Pin Type Anchor, 7/8"	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	103343054	Round Sling 1T1M	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	DCL-01	Drum Lifter	28/3/2025	27/3/2026		VN - Visual & NDT	PLE	G10	Satisfactory
G10 MOPU	DCL-02	Drum Lifter	28/3/2025	27/3/2026		VN - Visual & NDT	PLE	G10	Satisfactory
G10 MOPU	KE1B034	Safety Stinger, SWL. 14 MT.	28/3/2025	27/3/2026		VN - Visual & NDT	Lifting Gear	G10	Satisfactory
G10 MOPU	231055-4	Personnel Basket	28/3/2025	27/3/2026		V - Visual inspection	Personnel Bas	G10	Satisfactory
G10 MOPU	41569956	Hook, Auxiliary Crane	28/3/2025	27/3/2026		VN - Visual & NDT	Crane	G10	Satisfactory
G10 MOPU	BTC AC 4435	Hook, Main Hoist Crane	28/3/2025	27/3/2026		VN - Visual & NDT	Crane	G10	Satisfactory
G10 MOPU	1PML7158-1	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026	For Life boat (Port)	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	1PML7158-3	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026	For Life boat (Port)	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KCB 10839	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026	For Life boat (STB)	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KCB 10840	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026	For Life boat (Port)	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KCB 10841	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026	For Life boat (STB)	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KCB 10842	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026	For Life boat (Port)	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	WTL-210-1	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026	For Life boat (STB)	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	WTL-210-2	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026	For Life boat (STB)	V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KE 943	Pad-Eye, for liftboat (STB)	28/3/2025	27/3/2026		VN - Visual & NDT	FLE	G10	Satisfactory
G10 MOPU	KE 944	Pad-Eye, for liftboat (Port)	28/3/2025	27/3/2026		VN - Visual & NDT	FLE	G10	Satisfactory
G10 MOPU	KE 903	Pad-Eye, for rope ladder (Port)	28/3/2025	27/3/2026		VN - Visual & NDT	FLE	G10	Satisfactory
G10 MOPU	KE 906	Pad-Eye, for rope ladder (STB)	28/3/2025	27/3/2026		VN - Visual & NDT	FLE	G10	Satisfactory
G10 MOPU	N/A	Pad-Eye	28/3/2025	27/3/2026	No ID , No SWL	VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	N/A	Pad-Eye, for rope ladder (AFT)	28/3/2025	27/3/2026	No ID , No SWL	VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KIM MK 878	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	KIM MK 879	Wire Rope, Single Leg Sling	28/3/2025	27/3/2026		V - Visual inspection	Lifting Gear	G10	Satisfactory
G10 MOPU	VE-OP-HH-001	Basket	29/3/2025	28/3/2026		VN - Visual & NDT	Basket	G10	Satisfactory
G10 MOPU	KE 911	Monorail Beam	29/3/2025	28/3/2026		V - Visual inspection	FLE	G10	Satisfactory
G10 MOPU	KE 913	Monorail Beam, engine Room	29/3/2025	28/3/2026	no WLL/SWL marked	V - Visual inspection	FLE	G10	Quarantine
G10 MOPU	KE 914	Monorail Beam, engine Room	29/3/2025	28/3/2026	no WLL/SWL marked	V - Visual inspection	FLE	G10	Quarantine
G10 MOPU	KE 927	Monorail Beam, engine Room	29/3/2025	28/3/2026	no WLL/SWL marked	V - Visual inspection	FLE	G10	Quarantine
G10 MOPU	KE 928	Monorail Beam, engine Room	29/3/2025	28/3/2026	no WLL/SWL marked	V - Visual inspection	FLE	G10	Quarantine
G10 MOPU	KE 197	Pad-Eye, Engine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWI	VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 198	Pad-Eye, Engine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWI	VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 915	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWI	VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 916	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWI	VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 919	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWI	VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 920	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWI	VN - Visual & NDT	FLE	G10	Quarantine

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G10 MOPU	KE 921	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 922	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 923	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 924	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 925	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 926	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 929	Pad-Eye, Engine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 930	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 931	Pad-Eye, Engine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 933	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 934	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 935	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 936	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 937	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 938	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 939	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 940	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 941	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine
G10 MOPU	KE 942	Pad-Eye, on Beam, Eengine Room	29/3/2025	28/3/2026	ID illegible and no WLL/SWl VN - Visual & NDT	FLE	G10	Quarantine

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5	5		BV	5	BV	BV			VE	BV
Site	Serial No.	Description/Title	Last Insp Date	Insp Due Date	Remarks	Test Type	Group	Ownership	Name	Insp Result
G10 FSO	WN-003	Tool Box, Aluminum Lamp Box	30/3/2025	29/3/2026		VN - Visual & NDT	Container	G10		Satisfactory
G10 FSO	WN-004	Tool Box, Aluminum Lamp Box	30/3/2025	29/3/2026		VN - Visual & NDT	Container	G10		Satisfactory
G10 FSO	4366-24	Personnel Basket	30/3/2025	29/3/2026		V - Visual inspection	Personnel Basket	G10		Satisfactory
G10 FSO	KE1C034	Safety Stinger, SWL. 14 MT.	30/3/2025	29/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory
G10 FSO	YK2-1535	Safety Stinger, SWL. 12 MT.	30/3/2025	29/3/2026		VN - Visual & NDT	Lifting Gear	G10		Satisfactory

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53	53					53							
Site	Serial No.	Description/Title	Last Insp Date	Insp Due Date	Remarks	Test Type	Group	Ownership	Name	Insp Result	Last Inspection	BV cert Visual	BV cert NDT
G10 MOPU	241788	Tote Tank	27/3/2025	26/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	CTI-044	Tote Tank	27/3/2025	26/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	214245	Tote Tank	27/3/2025	26/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	CTI-048	Tote Tank	27/3/2025	26/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	51845-4	Tote Tank	27/3/2025	26/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	PPS-BSK-001	Basket	27/3/2025	26/3/2026		VN - Visual & NDT	Basket	G10		Satisfactory			
G10 MOPU	AGC-GR-001	Gas Rack	27/3/2025	26/3/2026		VN - Visual & NDT	PLE	G10		Satisfactory			
G10 MOPU	CTI-009	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	CTI-013	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	51844-19	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	242853	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	SL 242853/1	Wire rope, 4-Leg Sling 9/16". x 2.00	28/3/2025		Found machanical damage a	V - Visual inspection	Lifting Gear	G11		Rejected			
G10 MOPU	CTI-005	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	205680	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	CTI-004	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	CTI-045	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 MOPU	213114	Tote Tank	28/3/2025	27/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 FSO	122551	Tote Tank	30/3/2025	29/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 FSO	51845-19	Tote Tank	30/3/2025	29/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 FSO	51845-17	Tote Tank	30/3/2025	29/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 FSO	CTI-001	Tote Tank	30/3/2025	29/3/2026		VN - Visual & NDT	Tote Tank	G10		Satisfactory			
G10 FSO	210101 SCTW-SLIOSCT	Container	30/3/2025	29/3/2026		VN - Visual & NDT	Container	G10		Satisfactory			
G10 FSO	210201 SCTW-SLIOSCT	Container	30/3/2025	29/3/2026		VN - Visual & NDT	Container	G10		Satisfactory			
G10 FSO	22100091	Webbing Sling 3T3M	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	22100009	Webbing Sling 3T3M	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	22100017	Webbing Sling 3T3M	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	22100068	Webbing Sling 3T3M	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	22109652	Webbing Sling 3T3M	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	22098675	Webbing Sling 3T3M	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	22109661	Webbing Sling 3T3M	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	22109633	Webbing Sling 3T3M	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	ML2303001-1	Master Link 3T	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	ML2303001-2	Master Link 3T	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	ML2303001-3	Master Link 3T	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	ML2303001-4	Master Link 3T	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	SB2303001-1	Spreader Bar	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	SB2303001-2	Spreader Bar	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	01 A	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	01 B	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	01 C	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	01 D	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	02 A	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	02 B	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	02 C	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	02 D	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	03 A	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	03 B	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	03 C	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	03 D	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	04 A	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	04 B	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	04 C	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			
G10 FSO	04 D	Shackle, Screw Pin Type Anchor, 3/4''	30/3/2025	29/3/2026		V - Visual inspection	Lifting Gear	G10		Satisfactory			

INTERNAL

SECTION 6 : OPERATIONS AND THE MANAGEMENT OF CONTRACTOR

P-06-06

Lifting and Hoisting Operations

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	LIFTING AND HOISTING OPERATIONS		

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1. OBJECTIVES

- The highest standards of operational planning, monitoring and execution are fundamental to the safety of vessels and their crews, and for the protection of the environment.
- In compliance with the ISM Code this procedure shall be used in association with procedures in relation to management of risk.
- The purpose of this procedure is to document and to define the responsibility and authority related to lifting and hoisting operations and equipment inspection, testing, certification and maintenance requirements.

2. SCOPE

- This procedure shall apply to all Company Lifting and Hoisting activities. This procedure is mandatory for all vessels, offices and shore locations.
- It applies to operations using specialized shipboard cranes, which are those used for the purposes other than movement of gangways and ships stores.
- This procedure shall apply to own as well as third party supplied lifting equipment with a capacity of 1 ton Safe Working Load (SWL) or above. Meanwhile, all lifting equipment “strong points” having a lifting capacity lower than 1 ton SWL shall be clearly marked.

3. DEFINITIONS

Lifting Accessory

Any device that is used or designed to be used directly or indirectly to connect a load to a lifting appliance. (Slings, Hooks, Swivels, Turn blocks, Wedge sockets Etc.)

Lifting Appliance

Equipment that performs the lifting (Cranes, Jacks, Pad eyes, Forklifts, Powered hoists, Manual hoists, Lever hoists, Beam trolleys, Beam clamps Etc.)

Lifting Equipment

Both lifting appliance and/or lifting accessory.

WLL

The Working Load Limit (WLL) of a lifting appliance. It is also referred to as the Safe Working Load (SWL).

4. RESPONSIBILITY

Senior Vice President

Ensuring the requirements of this procedure are implemented, applied and followed.

Vessel Master

- Ensuring application of this procedure onboard the vessel under his/her command;
- Keeping the cargo gear certificates such the Cargo Gear Register up to date;
- Arranging maintenance/inspection of wires, sheaves and hook and the technical part of cargo gear which is normally delegated to ***Deck*** and ***Engine Officers***;
- Ensuring the implementation of this procedure.

Chief Officer

- Managing lifting operations and maintenance of related equipment;
- Maintenance, inspection and certificates of all lifting and lashing equipment on board including certificate control;
- Organizing inspection and inventory of all lifting (& lashing equipment) every 12 months.

Superintendent

- Monitoring the planned and un-planned maintenance and surveys of the cargo gear, lifting beams and spreader beams;
- Making detailed inspections of the cargo gear when performing a Superintendent inspection on board the vessel. The inspection findings shall be recorded in his/her inspection report.

Site Manager (Master or Operation Superintendent for MPSV)

- Applying SMS Documentation;
- Authorizing and designated the Person In Charge (PIC) who has the competence to control the lift Safely;
- Authorizing or designating lifting equipment Operators.

Banks-Man

- Being the sole Banks-Man at any given time;
- Direct line of sight of the load;
- Ensuring he/she does not handle rigging duties simultaneously.

Lifting Appliance Operator

- Authorizing the use of the equipment;
- Conducting pre-inspection of lifting appliance;
- Using equipment properly and with design specifications.

All Personnel Involved

- Understanding their role and having the competence to perform as required;
- Informing the PIC if conditions change or if there is any safety concerns during the lift.

Operations Manager

Ensuring that the requirements and expectations of lifting and hoisting operations are communicated and implemented onboard all vessels under his/her jurisdiction.

Offshore Commercial Vice President or Representative

Monitoring compliance with this procedure and liaising with the ***Master*** to best ensure all practical means are addressed to support the ***Master*** executing his/her duties in respect of this procedure.

5. PROCEDURE

5.1 Use of Vessel Cranes

- Applies to operations using specialized shipboard cranes, which are those used for the purposes other than movement of gangways and ships stores.
  - Crane operations shall only be performed by authorization of the ***Master*** or ***delegated person*** on the vessel;
  - All crane operations shall be subject to full pre-job planning Job Safety Analysis (JSA) before commencing, giving full consideration to the effects of weather, and vessel movement;
  - Only Trained with Certified Crane's Operator shall be authorized to use specialized shipboard crane;
  - Newly ***Assigned Crane Operators*** shall undertake a familiarization of the onboard crane equipment before operating the crane;
  - Lifting operations shall be stopped whenever weather conditions make it potentially hazardous or unsafe to continue operation;
  - Only certified slings, ropes, chains and similar lifting equipment shall be used;
  - All lifting equipment shall be carefully and fully inspected prior to use;
  - Damaged slings, straps or similar lifting equipment shall be taken out of service immediately and permanently destroyed;
  - A ***Designated Banks-Man*** shall be used to supervise onboard crane operations and to give signal directions to the Crane Operator;
  - The ***Banks-Man*** shall be clearly identifiable with the use of high visibility jacket or similar and shall remain within a designated safe area.
  - All personnel, whether involved in the crane operations or not, shall stay well clear of the area of operations;
  - Access ways that may come under operating crane paths are to be cordoned off and all personnel warned accordingly;
  - If there is any doubt whether the weight of any item to be lifted by the crane is within the crane's safe working load or not, stop the operation immediately;

5.1.1 Crane Operations – Training Roles

- Only the ***Master***, following a review of the required Operators' License, can authorize new personnel as Crane Operators;
- All new assigned Crane Operators shall operate the crane for a period of familiarization under none working conditions and shall be authorized for operations only when a full competence assessment has been performed and verified;
- Other Crewmembers may operate the crane for training purposes only, but always under close supervision of a licensed and experienced Crane Operator;

- All training shall be approved by the ***Master*** or ***Chief Officer*** and should at a minimum include the following:
  - The Safe Working Load (SWL) of the crane;
  - The location and operation of the emergency stop;
  - The movement parameters of the crane;
  - Tensioning and general load operation.

5.2 Principals for Conducting Lifting and Hoisting Operation

5.2.1 Planning

- A *Lifting Plan Checklist (F-06-OPT/37)* is required for every lift;
- If the lift deviates from the plan, make safe and STOP the lift;
- Hazard identification and risk assessment shall be an integral part of planning a lift;
- An assessment of the lift and determination of the lift method, equipment and number of people
- required are critical to planning of a lift.

5.2.2 Control

- One person in the lift team shall be designated as the Person In charge of the Lifting (PIC) operation (Referred to as PIC);
- The PIC shall review the *Lifting Plan Checklist (F-06-OPT/37)* and ensure that the required controls are in place and the lift is carried out following the plan;
- The PIC shall ensure that the lift team has tested and understood visual or radio communications prior to the lift;
- All personnel involved in the operation shall have their individual responsibilities clearly allocated;
- All people shall be kept clear of overhead loads and areas of potential impact;
- Manual load handling shall not be used to stop a swinging load and shall only be performed below shoulder height.

5.2.3 Competence

- All persons involved in planning/performing lifting and maintaining lifting equipment shall be trained and competent for their role;
- Refresher training and periodic assessment is necessary to assure competence.

5.2.4 Equipment

- Equipment shall be fit for its intended purpose and operating conditions and shall be designed to a recognized standard;
- Equipment shall be fitted with appropriate safety devices;
- Any safety device fitted on equipment shall be operational and not over-ridden.
- Be used and stored in accordance with equipment manufacturer specifications, applicable legal requirements and Client's standards.

5.2.5 Requirements for Inspection, Maintenance and Certification

- Equipment integrity shall be maintained and supported by an equipment register;
- Lifting equipment and devices shall undergo detailed and thorough examination by a Competent person at **least every 12 months** and **at least every 6 months** for 'man riding' equipment, such as baskets, fall arresters and man riding winches;
- All lifting devices and equipment shall be inspected visually prior to use.

5.2.6 Load Integrity and Stability

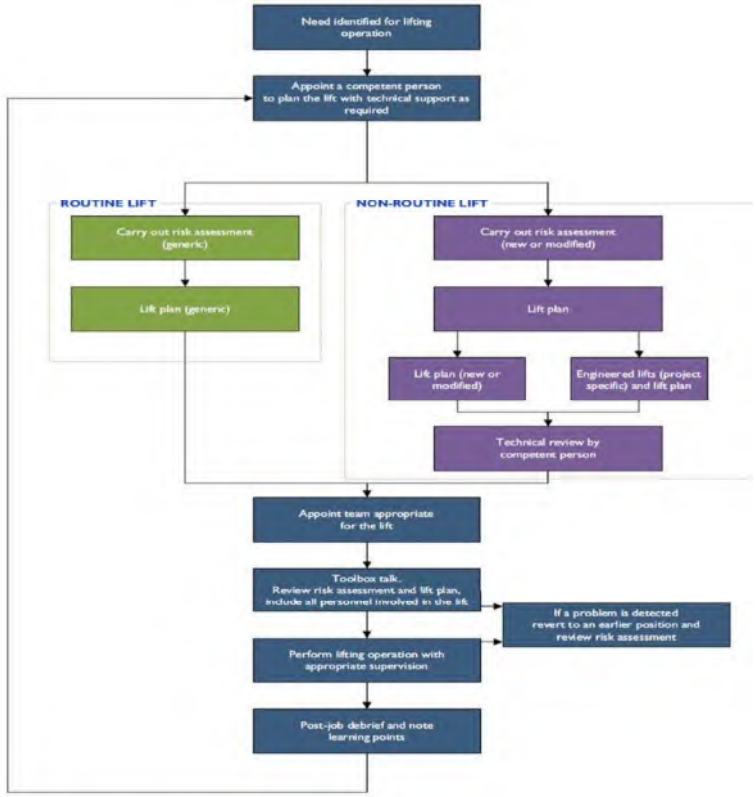
- Loads shall not exceed dynamic and/or static capacities of the lifting equipment;
- The integrity and stability of loads shall be verified before lifting.

5.2.7 Lifting of Personnel

- Lifting of personnel shall be avoided unless the risk has been demonstrated as being low as reasonably practicable;
- Lifting of personnel shall be in accordance to the specific personnel lifting plan;
- Lifted personnel shall be properly secured with lanyards unless written procedures and risk assessment require otherwise

5.2.8 Lifting Operations Flow-Chart

- The following flow-chart and brief description defining every step within the Lifting process. The steps remain the same for each location and work activity. However, the competent person shall decide which lifts lie within the appropriate planning route.



5.2.9 Hand Signals For Crane Operations

- The following is an example flow-chart and brief description defining every step within the Lifting process which are generally reference performs onboard. Sometimes, the ***Master*** shall ensure that the specific flow-chart and brief description is always align in compliance with the individually Client's format.
- This documentation shall be reviewed for ensuring that all related Shipboard Personnel are well familiarized with the Hand Signals

5.2.10 Defining Routine and Non-Routine Lifts

- For the purposes of this procedure two categories of lifting are identified, routine and non-routine.

5.2.11 Routine Lifts

- Routine lifts shall be identified and described as those which:
  - Are covered by a Job Safety Analysis (JSA)/Tool Box Meeting (TBM);
  - May not require a new *Lifting Plan Checklist (F-06-OPT/37)*;
  - Are lifts for which the *Lifting Plan Checklist (F-06-OPT/37)* can be generic but it shall still be discussed/reviewed at the pre-lift meeting. Such pre-lift meeting can, for example, be in the form of a Tool Box Meeting at the start of a shift or as required during the shift;
  - Are known, repetitive lifts, familiar to all of the lift team;
  - Are repetitive lifts which are covered by a previously prepared JSA and *Lifting Plan Checklist (F-06-OPT/37)*, however this shall be reviewed by the Competent Person;

  - Are where the identified lifting team is trained in the use of the specific lifting equipment and familiar with its limitations; and competent to complete the entire operation;
  - Are where the lifting team has performed their identified roles previously;
  - Are where all personnel involved are familiar with the written risk assessment and the *Lifting Plan Checklist (F-06-OPT/37)* for the operation being conducted;
  - Are where the *Lifting Plan Checklist (F-06-OPT/37)* is verified as the current issue before the operation?
  - For routine lifting operations, the *Lifting Plan Checklist (F-06-OPT/37)* shall be properly planned by a Competent Person together with the people normally using the lifting equipment.
  - The lift shall be appropriately supervised and carried out in a safe manner. All lifts require a *Lifting Plan Checklist (F-06-OPT/37)*.
- When operations are considered to be 'routine' the Company shall have a process in place to ensure that sufficient planning has been conducted.
- Due to the repetitive nature of such operations, an individual plan should not be required on each occasion that the operation is conducted, unless any of the significant matters to which the plan relate have changed and need to be taken account of.
- If in doubt, a lift should be considered 'non-routine'.

5.2.12 Non-Routine Lifts

- Non-routine lifts are those which do not meet all the criteria for routine lifts. An engineered lift is a typical non-routine lift.
- A non-routine lift is where:
- A job safety analysis is required to identify and mitigate the risks and a completed *Lifting Plan Checklist (F-06-OPT/37)* is required, signed off by the persons identified in the relevant boxes of the *Lifting Plan Checklist (F-06-OPT/37)*;
  - A new specific *Lifting Plan Checklist (F-06-OPT/37)* is required based on a risk assessment, (for example a HAZID);
  - Identification and risk assessment) or site specific JSA;
  - A pre-lift meeting or Tool Box Meeting shall be conducted involving all relevant parties. Those at this meeting would use the *Lifting Plan Checklist (F-06-OPT/37)*, relevant drawings and JSA as a basis to summarize the proposed lifting operation.
- The degree of planning can vary considerably and shall depend on the type of equipment to be used and the complexity of the operation.
- A non-routine *Lifting Plan Checklist (F-06-OPT/37)* shall be prepared by a Competent Person. This then needs to be reviewed and approved by another Competent Person and/or a technical authority. It shall then be reviewed and finalized by the on-site Competent Person and the Lift Supervisor carrying out the lift.
- A non-routine *Lifting Plan Checklist (F-06-OPT/37)* shall be produced on-site by a Competent Personify the need arises. The same review and approval, by a second

Competent Person and/or technical authority and the on-site lifting team and Lift Supervisor carrying out the lift, shall be required.

5.2.13 Initial Considerations for the Assessment of the Load and Its Handling

- For any type of lift an assessment of the load is vital:
  - What is the weight of the load?
  - Is the weight verified?
  - Is the load designed for offshore lifting, for example container type?
  - Are the lift points certificated/adequate?
  - Can slinging points be accessed safely?
  - Is the load slung in a stable fashion with no loose items in or on it?
  - Is the Centre Of Gravity (Cog) known?
  - Does the load have integrity and internal stability?
  - Is the shape or size difficult to sling?
  - Is it a very long load, liable to rotate etc?
  - Will it flex under suspension?
  - Does it require securing to its pallet?
  - Does the load contain liquids?
  - Is it fragile?
  - Is it high value?
  - Are there chemicals in the load?
  - If subsea, consider shock loads and changes to weight in air due to the effects of flooding and draining, seabed suction, plus marine growth or debris/grout if removing existing subsea structures, added mass, the splash zone, which will be affected by sea state, changes to buoyancy and the center of buoyancy;
  - Are there any sharp edges?
  - Are hold down bolts/sea fastenings removed?
  - Are necessary permits obtained for its lift?

5.2.14 Considerations for the Selection of Lifting Equipment

- Initial assessment shall include the following:
  - Is correct Personal Protective Equipment (PPE) identified and used?
  - Sling angles and lifting attachment angles;
  - Are attachment points adequate?
  - How are slings to be attached?
  - Is the hook type appropriate?
  - Manual handling of heavy rigging?
  - Will divers or Remote Operated Vehicles (ROV) be involved and are slings/attachments compatible with underwater work?
  - Is there a lifting point available directly overhead?
  - Is the sling arrangement suitable for the CoG?

  - Sling lay direction – left hand lay and right hand lay shall not be connected;
  - Will the layout and lay-down of the slings affect control of the lift?
  - Any problems with geometry of slings and crane hook?
  - Is buoyancy attached to sacrificial slings for ROV cut?
  - Are there remote or local release shackles (spring loaded/acoustic)?
  - Are tag lines required and does the lifting team understand the safe use of tag lines?
  - Is a tandem lift necessary?
  - Is cross hauling required?
  - Will heave compensation systems be in use?
  - Are sheaves and attachment points adequate for the possible winch/crane loading?
  - Is there a method of observing spooling on drums and rope path through sheaves?
  - Is suitable lifting equipment available?
  - Does lifting equipment need to be moved to another location(s) during the lift?
  - Is the load to be manipulated on the seabed?
  - Will ROVs be of use in the operation?
  - Is wire rope sufficient in length/construction for deep water (consider cabling)?
  - Will sling dynamics have an effect?
  - Is there protection for any control umbilical?

5.3 Equipment Maintenance Inspections and Testing

- Frequency of inspections shall be carried out in compliance with the *Planned Maintenance System* subject to the range date as specified in same scheme.
- Inspections shall be carried out by a competent crewmember. The ***Crewmembers*** competence level is at ***Master***'s discretion.
- Different inspections intervals are required for type of equipment as outlined in this procedure, however in principle the rule is as follows:
  - Visual inspection is required prior to use;
  - Annual inspection is required on lifting appliances' – i.e. crane wires, powered hoists, jacks, etc;
  - Bi-annual (6 monthly) inspection is required for lifting accessories – i.e. slings, rigging, shackles etc.;

5.3.1 Inspection Standards

- Cargo gear wires (hoisting wires) shall be inspected and examined as specified in *publication ISO 4309*. Criteria as specified in ISO 4309 are to be taken as a guide for inspections and examination of all cargo gear wires, incl. spare wires.
- Cargo gear wires shall be inspected/examined on state or condition of wire lubrication coating. Criteria shall be whether coating of inspected wire under normal and expected conditions will stay intact/suffice until next inspection date.

- **Visual inspection** of all parts of cargo gear shall be performed. **Special attention** shall be given to (but not limited to): swivels, hooks, sheaves, lubrication points/lines, limit switches, measuring/alarm devices, controls of gear, couplings, connecting parts and pins, etc.
- Record of inspection shall be kept in the *Plan Maintenance System*.

5.3.2 Lifting Belts

- Lifting belts with SWL/WLL over 15 tons (including) **shall be returned after use** by first convenient shipment, for inspection and storage at shore based stock;
- Lifting belts under 15 tons shall to be included in the *12 monthly inventory* and inspection job as applicable for all lifting equipment.

5.3.3 Tests and Lifespan of Lifting Accessories

- Slings <10m: To be tested and inspected at least once in every 5 years
- Shackles >SWL/WLL 12 tons: To be tested and inspected at least once in every 5 years
- Lifting chains, hooks, plates: To be tested and inspected at least once in every 5 years
- Attestation shall be issued by the specialist;
- Attestation shall be attached to the original certificate. If existing marks are not legible anymore, new certificate number shall to be issued and new mark to be stamped in to the shackle.

5.3.4 Modification of Lifting Equipment

- Modification of lashing and lifting equipment such as shortage/rejected/for replacement etc. shall be administrated on board and reported to the Company;
- *Original certificates* of rejected equipment shall be marked as such and have to be attached to the modification form.

5.3.5 Certificates and Attestations of Lifting Equipment

- All *Manufacturer's or Examination Certificates* of lifting and lashing equipment shall to be onboard.
- *Attestations of re-tested* lifting equipment shall be attached to the original certificates. A copy of the attestation shall be in the office;
- Non-ship-related beams ("roving equipment") shall be delivered to the vessel with the original certificate. In case the beam is left behind (onshore), the ***Master*** shall send the original certificate directly to the office.

5.3.6 Marking of Lifting Equipment

- All "Loose lifting equipment under the hook" and auxiliary constructions (load spreaders; special sea fast. etc.) shall be clearly marked with an unique identification number;

- For all lifting grommets, slings and shackles this identification number is the certificate number;
- For all other lifting equipment (spreaders; lifting beams; polyester belts; triangle-plates; etc.) this unique identification number, exists of the equipment number;
- For all auxiliary constructions, as far as applicable (load spreaders; etc.) this unique identification number, exists of the equipment number;
- 6 monthly inspection of lifting equipment shall be made visible by color coding.
- **Color coding** shall follow the following rules:
  - Generally, the **Particularly Color Code** will be designated by the Charterer and/or the Project Manager for a specific period, the ***Master*** shall ensure that all loose lifting equipment/gears shall be up to date marked with the specified color coding accordingly. These marked items are allowed to be used only;
  - If there is no color code defined by ***Charterer/Client***, the ***Master*** should be discussed and agreed with the ***Operations Manager*** for selection the color code to be applied. The ***Master*** shall be reminded that the certified lifting/hoisting equipment are permitted to be used only;
  - Others loose gears those are not color code is prohibit to be used for any lifting and they shall be isolated in compliance with the item 5.4.1 of this procedure;
  - The SWL color coding, the ***Master*** shall ensure that there are specific color code for clearly identification and implement for control the **different SWL** of all loose lifting/lashing gears in place on board.

5.3.7 Man Riding Basket

- Man riding basket includes basket and 4 leg sling. It shall be inspected by the ***Chief Officer*** **every 3 months**;
- The inspection includes: markings good visible, construction lifting equipment and documentation.
- Detailed inspection instruction is connected to the job in Star;
- An annual survey shall be conducted by Class society.

5.3.8 Engine Room – Overhead Trolley Beams

- When marked as having a capacity of more than 1 ton SWL than such equipment is regarded as lifting equipment which shall be regular checked and maintained as per the *specific PMS* Plan and shall be surveyed **every 5 year during dry-dock**;
- When being less than 1 ton SWL than it is strongly advised to have a Design Approval Document (DAD) in place.

5.3.9 Lashing Equipment

- The following equipment shall be subject to maintenance and inspection:
  - Steel cables and wires of all types;
  - Shackles, links;
  - Straps;

- Slings of all types;
- Turnbuckles, load binders;
- Hooks;
- Pulleys, snatch blocks;
- Chains.

- All cargo and lashing equipment is to be inspected by an approved inspection organization at a defined period according to the manufacturer's instructions or as indicated below.
- Color coding shall be used as applicable.
- Special attention shall be given to the identification of the following possible defects:
  - Bending, twisting or cracking of hooks or shackles;
  - Distortion and excessive wear of chains;
  - Deterioration of slings;
  - Broken or defective safety catches;
  - Any other obvious signs of damage.
- The following types of damages are examples for when lifting equipment shall be destroyed:
  - Any damages to the material;
  - Any cutting or crushing damage;
  - Welding spurt;
  - Any damage to the lifting eyes;
  - General wear and tear.

5.3.10 Wires and Cables

- Inspection and maintenance of cables used for towing or anchor handling are described in the Anchor Handling and Towing Operations
- Cables shall undergo **periodic visual checks** and shall be inspected annually It is important to recognize signs of internal and external damage including wire or stand breakage and to determine the metal section surface lost due to corrosion in comparison with the original.
- This information may be used to evaluate the remaining service life of the cable. Cable replacement is required in the following cases:
  - Excessive distortion - crushing and kinking. Excessive deformation can seriously alter cable strength or distribution of dynamic forces;
  - Socket damage - split, cracked, or deformed sockets shall be removed and replaced;
  - Exposure of the cable core (bird-caging) - If the distance between the socket and the damaged section of cable is less than the length of cable that stays on the drum, a possible solution consists in inversing the cable;
  - Strand and wire breakage - any cable presenting a broken wire or a number of visible broken strands resulting in a loss of 20% or more of the total of strands shall be removed from service and discarded.

- Cargo gear wires shall be **replaced after 5 years** of use or as revealed upon routine inspections.
- In the event rust is observed on any cargo gear wire, the wire shall be discarded/ rejected for use. Other discarding criteria, like broken wire strands, wear and tear, etc. (*ISO 4309)*.
- If inspections necessitate replacement of the wire:
  - The ***Master*** shall notify and consult with the assigned Superintendent;
  - The Superintendent shall authorize replacement order of cargo gear wires;
  - The *Superintendent* in consultation with the ***Operations Manager*** shall decide on date of replacement;
  - Spare wires onboard shall be used as replacement for rejected wires;
  - Spare wires shall be thoroughly visually inspected prior/during reefing. Replacement for spare wire shall be ordered through the purchasing department.

5.3.11 Modification of Wires

All cargo gear wire replacements and *Certificate Modifications* shall be recorded.

5.3.12 Non Destructive and Destructive Testing of Wires

- During dry-docking of the vessel, average every 5 years, cargo gear wires shall be examined by an external specialist. This includes inspection of the detachable end (wedge socket);
- All wires as well as lifting gears shall be always visual non-destructive tests prior every operating, at site this is for ensuring there are no overlooks damaged or deficiencies even there are being certified. "Never use when found there is not in scud order"
- During the same period about 7 meters of wire shall cut off in order to be DESTRUCTIVE tested. If destructive test results are indicating that the actual break load is less than the minimum breaking load, the Fleet ***Operation Technical Manager*** shall to be advised in order to take appropriate action.
- The above period should be changed in accordance with the specific ***Charterer/Clients***' requirement which any is earlier.

5.3.13 Special/Additional Testing of Wires

- Special cargo gear wires inspection testing shall be carried out as follows:
  - Post-accident;
  - Upon re-assembling (re-reeving);
  - If the crane has been out of operation for three months.
- This inspection is similar to the 3 monthly inspection as mentioned under this procedure.

5.3.14 Spare Wires

- One spare wire with maximum length for each diameter in use shall be standard stock onboard;
- All spare wires shall be destructive tested by means of cutting 7 meters in length;
- Spare wires shall be stored below deck in a dry place;
- Wires shall never to be in contact with steel decks, connecting socket. Wire-ends to be on top of placed reel or free from deck/bulkhead;
- Reels of new delivered spare wires shall be *clearly marked* with *certificate number*, date and place of delivery;
- The total lifetime of a wire is 11 years, which means maximum 6-year storage and 5-year lifetime.

5.3.15 Lubrication

- Wires shall be greased with lubricant-product, as per *maker's instructions* if cargo gear-wire lubrication/coating has been detected on inspection;
- In respect of possible corrosion and wear, special attention shall be given to wire parts like (but not limited to):
  - Connecting ends;
  - Sockets;
  - Dead-ends;
  - Wire cable clamps.

5.3.16 Shackles

- Shackles shall be painted according to the color code indicating their Safe Working Load (SWL);
- Each shackle shall be properly identified and have a *load test certificate*. Shackles should be greased regularly;
- Shackles should not be stamped for identification because of the risk of cracking;
- After intensive operational use, shackles shall be **visually inspected** for signs of damage;
- Threading is to be examined and the distances between the inner pin and between the two sides will be measured to detect possible distortion;
- Defective shackles shall be removed from service.

5.3.17 Link Type Shackles (Baldt Link)

- Link type shackles (Baldt links) in use on board shall be individually identified and have a load test certificate;
- After each intensive use, link type shackles (Baldt Link) shall be disassembled and cleaned with careful **visual inspection** for cracks or any other defects;
- Any shackle that presents excessive play or cannot be reassembled easily shall be removed from service;
- Stamping for identification is prohibited.

5.4 Survey Records, Certificates and Attestations

- The ***Master*** in consultation with the Superintendent shall arrange class surveys of lifting and cargo gear as per planned maintenance.
- All maintenance to the cargo gear shall be recorded and specified in *Plan Maintenance System* (PMS).
- All gear replacements/inspections/lubrications/maintenance/repairs or any other related wire and gear activity shall be recorded in the *PMS Plan*.
- *Certificates* from third parties involved in mentioned activities shall be included in the same file of the PMS Plan. Brief entry shall be made in *deck log*, making reference to activities as specified and recorded in *PMS* Plan. Annual, 5-yearly and occasional surveys of cargo gear (including stabilizer) shall be conducted by the classification Society.
- After completion of survey, the *Plan Maintenance System (PMS)* shall be endorsed for cranes/derricks and a *Lifting Appliance Certificate* should be issued.
- After completion of survey:
  - The PMS shall be endorsed by Class;
  - Original certificates of the cargo gear shall to be kept on board in the certificate file;
  - Attestations of the lifting beams shall to be attached to the original certificate;
  - Copies of certificates of the cargo gear and copies of the PMS Plan shall be sent to the Management office;
  - *Copies of lifting equipment* shall be sent to the ***Operations*** *or* ***Technical Manager***.

5.4.1 Rejected Lifting Material

- When material has been rejected, they were damaged and/or uncertified by authorization bodies, it shall be well marked and guarded to ensure it is not put in use.
- Rejected material shall be discarded as soon as practically possible.
- The ***Master*** shall ensure that all damaged or uncertified lifting material shall be isolation kept for further discharging from vessel as above mentioned.

6. RELATED FORMS

F-06-OPT/37	Lift Plan Checklist
F-06-OPT/48	Towing Register Report Form

7. APPENDIX

Appendix 7.1 : The SWL color code

8. REFERENCE STANDARDS

- OCIMF – Offshore Vessel Management and Self-Assessment (OVMSA), Element 6
- IMO – Safety Of Life At Sea (SOLAS), Chapter IX, The International Safety Management Code (ISM Code) Latest Edition, Chapter 7
- OSV Code - Code for safe practice for carriage of cargoes and persons by offshore supply vessels
- Publication ISO 4309

เอกสารแนบที่ 55

เอกสารการเก็บกู้วัสดุที่หล่นลงไปในทะเล

INCIDENT INVESTIGATION REPORT

REPORT NUMBER: Vessel Name: **PART 1**

Brief Description of Incident:

SECTION A – REPORTING REQUIREMENTS

Tick the boxes that best describe the actual and potential outcome.
Reporting and investigation requirements are based on the potential: may not need external report. **RED**: External report required

LEVEL 1 INCIDENT	LEVEL 2 INCIDENT	LEVEL 3 INCIDENT	LEVEL 4 INCIDENT	LEVEL 5 INCIDENT
• Fatality	• Multiple Lost Time Injuries (LTI) • Person missing (including persons overboard) • Non Occupational Illness of epidemic nature	• Lost Time Injury (LTI) • Non Occupational Illness requiring Medivac	• First Aid Case • Person overboard & recovered • Restricted Work Case (RWC) • Medical Treatment Case (MTC)	• A Near Miss that could have caused Injury, illness or damage to the environment or asset or company reputation but did not
• Oil spill overboard >15,000bbls	• Oil spill overboard > 1000bbls • Chemical Spill Overboard > 7 bbls • Hydrocarbon gas leak causing shutdown > 2 days	• Oil spill overboard • Chemical Spill Overboard • Hydrocarbon gas leak causing shutdown > 3 hrs	• Contained Oil Spill • Contained Chemical Spill • Hydrocarbon gas leak	
• Major fire or Explosion	• Fire causing Asset Damage • Security incident requiring increase of MARSEC Level 3	• Fire extinguished onboard (Operations affected) • Security incident requiring increase of MARSEC Level 2	• Fire immediately extinguished onboard (Operations unaffected)	
• Major asset damage (> US$ 1,000,000)	• Significant asset damage (US$ 100,000 to US$ 1,000,000) • Damage causing shutdown > 4 days	• Asset Damage (US$ 10,000 to US$ 100,000) • Damage causing shutdown > 1 day • Damage rendering safety critical equipment inoperable • Damage rendering operational critical equipment inoperable	• Minor asset damage (< US$ 10,000)	
• International media coverage	• Local media involvement			
Actual Outcome ☐	☐	☐	☐	☐
Realistic Potential ☐	☐	☐	☐	☐

TYPE OF INCIDENT (and Classification)

Near Miss		**Medical Treatment Case**		**Asset Damage**		**Contained Spill**	
Medical Treatment (non-occupational/ work related)		**Restricted Work Day Case**		**Unplanned Operation Event**		**Discharge to Environment: Oil/ Chemical/ Gas**	
First Aid Case		**Lost Time Injury**		**Equipment Breakdown/ Malfunction**		**Ship Security (ISPS)**	
Fire or Explosion							

SECTION B – DEATILS

Facility Location		**Was ER Plan Initiated?**	**YES / NO**	
Incident Location / Work Area		**Date & Time of Incident**		
Site / Address / Well Name		**Date & Time Reported**		
Facility Person in Charge (Name & Title FPSO = OIM / MSV = Master)		**Permit Type & No.**		
Supervisor (Name & Title)		**Location of Incident**		
Report Prepared by (Name & Title)		**Name of Witness/s**		
Facility Safety Officer (Name & Title)				
Swell (Height (M), Period (sec), Direction)		**Visibility**		
Significant Wave Height (Height (M), Period (sec), Direction)		**Wind Gusts (Knots)**		
Wind Sustained (Knots, Direction)		**Surface Current (Speed & Direction)**		
Vessel Movement (Pitch, Roll and Heave)				

INCIDENT INVESTIGATION REPORT

Factual Description of Incident

Immediate Actions Taken to Make Safe

SECTION C – FLUID ESCAPE

Material spilled		Volume		Release continuing NO		Rate of release	
Rate & direction of movement			Wind speed & direction			Current speed & direction	
Average wave height & period			Visibility		Precipitation		Temperature
Length of time of release (hours / minutes)							
Details of any immediate environmental / safety threat:							

SECTION D – OCCUPATIONAL INJURY / ILLNESS

Given Name		Surname		D.O.B.		Occupation	
Years of experience in position		Length of time on this facility		Employer			
Normal hours of work		Days onboard		Hours into shift		Medivac YES / NO	
Nature of injury / illness							
Treatment given							
Person giving treatment		Classification: ☐ Medical (non-work related) ☐ FAC ☐ MTC ☐ RWC ☐ LTI ☐ Other (please specify)					

Nature of Injury

Abrasions / Scratches		Concussion / Internal Injury		Freezing / Frostbite / Hypothermia		Puncture wound	
Amputation		Dislocation		Heat stress and strain		Effect of radiation	
Asphyxia / Drowning		Effects of Electricity		Numbness		Sprain / strain	
Burns-heat		Eye Injury		Permanent Disability		Tooth Injury	
Burns-chemical		Fatality		Physical Shock		Other Injury	
Bruises / Contusions		Fracture		Poisoning			

Injured Body Part

Injury linked to entire body		Feet / Toes		Hand / Fingers		Head / Face / Neck	
Lower limbs (Legs)		Shoulder to Groin / Hip		Upper Limbs (Arms)		Lumbar	
Respiratory		Internal					

REPORT NUMBER: Vessel: Intrepid Balanghai **PART 2**

SECTION E – DEFINE THE EVENT

What was the actual event? *Be careful not to confuse it with a cause / outcome or threat.*

SECTION F – IDENTIFY FAILED CONTROLS

What controls would normally have prevented the event (e.g. guard over pulleys)? Consider engineering, procedures, training, behavior etc.	How did these controls fail (e.g. guard not replaced after maintenance)?

SECTION G – WHY DID THE CONTROLS FAIL?

Equipment	Environmental	Human	Procedures
1. Maintenance	12. Housekeeping	19. Instructions given	29. Work procedures
2. Electrical failure	13. Accessibility	20. Interpretation of instructions	30. Work permits
3. Mechanical failure	14. Weather	21. Compliance to instructions	31. Checks/ inspections
4. Design	15. Lighting	22. Supervision	32. Audits
5. Layout	16. Hazard labeling/ signage	23. Planning	33. Other procedural factors
6. Tools (wrong type/ faulty)	17. Ventilation	24. Training/ experience	
7. Specifications	18. Other environmental factors	25. Speeding/ hurrying	
8. Operating instructions		26. Fatigue	
9. Isolation systems		27. PPE	
10. Fire/ explosion control		28. Other human factors	
11. Other equipment factors			

Select from the list of underlying causes above and provide describe how they helped cause the control to fail.

Factor	Details of Failure

SECTION H – CORRECTIVE ACTIONS

Factor	Details of corrective actions addressing above failures *(Recommendations will be tracked in Incident Register)*	By Whom	By Date	Priority

SECTION I – ONSHORE REVIEW

Incident causation factors and corrective actions have been reviewed and agreed-

Facility Superintendent	Name:		Signature:		Date:	/ /
HSEQ Manager	Name:		Signature:		Date:	/ /
Operations Manager	Name:		Signature:		Date:	/ /

SECTION J – CLOSE OUT (Confirmation Corrective Actions Implemented)

OIM	Name:		Signature:		Date:	/ /
Facility Superintendent	Name:		Signature:		Date:	/ /
HSEQ Manager	Name:		Signature:		Date:	/ /
Operations Manager	Name:		Signature:		Date:	/ /

เอกสารแนบที่ 56

Typhoon Evacuation Plan

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Thailand – Health, Safety, Security and Environment

Thailand Typhoon Evacuation Guideline

Guideline (GUI)

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Thailand Typhoon Evacuation Guideline

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All major changes to the document at this current revision are recorded below.
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R0	May 13	Andy M.	Issue for approval
R0	Aug 14	Andy M.	Review as ISO requirement
R1	Sep 14	Thanawat R.	- Review as ISO requirement - Format to EDMS template - Add mooring and unmooring situation of FPSO/FSO on page 7 by Andy Mackenzie - Add Rig Master position in this document
R2	12 Jul 19	Thanawat R.	Review for approval
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introduction

1.1 PURPOSE

This document provides guidelines to ensure the safety of personnel and protection of Company installations and rigs in the event of a Typhoon or Tropical Storm enter or develop in the Gulf of Thailand.

Given the unpredictable nature of storms, particularly in terms of their speed, strength and direction of developing storms, these guidelines serve as a framework to support decision-making.

The Field Manager (FM) or Company Man, in close collaboration with FPSO/FSO/MOPU/Marine Vessels and/or Drilling Rig Offshore Installation Manager (OIM) responsible for determining appropriate actions, including the potential shutdown of operations or evacuation of the field.

It is important to note that these guidelines are not prescriptive. The FM or Company Man retains the authority to deviate from them, should circumstances necessitate alternative actions based on the prevailing situation.

For further reference:

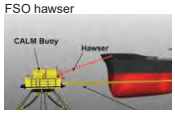
- Appendix A provides an overview of the subject of Tropical Storms and Typhoons.
- Appendix B details the early warning indicators of Tropical Storms and Typhoons.

1.2 SCOPE

The scope of this document encompasses all company-owned and/or operated installations and rigs located within the Gulf of Thailand, including contractor-owned and/or operated installations, rigs and vessels operating under company contract.

1.3 DEFINITIONS AND FACILITY DESIGN

Terms	Explanation
OWS	Offshore Weather Services Pty Ltd
Significant Wave Height (Hs or Hsig)	An average height of the highest one-third of all waves measured.
Max Wave Height (Hmax)	The forecast of maximum height of the wave that could occur from the weather forecast report.
Wind Gust	A sudden, brief increase in speed of the wind. According to U.S. weather observing practice, gusts are reported when the peak wind speed reaches at least 16 knots and the variation in wind speed between the peaks and lulls is at least 9 knots. The duration of a gust is usually less than 20 seconds.

FSO hawser 	A rope or cable for mooring or towing a ship.
MODU	Mobile Offshore Drilling Unit
MOPU	Mobile Offshore Production Unit

FACILITY DESIGN

Platform structure	All company platforms are designed to withstand **up to 12 m of Max Wave Height**
Crane Operation	Crane operation is allowed for wind condition **not over than 25 knots**
Supply vessel personnel transfer	Safe personnel transfer to and from supply vessel either by swing rope or Billy Pugh is allowed at sea state not over than **2.5 m max. wave height**
Jasmine WPA and WPD structures	Structure integrity of Jasmine WPA and WPD with Rigless Plug and Abandon Unit (RPU) on top deck cannot withstand maximum 12 m wave height impact in case of the direct hit by storm. The unit requires **2.5 days to rig down** from platform top deck without considering the logistic requirement.

2 TYPHOON ALERT GUIDELINE

The scenarios outlines in this section are based on the progression of a Tropical Disturbance (sustained winds 20-34 knots), into a Tropical Storm (sustained winds 34-63 knots), followed by a Typhoon (sustained winds 64-129 knots) or Super Typhoon (sustained winds >129 knots).

In anticipation of an approaching Tropical Depression, an up-to-date time schedule for suspending operations and evacuating personnel must be initiated.

Monitoring of any Tropical system should begin at a distance of 600 Nautical miles (NM). At this stage, the following personal are required to review all relevant documentation and preparations necessary to activate the Typhoon Alert Guideline.

a) Operation Manager
b) Marine and Logistics Assistant Manager
c) Drilling Manager
d) HSSE Manager

The Company in collaboration with Floating Production Storage and Offloading (FPSO), Floating Storage and Offloading (FSO), Mobile Offshore Production Units (MOPU), and Drilling Contractors has developed the following Typhoon Evacuation Guideline.

The guideline applied to MODUs, FPSO, FSO, MOPU and fixed installation platforms. It is important to note that FPSO, FSO, MOPU and Drilling Contractors are required to maintain their own Typhoon Response Procedures. Coordination and cooperation between the FM and Rig Superintendents/ Masters, and OIMs are essential to ensure all requirements are fulfilled, and the situation is managed effectively and safely.

The Company Contract Holder(s) is responsible for ensuring that the Contractor's plans/procedures align with this guideline and that any required bridging documents are prepared as needed.

For the vessels contracted by the Company and operating in the field, such as supply boats, work boats, work barges, or support vessels etc., typhoon response will be managed in accordance with the contractor's procedures but must also comply with this guideline under the supervision of the FM or Company Man.

Effective communication is crucial during all phases of Typhoon preparedness and response. The FM, Rig Superintendent, Master and OIMs must maintain regular communication to keep all personnel informed of the situation throughout.

Drilling Rig

a) The Rig shall be unmanned during Typhoon-strength storms that are predicted to exceed rig design specifications. For storms that do not exceed the rig's design specifications, evacuation decisions shall be made in accordance with this guideline and the relevant contractor procedures, where applicable.
b) Partial evacuation shall be conducted in stage as the tropical weather system approaches the rig location.
c) A total evacuation should be planned when storm intensity is predicted to exceed Phase 2 Orange Alert level, as determined by the Rig Superintendent/OIM
d) Total evacuation shall be carried out if the storm's intensity is forecasted to exceed the rig design specification.
e) Planned evacuation of any remaining essential personnel must be completed no later than 12 hours before the expected arrival of the Typhoon at the rig location.

FPSO/FSO/MOPU/Platform

a) For non-disconnectable FPSO/FSO designs, the mooring strengths are designed to withstand 100-year event conditions, allowing the vessel to remain on station. For disconnectable FPSO/FSO designed, the decision to disconnect shall be made in accordance with the Operators' procedures. The unmooring of disconnectable FPSO/FSO units will depend on the Typhoon approach direction / intensity, as well as the timing specified in the personnel evacuation plan in accordance with the procedures. If the disconnection of FSO/FPSO is required, preparations for field shutdown and evacuation of non-essential personnel must be planned in advance, as per the procedures. If disconnection is unnecessary, standard criteria and procedures for moored FPSO/FSOs shall apply. Coordination between FPSO/FSO Master/OIMs and the FM is required throughout.
b) Planned partial evacuation of personnel shall be initiated based on storm characteristics as determined by FM's and FPSO/FSO/ OIM's, in accordance with this guideline and consultation with FM.
c) Total evacuation of the FPSO/FSO/MOPU is not planned but shall be subject to Masters/OIM's decision based on the intensity and other storm characteristics.
d) The platforms are designed to withstand a 100-year storm event. Operations such as well work shall be suspended in accordance with this guideline; crews shall be evacuated to shore in accordance with this guideline. Hydrocarbon production systems and other critical operations shall be shut-in depending on storm conditions and path, and FPSO/FSO/MOPU factors as determined by FM, and in accordance with this guideline.
e) If the system is predicted to escalate to a Typhoon condition (or Tropical Storm with sustained winds of ≥50 knots) within the RED Zone level, the Company shall shut down production and evacuate Company personnel and contractor personnel under Company control, this action must comply with both company and contractor procedures as applicable.
f) It is critically important that the Typhoon Evacuation guidelines are coordinated with the Rig Contractor's and FPSO/FSO/MOPU operators 'Typhoon Evacuation plans, Specifically, the procedures for securing Rig/FPSO/FSO and MOPU facilities must be closely coordinated and adhered to in all circumstances.

As the operator, the company is responsible for managing, coordinating, and facilitating the implementation of this guideline. However, this relies on the expertise of Rig Contractors, FPSO/FSO/MOPU personnel, and Rig/FPSO/FSO/OIMs to ensure compliance with their securing procedures as outlined in their respective procedure manuals.

The Company's Typhoon Alert criteria (see section 2.1) is divided into four phases. The company Drilling and Operations Managers, in cooperation with FM and Rig/FPSO/FSO/OIMs, will react to each phase of the alert criteria as appropriate.

Note: The Contractor's typhoon response plans (for Drilling Rig, FSO, FPSO, Barge) take precedent over this document.

In the unlikely event of a loss of communications, the FM and/or Company Man in direct consultation with Masters/OIMs will be responsible for deciding on the appropriate phase of action.

A Single Point of Contact will be designated to the FM and/or Company Man who are responsibilities to take representatives on behalf of company for each facility (Rig/FPSO/FSO/MOPU). The communication between onshore and offshore facility (Rig/FPSO/FSO/MOPU) should be directly contacted to dedicated person.

The following Typhoon Alert Zones (for Jasmine, Manora, Nong Yao and Wassana Fields) are shown on the Gulf of Thailand Map in Appendix D. Action guidelines for each phase are described in Section 2.5

2.1 CRITERIA FOR PHASES OF ALERT

The evacuation strategy is based on the phase's zones indicated in the Appendix D:Typhoon Emergency guideline map, categorized into Gray, Green, Orange, and Red Phases.

Phase 0 – Pre-Condition Gray (600 NM from Typhoon)

This phase will initiate the Typhoon Evacuation guideline when a Tropical Storm, Depression, Typhoon or other similar system moves into or forms within 600 nautical miles (NM) to 500NM from the installation or rig site. This phase activates only a review of documentation and procedures and initiates tracking of the system.

Phase 1 - Condition GREEN (500 NM to 400 NM)

Will be activated when a Tropical Depression, Tropical Storm or Typhoon or other similar system has moved into or formed within 500-400 nautical miles (NM) from the installation or rig site.

Phase 2 - Condition ORANGE (400 NM to 200 NM)

Will be activated when a Tropical Depression, Tropical Storm or Typhoon is 400-200 nautical miles (NM) from the installation or rig site and the storm is modeled / forecasted to have ≥ 50 knot winds / conditions while in the Orange or Red Zone.

Phase 3 - Condition RED (200 NM and Closer)

Will be activated when a Tropical Depression, Tropical Storm or Typhoon is within 200 nautical miles (NM) of the installation or rig site and the storm is modeled / forecasted to have ≥ 50 knot winds / conditions while in the Red Zone.

Note: It is the intention of company, if the forecast indicates the system will enter the RED Zone with sustained winds of ≥50 knots, the field will be shut down and company / company associated personnel evacuated.

When activating the Orange / Red Zone actions, the primary objective is to protect the personnel, the environment, and Company property during severe weather conditions. In case of concerns or uncertainty on what action should be taken, the FM / Company Man should seek guidance from Operation Manager (OM) and the Country Response Team (CRT). The OM must also ensure that the any planned actions are communicated to upper management in Bangkok.

Upon entering the Red Zone, the Country Response Team (CRT) shall be established to assist Site Response Team (SRT), to ensure all personnel are safely evacuated, company property is secured, and nothing impacts the environment.

The boundaries of these alert zones have been established to provide sufficient time to make the facilities safe and/or evacuate prior to the onset of severe weather conditions. A nominal value of 15 knots forwards velocity of the storm, assumed to be directly towards the installation/rig site, has been used. It should be noted that more severe conditions may occur.

The FM shall consider the actual parameters of the storm including the speed and direction, taking due consideration of the fact that the parameters can change rapidly at any time.

The matrix of roles and responsibilities for personnel involved during each phase of typhoon evacuation are shown in Appendix F.

2.2 CALCULATION OF ALERT PHASES PRIORITIES

The alert phases noted above are provided as a guide for evacuation planning and preparation for securing the rig and/or Platforms and/or FPSO/FSO/MOPU. The formula listed below is to be used as a guideline to assist in scheduling events with sufficient time allowed for safe evacuation of all personnel. Remember that this is only a guideline. Individual storms' characteristics, operational constraints (logistical, production and drilling), will lengthen or shorten the actual time required. FM in conjunction with the Company Drilling/ Operations Managers and each Master or OIM, shall have the final say on when to evacuate.

Equation:

M ≥ (S + E + C + SM)

M = The time in hours before the Typhoon center hits the site.

S = Surface Operating Time in hours to finish the operation in progress.

E = Total Evacuation Time in hours to move personnel out of storms path by helicopter and/or boat.

C = Contingency Time in hours to allow for increase in the approaching storm's speed and for delays in securing well/work.

SM = Safety Margin (12 hours).

M – Should always be bigger than the total time needed plus 12 hours of added safety margin. Once the equation is equal, this is considered the best time to start evacuating non-essential personnel and securing well/rig/platform/FPSO/FSO/MOPU and finally, full evacuation of the site.

A pre-planned, tiered evacuation of non-essential personnel will reduce E. Some types of production and/or drilling operations may continue depending on the nature of the operation and the storm's overall characteristics. Securing of rig and well can then safely be carried out with minimum number of personnel allowing for a small evacuation by helicopter or boat. FM, Drilling and Operations Managers and Masters/OIMs will coordinate this action to facilitate continuance of operations for as long as it is SAFELY possible to do so. Completion of a Typhoon Evacuation Time sheet will help keep track of the storm's direction and estimated time of arrival and time required to safely evacuate. See example of Work Sheet in Appendix C.

2.3 CONDITIONS FOR EVACUATION BY HELICOPTER

Evacuation of personnel should not be unnecessarily delayed, as helicopters have limits on when they can safely operate. Once Phase 1 has been initiated, the helicopter refueling system (if applicable) should be double checked to ensure it is available and to ensure bulk or tote tanks are topped-up and available at all times.

The evacuation capacity of the current helicopter (S-76A++/C++) is approximately 12 passengers. The typical POB for Jasmine Field is 120-140 people, Manora field is 80-100 people, Nong Yao is 80-100 people, Wassana field is 80-100 people, and for MODUs between 120-150 people. This may mean multiple flights of 1.5 hour plus duration or more for a round trip. Careful planning will be required to move all non-essential personnel off the sites. See FPSO/FSO/MOPU and Rig Contractor's procedures and Section 2.1 above for more details and help in planning an evacuation.

The weather criteria for landing of the S-76 helicopter are based on wind levels. The S-76 cannot take off in winds greater than 60 knots or shutdown or start-up in winds greater than 45knts. This means that "Hot Refueling" may be required (if available). Certainly, if wind conditions are as above, "Hot Refueling"

will be the only way to refuel the helicopter. Hot refueling should only be carried out under a trained HLO officer or under the supervision of the co-pilot or captain. Aviation Contractor's procedures shall be used.

2.4 ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION

During any weather alert or potential evacuation, the following company personnel assignments will be in force (note that actual personnel in each position may vary, this list is correct at time of publication of this document):

- Operations Manager
- Drilling Manager
- Field Manager (Jasmine/ Manora/ Nong Yao/Wassana)
- Marine and Logistics Assistant Manager
- Helicopter Coordinator

It is expected that it will not be necessary to activate the ECC. The above personnel shall be responsible for their normal duties but shall give priority to their responsibilities in carrying out the evacuation plan. Their specific duties and responsibilities are outlined below.

The following responsibilities shall prevail in the situation of a Typhoon or Tropical Storm emergency:

2.4.1 FPSO/FSO/MOPU and Rig Masters - OIMs

- Regular monitoring of weather conditions and forecasts.
- Ensure the protection of onboard personnel's lives and equipment.

The Master/OIM can at any time initiate suspension of operations, disconnection of the offshore Drilling rig/FPSO/FSO (if applicable), securing the offshore Drilling rig/FPSO/FSO, and abandonment of the offshore Drilling rig/FPSO/FSO when deemed necessary to protect human life and/or equipment.

In consultation with FM and/or Company Man, prepare a list of essential personnel to remain on the offshore Drilling rig/FPSO/FSO/MOPU in each phase of the emergency, and order evacuation of personnel if and when required by the agreed means of transportation with FM.

2.4.2 Field Manager / Company Man

- In consultation with Rig Superintendent/Masters/OIMs, prepare and update a plan for securing the personnel and the offshore Drilling rig/installations platforms /MOPU when a Typhoon Alert has been initiated.
- Keep company Drilling Manager /Operations Managers informed of the details of the plan and any update thereof.
- Submit a list of essential crews to remain offshore in each phase of the emergency and the evacuation plan of personnel for each phase to Company Marine and Logistics Assistant Manager, Drilling Manager and Operations Managers.
- Liaise closely with Rig Contractor/FPSO/FSO/OIMs and act as an intermediary between the offshore Drilling rig/FPSO/FSO/MOPU and Company to ensure an optimal and coordinated effort.
- Decide whether to commence evacuation by helicopter and/or vessel and when.
- Decide whether to suspend operations and production and when.

2.4.3 Master of standby / supply vessel

- Overall responsibility of the vessel and crew.
- Render assistance to the offshore assets to protect and safeguard the life of personnel.

- Prepare to take personnel aboard for evacuation.

2.4.4 Drilling Manager and Operations Manager

- Ensure that Typhoon Evacuation plan is made and updated as necessary to secure personnel, the operation, the well and equipment.
- When the Typhoon entering the Orange Zone, verify OWS alerts by:
  a) Using other referenced Typhoon tracking/forecast websites, e.g.:
     http://www.tropicalstormrisk.com/
     http://www.wunderground.com/tropical/
     http://www.ssd.noaa.gov/imagery/wpac.html
  b) Contacting OWS by phone
- Keep the Company Management informed of the current situation, plan for securing personnel, the well, the operation, equipment, and advise on necessary actions to be taken in this respect.
- Coordinate Company and Contractor onshore activities with the offshore activities to render optimal assistance as the situation dictates.
- Inform the relevant Authorities of the situation if applicable.
- Provide assistance to the FM and OIM when deciding whether to commence evacuation by helicopter and/or vessel and when.
- Provide assistance to the FM and OIM when deciding whether suspend operations and production and when.
- Arrange (via Marine and Logistics Assistant Manager and contractors/employers) onshore receipt and accommodation of personnel if evacuated to shore.
- Initiate other actions as may be required to protect and safeguard the life of offshore personnel.

2.4.5 Marine and Logistics Assistant Manager

- Monitor weather conditions and forecasts then pass info to FM and OIM.
- Activate Phase 1 (Green) of the Typhoon/Tropical Storm Alert guideline and subsequent phases in consultation with the Company Drilling Manager / Operation Managers.
- Preparing and arranging helicopter and/or vessel evacuation of personnel onboard the offshore facilities as agreed with company FM/OIM and Drilling Manager /Operations Managers.
- Informing FM/OIM/Company Man of the evacuation capacity of the helicopter and the standby/supply vessel or crew boat.
- Identify the most suitable airport for receiving the helicopter evacuees and the most suitable port (or safe waters) for the vessel evacuees.
- Keep FM/OIM/Company Man and the Company Drilling Manager /Operations Managers informed of evacuation arrangements, including flight details and vessel details.
- Coordinate movement of vessels and helicopters.
- Arrange; via Helicopter Coordinator, onshore receipt and accommodation of personnel or verification that service contractor of personnel being evacuated have done so.
- Arrange onshore receipt and accommodation of personal.

2.4.6 Helicopter Coordinator

- Assist the Company Marine and Logistics Assistant Manager /FM/OIM by coordinating, planning helicopter movements.
- Liaise with Aviation Contractor.

2.5 ACTION GUIDELINES FOR TYPHOON/TROPICAL STORM EMERGENCY

This section covers four sets of action guidelines, one for each phase of a Typhoon/Tropical Storm Emergency, applicable for offshore rigs/FPSO/FSO/MOPU/Platforms that are operating on designated locations. Guidelines for suspension/securing/disconnecting of rig and FPSO/FSO/MOPU operations are described in the Rig Contractors and FPSO/FSO manuals.

Note: If Phase 1 of the Typhoon Evacuation emergency guidelines - Condition GREEN - is activated during a rig move, securing of the MODU should commence immediately. In consultation with company Man, the Rig Superintendent/Masters/OIMs shall prepare a list of essential personnel required to secure the rig in each phase, and the order of evacuation of the personnel. The list shall be sent to company Field/Drilling/Operations Managers and the Logistics Manager. company Field/Drilling/Operations Managers and Logistics Manager shall, in consultation with company Man on the rig and Rig Superintendent/ Masters/OIMs, assess whether the rig should be secured at the location or towed to safe waters.

2.5.1 ACTION GUIDELINES for PHASE 0

Marine and Logistics Assistant Manager

1. Alert FM/Masters/OIMs, Drilling/Operations Managers that the weather system is entering the 600 NM radiuses.
2. Keep weather plot updated at least every 6 hours and distribute to FM/Company Man and Masters/OIMs offshore.
3. Prepare plan for possible evacuation, including identification of airport for arrival of helicopter evacuees and safe port or waters for vessels.
4. Liaise with Rig Contractor/FPSO/FSO/MOPU Logistics representative at their bases.

Rig Contractor/FPSO/FSO/MOPU

1. Keep weather plot updated at least every 6 hours.
2. In conjunction with the Company FM/OIM/Company Man prepare list of essential crews required on the offshore Drilling rig/FPSO/FSO/MOPU in each phase of the emergency, and order and means of evacuation (by helicopter or vessel).
3. Advise personnel on board of current status of weather system.

Field Manager / Company Man

1. Prepare essential crew and evacuation list prepared for each phase in conjunction with Rig Superintendent/Masters/OIMs and forward to Maine and Logistics Assistant Manager and CRT.
2. Coordinate any vessel and/or helicopter movements with Company Marine and Logistics Assistant Manager.
3. Advise personnel onboard of current status of weather system.

Drilling Manager / Operation Managers

1. Provide support and advice to in-field personnel, particularly the FM/Company Man/Masters/OIMs.

2.5.2 ACTION GUIDELINES for PHASE 1

Condition GREEN

Marine and Logistics Assistant Manager

1. Alert FM/Masters/OIMs offshore/Drilling/Operations Managers/ CRT that the weather system is entering the Green Phase.
2. Advise Helicopter Coordinator to be on standby for possible evacuation of offshore rigs/installations.
3. Alert the standby/supply vessels.
4. Keep weather plot updated at least every 6 hours and distribute to FM/Company Man and Masters/OIMs offshore.
5. Finalize plan for possible evacuation, including identification of airport for arrival of helicopter evacuees and safe port or waters for vessels.
6. Advise company FM/Drilling/Operations Managers and CRT of the current evacuation guideline and any update or any change to the guideline.
7. Commence evacuation of non-essential personnel from the field.

Note: The aim is to have all non-essential personnel evacuated during the Green Phase, thus allowing sufficient time to evacuate remaining personnel during the Orange Phase if necessary. All personnel should have been evacuated if and when the weather system enters the Red Phase with sustained winds of ≥ 50 knots.

Liaise with Rig Contractor/FPSO/FSO/ MOPU LOGISTICS representative at their bases.

Rig Contractor/FPSO/FSO Masters/OIMs

1. Keep weather plot updated at least every 6 hours.
2. In conjunction with FM/Company Man finalize list of essential crews required on the offshore rig/FPSO/FSO/MOPU in each phase of the emergency, and order and means of evacuation (by helicopter or vessel). Commence evacuation of non-essential personnel according to plan.
3. Check emergency equipment, such as generators, anchor cable cutters, batteries, bilge pumps and emergency abandonment equipment for operational readiness.
4. Check navigation aids and ascertain these are operational on back-up power supply.
5. Check all hatches and vents are free and clear.
6. Stow and secure loose equipment not required for any emergency.
7. Advise personnel on board of current status of weather system.

Field Manager / Company Man

1. In consultation with company Drilling/Operations Managers prepare a detailed plan for suspending related operations and securing the operation, including a time schedule.
2. Commence evacuation of non-essential personnel according to the guideline.

3. Update the plan for suspending related operations and securing the operations every 6 hours and advise company Drilling/Operations Managers and Logistics Manager accordingly.
4. Finalize essential crew and evacuation list prepared for each phase in conjunction with Rig Superintendent/Masters/OIMs and forward to Logistics Manager and CRT.
5. Coordinate any vessel and/or helicopter movements with company Logistics Manager.
6. Report actual weather conditions on location to company Logistics Manager and Drilling/Operations Managers at least every 6 hours.
7. Advise personnel on board of current status of weather system.
8. Stow and secure loose equipment not required during any emergency.

Drilling Manager / Operation Managers

1. Review the situation and the plan for securing the operation and the current plan for evacuation of personnel.
2. Provide support and advice to in-field personnel, particularly the FM/Company Man/Masters/OIMs.
3. Consider establishing 24 hours manning of the Bangkok Office, depending on actual speed of the Typhoon/Tropical Storm movement.

2.5.3 ACTION GUIDELINES for PHASE 2

Condition ORANGE

Marine and Logistics Assistant Manager

1. Alert Drilling, Operations Managers, FM, Company Man, Masters/OIMs, Master of each vessel, Helicopter Coordinator and Contractors of entering the ORANGE Phase.
2. Complete evacuation of non-essential personnel and commence evacuation of remaining personnel per plan, liaising with FM/Company Man, as agreed with FM/Drilling/Operations Managers.

Note: The aim is to have all personnel evacuated during the Green and Orange Phases, i.e. all personnel should have been evacuated if and when the weather system enters the Red Phase with sustained winds of ≥50 knots.

3. Keep weather plot updated at least every 3 hours and monitor situation.
4. Keep FM/Drilling/Operations Managers informed of the situation.
5. Advise standby/supply vessels of the port or safe waters that have been designated for the vessels and any evacuees.

Master of standby / supply vessels

1. Ensure stability calculations to provide for best stability for transfer of materials and personnel as necessary.
2. Standby and keep close radio contact with the offshore Drilling rig/FPSO/FSO/MOPU and Company Marine and Logistics Assistant Manager as appropriate.
3. Await final instructions from Company Marine and Logistics Assistant Manager for the port or safe waters designated as destination for the vessels and any evacuees.
4. Receive evacuees if/as directed.

Note: Marine and Logistics Assistant Manager will most likely relay closest safe port via company Field Manager, Company Man or OIM.

Rig Superintendent /FPSO/FSO/ OIMs

1. In consultation with FM/Company Man, complete evacuation of non-essential personnel, such as visitors, observers, government representatives, painters and general maintenance personnel, and commence evacuation of remaining personnel per plan.

Note: A Contractor skeleton crew may be detailed to remain on board the rig/FSO/FPSO/MOPU as per Contractor's procedures and at the discretion of Masters/OIMs, otherwise the aim is to have all personnel evacuated if and when the weather system enters the Red Phase.

2. In consultation with FM/Company Man and at such time as a decision is made, suspend operations on the offshore rig and/or FPSO/FSO/MOPU.
3. Continue securing non-essential equipment onboard the offshore Drilling rig/FPSO/FSO/MOPU, with special emphasis on watertight hatches, doors and vents.

4. Having secured of any oil or gas well, disconnects from the well, if applicable, or stop production, if directed.
5. Advise personnel on board of current status of weather system.
6. Keep weather plot updated at least every 3 hours and monitor situation.

Field Manager / OIM/ Company Man

1. Coordinate evacuation with Company Marine and Logistics Assistant Manager /Drilling/Operations Managers.
2. Keep company Drilling/Operations Managers informed of the situation.
3. Update plan for suspending related operations and securing the operation every 3 hours and advise company Drilling/Operations Managers accordingly.
4. Report progress and actual weather conditions to Company Marine and Logistics Assistant Manager and Drilling/Operations Managers at least every 3 hours.
5. Secure the operation (including shutdown of all production and suspension of all work on wells) if and when required as per plan agreed with Company Drilling/Operations Managers and in consultations with Rig Superintendent/FPSO/FSO/ OIMs.

Note: The aim is that all operations shall be suspended prior to such time as the weather system enters the Red Phase with sustained winds of ≥50 knots.

6. Assist Rig Superintendent/FPSO/FSO/OIMs to evacuate personnel and secure the offshore rig/FPSO/FSO, if required.
7. Advise personnel in field of current status of weather system.

Drilling Manager / Operation Managers

1. Consult OWS and/or other websites

   http://www.tropicalstormrisk.com/

   http://www.wunderground.com/tropical/

   http://www.ssd.noaa.gov/imagery/wpac.html
2. About the expected track and expected intensity of the weather system.
3. Review of the situation and approval to secure the operations.
4. Make decision with FM / Company Man whether and when to secure and suspend all related operations and production.
5. Advise Company Marine and Logistics Assistant Manager and FM/Company Man to continue evacuation of personnel as per plan.

2.5.4 ACTION GUIDELINES for PHASE 3

Condition RED

Rig Superintendent/FPSO/FSO/ OIMs

1. Perform final check to ensure security of the offshore Drilling rig/FPSO/FSO/MOPU.
2. Evacuate remaining personnel.

Note: Contractors may leave a skeleton crew on board in accordance with their own procedures. Decision to leave a voluntary skeleton crew on the Offshore Rig/FPSO/FSO/MOPU is at the discretion of and the responsibility of the Rig Superintendent/Masters/OIMs. No company staff shall be included.

Field Manager/OIM/COMPANY MAN

1. Ensure all personnel have been evacuated safely.
2. Ensure all Operations in the field have been suspended (including production and all work on wells as applicable).
3. Continue to monitor the situation and liaise with Marine and Logistics Assistant Manager, Drilling/Operations Managers and Rig Superintendent and Masters/OIMs.

Master on Standby / Supply Vessels

1. Leave for port or safe waters as instructed by Marine and Logistics Assistant Manager.
2. Remain in close contact with other vessels heading in same direction.

2.6 ACTION GUIDELINES FOR REDEPLOYMENT TO FIELD AFTER EVACUATION

1. Redeployment shall be at the instruction of the FM/ OIM and directed by the Helicopter Coordinator and Logistics Manager.
2. Personnel shall be redeployed to the field by first available means of transportation. This may be surface vessel or helicopter or both. Priority shall be given to Essential Personnel and support services.
3. company Field/Drilling/Operations Managers in conjunction with Rig Superintendents/Masters/OIMs shall review and approve the redeployment lists.

3 APPENDIX

3.1 APPENDIX A TYPHOON OVERVIEW

3.1.1 Appendix A1 Introduction

The primary objective of this section is to provide information regarding tropical storms and typhoons to support guidelines (provided elsewhere in this document) for the protection and safety of all personnel on company offshore installations, rigs and vessels should a Typhoon or Tropical Storm enter or develop in the Gulf of Thailand.

These guidelines are based on the belief that the best defense against a typhoon is "not to be there". In the case of MODUs, unlike semi-sub or tender-based drilling operations where the vessel can be de-mobilized in a relatively short time (provided ample warning is provided), the Jack-Up type rig imposes operational constraints that limits its ability to quickly depart the path of a predicted weather anomaly. Historically, in most cases, the Jack-up type rigs and FPSO/FSO/MOPU's have been secured and evacuated of all or non-essential personnel and treated as a fixed installation. FPSO/FSO/MOPU's under company may or may not be disconnectable. Disconnection procedures (where applicable) are beyond the scope of this document and are the responsibility of the FPSO/FSO operator.

The Company, in the event of a typhoon or similar severe weather anomaly, shall follow this philosophy by:

1. Providing a timely and safe evacuation to safeguard all personnel working on board the installations/rigs/vessels as well as those on the support vessels.
2. Providing a minimum guideline and time estimation for production, well and rig securing.
3. Providing a good estimation of when to stop any particular operation to minimize non-productive time while remaining safe.
4. Preplanning evacuation for any serious weather-related situations.

3.1.2 Appendix A2 Background Information

In terms of their potential for destruction, typhoons and their cousins, cyclones, are the world's most violent storms. Yet, these most furious of storms are born in the calm placid climates of the tropics. The tropics supply the key ingredients needed for tropical cyclones: wide expanses of warm ocean water, air that's both warm and humid, and weak upper-level winds blowing in the same direction as winds near the surface. In the big picture of how the Earth keeps its heat budget balanced, typhoons move excess heat from the tropics to the middle latitudes. Typhoons can be thought of as huge machines, heat engines that convert the warmth of the tropical oceans and atmosphere into wind and waves. Fortunately, typhoons aren't very efficient machines. Even the strongest typhoons convert only a small amount (about 3%) of their available energy into wind and waves.

3.1.3 Appendix A3 Breeding Grounds

Tropical storms need a warm layer of ocean water (about 200 feet in depth) and an unstable atmosphere to develop. Water temperatures of at least 80°F are required to begin the evaporative process and energy exchange between air and water. In addition, surface winds converging at a central area of low-pressure force warm, humid air high into the atmosphere. Within this humid 18,000 foot or higher column of air, moisture rises, condenses, and releases latent heat energy, the primary source of fuel for tropical cyclones. The incidence of these storms in the Pacific is three times greater than that in the Atlantic. Pacific Ocean tropical storms often form off the west coast of Mexico with the easterly trade winds

providing a general steering current, moving the storms west and away from land. Most of these storms dissipate at sea, but some travel the entire width of the Pacific from Mexico to Asia. See Figure 1.1 below.

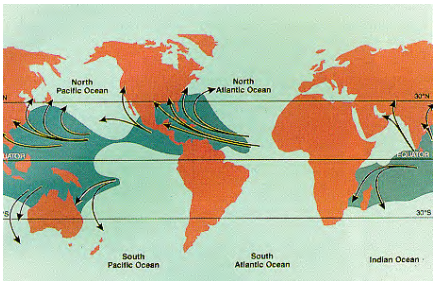


Fig 1.1 - Tropical Storm Breeding Grounds

3.1.4 Appendix A4 Role of The Winds

Hurricane-force winds of up to 200 mph in some extreme cases are the strongest winds encountered over ocean waters. The only winds that are stronger anywhere on the planet are those of tornadoes. Winds in the strongest tornadoes can top 300 mph, while hurricane winds above 150 mph are quite rare. But a tornado is much more concentrated than even the smallest hurricane: a mile-wide tornado is huge, a 100 mile-wide hurricane is small. Few tornadoes last even an hour, and a damage path of perhaps 100 miles goes into the record books.

In simple terms, warm, humid air spirals inward, speeding up as it approaches the center of the storm. Air under high pressure outside the storm moves into the low pressure center. At the same time, air rises under the bands of thunderstorms that surround the center of the storm. These "rain bands" or "spiral bands" are typically 3 to 30 miles wide and 50 to 300 miles long.

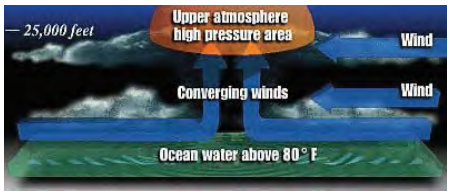


Fig 1.2 - Role of the Winds

Winds reaching the top of the storm (above 40,000 feet), in the eye wall, and in the bands of thunderstorms, flow outward. Meanwhile, air is sinking 20 to 40 feet a minute at the storm's center (where winds are mostly calm), warming it and suppressing clouds. The outflow of air at the top of the storm moves out from the center of the storm curving clockwise. See Figure 1.2 below.

3.1.5 Appendix A5 The Eye of a Typhoon

The center or eye of a typhoon is relatively calm. The most violent activity takes place in the area immediately around the eye, called the eyewall. At the top of the eyewall most of the air is propelled outward, increasing the air's upward motion. Some of the air, however, moves inward and sinks into the eye, creating a relatively cloud-free zone.

3.1.6 Appendix A6 Tropical Cyclones/Storms Wind Speeds

By international agreement, a tropical storm is the general term for all cyclonic circulation originating over tropical waters. The pattern of the circulation is counterclockwise north of the equator and clockwise south of the equator. A tropical cyclone has different stages (depending on its degree of organization and maximum sustained winds) throughout its average 12-day life cycle.

Tropical Disturbance

Disorganized mass of thunderstorms with very little, if any organized wind circulation. The lowest level of tropical cyclone activity. A slight circulation with no strong winds. A moving area of thunderstorms in the tropics that maintains its identity for 24 hours or more. A common phenomenon in the tropics.

Tropical Depression

A rotating circulation with sustained winds of 23-39 mph (20-34 knots). A view from above a tropical depression will show a closed wind circulation around a center.

Tropical Storm

A tropical storm with a strong, distinct rotating wind pattern and sustained wind speeds of 39 mph to 73 mph (34-63 knots). A tropical storm is given a name once it strengthens past the depression level and reaches tropical storm strength.

Typhoon

A typhoon is a severe tropical storm with a rotating pattern and sustained wind speeds of 74 mph (64 knots) to 129 knots.

Super Typhoon

As per Typhoon but with sustained wind speeds of at least 129 knots.

3.1.7 Appendix A7 Gulf of Thailand

The typhoon is the most intense form of a tropical storm which causes extremely strong winds and produces phenomenal waves and tides. Because of the shape of the Gulf of Thailand, movements of most storms that do enter the Gulf of Thailand track northwesterly to west over the Gulf and into the Andaman Sea. This is only a general direction of movement; the actual movement will vary and may be erratic in direction and speed. It can increase or decrease in intensity depending on the climatic conditions it moves into. Typically, tropical storms can vary in size from 60 to almost 1000 nautical miles

in diameter. However, most range between 100 and 500 miles in diameter. Due to these characteristics any tropical storm that forms or moves into the South China Sea is regarded as a potential threat to company operations in the Gulf of Thailand.

3.1.8 Appendix A8 Effects of Tropical Cyclonic Systems on Localized Weather Conditions

3.1.8.1 Appendix A8.1 Pressure

Very few observations/measurements have been obtained from the center of tropical storms; however, pressure measurements of 960 mb are likely at the center of a strong storm. The wind forces are the result of a very steep pressure gradient, not the actual pressure. From a boat captain's point of view, the wind force and the height of the waves are the significant effects of any tropical storm. The pressure gradient is generally very steep within about 100 miles of the center or approximately 10mb in 50 miles and increasing as the center is approached. Wind speeds and radiuses of tropical storms vary with each storm. Small eyes and more organized systems tend to produce stronger winds than larger but less organized systems. Tropical storms can produce great wind strengths which in turn potentially cause more adverse forces to be exerted on fixed structures such as fixed platforms and floating vessels. See figure 1.3 and 1.4.

Wind patterns caused by typhoon movement are not uniform. The strongest winds occur in the right hand semicircle of the typhoon's movement which is also reinforced by the general prevailing wind movements. This is the case of the Northern semi-circle for the Gulf of Thailand. This area is known to sea captains as a dangerous area. Movements of vessels in this area should be limited during any threat of a tropical storm. Winds in a typhoon spiral anti-clockwise in towards the eye, which typically may be from 10 to 70 miles across. Winds almost calm near the center of the eye, which is referred to as the "eyewall". The eye area is where there are light and variable winds with patches of blue sky between broken low clouds and a high-confused sea. Within 30 miles from the center of the system, winds of hurricane force are commonly experienced with tremendous seas and swell waves.

3.1.8.2 Appendix A8.2 Waves

Waves generated by a tropical storm reflect the intensity and movement of the system. Wind waves produced by local winds take on the direction of these winds and increase as the storm center approaches. The long swell ahead of a tropical storm is sometimes experienced at a distance of more than 1000 nautical miles from the storm's center. The swell travels much faster than the storm itself and frequently causes a storm tide which results in coastal flooding. The water begins to rise one or two days before the arrival of the storm and continues to rise until the storm passes or curves away from the coast. The storm tide may be as much as 10 to 15 feet above normal levels.

Swell waves are generated at a distance and radiate from the center of the storm with the highest swells moving in the direction of the general storm track. In case of a large system the long period swell created by the typhoon's central core may reach a location one to two days in advance of the typhoon's arrival at the location experiencing swells. A complicating factor is that the wind and the swell waves are usually coming from different directions thus resulting in strong shearing forces on structures and producing significantly unstable conditions for vessels or floating structures.

3.1.8.3 Appendix A8.3 General Weather

Very heavy rain is a feature of all tropical storms. It usually commences to fall as light rain at a distance of about 100 to 150 nautical miles from the center of the system. As the center approaches, torrential rain, hurricane force winds with extremely violent squalls and sudden shifts of wind are experienced,

sometimes with thunder and lightning. The sea becomes exceptionally high and is covered with froth and flying spray which mingles with the rain and fills the air with water. Visibility is extremely limited. The deafening roar of wind, which accompanies this weather close to the center will by comparison, drown out the noise of any thunderstorm.

As the edge of the eye passes, the wind suddenly becomes light, and the rain stops. The sea becomes mountainous and confused and the waves approach from all different directions. Blue sky is often visible between the patches of low clouds. The roar of the wind and sea fades toward the center of the eye. As the opposite side of the eye arrives, the same onslaught that just passed a short time before begins all over again but with the wind striking from the opposite direction to that previously experienced. See figure 1.5.

The typhoon season for the Gulf of Thailand extends from August through January. The majority of adverse weather conditions have historically formed from mid-October through early January. The weather may dictate the need for typhoon procedures before and after the above dates.

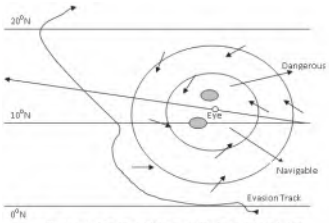


Fig. 1.3 Typhoon Track and Wind Systems of Typhoons in N. Hemisphere

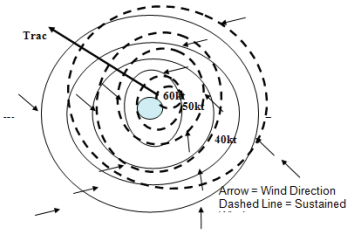


Fig. 1.4 Typical Track and Wind Systems of Typhoons in N. Hemisphere

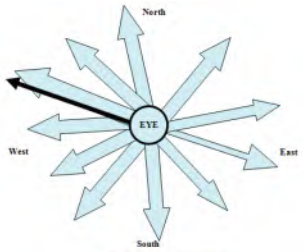


Fig 1.5 Typical Swell Generated by a Tropical Storm

3.2 APPENDIX B EARLY WARNING INDICATORS OF TROPICAL STORMS

3.2.1 Appendix B1 Traditional Methods

In any locality during typhoon season, ships' captains and other maritime specialists must monitor all available resources to ensure they are not caught unaware of an impending storm. Resources available includes many sophisticated remote sensing devices such as standard radar to more sophisticated Doppler or Nexrad Radar, Satellite images and radio and e-mail transmissions. More traditional means of storm prediction should also be monitored.

3.2.1.1 Appendix B1.1 Barometric Indications

In the tropics, in normal weather, the changes in the barometer readings are minimal. The range of daily change averages about 3mb (0.1 inch) at the equator, decreasing with latitude North and South to 2.5 mb (0.07 inch) at 30o latitude and 1.7mb (0.05 inch) at 35o.

During "Typhoon Season" even though the changes in barometric pressure are small the barometer should be closely monitored for any change that might indicate a change in conditions. The hourly reading should be compared with the average reading for that location and if it is 3mb (0.1inch) or more below the average pressure; it should be taken to mean that a tropical storm is almost certainly somewhere in the area and probably within 200 mile of the location. When the storm is 500 to 1,000 miles away the barometric pressure usually becomes unsteady and often rises a little above normal. This rise is usually followed by a definite slow fall usually over a distance of 120 to 500 miles from the storm center. After which, the rate of fall is rapid as the center of the storm nears.

3.2.1.2 Appendix B1.2 Color of Sky

Vivid coloring of the sky at sunrise and sunset are often associated with impending storms. This is often accompanied or followed by Cirrus clouds that appear 300 to 600 miles away. These types of clouds accompanied by the colorful skies are often the sailor's first warning of an approaching storm.

3.2.2 Appendix B2 Physical Factors

Length of Swell

Length of wave swell coming from the direction of the storm is another indicator of an impending storm system. These swells typically travel faster than the storm and usually extends more than 400 to 1000 nautical miles from the center of the storm, assuming there is no land mass between the location and the storm.

Visibility

Exceptional visibility is generally experienced in the vicinity of the storm system as its leading-edge approaches.

Wind

During the storm season if there is a marked increase in force and/or change in direction, there is possibility of a nearby tropical storm.

3.2.3 Appendix B3 Radar Effectiveness

The average merchant ship and drill vessel has radar capable of detecting rain at about 30 miles. Its usefulness as a warning or diagnostic tool is very limited. However, within its 30-mile radius or so most storm systems eyes can clearly be seen as a dark circular area in the radar scope. But of course, by this time the vessel or location is fully involved in the storm. More sophisticated radar not yet in widespread maritime use such as Doppler and Nexrad color radar can detect wind velocity and direction at much greater distances and therefore are much more useful.

3.2.4 Appendix B4 Weather Forecast Services

Offshore Weather Services (OWS) provide routine site-specific forecasts with 72-hour validity, which are issued every 12 hours at 0600hrs and 1800hrs, Thailand time.

These forecasts include a summary of the overall meteorological situation, details of expected wind and wave conditions and any warnings such as squalls, gale, high swells and other conditions for a given area and time interval. These forecasts also provide a Tropical Advisory section, which will contain details of any Tropical Disturbance in the central or south-central region of the South China Sea.

In the event of a Tropical storm or a Tropical Disturbance with the potential to develop into a Typhoon entering or forming in the Sea China Sea within 650 nautical miles (NM) of the Field and or rig location, a Tropical Storm Warning Forecast will be issued every 6 hours. These forecasts will continue with text and satellite images of the storm's expected movement and strength. Once a system forms or moves to within 450NM, the forecast will be issued every 3 hours.

Weather observations from Chevron's weather station located at Satun LQ is also available to provide Doppler Color radar images and other data, if required.

Other Weather Service sources can be found on the Internet, and it is good practice to compare information from different sources.

3.2.5 Appendix B5 Estimating Typhoon's Arrival Time at FPSO/FSO/MOPU or Drilling Rig Location

The following is to be used to estimate the Typhoons arrival at the FPSO/FSO/MOPU or Drilling location:

Items needed.

1. Scale Grid map of South China Sea and Gulf of Thailand.
2. Plotter or compass.
3. Up-to-date weather report.

Procedure/Step

1. Mark the location of the storm's Eye on the Scale Grid Map using data collected from the weather report.
2. From the location established in step 1, calculate the following:
3. Plot eye's movement and distance from previous location, if there was one given.
4. The eye and the rig location.

Calculation:

Eye Speed = Distance between the Eyes / the Time it took to travel.
Distance = Distance between rig and Radius of the Typhoon.
Time Before it hits = Distance Before typhoon hits / Speed of Eye.

3.3 APPENDIX C TRACKING SHEETS

Typhoon Calculation Work Sheet

This sheet is to be used to tack Tropical Weather Systems that trigger Phase 1 of company Typhoon Evacuation guidelines

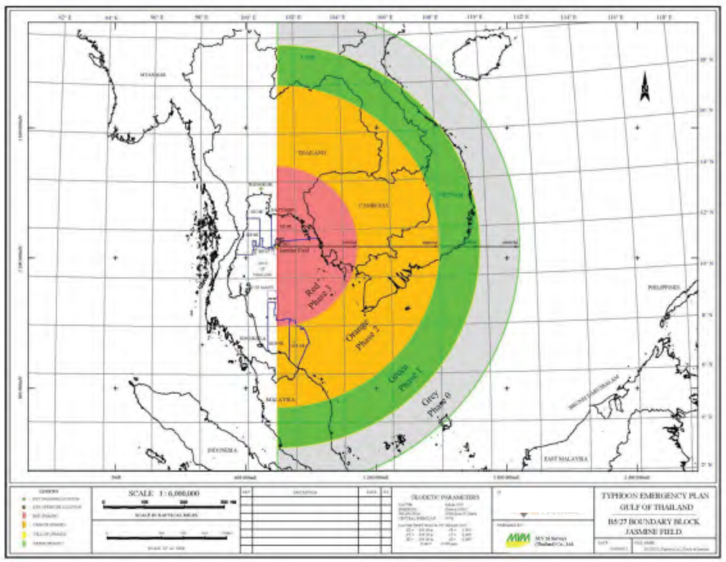
Minimum monitoring intervals; Phase 1: Green = 6 hrs Phase 2: Yellow = 6 hrs Phase 3: Orange = 3 hrs Phase 4 Red = 3 hrs

Time	A	B	C	D	E	F	G	M	SO T	TE T	CT	t
	Location 1	Location 2	Distance Rig/FPSO/FSO/ MOPU	Distance Traveled NM (A-B)	Time to Travel D in hrs	Speed kts (D/E)	Time to Hit Rig (hrs) C/F	M = G	S	E	C	M ³ (S+E+C+SM)

Time	A	B	C	D	E	F	G	M	SO T	TE T	CT	t
	Location 1	Location 2	Distance Rig/FPSO/FSO/ MOPU	Distance Traveled NM (A-B)	Time to Travel D in hrs	Speed kts (D/E)	Time to Hit Rig (hrs) C/F	M = G	S	E	C	M ³ (S+E+C+SM)
The following is used to estimate a Typhoons arrival at the MODU/FPSO/FSO Items needed: Scale Grid map of South China Sea and Gulf of Thailand Plotter or compass Up-to-date weather report Procedure Mark the location of the storm's Eye on the Scale Grid Map using data collected from the weather report. 2. From the location established in step 1, calculate the following Plot eye's movement distance from previous location, if there was one given The eye and the rig location Calculations: Eye Speed = Distance between the Eyes / Time it took to travel Distance = Distance between rig and Radius of the Typhoon Time to Rig of Eye = (Rig/FPSO/FSO Distance From typhoon) / Speed					Suggested time to Evacuate remaining essential personnel. M ³ (S + E + C) M = The time in hours before the Typhoon hits the rig S = Surface Operating Time in hours to finish the operation in progress E = Total Evacuation Time in hours to move personnel out of storms path by Chopper or boat C = Contingency Time in hours to allow for increase in the approaching storms speed for delays in securing well. SM = Safety Margin (12 hours) M – should always be bigger than the total time needed plus 12 +/- hrs of added safety margin. Once the equations is equal, this is considered the best time to start evacuating non-essential personnel and securing well and rig and finally, total evacuation of the rig location.							

3.4 APPENDIX D TYPHOON EMERGENCY GUIDELINE MAPS

JASMINE



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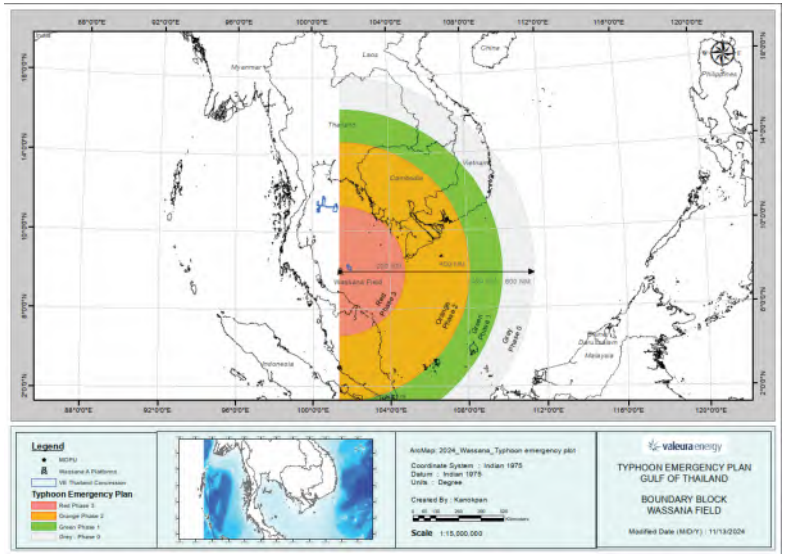

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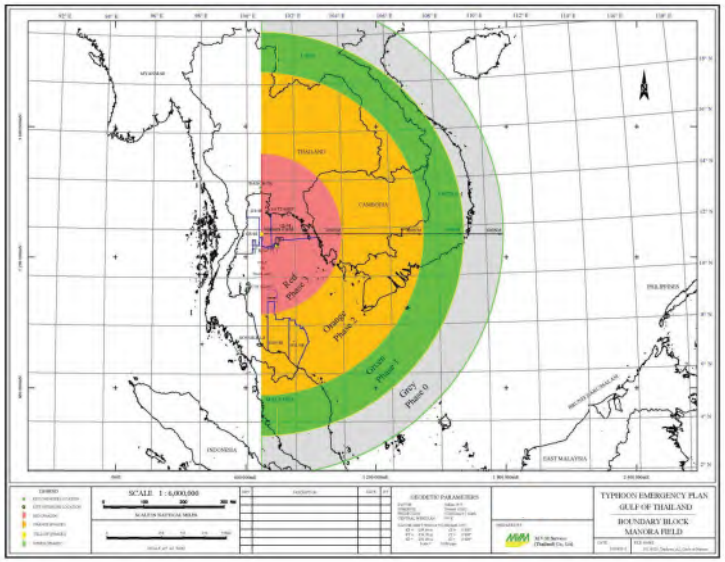


3.5 APPENDIX F INTREGRATED TYPHOON EVACUATION GUIDELINE

GUIDELINE FOR ACTION (THAILAND TYPHOON EVACUATION GUIDELINE, TH-GEN-HS-HS-GUI-0002 REV R4)

STORM RESPONSE CHECKLIST (TYPHOON RESPONSE PLAN FOR OPERATIONS, TH-GEN-OP-GN-PRC-0792 REV R2)

Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)

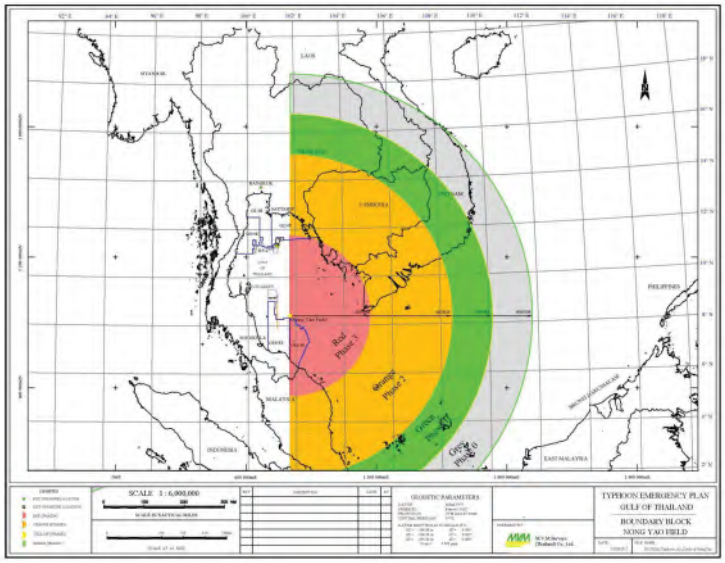
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION	
PHASE 0 – GREY PRE-ALERT ZONE 500-600 NM	This phase will initiate the Typhoon Evacuation guideline when a Tropical Storm, Depression, Typhoon, or other similar system moves into or forms within 600 nautical miles (NM) to 500 NM from the installation or rig site. This phase activates only a review of Typhoon Evacuation Guideline and procedures. Initiating tracking of OWS weather forecast data (tropical storm or typhoon tracking)	**GREY ALERT ZONE - Phase 0: 500-600 NM**	
		Company	
		Marine and Logistics Assistant Manager	1. Alert Field Manager / OIMs offshore and company Field/Drilling/Operations Managers that the weather system is entering the 600 NM radius. 2. Keep weather plot updated at least every 6 hours and distribute to Field Manager/Company Man and OIMs offshore. 3. 3. Prepare plan for possible evacuation, including identification of airport for arrival of helicopter evacuees and safe port or waters for vessels. Liaise with Rig Contractor/FPSO/FSO/MOPU Logistics representative at their bases.
		Field Manager /OIM/Company Man	1. Prepare essential crew and evacuation list prepared for each phase in conjunction with Rig Superintendent/OIMs and forward to company Bangkok office and Marine and Logistics Assistant Manager. 2. Coordinate any vessel and/or helicopter movements with company Logistics Manager. 3. Advise personnel on board of current status of weather system. Start engage/ contact Operation Managers (OM) & HSSE Manager to communicate with management team onboard of current status of weather system.
		Drilling Manager / Operation Managers	1. Provide support and advice to in-field personnel, particularly the Field Manager / Company Man / OIMs
		Offshore	
		Petrofac (Jasmine) FPSO	1. Keep weather plot updated at least every 6 hours. 2. In conjunction with company Field Manager/ Company Man prepare list of essential crews in each phase of the emergency. 3. Advise personnel on board of current status of weather system.
		OMNI (Manora & Nongyao) Three60 (Wassana) FSO/ MOPUT7/ MOPU (NYC) / JAKA TARUB (Wassana) FSO	1. Keep weather plot updated at least every 6 hours. 2. In conjunction with company Field Manager/ Company Man prepare list of essential crews in each phase of the emergency. 3. Advise personnel on board of current status of weather system.
		Drilling Rig	This phase should begin when a TRS is within one thousand (1,000) miles of the rig's location. In such case, the following should be implemented. 1. Keep weather plot updated at least every 6 hours. 2. In conjunction with company Field Manager/ Company Man prepare list of essential crews in each phase of the emergency. 3. Advise personnel on board of current status of weather system.
		Accommodation Barge/Supply Vessels	1. Keep weather plot updated at least every 6 hours. 2. In conjunction with company Field Manager/ Company Man prepare list of essential crews in each phase of the emergency. 3. Advise personnel on board of current status of weather system

Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)

Table 1. Storm Response Checklist

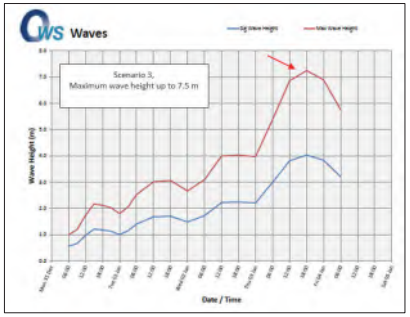
STEP/PHASE	INSTRUCTION	COMMENTS & OBSERVATIONS
Typhoon Preparation	☐ Review and update weather condition & tropical tracking report ☐ Platforms/ MOPU top-up diesel fuel and fresher water as minimum running 1 week. ☐ FSO increase provision stock at least 2 weeks foods shall be available for all personal on board. ☐ Platform/ MOPU emergency foods to be prepared and checked expiry date. ☐ Platform/ MOPU stow, and secure loose equipment not required during any emergency. ☐ Ensures that the entire communication systems including SSB, VHF, satellite phones are operational, and all hand-held units are always fully charged. ☐ FM/OIM & FPSO/FSO Master to review typhoon evacuation guideline.	Operation Manager/ HSSE Manager or delegated will prepare initial notification for offshore operation.
Scenario 1 **Wind gust more than 50 knots**	☐ Suspend all works at open area. ☐ Suspend lifting operation. ☐ Personnel stay inside CCR	TS plan is to be prepared by FM each field and agree with OM such as evacuation plan, communicate to Platform Operation & MOPU shut down etc.

NONGYAO



Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		
			2. Helicopter, boat and crane limitations (35 mph winds or as specified by vessel and/or helicopter companies) should be considered when planning Phase III and determining what contingency "C" to use in the Phase II – "M" calculation. 3. Confirm the maximum number of persons the vessels/helicopters can transport. 4. Check and ensure identification lights, obstruction lights, and fog horn are operable. 5. Test emergency generator and fill fuel tank completely. 6. Begin preparing and securing of items, such as: - Confirm watertight integrity - Remove or secure equipment not in use - Protect electric motors with Vis queen or plastic - Inspect derrick and remove all trash and soft line - Ensure rig has sufficient fuel for at least 10 day. 7. Using the following table, calculate a timetable relevant to current operation and location. Update this calculation every 12 hours or more often if required. 8. Transportation - Inform crew boats, service vessels, helicopters and Client's shore base facility that 'TRS procedure Phase I' is in effect. Review evacuation plans with individuals concerned, in conjunction with the Client's Representative. - Determine maximum sea and wind conditions to offload personnel for each crew boat and each workboat. - Establish maximum wind condition for routine and emergency helicopter use. - Discuss with Client's transportation representative any rig requirements and limitations regarding aircraft and service vessels for the evacuation of personnel and equipment. - Arrange for collection of any materials that must be sent to shore. - Establish hotel reservations as far in advance as possible, including bus, van, or auto transportation from landing point - Establish hotel reservations as far in advance as possible including bus, van, or auto transportation from landing point - Evacuate non-essential personnel from rig and inform the Client's representative. - Review evacuation plans with workboats, including destination points. - Offload any variable load needed to get to survival draft (if applicable) 9. Communication Planning - Send up-to-date Personnel On Board (POB) list to Operations Superintendent and continue to update as changes occur. - Ballast Control Operator / Radio Operator will maintain constant radio watch. Navtex and VHF radios will be transmitting regular updates on TRS progress. - The Operations Superintendent will monitor TRS via weather services and forward information to rig. - Weather and sea status at rig location should be monitored and recorded in environmental log every 2 hours. - /PIC to check handheld satellite phone is charged and test by making/receiving call to/from Shore base. Check radio communications with crew-boats, workboats, and helicopters. Ensure all batteries are fully charged.		
		Accommodation Barge/Supply Vessels	1. Keep weather plot updated at least every 6 hours. 2. In conjunction with company Field Manager/Company Man finalise list of essential crews required on the offshore accommodation barge in each phase of the emergency, and order and means of evacuation (by		

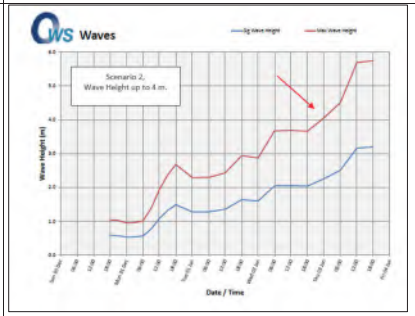
Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		
				☐ Prepare for FSO hose disconnection (MN/NY/ WSN) and typhoon response plan.



Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		
PHASE 1 – GREEN ALERT ZONE	Activating Phase 1 response and actions upon the potential risk (what is risk? And what is actions?) of a tropical depression, tropical storm or typhoon or other similar system moving into or formed within 500-400 nautical miles (NM) from offshore installations or drilling rig.	**GREEN ALERT ZONE - Phase 1: 400-500 NM**		
		Company		
		Marine and Logistics Assistant Manager	1. Alert Field Manager/OIMs offshore and Company Drilling/Operations Managers that the weather system is entering the Green Phase. 2. Advise Helicopter Coordinator to be on standby for possible evacuation of offshore rigs/installations. 3. Alert the standby/supply vessels. 4. Keep weather plot updated at least every 6 hours and distribute to Field Manager/Company Man and OIMs offshore. 5. Finalize plan for possible evacuation, including identification of airport for arrival of helicopter evacuees and safe port or waters for vessels. 6. Advise company Field/Drilling/Operations Managers of the current evacuation plan and any update or any change to the plan. 7. Commence evacuation of non-essential personnel from the field. Note: the aim is to have all non-essential personnel evacuated during the Green Phase, thus allowing sufficient time to evacuate remaining personnel during the Orange Phase if necessary. All personnel should have been evacuated if and when the weather system enters the Red Phase with sustained winds of ≥50 knots. Liaise with Rig Contractor/FPSO/FSO LOGISTICS representative at their bases.	
		Field Manager /OIM/Company Man	1. In consultation with company Drilling/Operations Managers prepare a detailed plan for suspending related operations and securing the operation, including a time schedule. 2. Commence evacuation of non-essential personnel according to plan. 3. Update the plan for suspending related operations and securing the operations every 6 hours and advise company Drilling/Operations Managers and Logistics Manager accordingly. 4. Finalize essential crew and evacuation list prepared for each phase in conjunction with Rig Superintendent/OIMs and forward to company Bangkok office and Logistics Manager. 5. Coordinate any vessel and/or helicopter movements with company Logistics Manager. 6. Report actual weather conditions on location to company Logistics Manager and Drilling/Operations Managers at least every 6 hours. 7. Advise personnel on board of current status of weather system. 8. Stow and secure loose equipment not required during any emergency.	
		Drilling Manager / Operation Managers	1. Review the situation and the plan for securing the operation and the current plan for evacuation of personnel. 2. Provide support and advice to in-field personnel, particularly the Field Manager/Company Man/OIMs. Consider establishing 24 hours manning of the Bangkok Office, depending on actual speed of the Typhoon/Tropical Storm movement.	
		Offshore		

STEP/PHASE	INSTRUCTION	COMMENTS & OBSERVATIONS
Scenario 2 **Weather forecast detected Maximum wave height up to 4 m.** **Phase 1-Condition Green**	☐ Prepare essential crew and evacuation list. ☐ Coordinate any vessel and/or helicopter movements with the Company Logistics. ☐ Commence evacuation of non-essential (Operation crew & Contractors) personnel according to evacuation list- by field support vessel. ☐ Advise personnel on board of current status of weather system. ☐ Minimize platform crew change, only required personal are extra to work on platform (maximum 4 persons/platform). ☐ FSO/ FPSO to check emergency equipment, such as generators, anchor cable cutters, batteries, bilge pumps and emergency abandonment equipment for operational readiness. ☐ Platform/ MOPU and FSO/ FPSO to check navigation aids and ascertain these are operational on back-up power supply. ☐ FSO/ FPSO stow, and secure loose equipment not required for any emergency. ☐ HWO/ RPU fully rig down from platform and demobilize if operation take place on Jasmine WPA and WPD.	FM/ OIM Offshore/ Drilling/ Operation Manager/ Marine and Logistic Assistant Manager/ HSSE Manager work and update with Management Team

Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		
				ALL PEOPLE OFFSHORE 1. Notify all Personnel of the Green Alert Status. 2. Liaise with the Bureau of Meteorology Duty Forecaster and other FPSO facilities as appropriate to maintain information flow regarding weather conditions (Updates required every 6 hours). 3. Confirm Typhoon Readiness – Reference Petrofac Procedure O-O-1000 (Securing loose equipment in readiness for Typhoon) 4. Prepare a ballast plan to bring the vessel to a suitable stress and draft condition as appropriate. 5. Liaise with company Field Manager and Petrofac as required to ensure all parties are being constantly updated. 6. Consider Backload of non-essential containers or equipment stored on Deck. 7. Re-consider any planned approaching Offlake Operations. 8. Determine the need and prepare a plan for evacuating non-essential personnel as deemed appropriate. 9. Ensure constant plotting of Typhoon/Storm path on Charts (Operations Supervisor). 10. Liaise with Supply Boats and agree on timing of Departing Field if Typhoon continues to track towards Field. **External Considerations: (Logistics Support Coordinator)** 1. Preparation of Logistics Plan for Evacuation of Field (Aviation & Supply Boats) in consultation with the Petrofac OIM. 2. Continue to monitor / Track Typhoon **PETROFAC OPERATIONS LEADER** Liaise with OIM on current status Offshore Ensure all Bangkok Support Staff are aware of situation and their roles if it should escalate.
		FPSO: Petrofac (Jasmine)		
		FSO: OMNI (Manora & Nong Yao) Three60 (Wassana) **MOPU:** T7 MOPU (NYC) Wassana MOPU	1. Keep weather plot updated at least every 6 hours. 2. In conjunction with company Field Manager/Company Man finalize list of essential crews required on the offshore rig/FPSO/FSO/MOPU in each phase of the emergency, and order and means of evacuation (by helicopter or vessel). Commence evacuation of non-essential personnel according to plan. 3. Check emergency equipment, such as generators, anchor cable cutters, batteries, bilge pumps and emergency abandonment equipment for operational readiness. 4. Check navigation aids and ascertain these are operational on back-up power supply. 5. Check all hatches and vents are free and clear. Tow and secure loose equipment not required for any emergency. 6. Advise personnel on board of current status of weather system.	
		Drilling Rig	This phase should begin when a TRS is within one thousand (1,000) miles of the rig's location. In such case, the following should be implemented: 1. Together with the Client's Representative, the OIM/PIC will prepare a detailed plan to include: - Secure well – consider time and materials required - Secure rig – consider time and materials required - Evacuate all personnel – consider time and resources Required.	



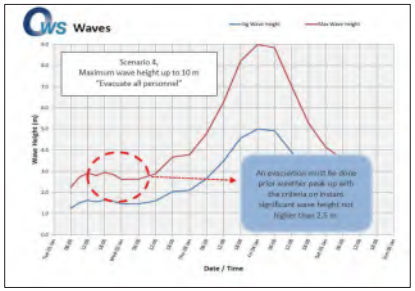
STEP/PHASE	INSTRUCTION	COMMENTS & OBSERVATIONS
Scenario 3 **Weather forecast detected Maximum wave height up to 7.5 m** **Phase 1-Condition Green**	☐ Activated platform shutdown/abandonment including pipeline flushing and suspension of all works (3-5 hrs. for flushing) ☐ Notify CRT for current situation, weather condition and further action taken/plan ☐ Keep Operations Managers informed of the situation ☐ CRT to notify government affair department and DMF on the field situation ☐ All essential crews unman platform and standby at FPSO / FSO ☐ CRT coordinate for hotel booking for the next crew demobilization	FM/ OIM Offshore/ Operation Manager and CRT

Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		
		FSO: OMNI (Manora & Nong Yao) Three60 (Wassana) **MOPU:** T7 MOPU (NYC) Wassana MOPU	1. In consultation with company Field Manager/Company Man, complete evacuation of non-essential personnel, such as visitors, observers, government representatives, painters and general maintenance personnel, and commence evacuation of remaining personnel per plan. Note: a Contractor skeleton crew may be detailed to remain on board the rig/FSO/FPSO/MOPU as per Contractor procedures and at the discretion of OIM, otherwise the aim is to have all personnel evacuated if and when the weather system enters the Red Phase. 2. In consultation with Field Manager/Company Man and at such time as a decision is made, suspend operations on the offshore rig and/or FPSO/FSO/MOPU. 3. Continue securing non-essential equipment onboard the offshore rig/FPSO/FSO/MOPU, with special emphasis on watertight hatches, doors and vents. 4. Having secured any oil or gas well, disconnect from the well, if applicable, or stop production, if directed. 5. Advise personnel on board of current status of weather system. 6. Keep weather plot updated at least every 3 hours and monitor situation.	
		Drilling Rig	**SECURE RIG** 1. Secure well and, if applicable, disconnect LMRP and pull riser 2. Confirm rig is secured as planned in Phase I and below: **Jack-Ups** - Lay down drill pipe - Secure BOPs - Secure drill floor and derrick - Skid rig into towing position - Jack rig to storm air gap 3. Confirming Transportation. When confirming transportation, consider the following: - Have helicopter and/or vessels (as previously coordinated) at rig in the required time - The pilot is responsible for helicopter at all times - The vessel captain is responsible for the boat at all times - Ensure each boat has instructions on where to dock after evacuation - Arrange post storm rendezvous plan with boat captains - Coordinate and confirm with Client and Shore base Operations the motel provisions and ground transportation. 4. Final Preparation to Evacuate. When making final preparations to evacuate the MODU, the OIM/PIC and shore-based Operations Manager/ Superintendent shall ensure twice-daily calls are held with the Client to confirm arrangements and eliminate any ambiguity as to the plan forward. Final preparation to evacuate shall include the following: - Visually check all valves to sea are closed. Do not rely on control console indicators. - Ensure all waterlight doors and hatches are secure - Ensure all deck cargo and equipment is secure - Manually sound all tanks and record the readings - Ensure all sounding tubes are capped - Ensure all tank vents will close if necessary - Ensure all hawse pipe covers are on and secure (if applicable) - Recheck stability calculations - Monitor rig's attitude for at least one hour to ensure no tanks are taking on water and that no tanks are communicating (if applicable) - Recheck emergency generator is fully operational	

Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		
			- Pump out all bilges - Shut down main engines - Aircraft warning light /obstruction light turned on - Complete securing of air isolation and sea chest overboard valves in all pump rooms	
		Accommodation Barge/Supply Vessels	1. Ensure stability calculations to provide for best stability for transfer of materials and personnel as necessary. 2. Standby and keep close radio contact with the offshore rig/FPSO/FSO/MOPU and company Marine and Logistics Assistant Manager as appropriate. 3. Wait final instructions from company Marine and Logistics Assistant Manager for the port or safe waters designated as destination for the vessels and any evacuees. 4. Receive evacuees if/as directed. Note: Marine and Logistics Assistant Manager will most likely relay closest safe port via company Field Manager, Company Man or OIM.	

Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		
PHASE 2 - ORANGE ALERT ZONE	Activating Phase 2 response actions upon the potential risk of a tropical depression, tropical storm or typhoon is 400-200 nautical miles (NM) from offshore installations or drilling rig. (Expected a windspeed of ≥ 50 knot in Orange Zone)	**ORANGE ALERT ZONE - PHASE 2: 200-400 NM**		
		Company		
		Marine and Logistics Assistant Manager	1. Alert Bangkok Office CRT/ Drilling/Operations Managers, Field Manager, Company Man, OIMs, Master of each vessel, Helicopter Coordinator and Contractors of entering the ORANGE Phase. 2. Complete evacuation of non-essential personnel and commence evacuation of remaining personnel per plan, 3. liaising with Field Manager/Company Man, as agreed with company Field/Drilling/Operations Managers. Note: the aim is to have all personnel evacuated during the Green and Orange Phases, iei.e. all personnel should have been evacuated if and when the weather system enters the Red Phase with sustained winds of ≥50 knots. 4. Keep weather plot updated at least every 3 hours and monitor situation. 5. Keep company Field/Drilling/Operations Managers informed of the situation. 6. Advise standby/supply vessels of the port or safe waters that have been designated for the vessels and any evacuees.	
		Field Manager /OIM/Company Man	1. Coordinate evacuation with company Marine and Logistics Assistant Manager, Drilling/Operations Managers & CRT. 2. Keep company Drilling/Operations Managers informed of the situation. 3. Update plan for suspending related operations and securing the operation every 3 hours and advise company Drilling/Operations Managers accordingly. 4. Report progress and actual weather conditions to company Logistics Manager and Drilling/Operations Managers at least every 3 hours. 5. Secure the operation (including shutdown of all productions and suspension of all work on wells) if and when required as per plan agreed with company Drilling/Operations Managers and in consultations with Rig Superintendent/FPSO/FSO/MOPU OIM. Note: the aim is that all operations shall be suspended prior to such time as the weather system enters the Red Phase with sustained winds of ≥50 knots. 6. Assist Rig Superintendent/FPSO/FSO/MOPU OIM to evacuate personnel and secure the offshore rig/FPSO/FSO/MOPU, if required. 7. Advise personnel in field of current status of weather system.	
		Drilling Manager / Operation Managers	1. Consult OWS about the expected track and expected intensity of the weather system. 2. Review of the situation and approval to secure the operations. 3. Make decision with Field Manager / Company Man whether and when to secure and suspend all related operations and production. 4. Advise the Company Marine and Logistics Assistant Manager and Field Manager/Company Man to continue evacuation of personnel as per plan.	

STEP/PHASE	INSTRUCTION	COMMENTS & OBSERVATIONS
Scenario 4 **Weather forecast detected Maximum wave height up to 10 m** Phase 2- Condition Orange	☐ All Operations in the field have been suspended. ☐ Demobilize crews with supply vessel, only essential persons remain on board the FSO/FPSO ☐ Release supply vessel(s) to port ☐ Ensure all personnel have been evacuated safely. Report head count by assigned onshore team leader (one of supervisor)	Note: The aim is that all operations shall be suspended prior to such time as the weather system enters the Red Phase with sustained winds of = 50 knots



Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		
		Offshore:		
		FPSO ·Petrofac (Jasmine)	**ALL PEOPLE OFFSHORE** 1. Declare an Orange Alert Status to all Personnel Offshore & Notify IMT Leader 2. Liaise with the OWS Duty Forecaster and other Facilities to gather information about weather conditions (OWS updates to be every 3 hours). 3. Petrofac EST and VE IMT combine Operations to monitor situation from Ashore. 4. Liaise with VE Field Manager and IMT Leader as required. 5. Constant Plotting of Typhoon Path on Charts (Ops Super to monitor) § Strong Consideration to be given to a Shutdown of Production and Offtake Operations (if currently underway) based on OWS Path Tracking (This decision is to be immediately made upon the Typhoon entering the Orange Zone at 400Nm's). 6. Note Procedure states: The aim is that all operations shall be suspended prior to such time as the weather system enters the Red Phase with sustained winds of ≥ 50 knots. 7. If tracking predicts Typhoon is heading in direction of Jasmine Field Well Platforms are to be shut-in and secured, all personnel are to return to the FPSO via Supply Boats in preparation for evacuation from the Field. 8. Review and proceed with planform evacuating non-essential personnel as appropriate. 9. Ensure facility is secured (e.g. windows, doors, hatches, cranes, hoists) as far as practicable. 10. Continue Review of OWS Path and if indications suggest a definite move towards the Red Zone Outer LimitLimit, then evacuation is to proceed. 11. Cease Work and ensure all systems are left in a safe operable state and return all PTW's to the CCR for cancellation (If any machinery is isolated immediately inform Operation Supervisor and OIM of Status and possible implications). 12. In the event of evacuation all Field personnel (with the exception of Nominated Essential Personnel – Refer list below) will leave the FPSO using Supply Vessels and Helicopters. Note Procedure states: The aim is to have all personnel evacuated during the Green and Orange Phases, i.e. all personnel should have been evacuated if and when the weather system enters the Red Phase with sustained winds of ≥ 50 knots. **AVIATION SUPPORT BASE MANAGER** 1. Commence Helicopter evacuation of FPSO Facilities when requested by OIM. 2. Ensure constant monitoring of Typhoon Path.	

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Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)		
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		STEP/PHASE	INSTRUCTION	COMMENTS & OBSERVATIONS
PHASE 3 – RED ALERT ZONE	Activating Phase 3 response actions upon the potential risk of a tropical depression, tropical storm or typhoon is 200 nautical miles (NM) to offshore installations or drilling rig. (Expected a windspeed of ≥ 50 knot in RED Zone) When activating the Orange / Red Zone response actions, the intent is to protect the personnel, environment, and property during severe weather conditions. If there are any concerns on actions to be taken, the Field Manager / Drilling Supervisor shall consult with Operation Managers/Drilling Manager in Bangkok. The Operation Managers/ Drilling Manager shall communicate to on-duty Country Response Team (CRT). The Duty Country Response Team (CRT) shall be activated to assist and support Site Response Team (SRT) in response to phases of tropical storms for safe personnel	RED ALERT ZONE – PHASE 3: <200 NM		**Scenario 5** **Weather forecast detected Maximum wave height up to 12 m** Phase 3-Condition Red	☐ Hose disconnection from CALM buoy (MN/NY/ Wassana). ☐ Sail FSO to safe location out of storm direction (MN/NY/ WSN) ☐ FPSO last crew abandonment by chopper (JM) ☐ Report final tanker location and status (MN/NY/ WSN) to CRT	OIM offshore
		Company				
		Field Manager /OIM/Company Man	1. Ensure all personnel have been evacuated safely. 2. Ensure all Operations in the field have been suspended (including production and all work on wells as applicable). 3. Continue to monitor the situation and liaise with company Drilling/Operations/Logistics Managers and Rig Superintendent and OIM(s).			
		Offshore				
		FPSO: Petrofac (Jasmine)	**ALL PEOPLE OFFSHORE** 1. Declare a Red Alert to remaining personnel onboard and notify the IMT Leader of the Status. 2. Ensure the IMT Leader has a revised POB List of those now remaining onboard. 3. In the event of loss of communications with Shore ensure that continual communications are kept with nearby Facilities if possible. (Request other Facilities to contact VE/Petrofac IMT of status if comms are lost). 4. All Personnel are to stay within the confines of the Accommodation and are only to move outside with the OIM's permission for Essential Activity and then they must be wearing Lifejackets and Safety Harness's and be in pairs with UHF Radio's. 5. Continue to liaise with the Bureau of Meteorology Duty Forecaster to get latest updates and tracking coordinates. 6. Continue plotting path to ascertain vicinity to the Field. 7. Update IMT Leader about current conditions / status Offshore and any accompanying issues that may eventuate (i.e.;i.e., Damage in the Field).			
		FSO: OMNI (Manora & Nong Yao) Three60 (Wassana) **MOPU:** 77 MOPU (NYC) Wassana MOPU	1. Perform final check to ensure security of the offshore FSO. 2. Evacuate remaining personnel. Note: Contractors may leave a skeleton crew on board in accordance with their own procedures. Decision to leave a voluntary skeleton crew on the Offshore FSO is at the discretion of and the responsibility of the OIMs. No company staff shall be included.			
		Drilling Rig	**EVACUATION OF PERSONNEL OR MOVE RIG TO SAFE ZONE** The OIM/PIC will initiate Phase III at 'T' + 'C' hours before Tropical Storm Force Winds are possible at the rig's vicinity and end "C" hours before the Tropical Storm Force Winds reach the rig's vicinity. - Evacuate all remaining personnel as quickly as feasible from the rig. If possible this is to be done during daylight hours - Do not deviate from the plan unless discussed with Operations Manager and Operations Superintendent. - Notify Operations Manager and Operations Superintendent when rig will be totally evacuated and by what means of transportation. - Notify Operations Manager and Operations Superintendent when each crew member arrives onshore. - Notify Client and regulatory body (if required) when final evacuation begins			

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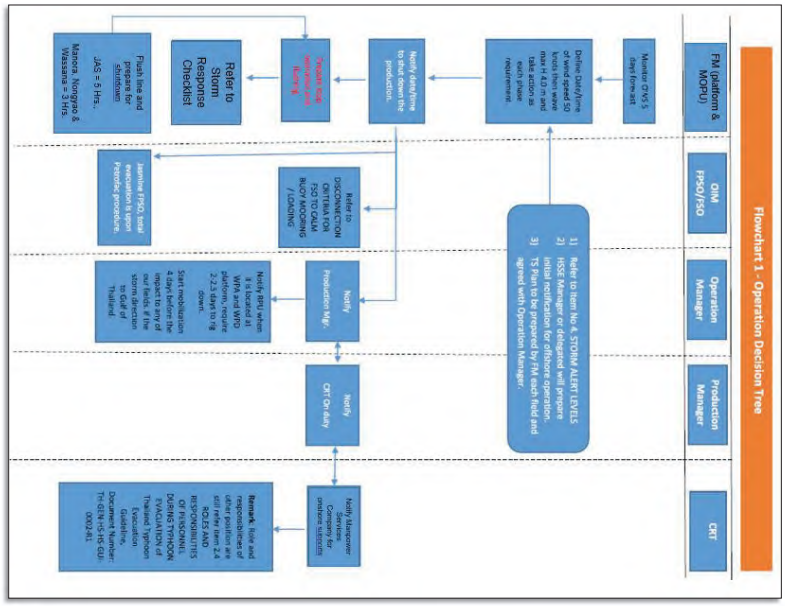
Guideline for action (TH-GEN-HS-HS-GUI-0002 Rev R4)				Storm response checklist (TH-GEN-OP-GN-PRC-0792 Rev R2)		
PHASE	STORM RESPONSE CRITERIA	ROLES AND RESPONSIBILITIES OF PERSONNEL DURING TYPHOON EVACUATION		STEP/PHASE	INSTRUCTION	COMMENTS & OBSERVATIONS
	evacuation and secured company assets with no impacts the environment.		- The first helicopter leaving the rig must be provided with a complete POB for the rig so that each person can be checked off on arrival onshore. The following personnel are recommended for the last flight from the rig (see also Emergency Response Plan): - OIM/Tool pusher - Barge Engineer - STC/Medic - Mechanic - Crane Operator - Client's Representative - Electrician - Ballast Control Operator (if applicable) - All personnel should stay in contact with the OIM/PIC - OIM/PIC should stay in close contact with Rig's shore base office and confirm when Phase III is complete. - All personnel should be ready to return to rig when it is safe to do so.			
		Accommodation Barge/Supply Vessels	1. Leave for port or safe waters as instructed by company Logistics Manager. 2. Remain in close contact with other vessels heading in same direction.			
RESUME Operations				**Scenario 6 - Recovery** **Weather forecast confirmed maximum wave height reduce below 2.5 m**	☐ Define minimum crews to re-mobilize to platform ☐ Platform manning and post storm inspection and report ☐ Sail FSO back to the CALM buoy position (only MN/NY/ WSN) ☐ CALM buoy inspection and hose re-connection (only MN/NY/ WSN)	FM/ OIM offshore/ Marine and Logistics Assistant Manager/ CRT

3.6 APPENDIX F OPERATION DECISION TREE



เอกสารแนบที่ 57

ตัวอย่างการรายงานสภาพอากาศรายวัน

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ows@offshoreweather.com.au
offshoreweather.com.au

Weather Forecast for Valeura Energy - Wassana CALM Buoy near 7° 56' 37.994"N 101° 24' 14.618"E
Valid for 96 hours from 0600LT 06 Feb 2025

Tropical Advisory:
Nil.

Warnings:
Nil.

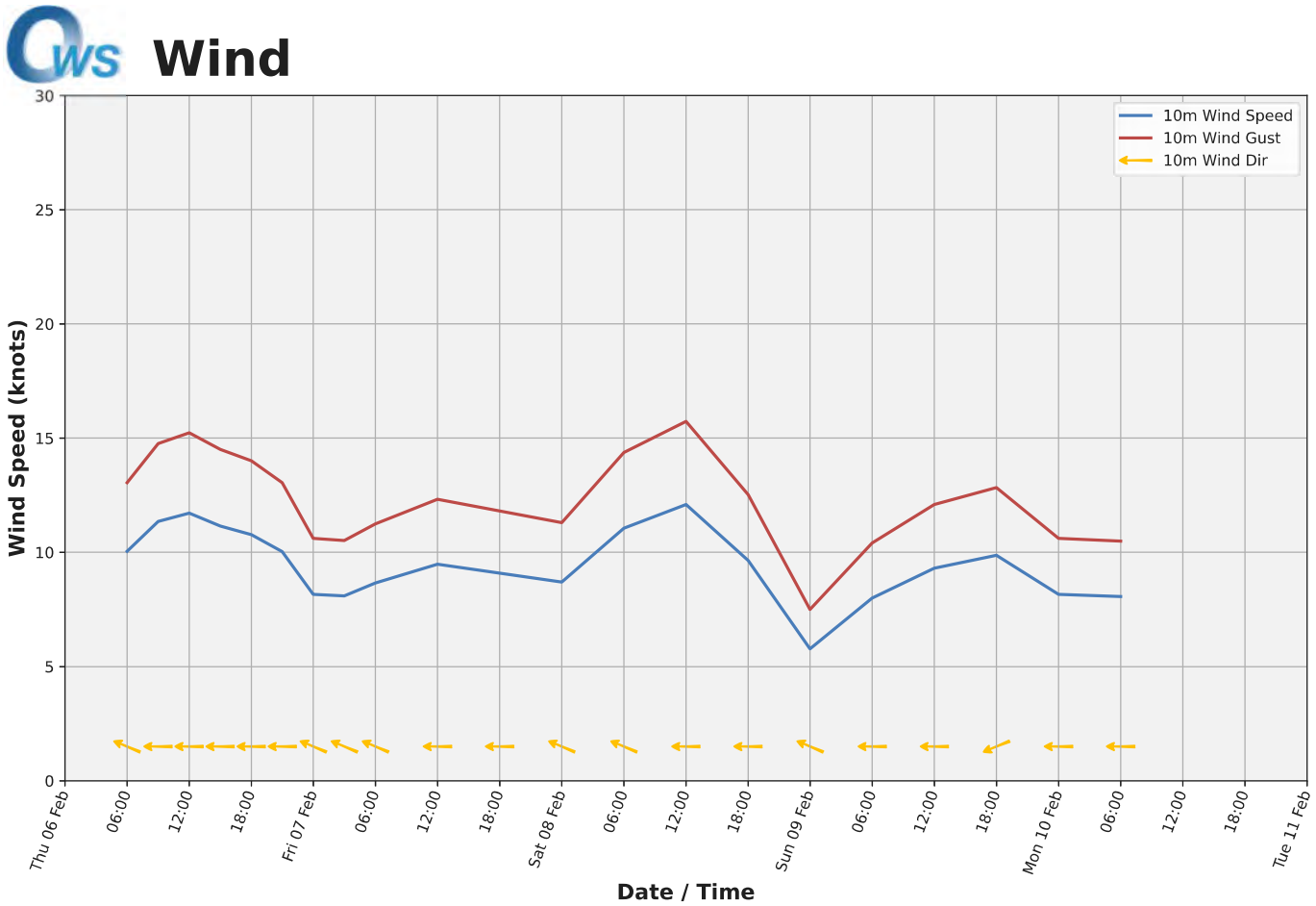
Met Situation:
Ridge extends S-SW over SE China to Vietnam/northern Thailand, then weakening and receding northwards as trough redeveloping over northern - central Thailand / Cambodia today and tomorrow. Another new firm ridge building S-SW over Vietnam by tomorrow, and over northern Thailand 8th - 9th before weakens again from the 10th with the redeveloping of a broad trough over Myanmar / central Thailand - Cambodia to the NW of Borneo.

Weather:
Isol showers, otherwise fair.

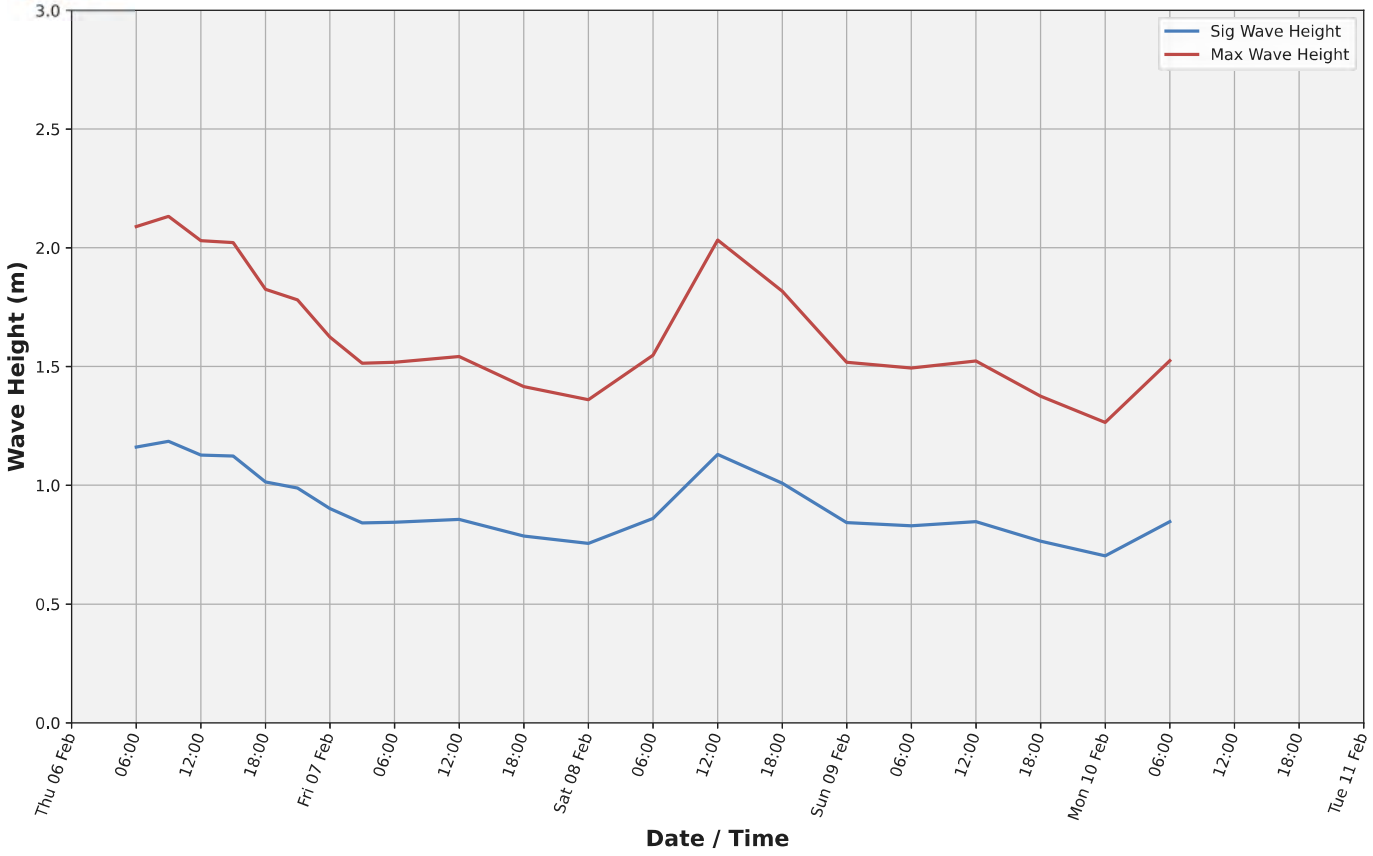
Date/Time		Wind (from / knots)					Sea	Swell 1			Swell 2			Total Wave			Confidence
LT		Dir	Spd	95%*	Gust	50m	Ht	Dir	Per	Ht	Dir	Per	Ht	Sig	95%*	Max	
Thu 06-Feb	06:00	ESE	10	15	13	12	0.4	ESE	6	1.1				1.2	1.5	2.1	High
	09:00	E	11	16	15	14	0.4	ESE	6	1.1				1.2	1.5	2.1	
	12:00	E	12	16	15	14	0.5	ESE	6	1.0				1.1	1.5	2.0	
	15:00	E	11	16	15	13	0.5	ESE	6	1.0				1.1	1.5	2.0	
	18:00	E	11	16	14	13	0.5	ESE	6	0.9				1.0	1.4	1.8	
	21:00	E	10	15	13	12	0.4	ESE	6	0.9				1.0	1.3	1.8	
Fri 07-Feb	00:00	ESE	8	13	11	10	0.3	ESE	6	0.8	ESE	7	0.3	0.9	1.3	1.6	High
	03:00	ESE	8	13	11	10	0.3	ESE	6	0.8				0.8	1.2	1.5	
	06:00	ESE	9	14	11	10	0.3	ESE	6	0.8				0.8	1.2	1.5	
	12:00	E	9	14	12	11	0.3	ESE	5	0.7	ESE	6	0.4	0.9	1.2	1.5	
	18:00	E	9	14	12	11	0.3	ESE	5	0.7	ESE	6	0.2	0.8	1.2	1.4	
Sat 08-Feb	00:00	ESE	9	14	11	10	0.3	ESE	6	0.7				0.8	1.2	1.4	High
	06:00	ESE	11	18	14	13	0.3	ESE	6	0.8				0.9	1.5	1.5	
	12:00	E	12	20	16	15	0.5	ESE	5	1.0				1.1	1.9	2.0	
	18:00	E	10	16	13	12	0.5	ESE	5	0.9				1.0	1.8	1.8	
Sun 09-Feb	00:00	ESE	6	13	8	7	0.2	ESE	5	0.8	ESE	9	0.1	0.8	1.5	1.5	Moderate
	06:00	E	8	16	10	10	0.2	ESE	6	0.8				0.8	1.4	1.5	
	12:00	E	9	18	12	11	0.3	ESE	7	0.8				0.8	1.5	1.5	
	18:00	ENE	10	18	13	12	0.3	E	7	0.7				0.8	1.6	1.4	
Mon 10-Feb	00:00	E	8	16	11	10	0.3	ESE	6	0.5	ESE	7	0.4	0.7	1.4	1.3	Moderate
	06:00	E	8	16	10	10	0.3	NE	4	0.4	ESE	7	0.7	0.8	1.5	1.5	

Units: wind speed/gust in knots; wave height in metres; wave periods in seconds; directions from
* Forecast mean wind / significant wave height upper bound (estimated 95% confidence).

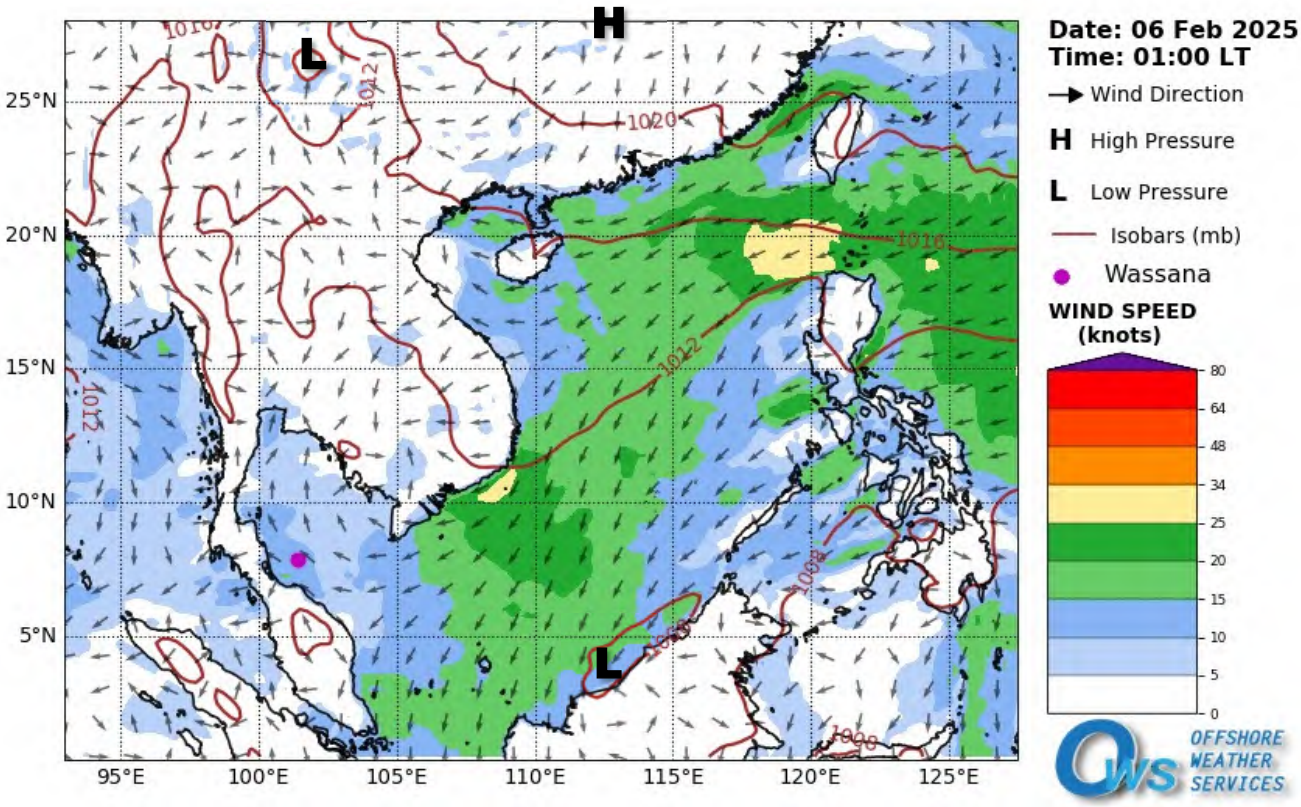
Duty Forecaster: OWS Forecast Team



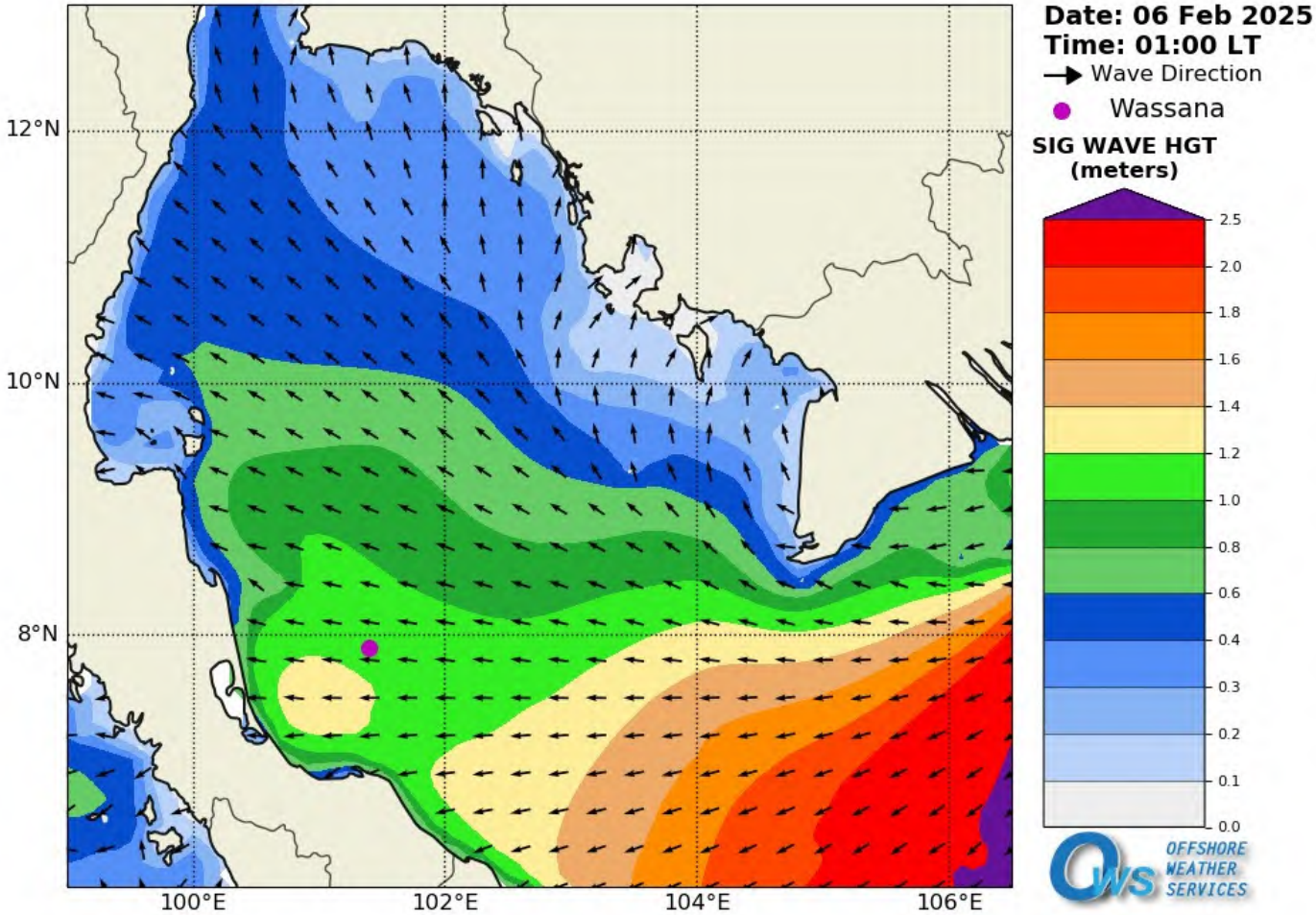
Wave



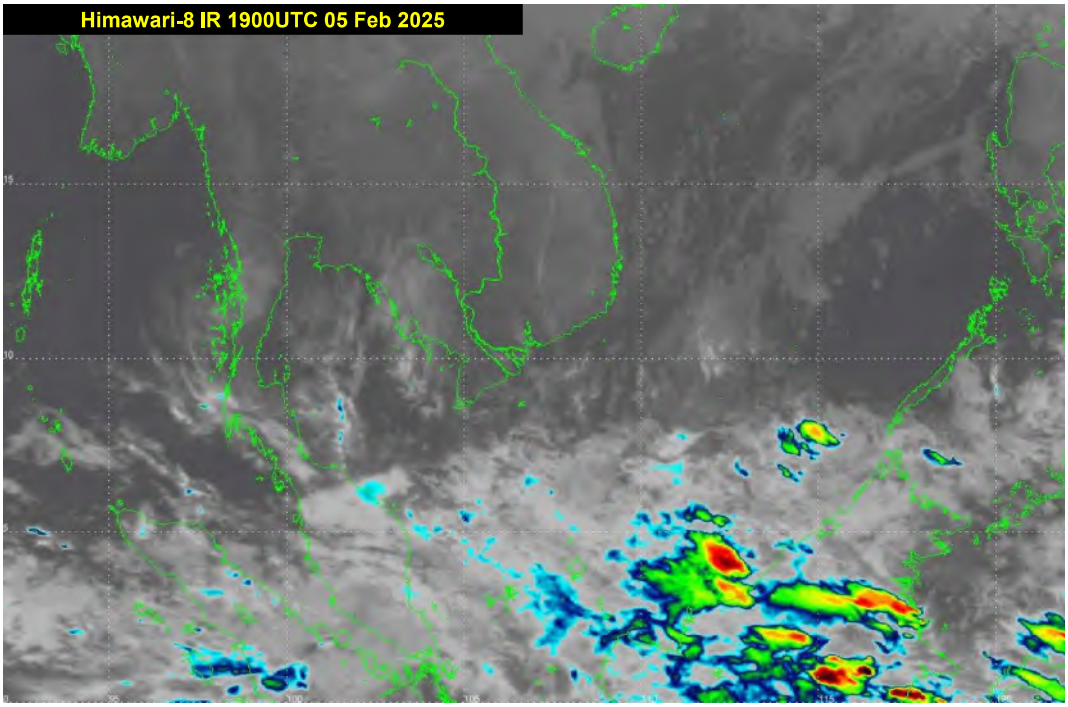
Sig Wave Height
Max Wave Height
Wave Height (m)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Thu 06 Feb
06:00
12:00
18:00
Fri 07 Feb
06:00
12:00
18:00
Sat 08 Feb
06:00
12:00
18:00
Sun 09 Feb
06:00
12:00
18:00
Mon 10 Feb
06:00
12:00
18:00
Tue 11 Feb
Date / Time



Date: 06 Feb 2025
Time: 01:00 LT
Wind Direction
H High Pressure
L Low Pressure
Isobars (mb)
Wassana
WIND SPEED (knots)
80
64
48
34
25
20
15
10
5
0
25°N
20°N
15°N
10°N
5°N
95°E
100°E
105°E
110°E
115°E
120°E
125°E
H
L
L
1020
1016
1012
1008
OFFSHORE WEATHER SERVICES



Offshore Weather Services Pty Ltd
Marine and Aviation Weather Forecasting Specialists



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Weather Forecast for Valeura Energy - Wassana CALM Buoy near 7° 56' 37.994"N 101° 24' 14.618"E
Valid for 96 hours from 1800LT 11 Apr 2025

Tropical Advisory:
Nil.

Warnings:
Gusts to 25kt in or near heavy showers/thunderstorms.

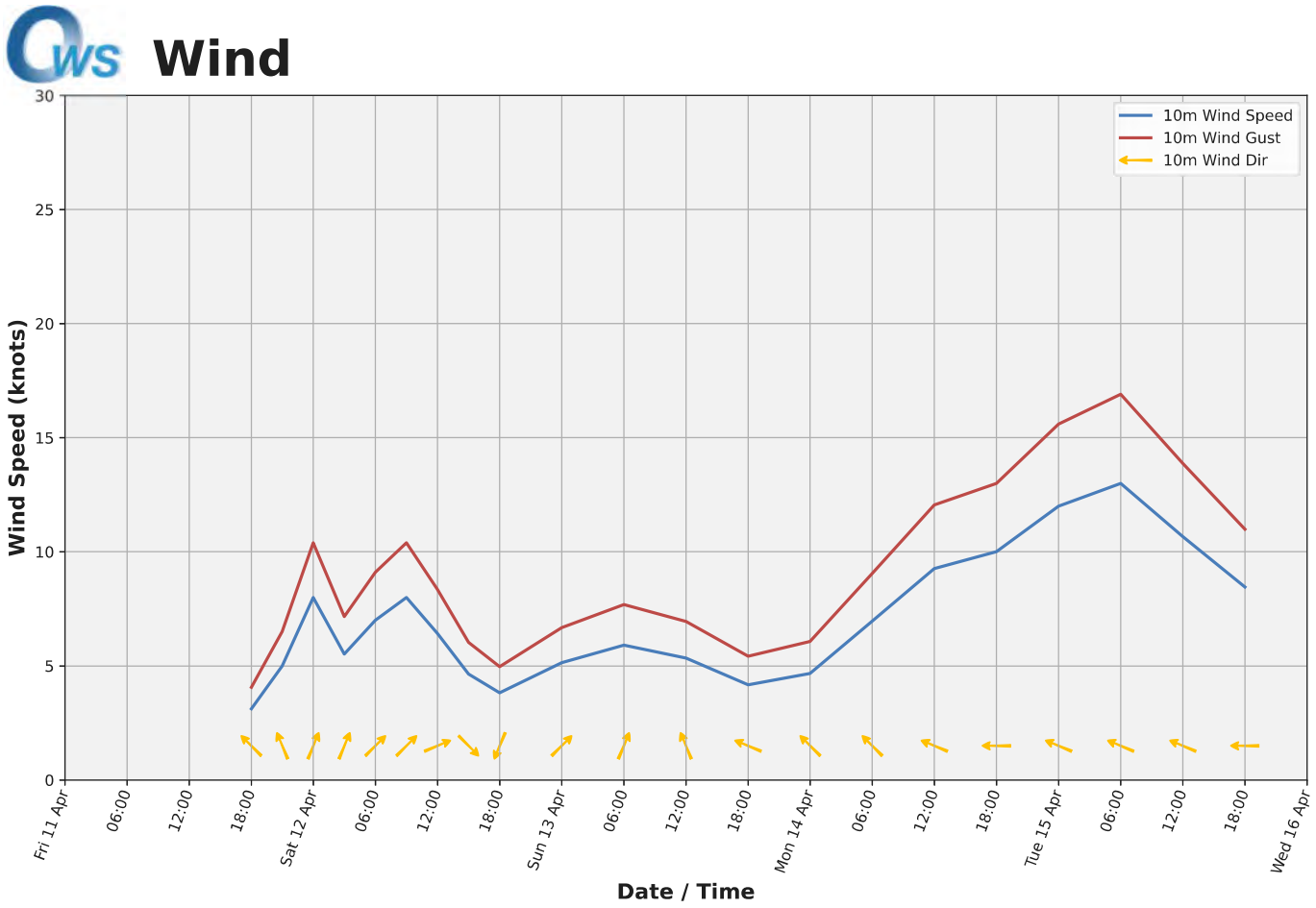
Met Situation:
Low pressure trough over northern Myanmar to SE China is expected to drift southwards from tomorrow until 14th as a ridge builds over SE China, Vietnam and northern Thailand. The ridge is expected to weaken from the 15th. Weak trough should extend over the Gulf of Thailand on the 14th.

Weather:
Isol - sct showers / isol thunderstorms, mainly overnight until morning.

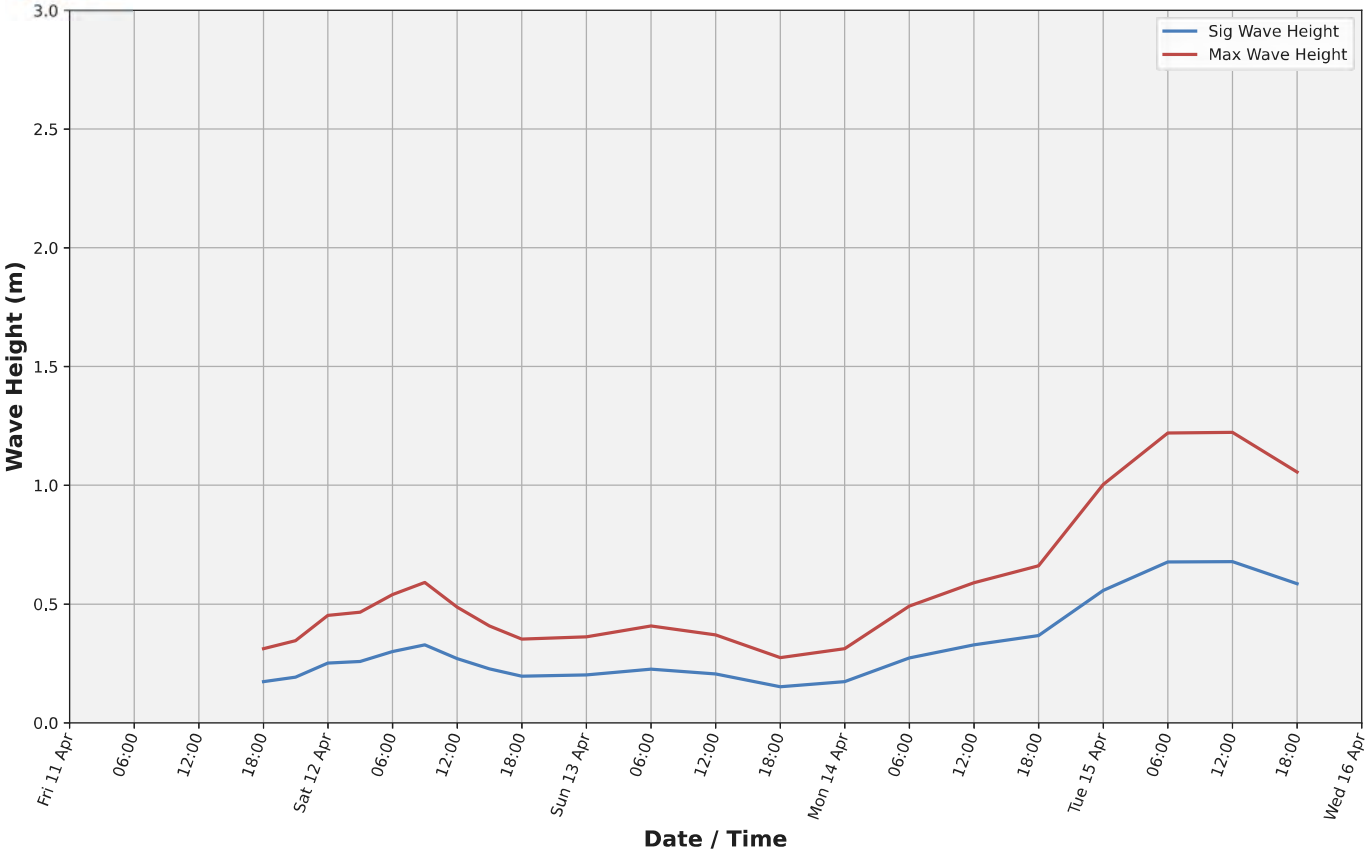
Date/Time LT		Wind (from / knots)					Sea	Swell 1			Swell 2			Total Wave			Confidence
		Dir	Spd	95%*	Gust	50m	Ht	Dir	Per	Ht	Dir	Per	Ht	Sig	95%*	Max	
Fri 11-Apr	18:00	SE	3	8	4	4	0.1	E	4	0.1	W	2	0.1	0.2	0.4	0.3	High
	21:00	SSE	5	11	6	6	0.1	E	4	0.1	WSW	2	0.1	0.2	0.5	0.3	
Sat 12-Apr	00:00	SSW	8	15	10	10	0.2	E	4	0.1	WSW	2	0.1	0.3	0.6	0.5	High
	03:00	SSW	6	13	7	7	0.2	E	4	0.1	W	2	0.1	0.3	0.7	0.5	
	06:00	SW	7	14	9	8	0.2	E	4	0.1	WSW	2	0.2	0.3	0.8	0.5	
	09:00	SW	8	15	10	10	0.2	E	4	0.1	WSW	2	0.2	0.3	0.8	0.6	
	12:00	WSW	6	14	8	8	0.2	E	4	0.1	WSW	2	0.1	0.3	0.7	0.5	
	15:00	NW	5	13	6	6	0.2	E	4	0.1	WSW	2	0.1	0.2	0.7	0.4	
	18:00	NNE	4	13	5	5	0.1	E	4	0.1	WSW	2	0.1	0.2	0.8	0.4	
Sun 13-Apr	00:00	SW	5	15	7	6	0.1	E	4	0.1	WSW	2	0.1	0.2	0.8	0.4	High
	06:00	SSW	6	13	8	7	0.2	NW	3	0.1	WSW	2	0.1	0.2	0.7	0.4	
	12:00	SSE	5	11	7	6	0.2				WSW	2	0.1	0.2	0.6	0.4	
	18:00	ESE	4	9	5	5	0.2							0.2	0.4	0.3	
Mon 14-Apr	00:00	SE	5	10	6	6	0.1	SE	2	0.1				0.2	0.4	0.3	Moderate
	06:00	SE	7	13	9	8	0.2	S	2	0.2				0.3	0.6	0.5	
	12:00	ESE	9	16	12	11	0.3	SE	2	0.2				0.3	0.7	0.6	
	18:00	E	10	16	13	12	0.3	E	2	0.2				0.4	0.8	0.7	
Tue 15-Apr	00:00	ESE	12	19	16	14	0.5	E	3	0.3				0.6	1.1	1.0	Moderate
	06:00	ESE	13	20	17	16	0.6	ESE	4	0.3				0.7	1.3	1.2	
	12:00	ESE	11	18	14	13	0.5	ESE	4	0.4				0.7	1.4	1.2	
	18:00	E	8	16	11	10	0.3	ESE	4	0.5				0.6	1.2	1.1	

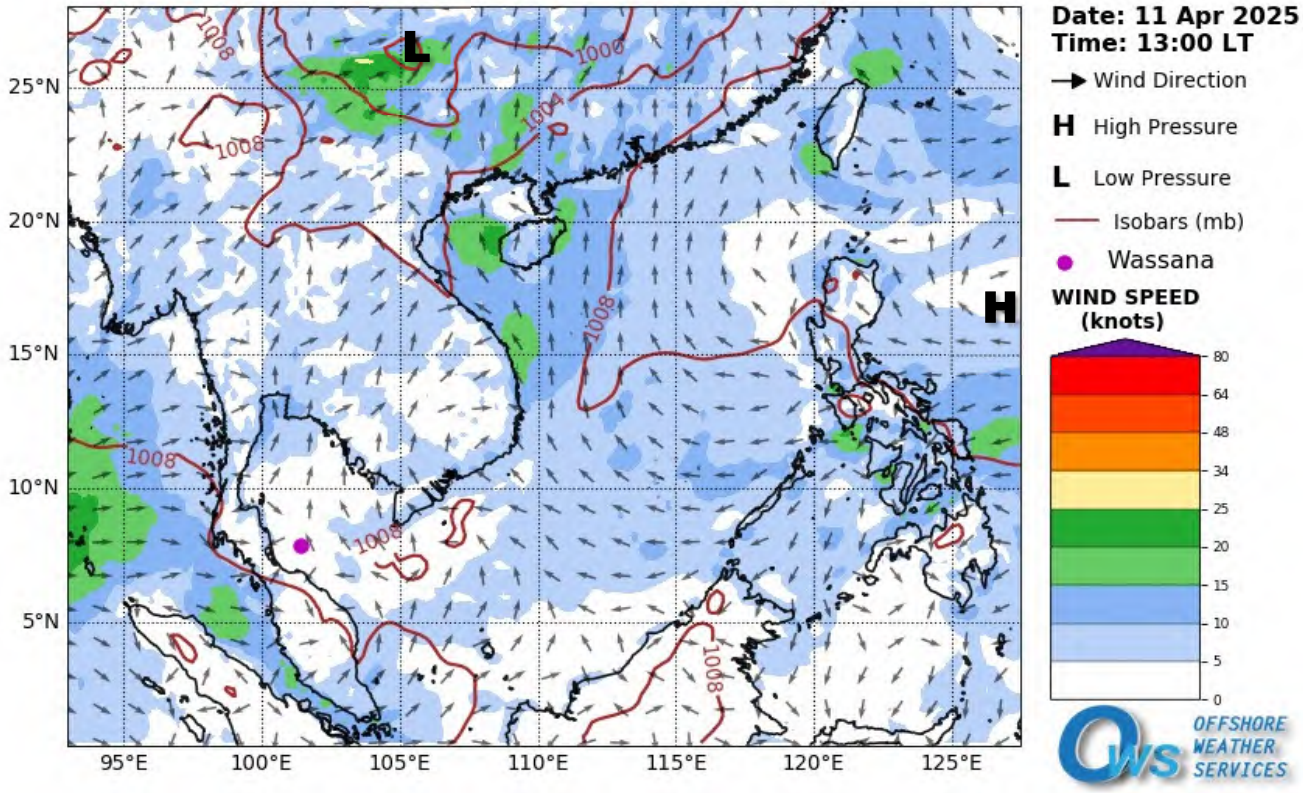
Units: wind speed/gust in knots; wave height in metres; wave periods in seconds; directions from
* Forecast mean wind / significant wave height upper bound (estimated 95% confidence).

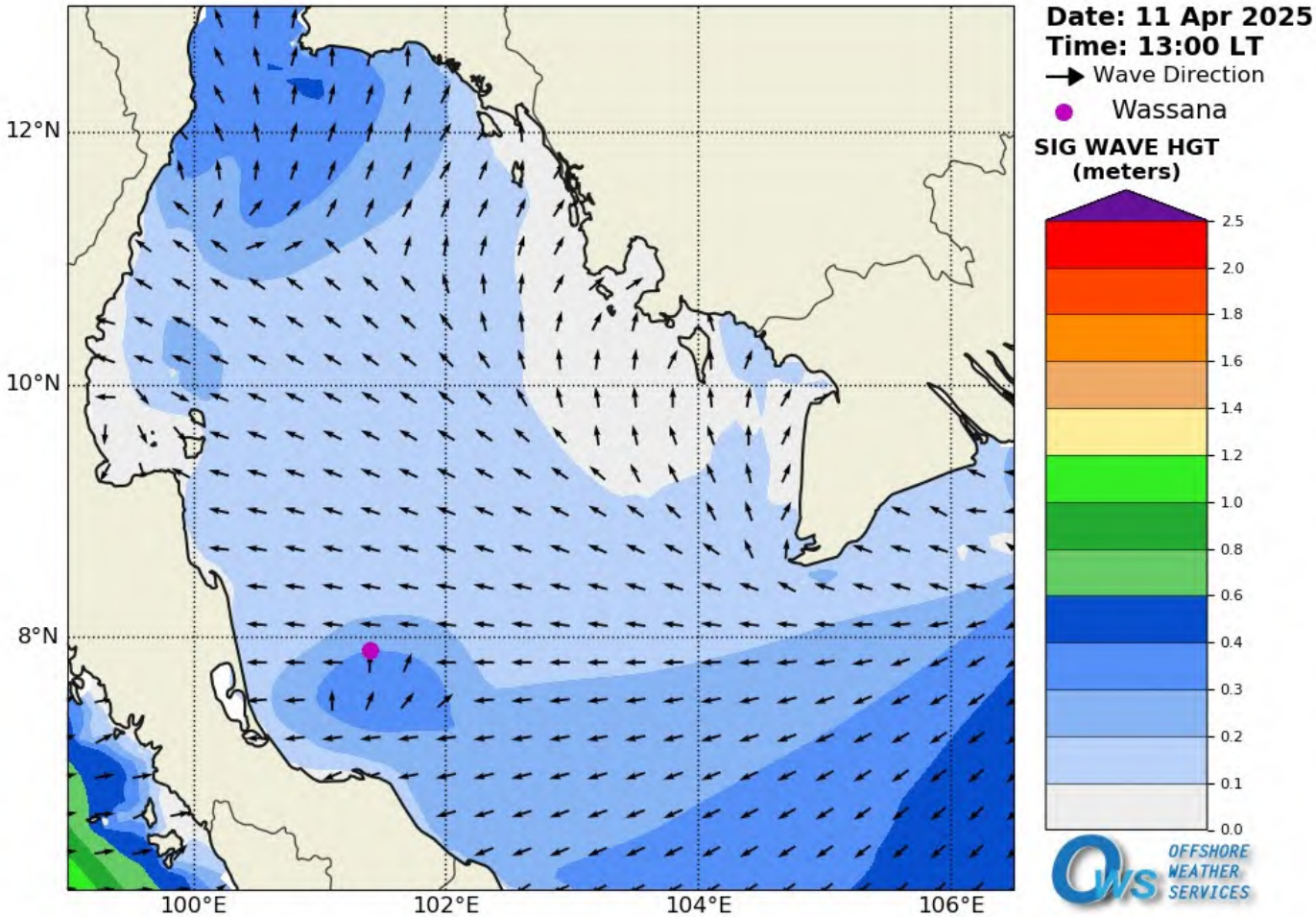
Duty Forecaster: Peter Wellby



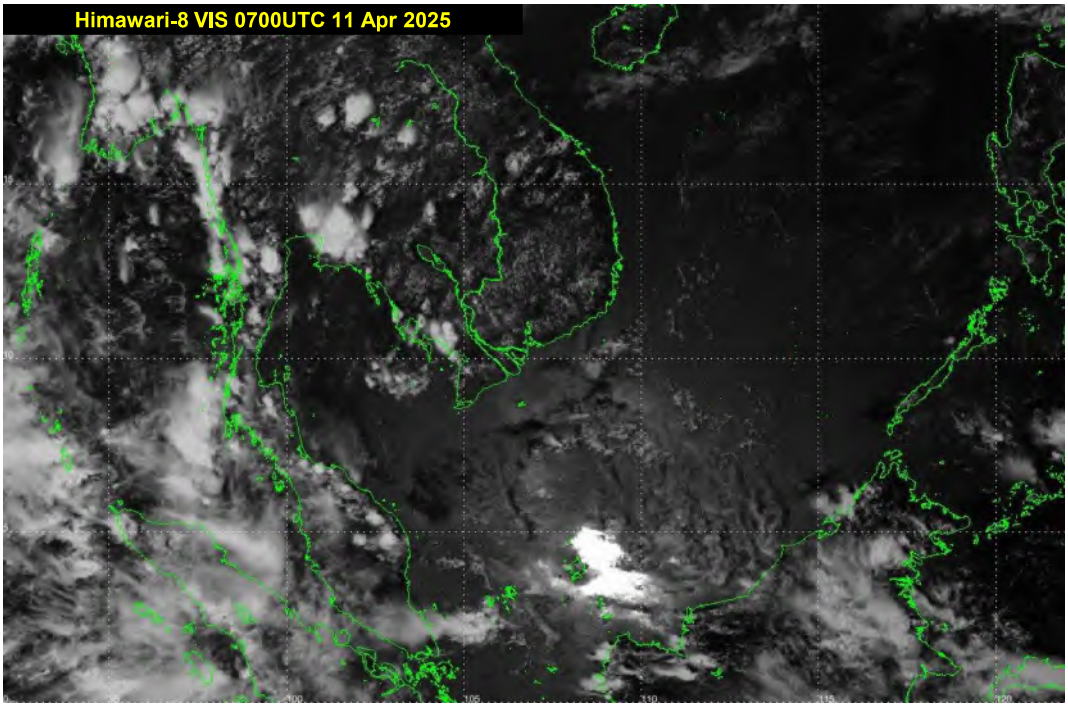
Wave


Sig Wave Height
Max Wave Height
Wave Height (m)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Fri 11 Apr
06:00
12:00
18:00
Sat 12 Apr
06:00
12:00
18:00
Sun 13 Apr
06:00
12:00
18:00
Mon 14 Apr
06:00
12:00
18:00
Tue 15 Apr
06:00
12:00
18:00
Wed 16 Apr
Date / Time


Date: 11 Apr 2025
Time: 13:00 LT
Wind Direction
H High Pressure
L Low Pressure
Isobars (mb)
Wassana
WIND SPEED (knots)
80
64
48
34
25
20
15
10
5
0
25°N
20°N
15°N
10°N
5°N
95°E
100°E
105°E
110°E
115°E
120°E
125°E
1008
1004
L
H
OFFSHORE WEATHER SERVICES



Offshore Weather Services Pty Ltd
Marine and Aviation Weather Forecasting Specialists



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Weather Forecast for Valeura Energy - Wassana CALM Buoy near 7° 56' 37.994"N 101° 24' 14.618"E
Valid for 96 hours from 1800LT 11 Jun 2025

Tropical Advisory:
Tropical Depression OWS02N25 was located near 16.8N 112.9E (11/0600UTC) and moving WNW-NW at 1012kt. Maximum sustained winds near the centre estimated to be 30kt. TD OWS02N25 is expected to continue moving towards Hainan Island and gradually deepen with a HIGH risk of becoming tropical storm intensity late tomorrow before crossing Hainan Island and Leizhou peninsula on the 13th-14th. It is then expected to dissipate over land by the 15th. TD OWS02N25 is not a direct threat to any location of your operations in the Gulf of Thailand.

Warnings:
MODERATE risk of squalls to 25-30kt in heavy showers/thunderstorms mainly nights - mornings. Squalls lasting for periods up to 20-30 minutes with onset gusts to 35-40kt and temporarily raised seas expected.

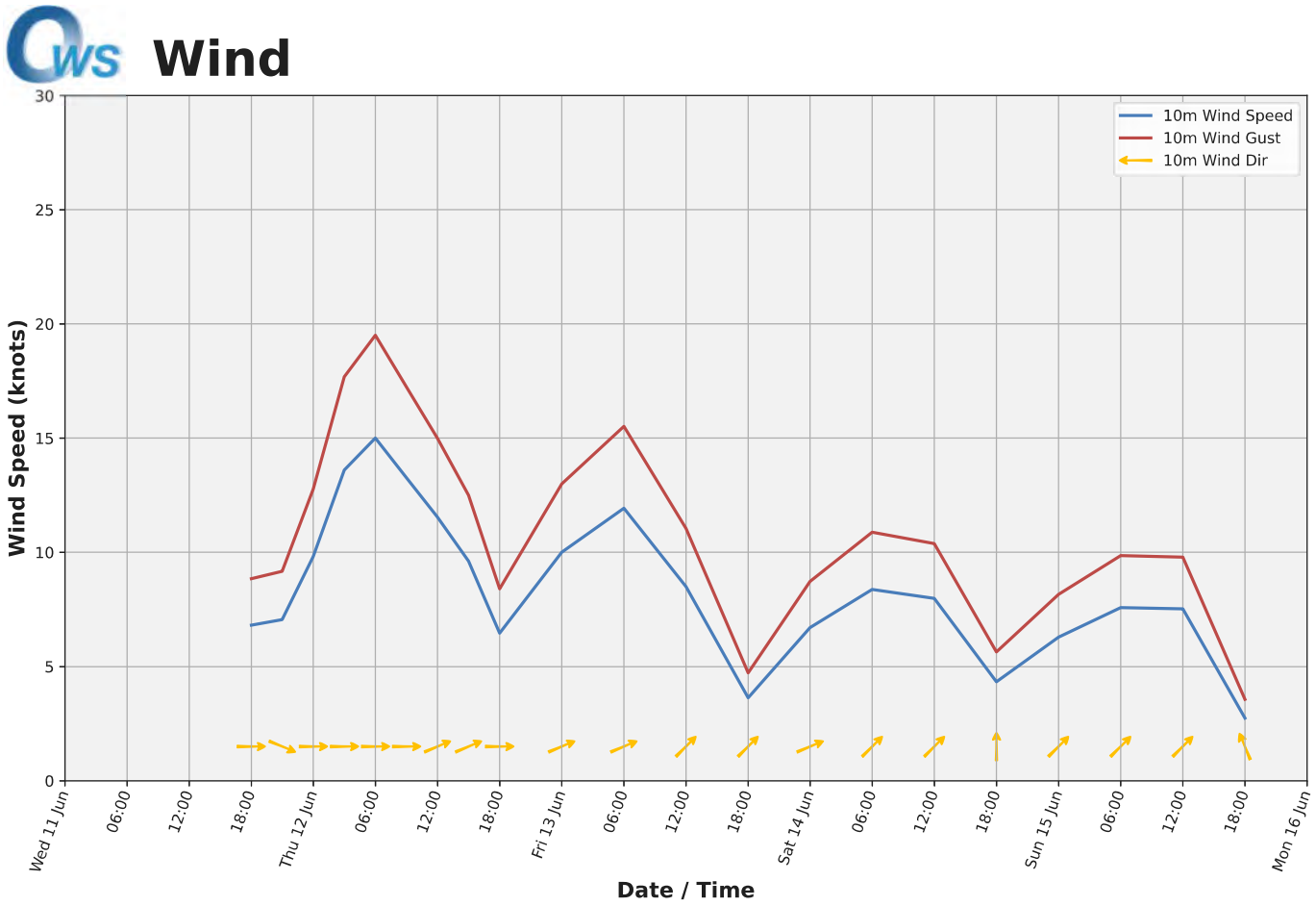
Met Situation:
Tropical Depression OWS02N25 over the northern South China Sea, SE of Hainan Island and is expected to continue moving towards Hainan Island and gradually deepen with a HIGH risk of becoming tropical storm intensity late tomorrow (see Tropical Advisory above). Weak ridge persisting over northern Sumatra to the southern Malay Peninula / Natuna Sea.

Weather:
Isol showers / thunderstorms mainly nights - mornings, otherwise fair.

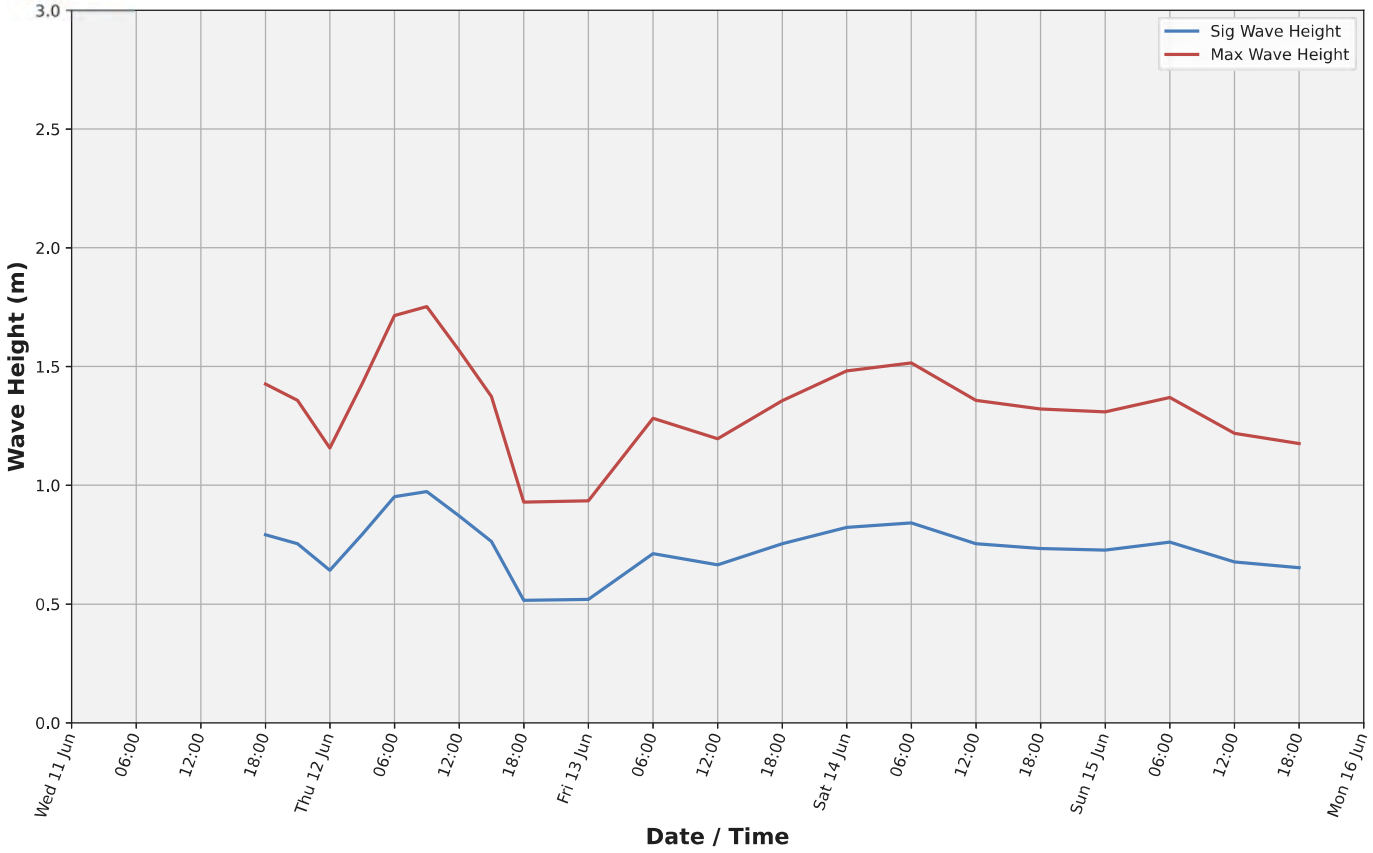
Date/Time LT		Wind (from / knots)					Sea	Swell 1			Swell 2			Total Wave			Confidence
		Dir	Spd	95%*	Gust	50m	Ht	Dir	Per	Ht	Dir	Per	Ht	Sig	95%*	Max	
Wed 11-Jun	18:00	W	7	13	9	8	0.2	W	4	0.7	NNW	5	0.3	0.8	1.1	1.4	High
	21:00	WNW	7	13	9	8	0.2	W	3	0.6	NW	5	0.4	0.8	1.0	1.4	
Thu 12-Jun	00:00	W	10	16	13	12	0.3	W	3	0.5	NW	5	0.3	0.6	0.9	1.2	High
	03:00	W	14	21	18	16	0.5	WSW	3	0.5	NW	4	0.3	0.8	1.1	1.4	
	06:00	W	15	22	20	18	0.8	WSW	2	0.5	NW	4	0.3	1.0	1.3	1.7	
	09:00	W	13	20	17	16	0.7	WSW	3	0.6	NNW	4	0.2	1.0	1.4	1.8	
	12:00	WSW	12	17	15	14	0.6	WSW	3	0.6	NNW	5	0.2	0.9	1.4	1.6	
	15:00	WSW	10	15	12	12	0.4	WSW	3	0.6	NNW	5	0.2	0.8	1.2	1.4	
	18:00	W	6	13	8	8	0.3	SE	5	0.4	NNW	4	0.2	0.5	0.9	0.9	
Fri 13-Jun	00:00	WSW	10	18	13	12	0.3	SSE	5	0.4	NNW	5	0.2	0.5	1.0	0.9	High
	06:00	WSW	12	18	16	14	0.5	SW	2	0.5	NW	4	0.2	0.7	1.2	1.3	
	12:00	SW	8	14	11	10	0.4	SE	5	0.5	S	2	0.2	0.7	1.1	1.2	
	18:00	SW	4	9	5	4	0.2	SE	5	0.7	W	3	0.2	0.8	1.1	1.4	
Sat 14-Jun	00:00	WSW	7	14	9	8	0.2	SE	5	0.8	NNW	5	0.1	0.8	1.2	1.5	Moderate
	06:00	SW	8	15	11	10	0.2	SE	5	0.8	NW	4	0.1	0.8	1.3	1.5	
	12:00	SW	8	14	10	10	0.3	SE	5	0.7	NW	4	0.1	0.8	1.1	1.4	
	18:00	S	4	9	6	5	0.2	SE	5	0.7	WSW	2	0.1	0.7	1.1	1.3	
Sun 15-Jun	00:00	SW	6	14	8	8	0.2	SE	5	0.7	NW	4	0.1	0.7	1.1	1.3	Moderate
	06:00	SW	8	14	10	9	0.2	SE	5	0.7	SW	2	0.2	0.8	1.2	1.4	
	12:00	SW	8	14	10	9	0.2	SE	5	0.6	SW	2	0.2	0.7	1.1	1.2	
	18:00	SSE	3	10	4	3	0.2	SE	5	0.6	SSW	2	0.2	0.7	1.1	1.2	

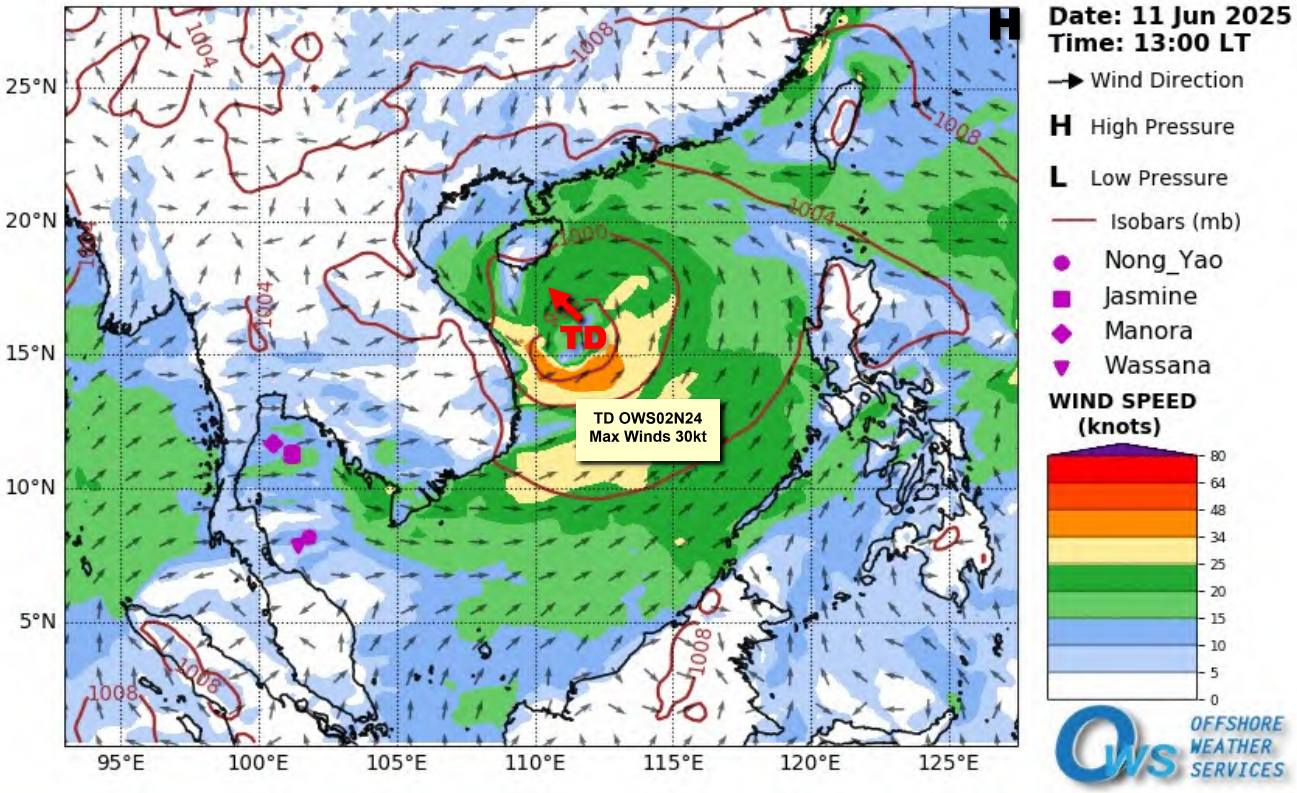
Units: wind speed/gust in knots; wave height in metres; wave periods in seconds; directions from
* Forecast mean wind / significant wave height upper bound (estimated 95% confidence).

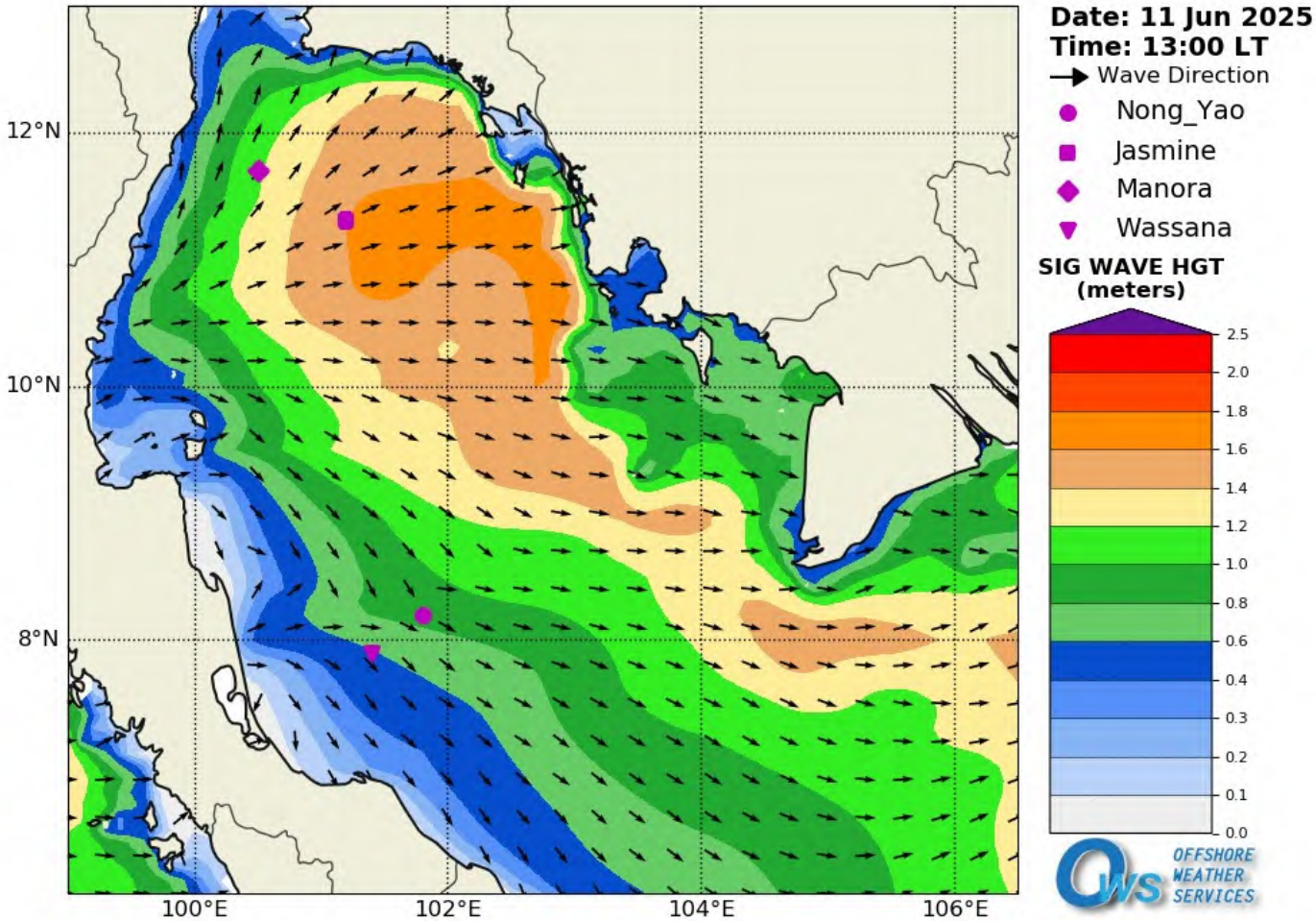
Duty Forecaster: Lucrecio About



Wave


Sig Wave Height
Max Wave Height
Wave Height (m)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Wed 11 Jun
06:00
12:00
18:00
Thu 12 Jun
06:00
12:00
18:00
Fri 13 Jun
06:00
12:00
18:00
Sat 14 Jun
06:00
12:00
18:00
Sun 15 Jun
06:00
12:00
18:00
Mon 16 Jun
Date / Time


Date: 11 Jun 2025
Time: 13:00 LT
Wind Direction
H High Pressure
L Low Pressure
Isobars (mb)
Nong_Yao
Jasmine
Manora
Wassana
WIND SPEED (knots)
80
64
48
34
25
20
15
10
5
0
TD
TD OWS02N24
Max Winds 30kt
1004
1008
1000
25°N
20°N
15°N
10°N
5°N
95°E
100°E
105°E
110°E
115°E
120°E
125°E
OFFSHORE WEATHER SERVICES



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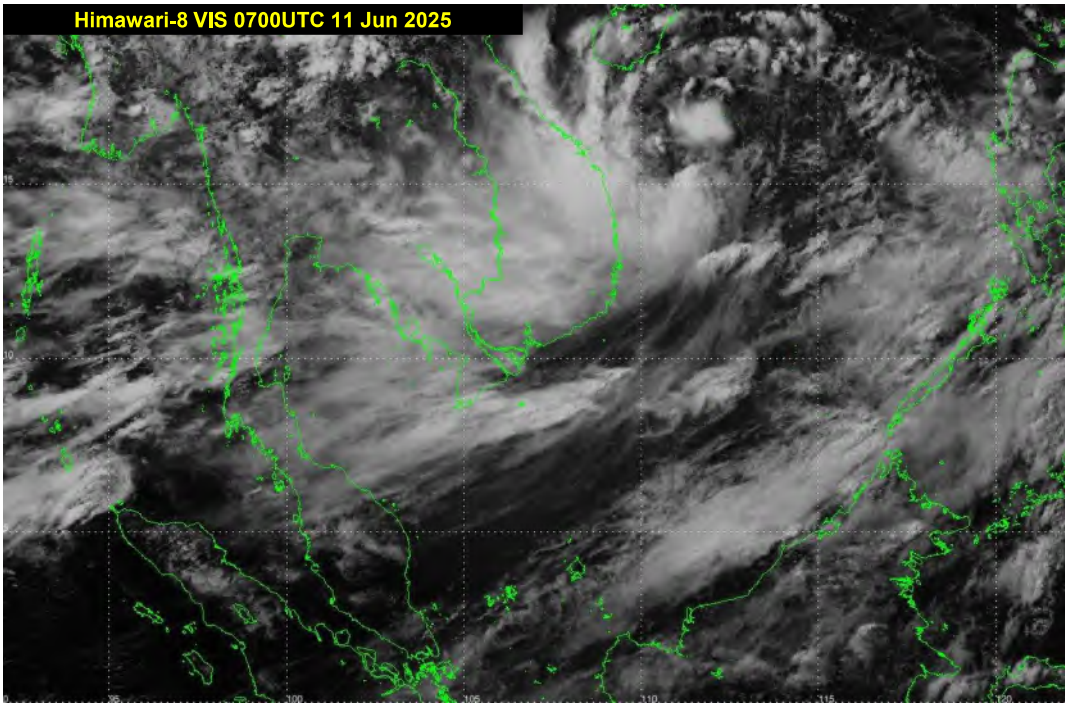
Marine and Aviation Weather Forecasting Specialists



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Weather Forecast for Valeura Energy - Wassana CALM Buoy near 7° 56' 37.994"N 101° 24' 14.618"E
Valid for 96 hours from 1800LT 09 Aug 2025

Tropical Advisory:
Nil.

Warnings:
MODERATE - HIGH risk of squalls to 25-30kt mainly evenings - mornings. Squalls lasting for periods up to 20-30 minutes with onset gusts to 35-40kt and temporarily raised seas expected.

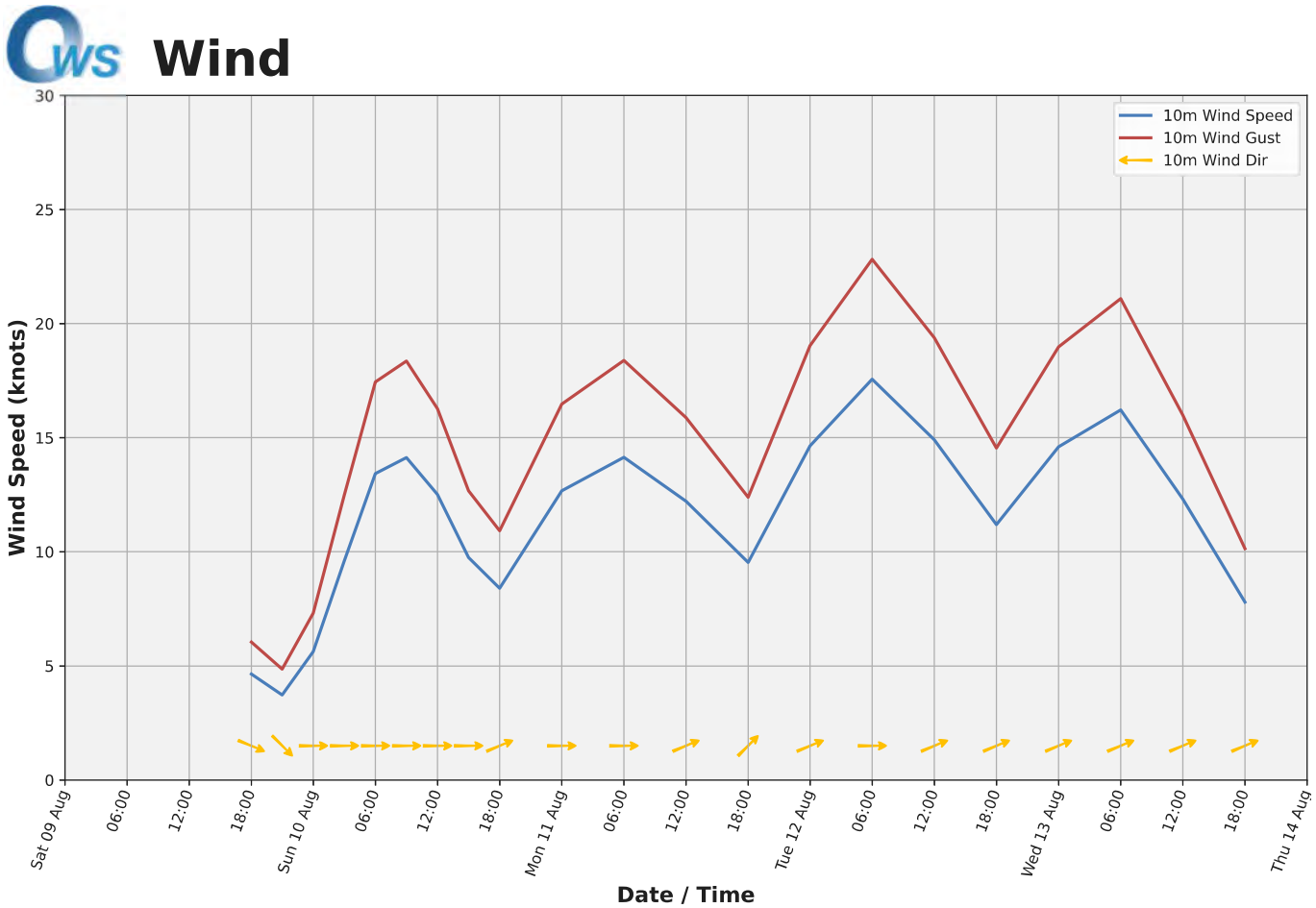
Met Situation:
A trough extending south over Vietnam and the northern South China Sea gradually deepening through the 12th. A weak ridge extending from northern Sumatra over the southern Malay Peninsula and Natuna Sea.

Weather:
Isol - sct showers / isol thunderstorms,

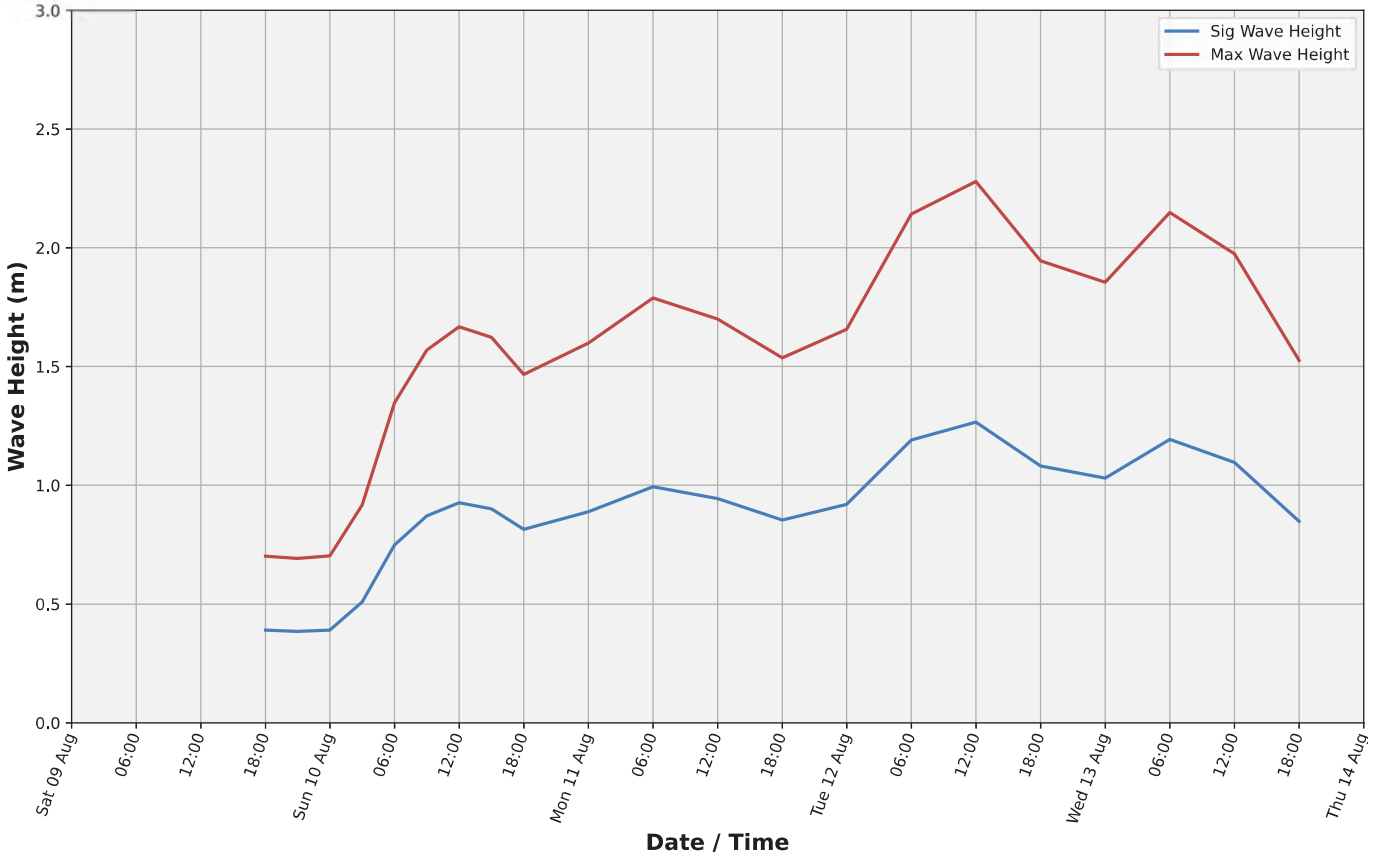
Date/Time LT		Wind (from / knots)					Sea Ht	Swell 1			Swell 2			Total Wave			Confidence
		Dir	Spd	95%*	Gust	50m		Dir	Per	Ht	Dir	Per	Ht	Sig	95%*	Max	
Sat 09-Aug	18:00	WNW	5	9	6	6	0.1	SSW	3	0.3	NW	3	0.2	0.4	0.6	0.7	High
	21:00	NW	4	9	5	4	0.1	WSW	3	0.3	NNW	3	0.2	0.4	0.6	0.7	
Sun 10-Aug	00:00	W	6	12	7	7	0.1	WSW	3	0.3	NNW	3	0.2	0.4	0.7	0.7	High
	03:00	W	10	16	12	12	0.2	WSW	3	0.4	NW	3	0.2	0.5	0.9	0.9	
	06:00	W	13	19	17	16	0.5	WSW	3	0.5	NNW	3	0.2	0.7	1.1	1.3	
	09:00	W	14	20	18	17	0.7	WSW	3	0.5	NNW	4	0.2	0.9	1.2	1.6	
	12:00	W	13	18	16	15	0.7	W	4	0.6	NNW	4	0.2	0.9	1.3	1.7	
	15:00	W	10	15	13	12	0.5	W	4	0.7	SSW	4	0.3	0.9	1.3	1.6	
	18:00	WSW	8	14	11	10	0.3	WSW	4	0.7	NNW	4	0.3	0.8	1.2	1.5	
Mon 11-Aug	00:00	W	13	22	16	15	0.4	SW	3	0.6	NNW	5	0.5	0.9	1.4	1.6	High
	06:00	W	14	19	18	17	0.7	WSW	3	0.6	NNW	5	0.4	1.0	1.4	1.8	
	12:00	WSW	12	21	16	15	0.7	WSW	4	0.6	NNW	4	0.3	0.9	1.3	1.7	
	18:00	SW	10	19	12	11	0.5	WSW	4	0.6	NNW	5	0.4	0.9	1.3	1.5	
Tue 12-Aug	00:00	WSW	15	23	19	18	0.6	WSW	4	0.6	NW	5	0.4	0.9	1.5	1.7	Moderate
	06:00	W	18	25	23	21	0.9	W	4	0.8				1.2	1.8	2.1	
	12:00	WSW	15	24	19	18	0.9	W	4	0.9				1.3	1.8	2.3	
	18:00	WSW	11	23	15	13	0.7	WSW	4	0.7	NNW	5	0.5	1.1	1.8	1.9	
Wed 13-Aug	00:00	WSW	15	24	19	18	0.6	WSW	4	0.7	NW	5	0.4	1.0	1.8	1.9	Moderate
	06:00	WSW	16	27	21	19	0.8	WSW	4	0.8	NW	5	0.3	1.2	2.0	2.1	
	12:00	WSW	12	23	16	15	0.8	W	4	0.8				1.1	1.9	2.0	
	18:00	WSW	8	20	10	9	0.4	WSW	4	0.7	NNW	4	0.3	0.8	1.7	1.5	

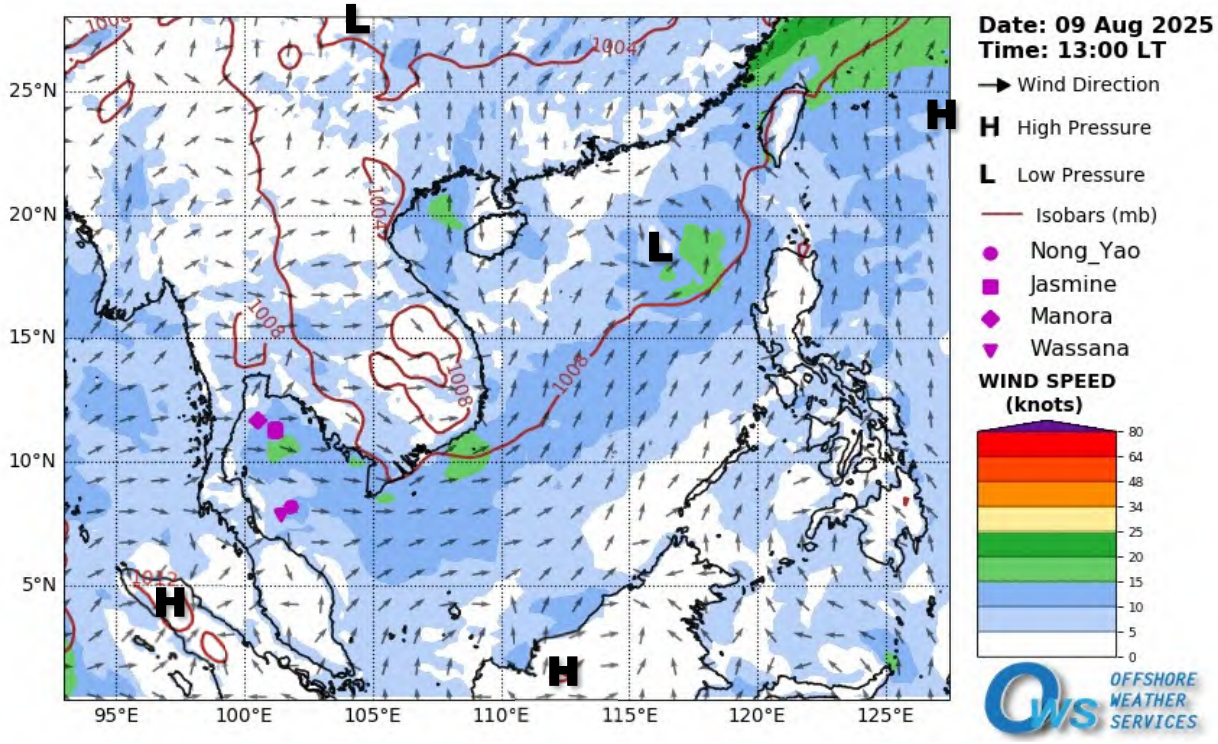
Units: wind speed/gust in knots; wave height in metres; wave periods in seconds; directions from
* Forecast mean wind / significant wave height upper bound (estimated 95% confidence).

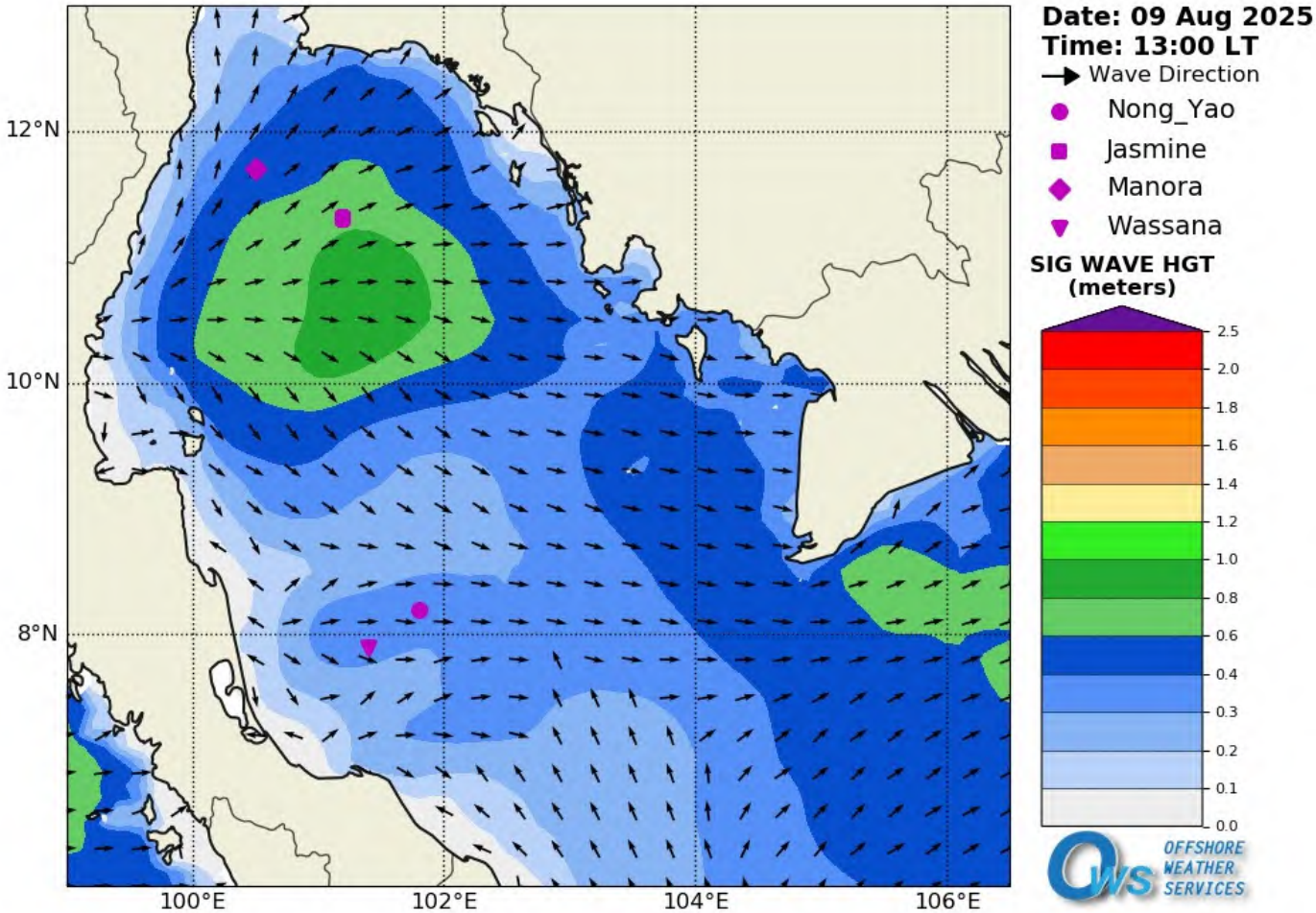
Duty Forecaster: OWS Forecast Team



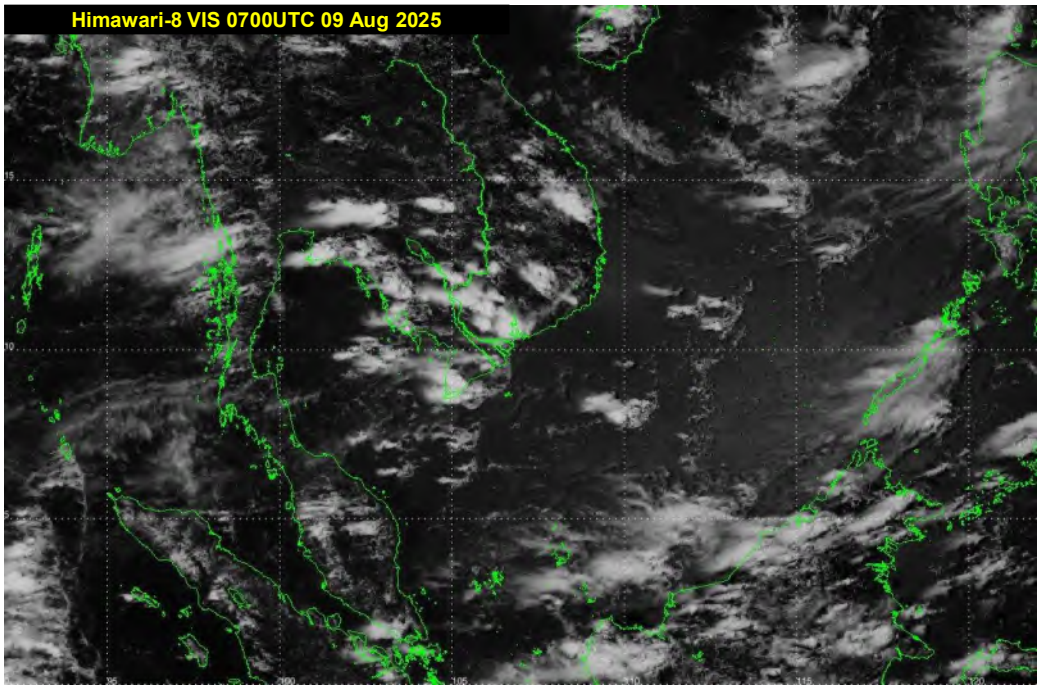
Wave


Sig Wave Height
Max Wave Height
Wave Height (m)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Sat 09 Aug
06:00
12:00
18:00
Sun 10 Aug
06:00
12:00
18:00
Mon 11 Aug
06:00
12:00
18:00
Tue 12 Aug
06:00
12:00
18:00
Wed 13 Aug
06:00
12:00
18:00
Thu 14 Aug
Date / Time


Date: 09 Aug 2025
Time: 13:00 LT
Wind Direction
H High Pressure
L Low Pressure
Isobars (mb)
Nong_Yao
Jasmine
Manora
Wassana
WIND SPEED (knots)
80
64
48
34
25
20
15
10
5
0
25°N
20°N
15°N
10°N
5°N
95°E
100°E
105°E
110°E
115°E
120°E
125°E
1004
1008
1012
OFFSHORE WEATHER SERVICES



Offshore Weather Services Pty Ltd
Marine and Aviation Weather Forecasting Specialists



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ows@offshoreweather.com.au
offshoreweather.com.au

Weather Forecast for Valeura Energy - Wassana CALM Buoy near 7° 56' 37.994"N 101° 24' 14.618"E
Valid for 96 hours from 1800LT 07 Oct 2025

Tropical Advisory:
Nil.

Warnings:
MODERATE - HIGH risk of squalls to 25kt in heavy showers/thunderstorms mainly afternoon - early mornings. Squalls lasting for periods of 20-30 minutes with onset gusts to 35kt and temporarily raised seas.

Met Situation:
A trough extending over northern Thailand / Vietnam across the central South China Sea to the central Philippines drifting south ahead of a ridge building over SE China and northern South China Sea overnight and tomorrow. A broad low-level circulation developing over the South China Sea from late 08th with no significant development expected. A weak ridge persisting over northern Sumatra to the southern Malay Peninsula and Natuna Sea.

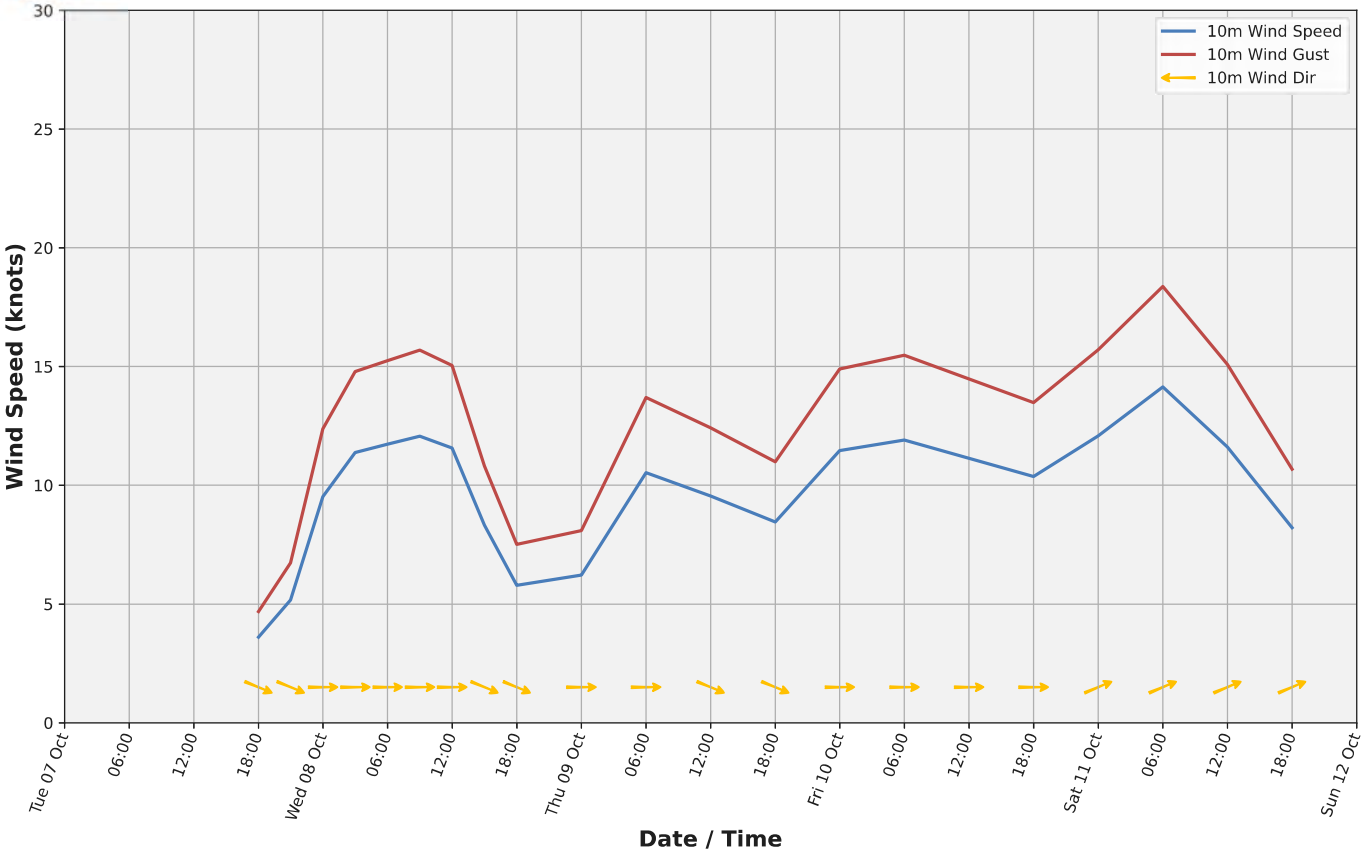
Weather:
Isol - sct showers / isol thunderstorms mainly afternoons - early mornings.

Date/Time LT		Wind (from / knots)					Sea	Swell 1			Swell 2			Total Wave			Confidence
		Dir	Spd	95%*	Gust	50m	Ht	Dir	Per	Ht	Dir	Per	Ht	Sig	95%*	Max	
Tue 07-Oct	18:00	WNW	4	9	5	4	0.1	SW	3	0.4	NW	3	0.2	0.5	0.8	0.9	High
	21:00	WNW	5	13	7	6	0.1	SW	3	0.5	NNW	4	0.2	0.5	0.8	0.9	
Wed 08-Oct	00:00	W	10	18	12	11	0.2	WSW	3	0.4	NW	4	0.2	0.5	0.9	0.9	High
	03:00	W	11	18	15	14	0.4	W	3	0.3				0.5	1.0	0.9	
	06:00	W	12	18	15	14	0.5	W	3	0.3				0.6	1.0	1.1	
	09:00	W	12	17	16	14	0.6	WNW	3	0.3				0.6	1.0	1.1	
	12:00	W	12	16	15	14	0.5	WNW	3	0.3				0.6	1.0	1.1	
	15:00	WNW	8	13	11	10	0.3	NW	3	0.5				0.6	0.9	1.1	
	18:00	WNW	6	11	8	7	0.2	NW	4	0.6				0.6	0.9	1.1	
Thu 09-Oct	00:00	W	6	15	8	7	0.2	NW	4	0.5				0.6	1.0	1.0	High
	06:00	W	11	19	14	13	0.3	NW	4	0.6				0.7	1.3	1.3	
	12:00	WNW	10	17	12	11	0.4	NNW	4	0.7				0.8	1.2	1.5	
	18:00	WNW	8	17	11	10	0.3	NW	4	0.8				0.9	1.3	1.5	
Fri 10-Oct	00:00	W	11	19	15	14	0.3	NW	4	0.8				0.9	1.3	1.5	Moderate
	06:00	W	12	19	15	14	0.5	NW	4	0.7				0.9	1.4	1.6	
	12:00	W	11	18	14	13	0.5	NW	4	0.7				0.9	1.3	1.6	
	18:00	W	10	19	13	12	0.4	NW	4	0.6				0.7	1.2	1.3	
Sat 11-Oct	00:00	WSW	12	22	16	15	0.5	NW	4	0.6				0.8	1.4	1.4	Moderate
	06:00	WSW	14	23	18	17	0.7	NW	3	0.6	SW	2	0.2	0.9	1.5	1.6	
	12:00	WSW	12	19	15	14	0.6	NW	3	0.5	WSW	3	0.3	0.9	1.4	1.6	
	18:00	WSW	8	20	11	10	0.3	NW	3	0.4	SW	3	0.3	0.6	1.3	1.1	

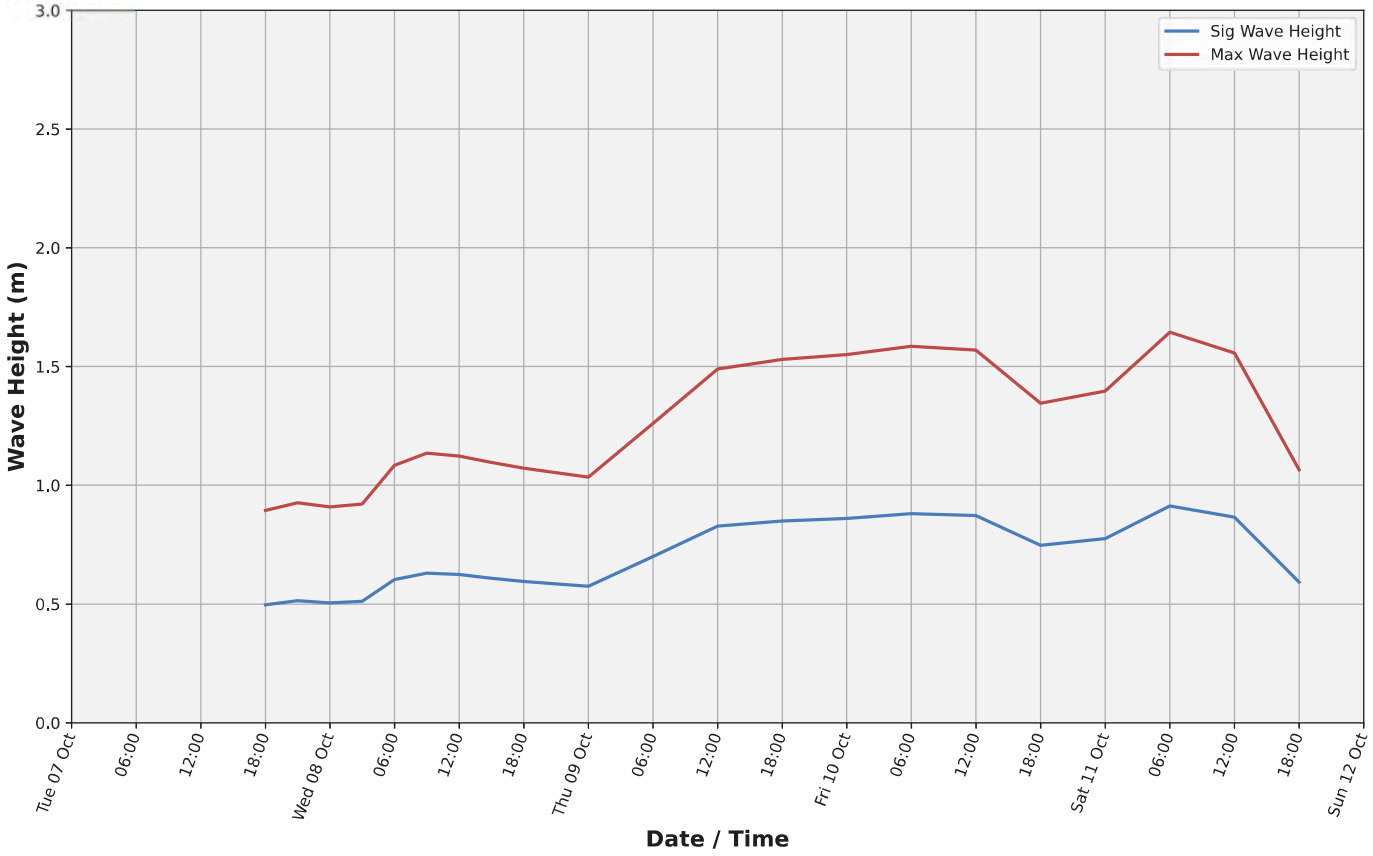
Units: wind speed/gust in knots; wave height in metres; wave periods in seconds; directions from
* Forecast mean wind / significant wave height upper bound (estimated 95% confidence).

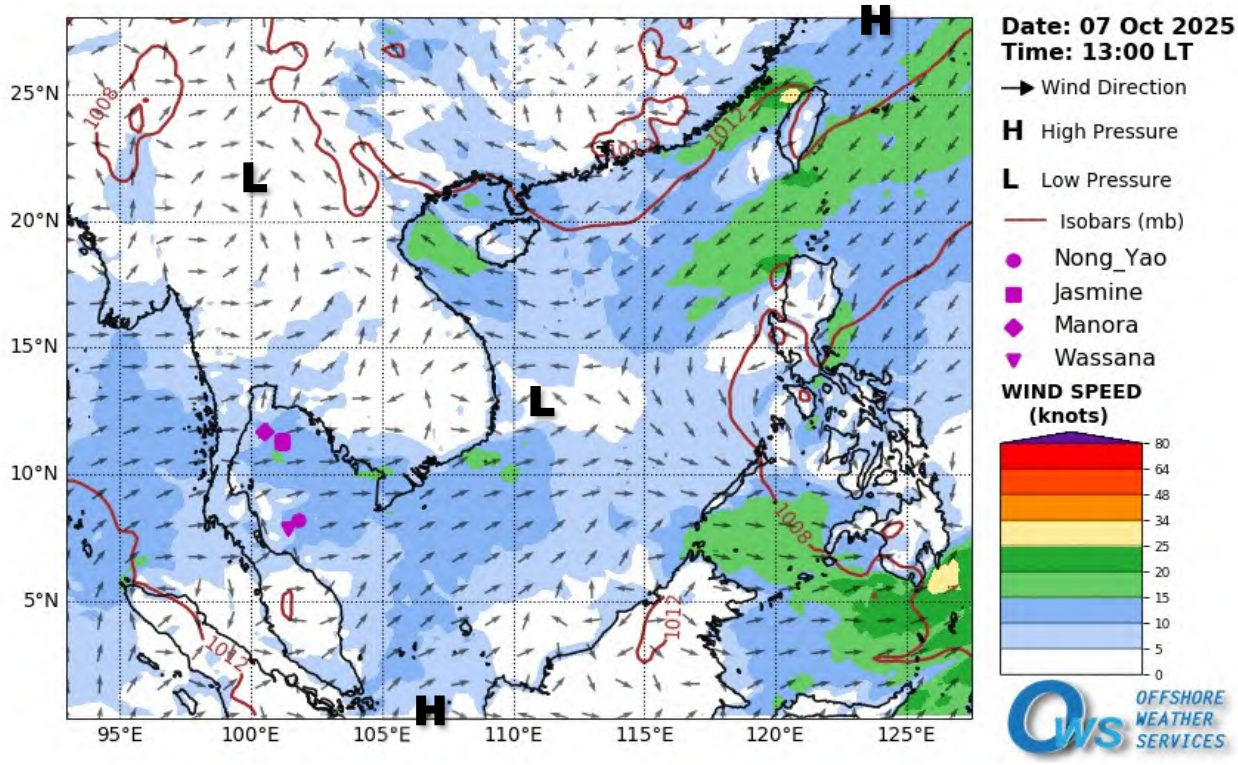
Duty Forecaster: OWS Forecast Team

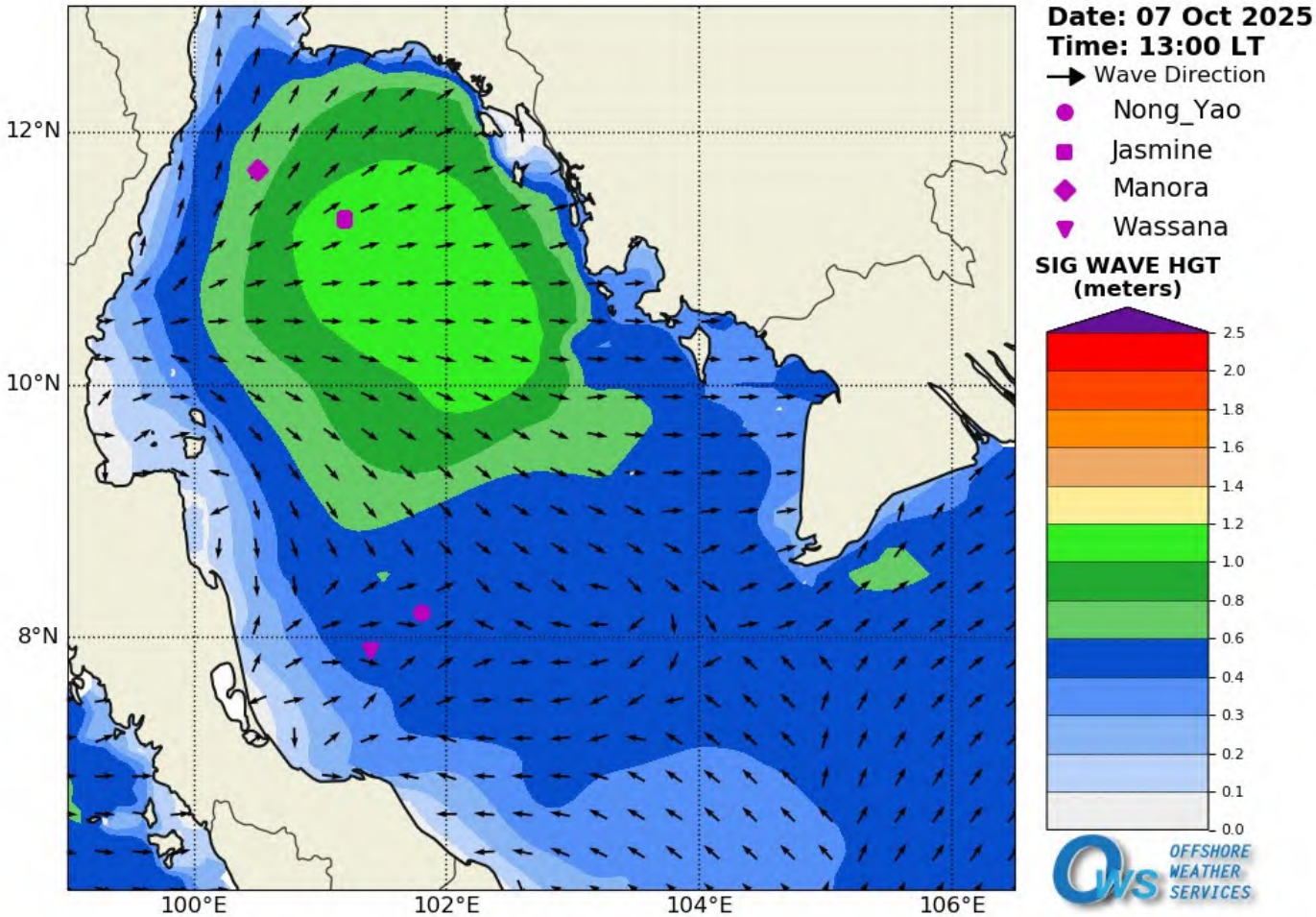
Wind



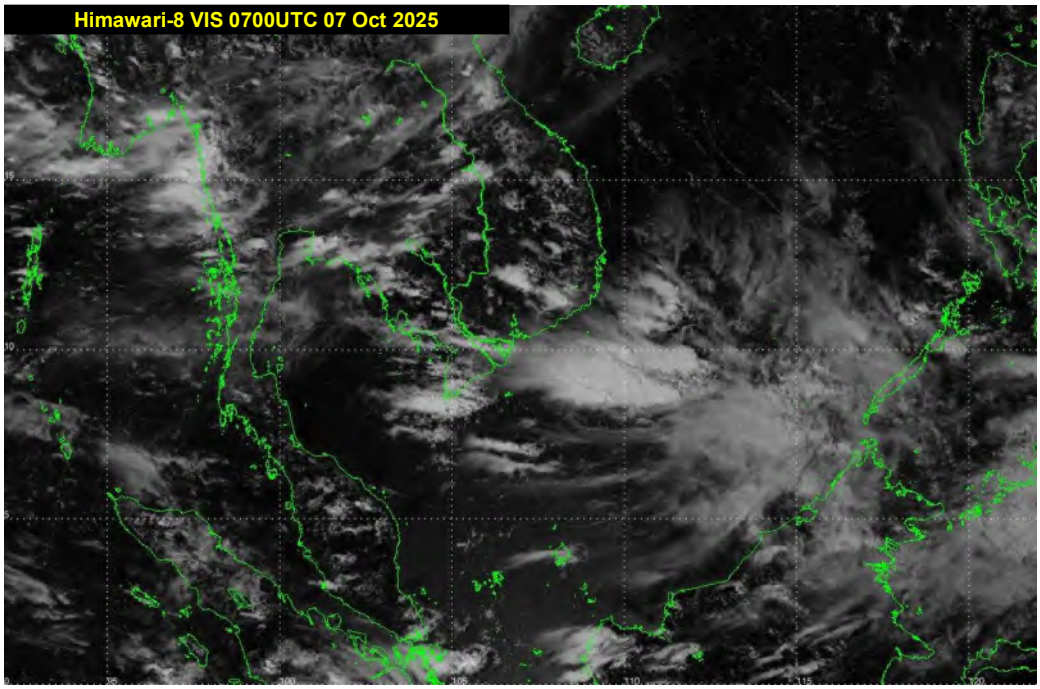
Wave


Sig Wave Height
Max Wave Height
Wave Height (m)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Tue 07 Oct
06:00
12:00
18:00
Wed 08 Oct
06:00
12:00
18:00
Thu 09 Oct
06:00
12:00
18:00
Fri 10 Oct
06:00
12:00
18:00
Sat 11 Oct
06:00
12:00
18:00
Sun 12 Oct
Date / Time


Date: 07 Oct 2025
Time: 13:00 LT
Wind Direction
H High Pressure
L Low Pressure
Isobars (mb)
Nong_Yao
Jasmine
Manora
Wassana
WIND SPEED (knots)
80
64
48
34
25
20
15
10
5
0
25°N
20°N
15°N
10°N
5°N
95°E
100°E
105°E
110°E
115°E
120°E
125°E
1008
1012
OFFSHORE WEATHER SERVICES



Offshore Weather Services Pty Ltd
Marine and Aviation Weather Forecasting Specialists



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Weather Forecast for Valeura Energy - Wassana CALM Buoy near 7° 56' 37.994"N 101° 24' 14.618"E
Valid for 96 hours from 1800LT 08 Dec 2025

Tropical Advisory:
Latest satellite and scatterometer data indicate Tropical Disturbance Invest OWS87I25 has dissipated over the Sulu Sea. With this development, this will be the final Tropical Advisory on the system.

Warnings:
Nil.

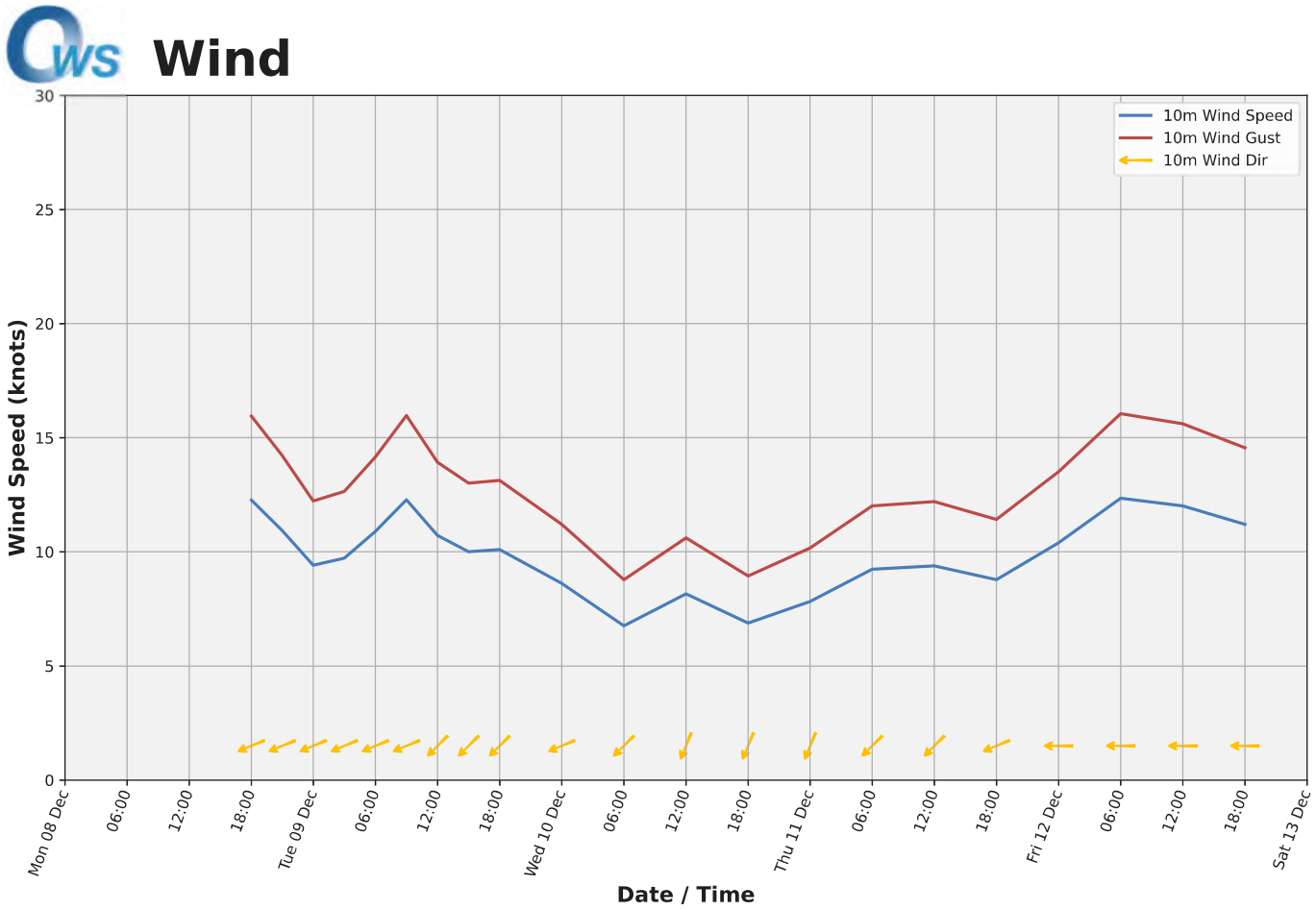
Met Situation:
Ridge over SE China / northern South China Sea strengthening overnight and tomorrow, then weakening 10th-12th before a strong ridge builds SSW over SE China on the 13th and extends over the northern South China Sea / northern Vietnam on the 14th. Tropical Disturbance Invest OWS87I25 has dissipated over the Sulu Sea.

Weather:
Fair. Sct showers / Isol thunderstorms on the 11th.

Date/Time LT		Wind (from / knots)					Sea	Swell 1			Swell 2			Total Wave			Confidence
		Dir	Spd	95%*	Gust	50m	Ht	Dir	Per	Ht	Dir	Per	Ht	Sig	95%*	Max	
Mon 08-Dec	18:00	ENE	12	15	16	15	0.5	E	5	0.9				1.0	1.2	1.9	High
	21:00	ENE	11	13	14	13	0.5	E	5	0.9				1.0	1.2	1.9	
Tue 09-Dec	00:00	ENE	9	12	12	11	0.4	E	5	0.9				1.0	1.1	1.8	High
	03:00	ENE	10	14	13	12	0.3	E	5	0.8				0.9	1.0	1.5	
	06:00	ENE	11	15	14	13	0.4	E	5	0.7	NNE	4	0.5	0.9	1.1	1.7	
	09:00	ENE	12	17	16	15	0.5	ESE	5	0.6	N	5	0.4	0.9	1.1	1.6	
	12:00	NE	11	16	14	13	0.5	ESE	6	0.5	N	4	0.4	0.8	1.2	1.5	
	15:00	NE	10	15	13	12	0.4	ESE	6	0.4	NE	4	0.5	0.8	1.1	1.4	
	18:00	NE	10	14	13	12	0.4	ESE	7	0.2	ENE	4	0.7	0.8	1.2	1.5	
Wed 10-Dec	00:00	ENE	9	12	11	10	0.3	ESE	6	0.5	ENE	4	0.5	0.8	1.1	1.4	High
	06:00	NE	7	10	9	8	0.2	ESE	6	0.4	NNE	4	0.6	0.8	1.0	1.4	
	12:00	NNE	8	11	11	10	0.2	ESE	7	0.3	N	5	0.6	0.7	0.9	1.3	
	18:00	NNE	7	9	9	8	0.2	E	7	0.3	N	5	0.6	0.7	0.9	1.3	
Thu 11-Dec	00:00	NNE	8	12	10	9	0.2	E	6	0.2	ENE	5	0.6	0.7	0.9	1.2	Moderate
	06:00	NE	9	13	12	11	0.3	N	4	0.4	E	5	0.6	0.8	1.1	1.4	
	12:00	NE	9	14	12	11	0.3	NNW	5	0.3	NNE	4	0.8	0.9	1.2	1.6	
	18:00	ENE	9	15	11	11	0.3	E	5	0.5	N	5	0.7	0.9	1.3	1.6	
Fri 12-Dec	00:00	E	10	19	14	12	0.3	NNW	4	0.1	E	5	0.8	0.9	1.6	1.6	Moderate
	06:00	E	12	22	16	15	0.5	NNW	4	0.1	E	5	0.9	1.0	1.9	1.9	
	12:00	E	12	20	16	14	0.6	NNW	5	0.4	E	5	0.9	1.2	2.0	2.1	
	18:00	E	11	18	15	13	0.6				E	5	0.9	1.1	1.9	1.9	

Units: wind speed/gust in knots; wave height in metres; wave periods in seconds; directions from
* Forecast mean wind / significant wave height upper bound (estimated 95% confidence).

Duty Forecaster: OWS Forecast Team



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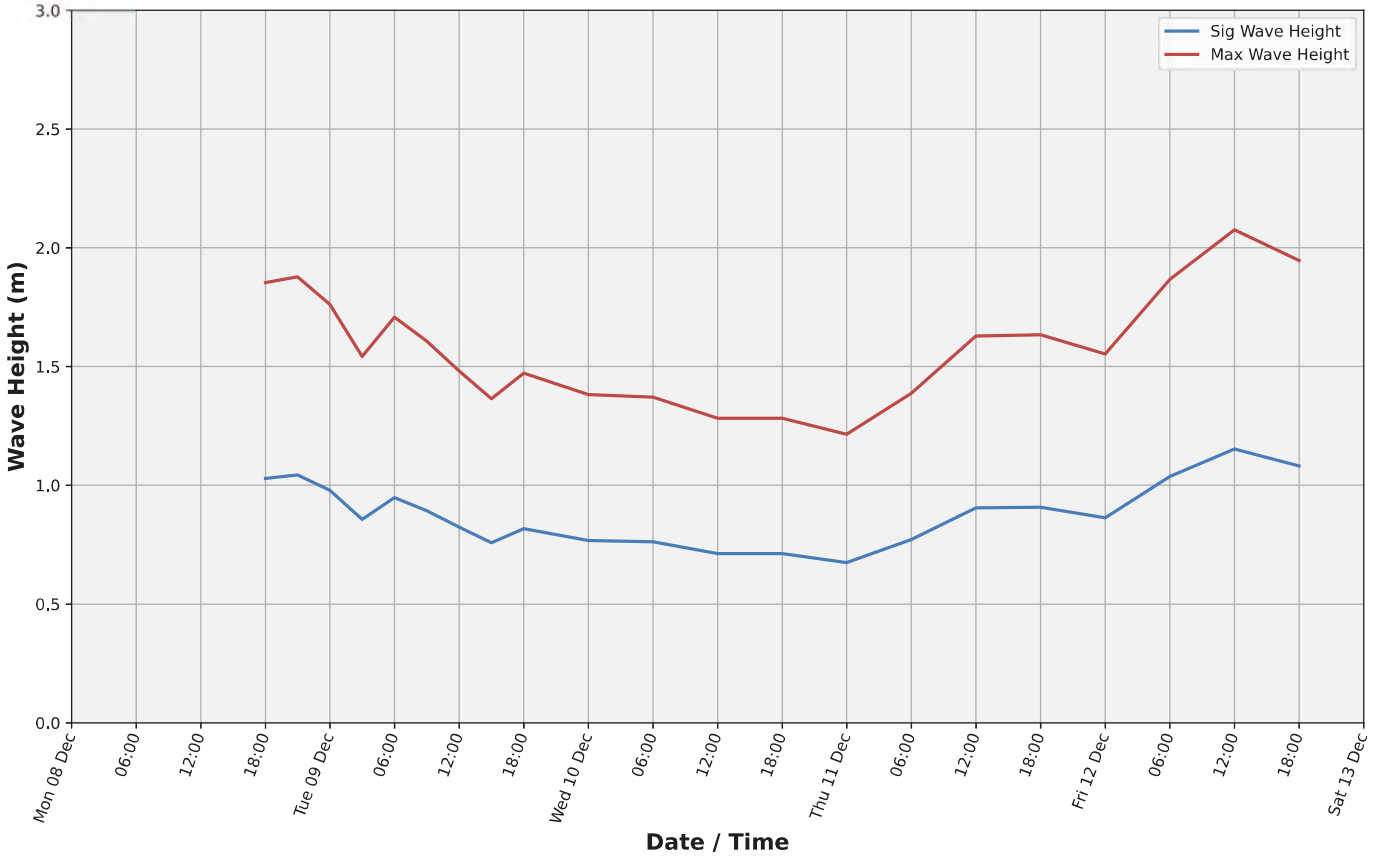
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Max Wave Height
Wave Height (m)
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2.0
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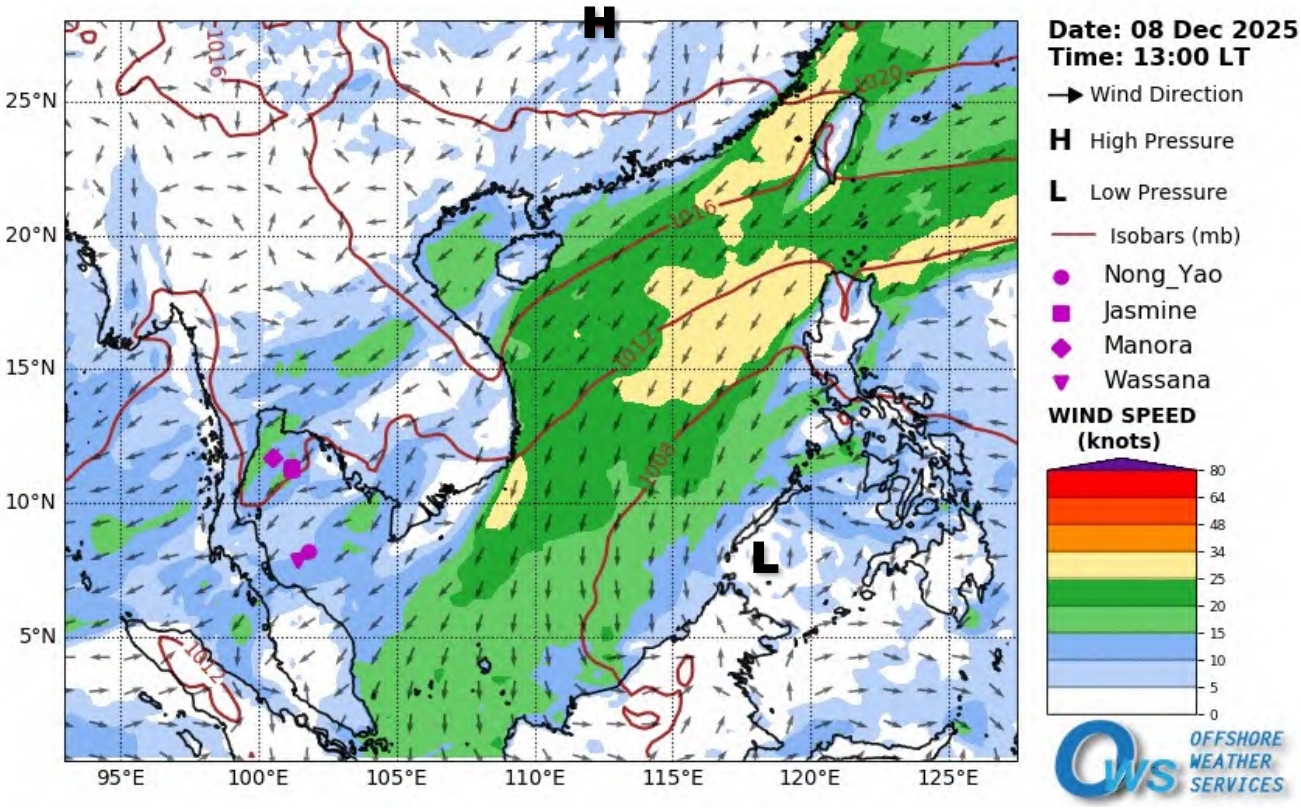
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L Low Pressure
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Jasmine
Manora
Wassana
WIND SPEED (knots)
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34
25
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15
10
5
0
H
L
1016
1029
1016
1012
1008
25°N
20°N
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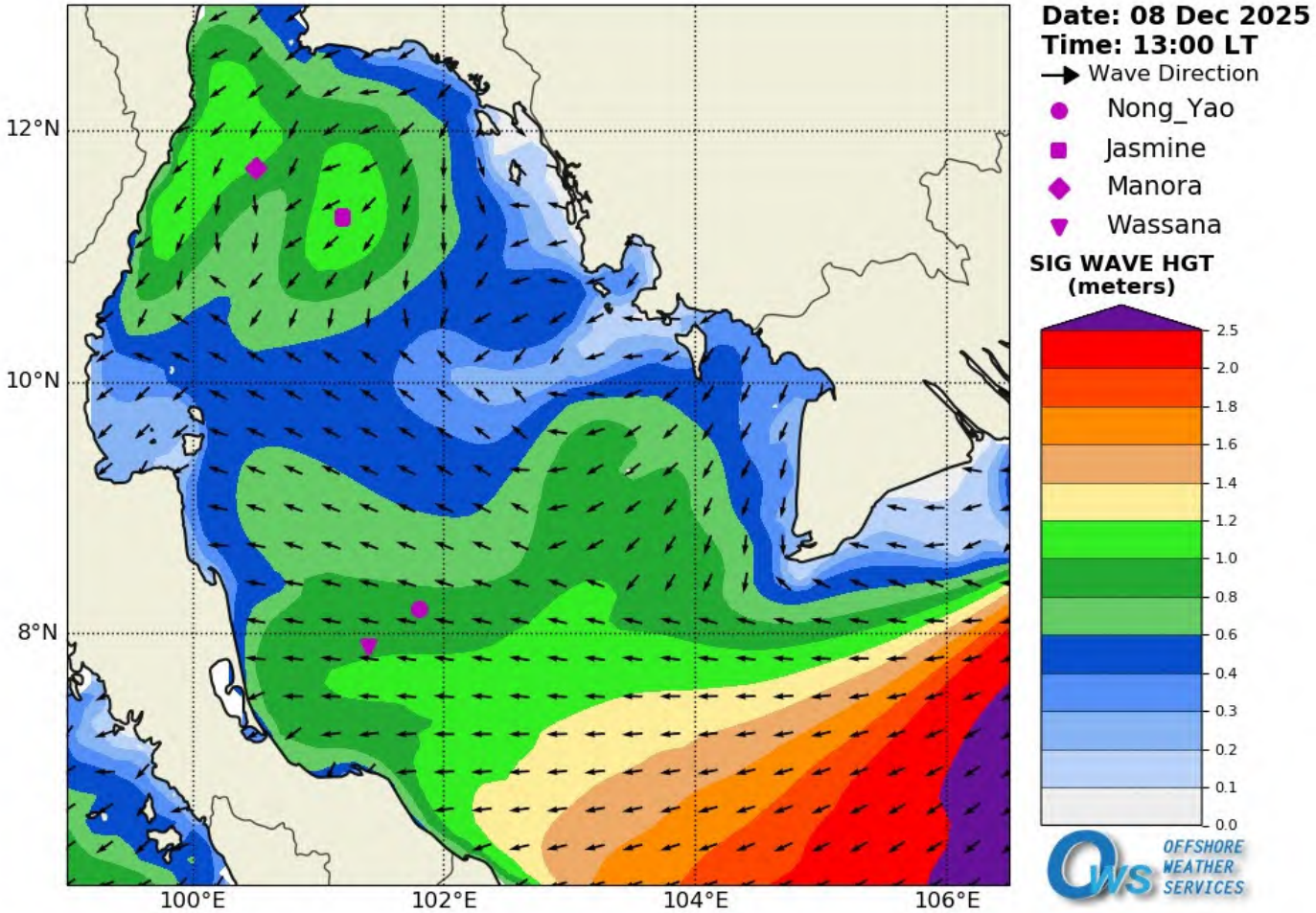
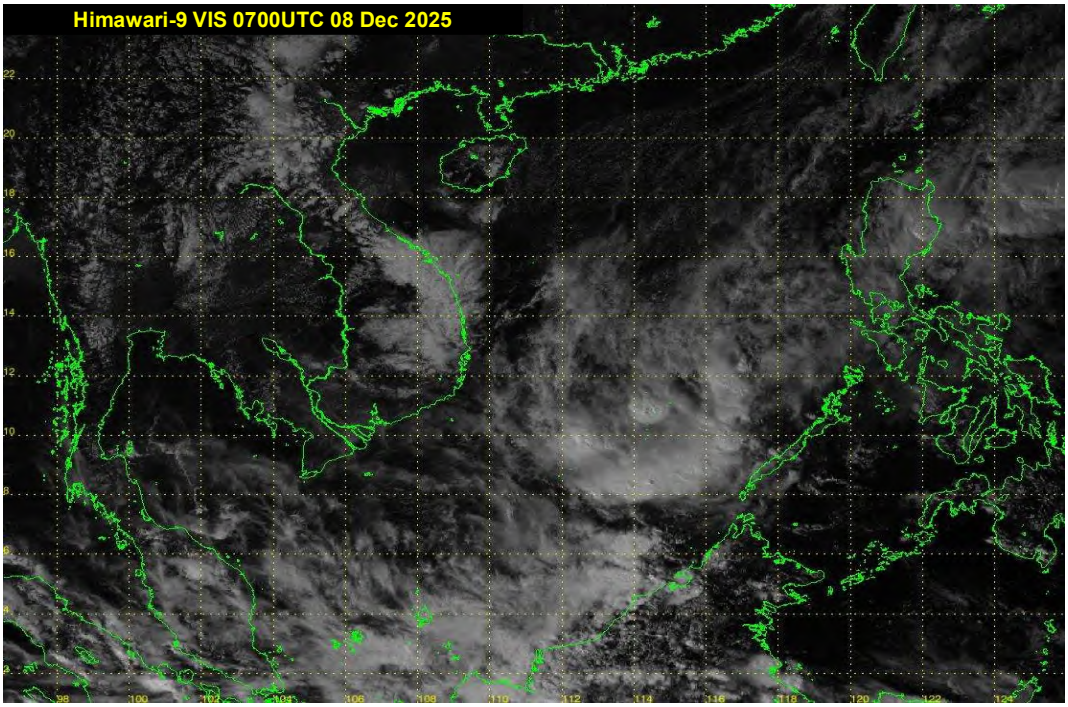
OFFSHORE WEATHER SERVICES



Offshore Weather Services Pty Ltd
Marine and Aviation Weather Forecasting Specialists



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Oil Spill Contingency Plan

Thailand – Health, Safety, Security and Environment

Country Oil Spill Response Plan Part 1 (Exploration, Drilling, and Production Phases)

Manual (MAN)

Published

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Thailand – Health, Safety, Security and Environment

Country Oil Spill Response Plan Part 1 (Exploration, Drilling, and Production Phases)

Manual (MAN)

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R0	8 Jun 12	Sanong C.	Issue for 2nd review
R0	Sep 13	Suchada J.	Table of contents Oil Spill Responses – Actions chart
R1	Aug 15	Suchada J.	- Format to EDMS Template - Update oil spill contractor name and location - Review R&R checklist form and spread sheet of Dasic Slickgone NS in Appendix
R2	Dec 17	Suchada J.	- Review for approval
R3	Jul 19	Suchada J.	- Update OSRL mobilisation authorisation and notification forms - Update IESG stockpiles, activation flowcharts and forms - Review for approval
R4	28 May 23	Alisa J.	- Updated logo, cover and header

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1 PURPOSE

The Country Oil Spill Response Plan (OSRP) has been written in accordance with international and Thailand best practices for company (hereafter referred to as Company and it aims to offer guidance on the response strategies and necessary actions to prevent and / or minimize any accidental discharge of oil and to mitigate negative effects. It provides specific guidance to personnel who may be involved in a spill response related to company exploration, drilling, and production operations. Specifically, it supplies the Country Response Team (CRT) with the response strategies, main procedures, and information required during an oil spill response.

The Country OSRP covers ALL potential spills from the following activities / areas:

- All offshore facilities / fields operated by company i.e., production platforms and in-field pipelines, calm buoy
- Offshore Exploration activities including Geotechnical and Geographical surveys
- Drilling operations in the Gulf of Thailand (GOT) (Exploration drilling and In-field drilling)
- FPSO/FSO and an off-take tanker including oil export pipelines used for an off-loading
- Offshore construction operations in the Gulf of Thailand (GOT) (installation, HUC works on new platforms and Brownfield works on existing facilities)
- Marine operations including supply boat and crew boat, Construction Support Vessel and Derrick/Lay barge)

Note: At this stage, company does not have any onshore production operations therefore the plan excludes detailed information related to onshore concessions. A separate response plan will be required for onshore drilling activities (site specific).

In the event of an oil spill occurring on the facilities / fields, the response will be directed towards;

- Saving life and / or caring for the injured or both
- Protect of the environment
- Limitation of damage to assets

1.1 ACRONYMS AND DEFINITIONS

Acronyms

Abbreviation	Expanded Form
CRT	Country Response Team
CMT	Crisis Management Team
SRT	Site Response Team
GOT	Gulf Of Thailand
HUT	Hook - Up Team
FPSO	Floating Production, Storage and Offloading
FSO	Floating Storage and Offloading
OSRP	Oil Spill Response Plan
BCP	Business Continuity Plan
OSCT	Oil Spill Combat Team (Thailand)
IESG	Oil Industrial Environment Safety Group
MOU	Memorandum of Understanding
OSRL	Oil Spill Response Ltd.
OPRC	International Oil Spill Response Convention

Abbreviation	Expanded Form
DMF	Department of Mineral Fuels
PCD	Pollution Control Department
ICS	Incident Command System
MSDS	Material Safety Data Sheet
BBLS	Barrels
IAP	Incident Actions Plan
KCR	Key Contractor Representative
IMO	International Marine Organization

Definitions

Term	Definition
Oil Spill	Any Oil > 1 barrel drop into the sea
Tier 1	Local Spill: Oil spill less than 20 tons (< 150 bbls)
Tier 2	Country Spill: Oil spill of 20 – 1,000 tons (150 – 7,500 bbls)
Tier 3	International Spill: Oil spill more than 1,000 tons (> 7,500 bbls)
Contractor	Oil Spill Consultant/ Service (Oil Spill Response Contractor), Supply boats

1.1 OIL SPILL RESPONSE DOCUMENTATION

Recognizing that:

- Local "Tier 1" response will vary and will be specific to the individual facility / field dependent upon activity, type and size of the operation, hydrocarbon characteristics, number of facilities within field, etc.
- Company Emergency Response structure / organization including Country Response Team (CRT) and Site Response Team (SRT) will be common to all company facilities / fields
- Emergencies demand that OSRPs must be clear, concise, and targeted towards the users (i.e. CRT and SRT)

The company oil spill response is captured in three documents;

- Part 1: Country OSRP (this document),
- Part 2: Environmental Sensitive Area, Oil Spill Modeling and Crude Properties and Emergency Contact List, and
- Part 3: Shoreline Clean-up. The OSRPs shall be used in conjunction with company Emergency Response Manual.

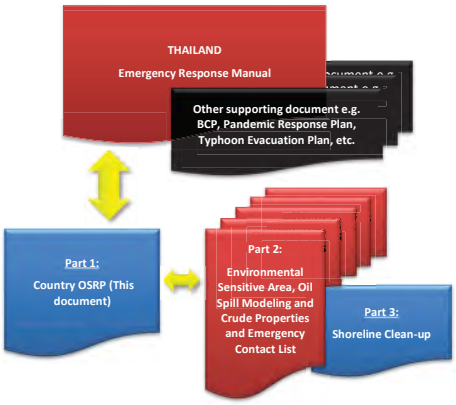


Figure 1-1 Oil Spill Response Document

Part 1 of the "Country OSRP" comprises of 4 main sections;

Section 1: Introduction and Scope

Section 2: Classification of Oil Spill

Section 3: company-Oil Spill Responses and Actions Chart

Section 4: Interface with National Oil Spill Contingency Plan (N-OSCP)

Details such as the specific location of the site, description of the facility including main activities and hydrocarbon types can be found in each of the relevant Offshore OSRPs.

2 INTRODUCTION AND SCOPE

At present company holds the license to operate in offshore petroleum concessions in the GOT, company has been conducting exploration and production activities including Geotechnical and Geographical surveys, Exploration drilling, Production operation and in-field drilling.

The offshore concession blocks are located in the northern and the southern GOT (Figure 1-2). Company Onshore supporting facilities are located in Sattahip and Songkhla including Warehouse, Yard, Marine port, and Hangar.

Figure 1-2 Company Concession Map (Onshore and Offshore)

3 CLASSIFICATION OF OIL SPILL

The classification of an oil spill in determined on the basis of the volume of petroleum released follows the National Oil Spill Response Contingency Plan. The classification is as follows:

Tier 1: Local Spill: Oil spill of less than 20 tons (< 150 bbls)

Tier 2: Country Spill: Oil spill of 20 – 1,000 tons (150 – 7,500 bbls)

Tier 3: International Spill: Oil spill more than 1,000 tons (> 7,500 bbls)

Note: Conversion from tons to barrels of oil is depended on the oil properties. The conversion (ton to barrel) will be ranged between 6.5 to 7.9 depending on crude type.

Conversion Factors

Code	Description/Appearance	Thickness (mm)	Quantity (m3/km2)
1	Sheen (silvery/grey)	40 to 300	0.04 to 0.3
2	Rainbow	300 to 5,000	0.3 to 5.0
3	Metallic	5,000 to 50,000	5.0 to 50.
4	Discontinuous true oil color	50,000 to 200,000	50 to 200
5	Continuous true oil color	200,000 or greater	200 or greater

Unit		Approximate conversion Factor	Unit
barrels of oil (bbl)	Multiplied by	42	US gallons (gal)
barrels of oil (bbl)	Multiplied by	0.136	ton of oil equivalent (toe)
barrels of oil (bbl)	Multiplied by	0.15898	cubic meters (m3)
Tons of oil	Multiplied by	7.33 [1]	barrels of oil equivalent
US gallons (gal)	Multiplied by	0.0238	barrels (bbl)
US gallons (gal)	Multiplied by	3.7854	Liters(l)

This conversion can range from 6.5 to 7.9 depending on the type of crude oil. This factor is indented to provide an approximation that can be used when the exact factor is unknown.

Definitions of these categories, for the purposes of determining appropriate response strategies, are provided as follows;

3.1 TIER 1 – LOCAL OIL SPILL

All facilities / fields shall have a capability to manage the response at this level using onsite resources without requiring external assistance. Therefore, oil spill response equipment should be able to deal with 20 tons of spill considering appropriate response techniques i.e. natural dispersion, chemical dispersant and mechanical containment, and recovery.

3.2 TIER 2 – COUNTRY OIL SPILL

When the spill is beyond onsite response capability or when the risk of environmental impact becomes high (i.e. uncontained spill, direction toward environmental sensitive areas, fishing areas, etc.), the oil spill response shall be passed to NATIONAL GOVERNMENT AGENCIES IN THAILAND as the primary responds under the National Oil Spill Contingency Plan (N-OSCP), which covers spills in Inland waters, within Port

Limits, Coastal Areas and at Sea (in both territorial waters and the Exclusive Economic Zone). Under this legislation the Marine Department, as part of the Ministry of Transport and Communications, is the principal (lead) agency for dealing with marine pollution incidents. And also acquired more additional resources and support from;

- Company Country Response Team (CRT)
- Tier 2 Oil spill response contractor which is Oil Spill Combat Team (OSCT) Thailand
- Oil Industry Environmental Safety Group Association (IESG)
- If required, Tier 3 Oil spill response contractor which is Oil Spill Response Ltd. (OSRL).
- Other oil companies under agreed MOU.
- Government agencies including Department of Mineral Fuels, Royal Thai Navy, The Marine Environment Section of the Marine Department (MES), Pollution Control Department of the National Environment Department, etc.
- Committee on the Prevention and Combating of Oil Pollution (under the National Oil Spill Contingency Plan)

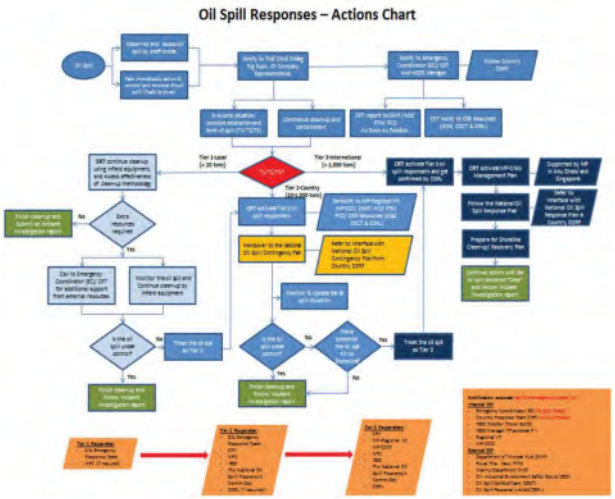
3.3 TIER 3 – INTERNATIONAL OIL SPILL

The Tier 3 spill is a spill from a major or uncontrolled source e.g., uncontrolled well blowout, main subsea pipeline rupture, severe damage to FSO / FPSO / Off-take Tanker, etc. At this level, it will be beyond the capability of the Country response and will be required external support from outside Thailand such as.

- Support from company Crisis Management Team (CMT)
- Tier 3 Oil spill response contractor which is OSRL
- Support from other countries through a coordination of Thai Government, Committee on the Prevention and Combating of Oil Pollution

In case of the Government activates the National Oil Spill Contingency Plan, the Committee on the Prevention and Combating of Oil Pollution (CPCOP) will be in control of overall oil spill response operation, company will be one of Operation Unit.

4 COMPANY – OIL SPILL RESPONSE AND ACTION CHART



5 INTERFACE WITH NATIONAL OIL SPILL CONTINGENCY PLAN (N-OSCP)

The National Oil Spill Response Plan is intended to delineate responsibilities for the oil spill response operation, to establish response procedures and mechanisms. The objective of the plan is to build cooperation among concerned agencies to optimally co-utilize existing resources for the oil spill operation in Thai waters to ensure timely and effective response to accomplish the common purpose of minimizing damage to the environment and marine resources.

The plan deals with oil spills occurred in inland waters, port limits, coastal areas and at sea, both in the territorial sea and the exclusive economic zone.

Under this legislation the Marine Department, as part of the Ministry of Transport and Communications, is the principal (lead) agency for dealing with marine pollution incidents. Company will be an Operation Unit to support the Committee on the Prevention and Combating of Oil Pollution (CPCOP).

The Marine Department, the Royal Thai Navy, the Provincial Administration, and the Oil Industry Environmental Safety Group (IESG), OSR Contractors, OSRL are the main agencies involved in oil pollution prevention and response. They will be supporting unit.

Process to set up Committee on the Prevention and Combating of Oil Pollution (CPCOP)

Once oil spill incident occurred the COMPANY shall report to Marine Department, Royal Thai Navy, and Pollution Control Department:

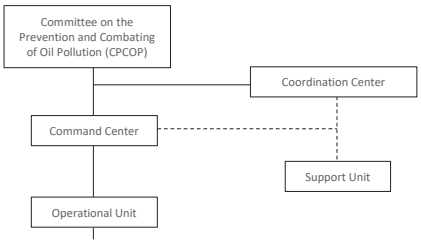
1. The Marine Department who acts as a secretary of CPCOP will report to Ministry of Transport and Communications.
2. The Ministry of Transport and Communications order to set up the CPCOP and he will act as a chairman of CPCOP.
3. If oil spill happens in coastal water the Director General of Marine Department will act as a director of Command Center but if the oil spill occurred outside coastal water the Commander of Royal Thai Navy will act as a director of Command Center.
4. The Command Center will set up nearby the oil spill location, for outside coastal water will be on Navy boat.
5. The COMAPNY will be an Operation Unit under the Command Center.
6. The Oil Spill contractor inside and outside Thailand will be a support unit under Coordination Center.

Handover from COMPANY to CPCOP

The Marine Department will communicate/ monitor with COMPANY actions, the handover from COMPANY to CPCOP depends on:

1. COMPANY cannot control situation because of inadequate OSR equipment & resources.
2. Likely a big impact to sensitivity area.
3. Capability/ resources of Committee on the Prevention and Combating of Oil Pollution are ready to take-over the situation
4. Command/ Coordination center location has been set up
5. Communication system has been set up
6. Support unit has been set up

National Oil Spill Response Organization



Note "_____" means order line.

5.1 DUTIES AND RESPONSIBILITIES

5.1.1 The Committee of CPCOP

The Committee shall be responsible for supervising, monitoring, and evaluating the oil spill response including disseminating information to public and media and submitting the report to the Cabinet.

5.1.2 Coordination Center

The Marine Department shall assume the role of the Coordination Center, with the Director-General as Director of the Center.

The Coordination Center shall have the following responsibilities:

- Notification of the concerned agencies for the purpose of establishing the Command Center and terminating the response operation when completed;
- Reporting of the operation to the Committee;
- Dissemination of pertinent information to media;
- Coordination of activities with concerned agencies;
- Gathering evidence for legal action against polluters for a compensation claim of clean-up cost

5.1.3 The Command Center

The Command Center shall be operated by the Marine Department or the Royal Thai Navy. The Command Center comprises representatives from the Operation Unit and Support Unit as deemed necessary by the Director of the Center. The Director shall coordinate the commands issued to the Operation Unit at the site of incident.

If the spill occurs in rivers, estuaries, lakes and port limits as designated in the Ministerial Regulations, representatives from the Marine Department shall act as the Director of the Center. If the incident occurs at sea outside the port limits, representatives from the Royal Thai Navy shall act as the Director of the Center.

The Command Center shall have the following responsibilities:

- Development of action plan and determination of response strategy;
- Direction, coordination and issue of command to achieve efficient oil spill response operation and minimal environmental damage;
- Reporting of the progress of the operation to the Coordination Center periodically;
- Coordination with the Coordination Center for additional response resources

5.1.4 The Operation Unit

The Operation Unit shall consist of representatives from the Marine Department, the Royal Thai Navy, the Provincial Administration, Bangkok Metropolitan Administration and Oil Industry Environmental Safety Group Association.

The Operation Unit shall conduct the oil spill response operation as assigned by the Command Center and shall continuously report the progress of the operation and difficulties encountered to the Command Center.

5.1.5 The Support Unit

The Support Unit shall consist of the Air Force, the Army, the Marine Police, Department of Aviation, Meteorological Department, Office of Natural Resources and Environmental Policy and Planning, Pollution Control Department, Fisheries Department, Department of Marine and Coastal Resources, Customs Department, Department of Treaties and Legal Affairs, the Comptroller-General's Department, Office of Permanent Secretary of the Ministry of Transport, Bureau of Royal Rain-Making and Agricultural Aviation, Natural Park, Wildlife and Plant Conservation Department, Immigration Bureau, Department of Disaster Prevention and Mitigation (General Secretariat of Civilian Disaster Prevention), Department of Mineral Fuels, Department of Industrial Works, Port Authority of Thailand, the CAT Telecom Public Company Limited, Tourism Authority of Thailand and other private sectors concerned. The Support Unit shall provide support on technical advice, equipment and facility, vehicles, manpower and others as deemed necessary for oil spill response upon a request.

5.2 RESPONSE PROCEDURES

5.2.1 Alerting System

Once the oil spill incident is sighted, a witness shall report to the government agencies concerned, as listed in Appendix H.

5.2.2 Report Receiving

Upon receiving the report of an oil spill, the receiving agency shall;

- Make inquiries for further details as outlined in the reporting form of Appendix H
- Notify the Marine Department to determine whether the Coordination Center shall be established

5.2.3 Action to be taken upon the incident report.

Action to be taken by the Coordination Center

- Reporting to the Committee on the Prevention and Combating of Oil Pollution
- Promoting public relations
- Notifying ships and people who may be affected
- Coordinating support for the Operation Unit
- Compiling information in relation to the operation

Action to be taken by the Command Center

- Directing, supervising and coordinating the response, as appropriate
- Reporting the progress of the operation to the Coordination Center periodically
- Coordinating the activities of the concerned agencies
- Evaluating the operation continuously and recommending the Coordination Center for additional support

Action to be taken by the Operation Unit

- Conducting the oil spill clean-up as assigned
- Reporting the operation result to the Command Center
- Reporting the progress of the operation to the Coordination Center periodically

Action to be taken by the Support Unit

The Support Unit shall supply personnel, expert, equipment, vehicles, provisions and others deemed necessary, upon a request by the Command Center or the Coordination Center

5.2.4 Collection and Disposal of Oily Debris

The Command Center shall coordinate with Provincial administration for collection of oily debris and coordinate with the Department of Industrial Works for its disposal.

5.2.5 Termination of Oil Spill Clean-up

The Command Center, after evaluating the situation and deciding that the desired level of clean-up has been achieved, shall inform the Coordination Center for approval of the termination of operation.

5.2.6 Evaluation

The Coordination Center shall submit to the Committee the summary and the evaluation of the operation including recommendations on necessary revisions to improve the effectiveness of the plan.

5.3 COORDINATION

Cooperation among agencies of both government and private sectors shall be made through coordination. Each agency shall then issue instructions to its own units.

Coordination of spill response may be categorized according to the spill size as follows.

Tier 1: Local Spill (small spill not exceeding 20 tons), which may occur from oil transfer activities at ports.

Responsibility for clean-up lies with the agency that causes the spill and /or agency involved. The Marine Department, Royal Thai Navy, Pollution Control Department must be notified of the incident at the first opportunity.

Tier 2: Country Spill (medium spill with a size range of 20 -1,000 tons), which may result from accidents such as subsea pipeline leak, vessels' collision.

Responsibility for clean-up requires cooperation from various national agencies, both government and private. The operation shall be conducted in accordance with the National Oil Spill Response Plan. If the clean-up is beyond capability of existing resources, international assistance may be requested.

Tier 3: International Spill (major spill exceeding 1,000 tons), which may be caused by a severe accident such as ship collides tanker, long distance subsea pipeline rupture and leak. International assistance is needed for spill response in this level.

6 APPENDIX A: ROLES, RESPONSIBILITIES AND ORGANIZATIONAL ASPECTS

As a concession license holder, company is responsible for;

- Safety of all personnel onboard facilities / fields operated by company.
- Operation of all facilities under direct control of company
- Having in place appropriate oil spill contingency arrangements for facilities / fields and all activities in concession areas
- Ensuring adequate resources including trained personnel, equipment and PPE for Tier 1 response are provided to facilities / fields.
- Ensuring all drilling contractors working for company have in place appropriate Emergency Bridging document covering oil spill response
- Immediate response to any oil spill associated with company facilities / fields including stop or minimize the spill, deployment of onsite spill response equipment and clean-up operation
- Ensuring appropriate internal and external notifications are undertaken in the event of a spill
- Coordination and mobilization of additional resources to support oil spill response and clean-up operations according to category of the spill
- Disposal of recovered oil following all oil spill incidents according to Thailand legislation.
- Provide support to Government authorities in the event of Tier 2 and Tier 3 spill according to the National Oil Spill Response Contingency Plan
- Liaison at all times with company oil spill response contractors
- Having appropriate third party liability, including pollution liability and insurance according to the Business Continuity Plan

The framework for crisis and emergency is based on a three-tier structure with distinctive roles, responsibilities and boundaries for the three levels which differentiate between tactical, operational and strategic responses.

- Tactical response: reactive, with a short time horizon and located relatively close to the scene of an adverse event.
- Operational response: partly reactive and partly proactive, with a medium-term time horizon and normally located remote from the scene of an adverse event.
- Strategic response: mainly proactive, with a longer-term time horizon and whose geographical location is close to the ultimate decision makers.

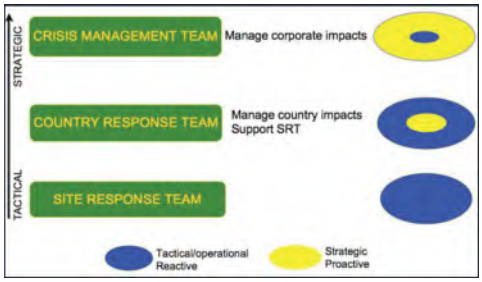


Figure D-1: Division of Responsibilities between Teams

1) Site Response Team (SRT)

Any oil spill incident shall be managed locally by facility /field Site Response Team, in conjunction with other specialized teams and/or local emergency services and government agencies. The oil spill SRT is required to be setup at operational sites in accordance with the Incident Commander System (ICS) to achieve maximum coordination across all parties delivering emergency control services.

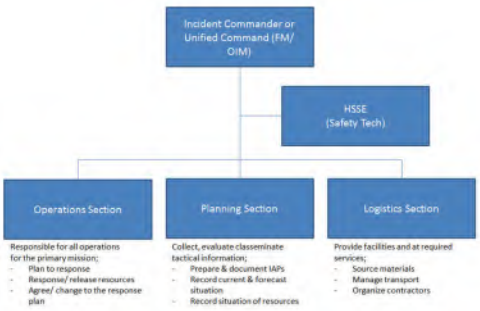


Figure D-2: SRT – Incident Commander System

2) Country Response Team (CRT)

Company CRT is responsible for managing the offsite impacts of an emergency, providing additional resources, pre-empting escalation, giving overall direction of the total response, managing the Country implications and communicating with Country stakeholders. The activation and management of CRT shall follow the Company ERP. The members of the CRT are as follows;

- Team Leader (TL),
- Emergency coordinator (EC),
- Site contact (SC),
- Logistics (LOG)
- QHSSE (QHSSE)
- Admin. Recorder (AR)
- Finance (FIN)
- Communications Manager (CM) fulfilled by GA
- Government Affairs Contact (GA)
- IT Representative (IT)
- Human Capital (HC)
- Reception (R)
- Key Contractor Representative (KCR) and other contractors as required
- Stakeholders

The Emergency Control Center (ECC) is located at company head office at Shinawatra Tower 3, 31st Floor, Viphavadi-Ransit Road, Chatuchak, and Bangkok, Thailand.

3) Crisis Management Team (CMT)

Whenever an adverse event has the potential to become, or has evolved into, a crisis impacting company the CMT shall be mobilized to support emergency response of CRT and SRT. The activation and management of CMT shall follow the company Crisis and Emergency Response standard.

The process involved in setting up & managing all emergencies from the first alert through to Response Stand-down shall follow Company Emergency Decision Flow Chart as shown below.

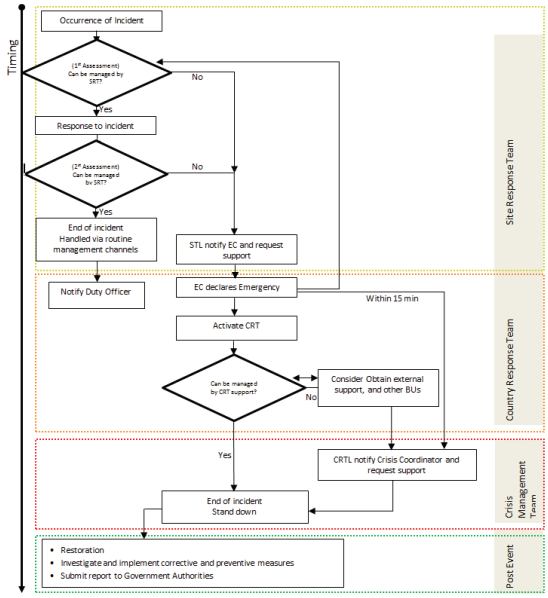


Figure D-3: Company Emergency Decision Flow Chart

4) Contractors

Contractor Emergency Response Plan shall be followed to manage all emergencies at the particular contractor locations. In case of an oil spill incident, the contractor is responsible for;

- Safety of all personnel onboard and within specified safety zone
- Immediate response to any oil spill including stop the leak source(s) or minimize the spill as soon as possible
- Alert and liaise with company Representative (as specified in the bridging document)
- Support the implementation of company OSRPs
- Communication and coordination with supply boats on the tactical responses
- Coordination and providing support to company oil spill response contractors at operational site
- Providing support to the Government authorities at an operational site level
- Clean up any spillage on the Rig and affected company facilities as a result of the spill

4.1 Supply Boat Contractors

Company has contracted with supply boat contractors to provide support to offshore operations. As needed, company will assign appropriate supply boat to support the oil spill response at facilities / fields. These boats are responsible for;

- Observation and detection of oil spill which may occur during operation
- Notification and reporting any oil spill to facilities / fields personnel according to Offshore OSRP
- Supporting spill assessment by conducting marine survey of a spill
- Transportation and storage of oil spill response equipment as requested by company
- Being part of the oil spill tactical response team to deploy equipment or spraying dispersant as per instruction by company
- Participation the training and exercise for the deployment of oil spill response equipment and usage of dispersants

4.2 Oil Spill Combat Team (Thailand) (OSCT)

- Oil Spill Combat Team (Thailand), OSCT is contracted by company to maintain the Tier 1 and Tier 2 oil spill response equipment at facilities / fields and contractor onshore base in Sattahip
- Upon request, Oil Spill Response Contractor will provide specialists, additional workforce and additional equipment which can be mobilized within 24 hours after receiving notification
- Cooperate with other oil spill response tactical teams i.e. OSRL, Government authorities, IESG, other oil companies who provide additional assistance, etc.
- Ensuring appropriate personnel are trained and exercised in equipment deployment and oil spill response in order to meet the requirements of an International Oil Spill Response Convention (OPRC), Thailand legislation, company Country OSRP and Offshore OSRP

4.3 Oil Spill Response Contractor (OSRL)

- OSRL is contracted by company to maintain the Tier 3 oil spill response capability.
- Upon request, OSRL will provide a trained technical advisor (free for the first 48 hours) to advise the Country Response Team (CRT) on matters of oil spill response.
- Upon request, mobilize oil spill response team and equipment from Singapore or other international bases to Thailand and to oil spill incident location. Company assistance is required for coordinating and getting Government approval of immigration, custom clearance and in country logistic.
- OSRL to ensure appropriate personnel are trained and exercised in their equipment deployment and oil spill response in order to meet the requirements of an International Oil Spill Response Convention (OPRC), Thailand legislation, Country OSRP and Offshore OSRP.

4.4 Oil Industrial Environment Safety Group (IESG)

Company has become a member of IESG since January 2010. In the event of oil spill higher than Tier 1, IESG has developed the IESG OSRP in order to provide coordination between the spiller, other IESG members, and the relevant Government authorities. IESG roles and responsibilities are;

- Upon request, activate IESG committee and act as the lead organization for the clean-up operation, with the ability to request assistance and resources from other IESG members. However the lead role in the response may be assumed by the Government in the event of National Oil Spill Contingency Plan is activated
- Maintain pool equipment for Tier 2 response stored at onshore warehouses in Sattahip and Songkhla
- Organize periodic IESG integrated exercise with tactical deployment

5) Government Authorities

5.1 Department of Mineral Fuels (DMF)

- To be notified in the event of oil spill incident within 24 hours.
- Provide assistance to company coordinating with other Government agencies.
- Act as a member of the Committee on the Prevention and Combating of Oil Pollution in the Tier 3 response or when the National Oil Spill Contingency Plan is activated.

5.2 Pollution Control Department (PCD)

- To be notified in the event of oil spill incident
- Assist in oil spill response and give permission for spraying dispersants (Approved list of dispersants are in Appendix E)
- Act as a member of the Committee on the Prevention and Combating of Oil Pollution in the Tier 3 response or when the National Oil Spill Contingency Plan is activated.

5.3 Marine Department (MD)

- To be notified in the event of oil spill incident.
- Upon request, provide additional oil spill response resources as appropriate.
- In Coastal water, act as the lead agency of the Committee on the Prevention and Combating of Oil Pollution in the Tier 3 response or when the National Oil Spill Contingency Plan is activated.
- Act as a secretary of the Committee on the Prevention and Combating of Oil Pollution
- In Coastal water, act as the lead commander of Operational Unit under the Committee on the Prevention and Combating of Oil Pollution.

5.4 Royal Thai Navy (RTN)

- To be notified in the event of oil spill incident
- Upon request, provide additional oil spill response resources as appropriate.
- Outside Coastal water, act as the lead agency of Operational Unit of the Committee on the Prevention and Combating of Oil Pollution in the Tier 3 response or when the National Oil Spill Contingency Plan is activated.
- Outside Coastal water, act as the lead commander of Operational Unit under the Committee on the Prevention and Combating of Oil Pollution.

6) Communication (Media)

Refer to Thailand Crisis & Emergency Response Communications Manual

7 APPENDIX B: OIL SPILL RESPONSE CHECKLIST

The following oil spill response checklist details the required response actions for key CRT members. Emergency duties and responsibilities of all CRT members are detailed in the Company Emergency Response Manual.

B – 1: Team Leader (TL)

Team Leader				
Key Responsibilities	Provide direction and guidance to all members of the CRT. Implement and, if necessary, establish Company policy and practice in respect of the conduct of the emergency response. The Team Leader will be a primary responsibility to act on behalf of the Company and Partners			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
Alert and Notifications	For any spill, immediately notified by EC or directly from STL			
	Report to Country Manager			
	Notify HSSE on Duty			
	Notify MC to report the relevant government authorities			
	Notify CMT if required			
Initial Assessment	To be informed via EC or directly by STL on the spill conditions, this includes location, amount of spill, capability on site, situation of initial response on site, possibility of escalation, etc.			
	Consult with HSSE duty for the need of further assessment by oil spill response contractors i.e. Oil Spill Response Contractor, IESG or OSRL In consultation with EC to decide the need of CRT activation			
	If the spill can be managed by SRT without requiring additional assistant, TL will keep monitoring the response without activation of CRT			
Set up ECC	Give order to EC to mobilize CRT team to ECC (this can be done via Call tree and Emergency SMS alert)			
	Decide to call in relevant Key contractors (Oil Spill Response Contractor, Drilling, etc.)			
Set Response Objectives / Strategies	Together with all CRT members, evaluate the situation and impact from the incident to set the CRT response objectives with prioritization (refer to objective and strategy guide)			
Planning and Development IAP	Lead the CRT to develop IAP following the selected strategies			
	Ensure IAP is socialized to SRT, CMT and other relevant parties e.g. government authorities, onshore supply base, relevant contractors, etc.			
Implement IAP and Response	Lead and instruct CRT and SRT for the implementation of response actions. Approve holding statement. Review press release and other public statement and submit to MOG for approval			

Emergency Coordinator (EC)				
Key Responsibilities	The EC will notify concerned personnel and set-up Emergency Command Centre. He/ She will also notify the contracted oil spill response companies, i.e. OSCT and/or OSR Limited, to assist on the implementation and actions on the spill. EC will coordinate with the STL on methodology to response the spill. EC has a secondary responsibility to act on behalf of the Company and Partners.			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
Periodic Assessment	Monitor and re-assess the situation and evaluate the effectiveness of oil spill response			
	Collect intelligence and ensure the team is always aware of the update situation			
	Consult with TL to adjust the IAP as necessary			
Stand Down	Assist the TL to notify all parties of the stand down			
	Develop the initial recovery plan for SRT			
	Ensure all records of response events are maintained Assist TL to write the TOR of the incident			

Team Leader				
Key Responsibilities	Provide direction and guidance to all members of the CRT. Implement and, if necessary, establish Company policy and practice in respect of the conduct of the emergency response. The Team Leader will be a primary responsibility to act on behalf of the Company and Partners			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
	Manage phone call from Key stakeholders (CMT, Partners, Government Authorities, etc.)			
	Manage and control flow of information (in and out)			
Periodic Assessment	Keep tracking of IAP implementation			
	Monitor and re-assess the situation and evaluate the effectiveness of response			
	If required, change and improve the IAP to enhance the response			
	If oil spill is escalated to an uncontrolled situation within Country capabilities, request CMT support			
Stand Down	Consider to stand down the CRT when oil spill incident is under control			
	Conduct team debriefing and ensure response evidence of CRT is kept for further investigation			
	Review the incident investigation TOR and submit to Country Manager			
	Hand over any ongoing issues including public communication, initial recovery plan, stakeholders' engagement, compensation plan, etc. to company leadership team			

B – 3: Site Contact (SC)

Site Contact (SC)				
Key Responsibilities	Establish single point communication. Determine extent of the emergency and ascertain the number of people involved Assist with the interpretation of the (site) technical needs Provide advice on the structural integrity of damaged installations			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
Alert and Notifications	N/A			
Initial Assessment	N/A			
Set up ECC	To be called in when CRT is activated			
	Assist the CRT to setup ECC			
	Once ECC is activated, become single point of communication with SRT			
	Check and ensure the communication with SRT is established			
Set Response Objectives / Strategies	Collect all incoming information and update to EC and TL key information;			
	Locations of spill,			
	Safety of personnel,			
	Type of oil and its characteristic,			
	Weather condition,			
	Spill size and volume estimation, Predicting spill movement,			
	Monitoring and tracking of spill movement			
	Communicate with SRT to get updated situation for the Team to setup response objectives and strategies			
Planning and Development IAP	Assist the team to develop the IAP			
Implement IAP and Response	Communicate the IAP to SRT			
	Communicate with SRT, the technical response advised by HSSE and specialist from oil spill response contractor(s)			
	Keep update with SRT on the progress of response and situation Interpret the technical information received from site and inform EC and TL			
Periodic Assessment	Ensure the up to date situation at site is used for an assessment			
Stand Down	Communicate with SRT to stand down emergency and initial recovery plan			

B – 2: Emergency Coordinator (EC)

Emergency Coordinator (EC)				
Key Responsibilities	The EC will notify concerned personnel and set-up Emergency Command Centre. He/ She will also notify the contracted oil spill response companies, i.e. OSCT and/or OSR Limited, to assist on the implementation and actions on the spill. EC will coordinate with the STL on methodology to response the spill. EC has a secondary responsibility to act on behalf of the Company and Partners.			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
Alert and Notifications	For any spill, immediately notified by SRT as a first point of contact Notify TL of an incident			
Initial Assessment	To be informed directly by STL on the spill conditions, this includes location, amount of spill, capability on site, situation of initial response on site, possibility of escalation, etc. Consult with HSSE duty for the need of further assessment by oil spill response contractors i.e. Oil Spill Response Contractor OSRL			
	In consultation with TL to decide the need of CRT activation If the spill can be managed by SRT without requiring additional assistant, EC will keep monitoring the response and provide update to TL without activation of CRT			
Set up ECC	Mobilize the CRT team to ECC via Call tree and SMS alert			
	Organize the setup of ECC			
	As appropriate, call in Key Contractors and other stakeholders involved in the incident (may require Oil Spill Response Contractor representative)			
Set Response Objectives / Strategies	Assist TL to develop response objectives and strategies			
Planning and Development IAP	Facilitate the development of IAP with the team and get approval from TL			
	Assist TL to socialize the IAP to relevant parties			
Implement IAP and Response	Assist TL to coordinate the implementation of IAP with relevant response parties			
	Assist TL to manage phone call from Key stakeholders (CMT, Partners, Government Authorities, etc.)			
	Manage and control flow of information (in and out)			
	Keep tracking of IAP implementation			

B – 4: Logistic (LOG)

Logistics (LOG)				
Key Responsibilities	Will provide information on available support and response vessels as well as transportation availability for evacuation, if required. Co-ordinate Helicopter and Boat movements. Prepare and mobilize equipment, materials and personnel as required. Ascertain the status and location of all possible air / sea rescue. Coordinate Search and Rescue efforts with authorities, if required. Update meteorological data from weather services provider. Pass information to the administration/recorder			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
Alert and Notifications	N/A			
Initial Assessment	At this stage, LOG may be contacted by EC or TL for the following supports; If aerial surveillance is required, coordinate the mobilization of Helicopter			
	If detailed assessment by oil spill contractor is required, updated the meteorological data from weather services provider			
Set up ECC	Assist the CRT to setup ECC			
	Update all available logistic resources			
Set Response Objectives / Strategies	Propose the response strategies on logistic aspect			
Planning and Development IAP	Planning the logistic support for the mobilization of oil spill resources including; OSCT Thailand			
	IESG			
	OSRL (Singapore to Thailand and to Site)			
	Others			
	Provide the team with updated available resources			
	Manage means of communication among all response parties (list of emergency contact of vessels, Rig, Platforms, etc.)			
Implement IAP and Response	Manage and coordinate the mobilization of resources with Contractors and others (marine, land and air transport)			
	If OSRL to be mobilized, coordinate with MC to acquire government approval for the logistic of OSRL as soon as possible (i.e. immigration and custom clearance)			

B – 5: HSSE

HSSE				
Key Responsibilities	Will provide information on the spill, MSDS and JSA of Mechanical Equipment planned to undertake the spill operations. He/ She will also provide an advice on Evacuation Plan as well as taking the role of Incident Command Secretary to record all events concerned the response operations. She/he will also keep track on the financial aspects due to response operations			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
Alert and Notifications	In case of minor spill, to be notified by STL as soon as practicable. HSSE must immediately report to HSSE Manager of an incident			
	In case of major spill, to be notified by EC			
Initial Assessment	Advise SRT on the oil spill assessment			
	Request oil spill response contractor(s) to conduct detailed assessment if required			
	Assessment of environmental impact (actual and potential)			
	Advise EC and TL on the assessment result			
Set up ECC	Assist the CRT to setup ECC			
	Ensure all necessary documents are available in ECC including; Company ERP, OSRPs			
	Contractor's Bridging document, ERP and OSRP			
	EIA report			
	MSDS database			
	Etc. Call in the oil spill response contractors as required			
Set Response Objectives / Strategies	Provide HSSE considerations for the development of response objectives and strategies (consultation with oil spill response contractors)			
Planning and Development IAP	Assist EC to facilitate the development of IAP			
	As directed by TL, communicate IAP with oil spill response contractors and others (IESG, Government authorities, etc.)			
Implement IAP and Response	In consultation with Oil spill response contractors, advise EC and TL on the strategy and tactical response			
	Advise SRT on the tactical response			
	Coordinate and arrange with LOG the supply of HSSE equipment i.e. PPE, Waste skip, etc.			

Logistics (LOG)				
Key Responsibilities	Will provide information on available support and response vessels as well as transportation availability for evacuation, if required. Co-ordinate Helicopter and Boat movements. Prepare and mobilize equipment, materials and personnel as required. Ascertain the status and location of all possible air / sea rescue. Coordinate Search and Rescue efforts with authorities, if required. Update meteorological data from weather services provider. Pass information to the administration/recorder			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
Periodic Assessment	Assess the effectiveness and capability of logistic to support the mobilization of resources			
Stand Down	Communicate with logistic contractors to stand down			
	Coordinate with logistic contractors and arrange de-mobilization of resources			

HSSE				
Key Responsibilities	Will provide information on the spill, MSDS and JSA of Mechanical Equipment planned to undertake the spill operations. He/ She will also provide an advice on Evacuation Plan as well as taking the role of Incident Command Secretary to record all events concerned the response operations. She/he will also keep track on the financial aspects due to response operations			
Reports to:				
Phase	**Action**	**Time/Date**	**Tool**	**Status**
	Coordinate the mobilization of oil spill contractor's resources			
	As directed by TL, assist MC to communicate with the Government authorities			
	Update the spill situation on the map posted in ECC			
Periodic Assessment	In consultation with Oil spill response contractors, assess the effectiveness of response and provide advice to EC and TL			
Stand Down	Advise EC and TL to make decision to stand down			
	Assist EC and TL to develop initial recovery plan and incident investigation TOR			
	Ensure all evidence is maintained properly for further investigation			
	Work with HSSE Manager and team to prepare environmental monitoring and clean-up plan as appropriate			

B – 8 : Key Contractor Representative (KCR)

Key Contractor Representative (KCR)				
Key Responsibilities	Attends the ECC on the invitation of the EC. Provides assistance and liaison within the CRT as required. Coordinates any media release through their contractor staff			
Reports to:				
Phase	Action	Time/Date	Tool	Status
Alert and Notifications	N/A			
Initial Assessment	N/A			
Set up ECC	To be notified by CRT			
	IF required, mobilize to ECC			
	Become a coordinator between CRT and Contractor's Emergency response team / head office			
Set Response Objectives / Strategies	Communicate the response objectives and strategies with Contractor Emergency response team / head office			
Planning and Development IAP	Provide support to the development of IAP			
Implement IAP and Response	Coordinate with contractor management to provide support to the implementation of IAP Coordinate and support to CRT members as required			

B – 6: Communication Manager

Communications Manager				
Key Responsibilities	Keep CRT members updated. Ensure initial "media readiness" communicated to reception, security/building management, employees, CRT. Leader of Communications support team. Logging of all Communication activities. Guidance to CRT on communication strategy Responsible for developing Communication strategy plan. Generate all stakeholder messaging/statements to: Media External stakeholders Employees Secure approval for statements from Legal, Operations Management, other Stakeholders (e.g., government). Liaising with those directly responsible for stakeholder relationships to ensure consistency of messages Next of kin – HR Authorities – Government Affairs, HSE NGO/communities Establish communications network with primary stakeholders. Liaison with MOG/company/Corporate/Communications. Handling media enquiries. Preparing and advice on any media encounters including interview, press briefings. Manage separate media support teams			
Reports to:				
Phase	Action	Time/Date	Tool	Status
All phases	Manage all communications and media as per key responsibilities			

Key Contractor Representative (KCR)				
Key Responsibilities	Attends the ECC on the invitation of the EC. Provides assistance and liaison within the CRT as required. Coordinates any media release through their contractor staff			
Reports to:				
Phase	Action	Time/Date	Tool	Status
Periodic Assessment	Provide update response actions / supports on the contractor's side			
Stand Down	Notify contractor management of the stand down			

B – 7: Government and Media Contact (MC)

Government Affairs (GA)				
Key Responsibilities	Will notify concerned government authorities - i.e. the Marine Environment Section of the Habour Department, the Royal Thai Navy, the Provincial Administration (including local Port Authorities and provincial government), Department of Mineral Fuels (DMF), the Pollution Control Department (PCD), the Fisheries Department - on the event and the plan to response. In addition, he/she will take initiative action to control the news given to Media			
Reports to:				
Phase	Action	Time/Date	Tool	Status
Alert/ Notifications	N/A			
Initial Assessment	As directed by TL, notify concerned government authorities as per regulatory requirement (see 4.1.3)			
Set up ECC	Assist the setup of ECC			
	Become single point of contact for government authorities			
Set Response Objectives / Strategies	Advise EC and TL on the requirement of government authorities			
Planning and Development IAP	As directed by TL, communicate the IAP to government authorities			
Implement IAP and Response	As directed by TL, Coordinate between government authorities and CRT on the implementation of IAP			
	Communicate approved statement and press release to government authorities			
Periodic Assessment	As directed by TL, provide update to government authorities			
Stand Down	Notify government authorities of the stand down			
	Submit the approved report to government authorities			
	Coordinate with the government authority to setup the compensation plan			

8 APPENDIX C : OIL SPILL RESPONSE METHODS

General Spill Response Considerations

The response techniques, or combination of techniques employed in a spill are dependent upon the product spilled, quantity, location, response time, weather conditions, responder capability, and availability of response equipment. Among the options available are:

- Mechanical cleanup methods
- Dispersants
- Natural removal

1. Mechanical Cleanup Methods

Mechanical oil spill response uses physical barriers (boom) and mechanical devices (Skimmers) to redirect and remove oil from the surface of the water.

- Oil Containment Boom: Spilled oil floating on the water's surface is affected by wind, currents and gravity, all of which cause it to spread. Boom is used for concentrating oil so that it is thick enough to be skimmed, for keeping oil out of sensitive areas, or for diverting oil into collection areas. The success of booming as a strategy is dependent on currents, wind, and waves. Currents can draw the oil under the boom; waves may cause oil to splash over; wind and currents may cause the boom to sink or plane; and currents or debris may damage the boom.
- Skimmers: Skimmers remove oil from the water's surface and are typically used with boom that concentrate the oil to make it thick enough to be skimmed efficiently. The effectiveness of the skimmer is determined by how quickly it can collect the oil, and how much water is mixed in with it. The oil collected by the skimmer is stored in a containment tank.

Advantages

- Physically removes oil from the environment
- Allows recycling or proper disposal of recovered oil
- Minimizes direct environmental impacts in open water areas

Disadvantages

- Limitations of mechanical recovery exist. Wind, waves and currents may allow only a fraction of the spilled oil to be contained and recovered
- The limitations of mechanical protection and recovery methods must be fully considered. Booms may fail and skimmers may clog

2. Dispersants

Dispersants are specially designed oil spill products that are composed of detergent-like surfactants in low toxicity solvents. Dispersants do not actually remove oil from the water. Instead, they break the oil slick into small particles, which then disperse into the water where they are further broken down by natural processes. Dispersion of oil into the water column occurs naturally in untreated spills; dispersants just speed up the process. Dispersants also prevent the oil droplets from coming together again and forming another surface slick. Dispersants also reduce the ability of the oil to attach to birds and other animals, shoreline rocks, and vegetation. Fire and explosion hazards are lessened because dispersants reduce evaporation of volatile oil components. The effects of the rapidly diluted dispersed oil must be weighed against the effects of that oil if it were allowed to impact wildlife populations or the shoreline.

Dispersants may be applied to oil from airplanes, helicopters, or vessels. Dispersant spray systems are designed to provide the correct droplet size and dosage, as both are important factors in effective oil dispersal. The volume of dispersant applied is a fraction of the volume of oil treated, with a typical dispersant to oil ratio of 1:20.

When the oil is treated with dispersants, it disperses in the mixing zone of the water column (approximately the upper 10 m). The dispersed oil will be spread horizontally by tides and currents, rapidly decreasing the concentration of the oil. Many impacted water column populations will rapidly recover from the dispersed oil exposure because of their mobility and/or fecundity. If these impacts are expected to be short term, these organisms are given a lower priority than bird and mammal populations and sensitive shoreline habitats, which when oiled recover quite slowly. Typically, dispersant use is reserved for deeper waters to ensure sufficient dilution of the oil and to prevent impacts on bottom-dwelling organisms. There may be cases where use in shallower environments can be justified to minimize impact to highly sensitive areas that are difficult to otherwise protect.

Advantages

- Reduced impact of surface oil on shorelines, sensitive habitats, birds, mammals, and other wildlife
- Rapid treatment of large areas
- Reduced oil storage and disposal problems
- Accelerated natural degradation processes
- Use in high seas and currents is feasible

Disadvantages

- Increased oil impacts on organisms in the upper 30 feet of water column.
- Time frame for effective use may be short
- Application equipment may be unavailable

3. Natural Removal

To do nothing may sometimes be appropriate. No action is taken except for monitoring the movement of the spilled oil (i.e., Light hydrocarbons are volatile and highly flammable. Recovery may not be attempted because of fire hazards).

9 APPENDIX D: SHALLOW WATER/ SHORELINE CLEANUP PROCEDURES

1. Shallow Water

- Open Sea Boom: In areas of shallow water, it may be possible to collect or corral the oil with ocean boom and take it to deeper water or low-current areas that have better skimmer access and higher recovery rates.
- Bottom-seal Boom: This boom is designed for deployment in very shallow water where traditional boom may foul on the bottom during low water levels. This boom's special features allow it to conform to the substrate, so that it can continue to act as a barrier to oil during changing tides or lower water levels. Bottom seal boom uses ballast tubes that are filled with water and actually lay on the bottom to provide a seal against oil passage. Shallow water boom is effective in higher-current areas because the shallow skirt minimizes the drag in the current.
- Sorbent Boom: Sorbent boom is designed primarily to absorb oil although it can act as a protective measure against thin oil sheens under very quiet water conditions. Snare boom (pom-poms tied onto a line) is effective as a sorbent of more viscous oils under higher wave and current conditions. In any current, sorbent boom can contain only the thinnest sheens. When used with conventional booms, sorbents can be placed outside of the boom to pick up small amounts of escaping oil, or inside the boom to absorb small amounts of contained oil.
- Inland Boom: Inland boom is the smallest conventional boom and is designed for deployment in very shallow water; as the draft is only 6-12 inches. It is normally deployed in more protected waters where there is little or no wave action.

2. Shoreline Cleanup

Oil types vary greatly and have a major influence on the degree of impact, ease of cleanup and persistence of the contamination. Lighter oils (diesel and condensate) will evaporate quickly but tend to be more toxic and penetrate the shoreline sediments to a greater degree. Heavier crude oils are less toxic to shoreline ecosystems and do not penetrate finer sediments, but they are very persistent, difficult to clean and may smother shoreline organisms.

This section provides shoreline cleanup matrices for use in the selection process of a particular cleanup method(s). Four matrices have been constructed for the major categories of oil (very light, light, medium, and heavy) and are shown in the following tables. Each matrix can be used as a cleanup advisory tool. The matrix is only a general guide for cleanup method selection and must be used in conjunction with field observation, scientific advice, and practical experience. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques.

Classification of Oil types

Oil can be divided into five general types with the following properties:	
GROUP 1 - Very Light Refined Products (e.g., gasoline, naphtha, solvents, Avgas 80/100) 1. Very volatile and highly flammable (flash point near 0 degrees - 73 degrees F/40 degrees C). 2. High evaporation rates; complete removal by evaporation is likely. 3. Low viscosity; spread rapidly to a thin sheen. 4. Specific gravity less than 0.80; floats on water. 5. High acute toxicity to biota; can cause localized, severe impacts to water-column and intertidal resources. 6. Will penetrate substrate, causing subsurface contamination. 7. Recovery usually not attempted because of fire hazards. 8. Exclusion booming of sensitive areas must be completed rapidly.	**GROUP 2 - Diesel-Like Products and Light Crude Oils** (e.g. no. 2 fuel oil, jet fuels, kerosene, marine diesel, West Texas crude, Alberta crude) 1. Moderately volatile (flash point varies from 100 to 125 degrees F/40- 65 degrees C). 2. Light fractions (up to two-thirds of the spill volume) will evaporate. 3. Low to moderate viscosity; spread rapidly into thin slicks. 4. Specific gravity of 0.80-0.85, API gravity of 35-45, so slicks will float on the water surface except under turbulent mixing conditions. 5. Moderate to high acute toxicity to biota; product-specific toxicity related to type and concentration of aromatic compounds in the water-soluble fraction. 6. Will coat and penetrate substrate; some subsurface contamination. 7. Stranded oil tends to smother organisms. 8. Containment/recovery from the water is most effective early in the response.
GROUP 3 - Medium Oils and Intermediate Products (e.g., North Slope crude, South Louisiana crude, intermediate fuel oils, lube oil) 1. Moderately volatile (flash point higher than 125 degrees F/=52 degrees C). 2. Up to one-third will evaporate. 3. Moderate to high viscosity. 4. Specific gravity of 0.85-0.95; API gravity of 17.5-35. 5. Variable acute toxicity, depending on amount of light fraction. 6. Can form stable emulsions. 7. Will coat and penetrate substrate; heavy subsurface contamination likely. 8. Stranded oil tends to smother organisms. 9. Recovery from the water and shoreline cleanup is most effective early in the response.	**GROUP 4 - Heavy Crude Oils and Residual Products** (e.g., Venezuela crude, San Joaquin Valley crude, Bunker C, no. 6 fuel oil) 1. Slightly volatile (flash point grater than 150 degrees F/65 degrees C). 2. Little product loss by evaporation (usually less than 10-15 percent). 3. Very viscous to semi-solid; may become less viscous when warmed in sunlight. 4. Specific gravity of 0.95-1.00; API gravity of 10-17.5; so slicks will float initially and sink only after weathering or incorporating sediment. 5. Low acute toxicity relative to other oil types. 6. Form stable emulsions. 7. Little penetration of substrate likely. 8. Stranded oil tends to smother organisms. 9. Recovery from the water and shoreline cleanup difficult during all stages of response.
GROUP 5 - Very Heavy Residual Products 1. Very similar to all properties of Group 4 oils, except that the specific gravity of the oil is greater than 1.0 (API gravity less than 10). Thus, the oil has a greater potential to sink when spilled.	

Selection of Method

Selection of a specific cleanup method to be used is based upon the degree of oil contamination, shoreline types, and the presence of sensitive resources. Extremely sensitive areas are limited to manual cleanup methods or natural remediation. It is important to note that the primary goal of the cleanup is the removal of oil from the shoreline with no further injury or destruction to the environment. The three codes used in the matrices are defined as follows:

A (ADVISED): Method which best achieves the goal of minimizing destruction or injury to the environment.

P (POSSIBLE): Viable and possibly useful but may result in limited adverse effects to the environment.

SHADED AREA: Do not use this method.

SHORELINE CLEANUP MATRIX Very Light Oil	SHORELINE TYPES											
	Coastal Structures	Bluffs	Fine Sand Beach	Coarse Sand Beach	Shell Beach	Perched Sand Beach	Perched Shell Beach	Sandy Tidal Flat	Muddy Tidal Flat	Forested Swamp	Fresh Marsh	Salt Marsh
CLEANUP METHOD	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
No Action	A	A	A	A	A	A	A	A	A	A	A	A
Manual Debris Removal	A	A	A	A	P	P	P	P	P	P	P	P
Manual Sediment Removal		P	P	P	P	P	P	P				
Manual Sorbent Application	A	P	P	P	P							
Manual Scraping		P	P	P		P		P				
Manual Vegetation Cutting												
Motor Grader/Elevating Scraper		P	P	P	P							
Elevating Scraper		P	P	P	P							
Motor Grader/Front-End Loader		P	P	P	P							
Front-End Loader: Rubber-Tired or –Tracked		P	P	P	P							
Bulldozer: Rubber-Tired Front-End Loader		P	P	P	P							
Backhoe		P	P	P	P							
Beach Cleaner		P	P	P	P							
Dragline/Clamshell		P	P	P	P							
Cold Water Deluge Flooding	A	P	P	P	P	P	P	P	P	A	A	A
Low Pressure Cold Water Washing	A		P	P	P					A	A	A
High Pressure Cold Water Washing	A											
Low Pressure Hot Water Washing	A		P	P	P							
High Pressure Hot Water Washing	A											
Steam Cleaning	A											
Sand Blasting	A											
Vacuum	A	P	P	P	P	P	P	P	P	P	P	P
Trenching/Vacuum		P	P	P	P			P				
Sediment Removal, Cleaning, & Replacement												
Push Contaminated Substrate into Surf												
Pavement Breakup												
Disc into Substrate												
Burning												
Chemical Oil Stabilization												
Chemical Protection of Beaches												
Chemical Cleaning of Beaches												
Nutrient Enrichment	P	P	P	P	P	P	P	P	P	P	P	P
Bacterial Enrichment	P	P	P	P	P	P	P	P	P	P	P	P

Table D-1: Shore line clean up matrix for very light oil

SHORELINE CLEANUP MATRIX Light Oil	SHORELINE TYPES											
	Coastal Structures	Bluffs	Fine Sand Beach	Coarse Sand Beach	Shell Beach	Perched Sand Beach	Perched Shell Beach	Sandy Tidal Flat	Muddy Tidal Flat	Forested Swamp	Fresh Marsh	Salt Marsh
CLEANUP METHOD	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
No Action	P	P	P	P	P	P	P	P	P	P	P	P
Manual Debris Removal	A	A	A	A	P	P	P	P	P	P	P	P
Manual Sediment Removal		P	P	P	P	P	P	P				
Manual Sorbent Application	A	P	A	A	P	P	P	P	P	P	P	P
Manual Scraping	A	P	A	A	P	P	P	P	P			
Manual Vegetation Cutting											P	P
Motor Grader/Elevating Scraper		P	A	A	P	P	P	P				
Elevating Scraper		P	A	A	P	P	P	P				
Motor Grader/Front-End Loader		P	A	A	P	P	P	P				
Front-End Loader: Rubber-Tired or –Tracked		P	A	A	P	P	P	P				
Bulldozer: Rubber-Tired Front-End Loader		P	A	A	P	P	P	P				
Backhoe		P	A	A	P	P	P	P				
Beach Cleaner		P	A	A	P	P	P	P				
Dragline/Clamshell		P	A	A	P	P	P	P				
Cold Water Deluge Flooding	A	P	A	A	P	P	P	P		A	A	A
Low Pressure Cold Water Washing	A	A	A	A	P	P	P	P		P	P	P
High Pressure Cold Water Washing	A			P				P		P	P	P
Low Pressure Hot Water Washing	A	P	P	P	P	P	P	P				
High Pressure Hot Water Washing	A			P				P				
Steam Cleaning	A											
Sand Blasting	A											
Vacuum	A	P	P	P	P	P	P	P	P	P	P	P
Trenching/Vacuum		P	P	P	P			P				
Sediment Removal, Cleaning, & Replacement			P	P								
Push Contaminated Substrate into Surf			P	P	P							
Pavement Breakup			P	P	P							
Disc into Substrate			P	P								
Burning												
Chemical Oil Stabilization												
Chemical Protection of Beaches												
Chemical Cleaning of Beaches												
Nutrient Enrichment	P	P	P	P	P	P	P	P	P	P	P	P
Bacterial Enrichment	P	P	P	P	P	P	P	P	P	P	P	P

Table D-2 Shore line clean up matrix for light oil

SHORELINE CLEANUP MATRIX Medium Oil	SHORELINE TYPES											
	Coastal Structures	Bluffs	Fine Sand Beach	Coarse Sand Beach	Shell Beach	Perched Sand Beach	Perched Shell Beach	Sandy Tidal Flat	Muddy Tidal Flat	Forested Swamp	Fresh Marsh	Salt Marsh
CLEANUP METHOD	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
No Action	P	P	P	P	P	P	P	P	P	P	P	P
Manual Debris Removal	A	A	A	A	P	P	P	P	P	P	P	P
Manual Sediment Removal		P	P	P	P	P	P	P				
Manual Sorbent Application	A	P	A	A	P	P	P	P	P	A	A	A
Manual Scraping	A	P	A	A	P	P	P	P	P			
Manual Vegetation Cutting										P	P	P
Motor Grader/Elevating Scraper		P	A	A	P	P	P	P				
Elevating Scraper		P	A	A	P	P	P	P				
Motor Grader/Front-End Loader		P	A	A	P	P	P	P				
Front-End Loader: Rubber-Tired or –Tracked		P	A	A	P	P	P	P				
Bulldozer: Rubber-Tired Front-End Loader		P	A	A	P	P	P	P				
Backhoe		P	A	A	P	P	P	P				
Beach Cleaner		P	A	A	P	P	P	P				
Dragline/Clamshell		P	A	A	P	P	P	P				
Cold Water Deluge Flooding	A	A	A	A	P	P	P	P	P	A	A	A
Low Pressure Cold Water Washing	A	P	P	P	P	P	P	P		P	P	P
High Pressure Cold Water Washing	A			P				P				
Low Pressure Hot Water Washing	A	P	P	P	P	P	P	P				
High Pressure Hot Water Washing	A			P				P				
Steam Cleaning	A											
Sand Blasting	A											
Vacuum	A	P	A	A	P	P	P	P	P	P	P	P
Trenching/Vacuum		P	P	A	P			P				
Sediment Removal, Cleaning, & Replacement			P	P								
Push Contaminated Substrate into Surf			P	P	P							
Pavement Breakup			P	P	P							
Disc into Substrate			P	P								
Burning	P	P	P	P	P						P	P
Chemical Oil Stabilization	P	P	P	P	P	P	P	P				
Chemical Protection of Beaches	A	P	P	P	P	P	P			P	P	P
Chemical Cleaning of Beaches	A	P	P	P	P	P	P			P	P	P
Nutrient Enrichment	P	P	P	P	P	P	P	P	P	P	P	P
Bacterial Enrichment	P	P	P	P	P	P	P	P	P	P	P	P

Table D-3 Shore line clean up matrix for medium oil

SHORELINE CLEANUP MATRIX Heavy Oil	SHORELINE TYPES											
	Coastal Structures	Bluffs	Fine Sand Beach	Coarse Sand Beach	Shell Beach	Perched Sand Beach	Perched Shell Beach	Sandy Tidal Flat	Muddy Tidal Flat	Forested Swamp	Fresh Marsh	Salt Marsh
CLEANUP METHOD	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
No Action	P	P	P	P	P	P	P	P	P	P	P	P
Manual Debris Removal	A	A	A	A	P	P	P	P	P	P	P	P
Manual Sediment Removal		P	P	P	P	P	P	P				
Manual Sorbent Application	A	P	A	A	P	P	P	P	P	A	A	A
Manual Scraping	A	P	A	A	P	P	P	P	P			
Manual Vegetation Cutting										P	P	P
Motor Grader/Elevating Scraper		P	A	A	P	P	P	P				
Elevating Scraper		P	A	A	P	P	P	P				
Motor Grader/Front-End Loader		P	A	A	P	P	P	P				
Front-End Loader: Rubber-Tired or –Tracked		P	A	A	P	P	P	P				
Bulldozer: Rubber-Tired Front-End Loader		P	A	A	P	P	P	P				
Backhoe		P	A	A	P	P	P	P				
Beach Cleaner		P	A	A	P	P	P	P				
Dragline/Clamshell		P	A	A	P	P	P	P				
Cold Water Deluge Flooding	A	A	A	A	P	P	P	P	P	A	A	A
Low Pressure Cold Water Washing	A	P	P	P	P	P	P	P		P	P	P
High Pressure Cold Water Washing	A			P				P				
Low Pressure Hot Water Washing	A	P	P	P	P	P	P	P				
High Pressure Hot Water Washing	A			P				P				
Steam Cleaning	A											
Sand Blasting	A											
Vacuum	A	P	A	A	P	P	P	P	P	P	P	P
Trenching/Vacuum		P	P	A	P			P				
Sediment Removal, Cleaning, & Replacement			P	P								
Push Contaminated Substrate into Surf			P	P	P							
Pavement Breakup			P	P	P							
Disc into Substrate			P	P								
Burning	P	P	P	P	P						P	P
Chemical Oil Stabilization	P	P	P	P	P	P	P	P				
Chemical Protection of Beaches	A	P	P	P	P	P	P			P	P	P
Chemical Cleaning of Beaches	A	P	P	P	P	P	P			P	P	P
Nutrient Enrichment	P	P	P	P	P	P	P	P	P	P	P	P
Bacterial Enrichment	P	P	P	P	P	P	P	P	P	P	P	P

Table D-4 Shore line clean up matrix for heavy oil

10 APPENDIX E: APPROVED LIST OF DISPERSANTS AND MSDS

1. Approved List of Dispersant by PCD Thailand (2013)

No.	Product Name	Approval area	Reference
1	Agma DR 379	S B RS	MAFF
2	Agma OSD 569	S B RS	MAFF
3	Ardrox 6120	*	AMSA
4	BIODISPERS (FORMERLY PETROBIODISPERS)	*	U.S.EPA
5	BP-AB	*	AMSA
6	Caflon OSD	S B RS	MAFF
7	CHEMAX 307 oil spill dispersant	*	TISI
8	Chimec Chimsperse 2000 SG	*	MPA Singapore
9	Compound W-2096	S B RS	MAFF
10	Corexit 9500	*	AMSA
11	Corexit 9550	*	AMSA
12	Corexit® EC9500A	*	U.S. EPA
13	COREXIT® EC9527A (Formerly Corexit 9527)	*	U.S.EPA, AMSA
14	Dasic Slickgone EW	S B RS	MAFF
15	Dasic Slickgone LTSW	*	AMSA
16	Dasic Slickgone NS	S B RS(2), *	MAFF(2),AMSA*
17	DISPERSIT SPC 1000TM	*	U.S. EPA
18	Emulsol LW	S B RS	MAFF
19	Enersperse1040	S B RS	MAFF
20	Finasol OSR 51	S B RS	MAFF
21	Finasol OSR 52	S B RS(2), *	MAFF(2), US.EPA*
22	Gard Slicksol	S B RS	MAFF
23	JD-109	*	U.S. EPA
24	JD-2000TM	*	U.S.EPA
25	MARE CLEAN 200	*	U.S. EPA
26	Maxi-Clean 2	S B RS	MAFF
27	NEOS AB 3000	*	U.S. EPA
28	NOKOMIS 3-F4	*	U.S.EPA
29	NU CRU	S B RS	MAFF
30	OD 4000	S B RS	MAFF

31	OSD/LT Oil Spill Dispersant	S B RS	MAFF
32	OSR 4000	S B RS	MAFF
33	Radiagreen OSD	S B RS	MAFF
34	SAF-RON GOLD (a/k/a SF-GOLD DISPERSANT)	*	U.S. EPA
35	SEA BRAT # 4	*	U.S. EPA
36	Seacare Ecosperse	S B RS	MAFF
37	Seacare OSD	S B RS	MAFF
38	Shell VDC	*	AMSA
39	Shell VDC+	*	AMSA
40	Super-dispersant 25	S B RS	MAFF
41	Tergo R-40	*	AMSA
42	Veclean Oil Dispersant	S B RS	MAFF
43	Zl-400 (a/k/a Zl-400 OIL SPILL DISPERSANT)	*	U.S. EPA

Legend: S=sea B=beach RS=stone beach *=unspecified.
Note - information subject to change monthly without prior notice

2. Material Safety Data Sheet (MSDS)

COREXIT 9500

	MSDS: TRADE NAME - COREXIT 9500			
SECTION 1	**CHEMICAL PRODUCT IDENTIFICATION**			
Description	A blend of oxyalkylate polymers organic sulfonic acid salt			
NFPA 704M/HMIS RATING				
1/1 Health	1/1 Flammability	0/0 Reactivity	0 Other	
0 = Insignificant	1 = Slight	2 = Moderate	3 = High	4 = Extreme
SECTION 2	**COMPOSITION/INGREDIENT INFORMATION**			
Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 15 for the nature of the hazard(s).				
INGREDIENT(S)	**CAS #**	**APPROXIMATE %**		
Hydrotreated Light Distillate	64742-47-8	20-40		
SECTION 3	HAZARD IDENTIFICATION			
EMERGENCY OVERVIEW:				
CAUTION! May cause irritation to skin and eyes. Avoid contact with skin, eyes, and clothing. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally. Empty containers may contain residual product. Do not reuse container unless properly reconditioned.				
Primary Route(s) of Exposure	Eye, Skin, Inhalation			
Eye Contact	Can cause mild, short-lasting irritation.			
Skin Contact	May cause irritation with prolonged contact.			
SYMPTOMS OF EXPOSURE				
Acute	Inhalation of high concentrations of hydrotreated light distillate can cause nausea, dizziness, vomiting, stupor, or unconsciousness.			
Chronic	Prolonged skin contact with hydrotreated light distillate can cause dry skin and defatting resulting in irritation and dermatitis.			
Aggravation of Existing Conditions	A review of available data does not identify any worsening of existing conditions.			
SECTION 4	**FIRST AID INFORMATION**			
Eyes	Flush with water for 15 minutes. Call a physician.			
Skin	Wash thoroughly with soap and rinse with water. Call a physician.			
Ingestion	Do not induce vomiting. Give water. Call a physician.			
Inhalation	Remove to fresh air. Treat symptoms. Call a physician.			
Note to Physician	Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.			
CAUTION	If unconscious, having trouble breathing, or in convulsions, do not induce vomiting or give water.			
SECTION 5	**FIRE FIGHTING MEASURES**			
Flash Point	210 Degrees F (PMCC) ASTM D-93			
Extinguishing Media	Based on the NFPA guide, use dry chemical, foam, carbon dioxide, or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.			
Unusual Fire and Explosion Hazard	May evolve SOx under fire conditions.			
SECTION 6	**ACCIDENTAL RELEASE MEASURES**			
SPILL CONTROL AND RECOVERY				
Small Liquid Spills	Contain with absorbent material such as clay, soil, or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 15.			
Large Liquid Spills	Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 15.			
Large Indoor Spills	Evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 8.			

SECTION 7	**HANDLING AND STORAGE**	
Storage	Keep container closed when not in use.	
SECTION 8	EXPOSURE CONTROLS/PERSONAL PROTECTION	
Respiratory Protection	Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists are generated, use either a chemical cartridge respirator with a dust/mist pre-filter or supplied air. For large spills, entry into large tanks, vessels, or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended	
Ventilation	General ventilation is recommended.	
Protective Equipment	Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance, or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton, and butyl (compatibility studies have not been performed). The availability of an eye wash fountain and safety shower is recommended. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse	
Human Exposure Characterization	Based on Nalco's recommended product application and our recommended personal protective equipment, the potential human exposure is LOW.	
SECTION 9	**PHYSICAL AND CHEMICAL PROPERTIES**	
Color	Clear to slightly hazy amber	
Form	Liquid	
Odor	Hydrocarbon	
Solubility in Water	Completely	
Specific Gravity	0.95 @ 60 Degrees F	ASTM D-1298
Viscosity	177 cst @ 32 Degrees F 70 cst @ 60 Degrees F 27 cst @ 100 Degrees F	
Pour Point ASTM	Less than –71 Degrees F	D- 97
Boiling Point	296 Degrees F @ 760 mm Hg	ASTM D-86
Flash Point	210 Degrees F (PMCC)	ASTM D-93
Vapor Pressure	15.5 mm Hg (0.3 psi) @ 100 Degrees F	ASTM D-323
Note	These physical properties are typical values for this product.	
SECTION 10	**STABILITY AND REACTIVITY**	
Incompatibility	Avoid water contamination that may cause gelling. Avoid contact with strong oxidizers (e.g., chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, and permanganates) that can generate heat, fires, explosions, and the release of toxic fumes.	
Thermal Decomposition Products	In the event of combustion, CO, CO 2, or SOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.	
SECTION 11	**TOXICOLOGICAL INFORMATION**	
Toxicity Studies	No toxicity studies have been conducted on this product.	
SECTION 12	**DISPOSAL CONSIDERATIONS**	
Disposal	If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261 since it does not have the characteristics of Subpart C, nor is it listed under Subpart D. As a nonhazardous liquid waste, it should be solidified with stabilizing agents such as sand, fly ash, or cement so that no free liquid remains before disposal to an industrial waste landfill. A nonhazardous liquid waste can also be incinerated in accordance with local, state, and federal regulations.	
SECTION 13	**TRANSPORTATION INFORMATION**	
Proper shipping name/hazard class may vary by packaging, properties, and mode of transportation. Typical proper shipping names for this product		
All Transportation Modes: Product is not regulated during transportation		

Slickgone NS

MSDS TRADE NAME – SLICKGON NS		
SECTION 1	**CHEMICAL PRODUCT IDENTIFICATION**	
Description	International approved dispersant for treating marine oil spill	
SECTION 2	**COMPOSITION/INGREDIENT INFORMATION**	
INGREDIENT(S)	Concentration	CAS #
Kerosene – odorless – distillates (petroleum) hydroteated light	60-70%	64742-47-8
Sodium dioclylsulphosuccinate	1-10%	577-11-7
SECTION 3	**HAZARD IDENTIFICATION**	
The product is classified as non-hazardous. May cause degreasing of the skin. May cause irritation to eyes		
SECTION 4	**FIRST AID INFORMATION**	
Skin contact	Remove contaminated clothing. Wash with water. Seek medical alteration if irritation or symptoms persist. Wash all contaminated clothing before reuse	
Eye contact	Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Contact lenses should be removed. Seek medical attention	
Inhalation	Move the exposed person to fresh air. Seek medical attention if irritation or symptoms persist.	
Ingestion	DO NOT INDUCE VOMITING. Rinse mouth thoroughly. Drink 1 to 2 glasses of water. Seek medical attention.	
General information	Potential for aspiration if swallowed.	
SECTION 5	**FIRE FIGHTING MEASURES**	
Extinguishing media	Alcohol resistant foam. Carbon dioxide (CO_2) Dry chemical. Do not use water jet. Cool fire exposed containers with water spray.	
Fire hazards	Burning produces irritating, toxic and obnoxious fumes.	
Protective equipment	In case of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus.	
SECTION 6	**ACCIDENTAL RELEASE MEASURES**	
Personal precautions	Wear suitable protective equipment. See section 8 for further information.	
Environmental precautions	Prevent further spillage if safe. Do not allow product to enter drains. Do not flush into surface water. Do not let product contaminate subsoil. Advise local authorities if large spills cannot be contained.	
Clean up methods	Absorb with inert, absorbent material. Transfer to suitable, labeled containers for disposal. Contact a licensed a waste disposal company. Clean spillage area thoroughly with plenty of water.	
SECTION 7	**HANDLING AND STORAGE**	
Handling	Wear protective clothing. See section 8 for further information.	
Storage	Keep out of the reach of children. Avoid contact with : strong oxidizing agents. Keep in a cool, dry well-ventilated area.	
Suitable packaging	Store in original container.	
Specific use	Obtain special instruction from the supplier.	
SECTION 8	**EXPOSURE CONTROLS/PERSONAL PROTECTION**	
Exposure limits **Kerosine- odourless-distillates (petroleum) Hydrotreated light**	WEL 8-hr limit ppm : WEL 15 min limit ppm :	WEL 8 –hr limit mg/m3:1000 WEL 15 min limit mg/m3:
Engineer measures	Ensure adequate ventilation of the working area.	
Respiratory protection	Not normally required. Wear suitable respiratory equipment when necessary. For shot periods of work a combination of charcoal filter and particulate filter is suitable.	
Hand protection	Chemical resistant gloves (PVC)	

Eye protection	Approved safety goggles. Provide eye wash station.	
Protective equipment	Apron (Plastic or rubber) Rubber boots.	
SECTION 9	**PHYSICAL AND CHEMICAL PROPERTIES**	
Description	Viscous liquid.	
Colour	Brown.	
Odor	Mild.	
Boiling point	192˚C	
Specific Gravity	0.95 @ 60 Degrees F	ASTM D-1298
Flash point	72˚C	
Relative	0.87	
Water solubility	Slightly miscible in water	
Viscosity	Flow Time in 3 mm ISO cup (ISO 2431) – 40	
SECTION 10	**STABILITY AND REACTIVITY**	
Stability	Stable under normal conditions.	
Conditions to avoid	Burning produces irritating, toxic and obnoxious fumes.	
Materials to avoid	Strong oxidizing agents.	
SECTION 11	**TOXICOLOGICAL INFORMATION**	
Acute Toxicity	Ingestion may cause nausea and vomiting.	
Corrosivity	May cause irritation to eyes. May cause degreasing of the skin. Potential for aspiration if swallowed.	
Repeated or prolonged exposure	Repeated or prolonged exposure may cause dermatitis.	
Mutagenic effects	No mutagenic effects reported.	
Carcinogenic effects	No carcinogenic effects reported.	
Reproductive toxicity	No teratogenic effects reported.	
SECTION 12	**ECOLOGOCAL INFORMATION**	
Degradability	The surfactant(s) contained in this preparation complies (comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member State and will be made available to them, at their direct request or at the request of a detergent manufacturer.	
Bioaccumulation	Dose not bioaccumulate.	
SECTION 13	**DISPOSAL CONSIDERATIONS**	
General information	Dispose of as special waste in compliance with local and national regulations.	
Disposal of packaging	Dispose of incompliance with all local and national regulations.	
SECTION 14	**TRANSPORT INFORMATION**	
Further information	The product is not classified as dangerous for carriage.	
SECTION 15	**REGULATORY INFORMATION**	
SECTION 16	**OTHER INFORMATION**	
Text of risk phrase in Section 3	R36- Irritating to eyes. R38- Irritating to skin. R65-Harmful: may cause lung damage if swallowed.	

Chemex 307

1. Identification of the substance / Preparation and of the Company Manufacturer
   Product Code : ***CHEMAX 307***
   Product Name : ***Oil spill dispersant***
   Manufacturer : ***Chemax & Phypers Co., Ltd.***

2. Composition
   Hydrocabon Solvent
   Non-ionic Emulsifier

3. Hazards Identification

Eye Contact	May cause irritation
Skin Contact	Exposure can irritate sensitive skins
Ingestion	Can lead to nausea or diarrhea
Inhalation	Asthmatic type response with sensitive Individuals

4. First Aid Measures

Eye Contact	Flush with water for at least 15 minutes. Contact Physician
Skin Contact	Wash thoroughly with soap and water
Ingestion	Give two glasses of water to dilute product. Do not induce vomiting
Inhalation	Calm the individual, allow plenty of fresh air, loosen clothing around neck

5. Fire Fighting Measures

Extinguishing Media	Water Carbondioxide Dry Powder
Special Fire Fighting Procedures	None
Hazardous Ingredients	None

6. Handing and Storage
   Precautions on handling packaged materials or , Plastic Drum. No danger from handling packaged material. Ensure containers remain sealed.

   Recommended storage conditions. Store in cool dry conditions. Storage temperature should be between 5 ºC and 40 ºC

7. Personal Protection

Eyes	Wear safety glasses
skin	Limit exposure. Wear rubber gloves. Do not bulk product directly.
Ingestion	Wear protective mask. Store in a safe place.
Inhalation	Use approved respiratory mask. Avoid dust creation where possible.
General precautions	Treat as you would any chemical or biological powder. Always wash hands thoroughly after use.

8. Physical / Chemical Properties

Appearance	Clear liquid (Pale Yellow Liquid)
Odour	Hydrocarbon Solvent
Flash Point	60-65 ˚C
Density	0.88-0.92 Kg/L.
Cloud Point	-20 ˚C
Heavy Metal (Hg, Se, Cd, Pb, As, Cr, Ba, Ni, Cu, Zn, Mn)	Non
Cyanide(HCN)	Non
Health and Safety	Arrow Classification

9. Stability / Reactivity

Stability	Stable
Incompatibility	None
Hazardous by-products	None
Hazardous polymerization	Will not occur

10. Toxicological Information
    Prolonged exposure may lead to irritation of sensitive skins.
    The product is considered to be non-toxic.

11. Ecological Information
    The base material is of natural origin and is relatively inert.

12. Disposal Considerations
    Local authority requirements should be checked before disposal of large quantities.
    Packaging can be recycled.

13. Transport Information

UN No	None
IMDG Code	Not Classified
ADR / RID	Not Classified
ICAO / IATA	Not Classified
Shipping Name :	***Chemax 307***

14. Regulatory Information
    The Product is not subject to mandatory labeling.

15. additional Information
    For further technical information regarding this product contact CPC.

11 APPENDIX F: OIL SPILL RESPONSE INVENTORIES

1. Infield equipment for Production and Drilling which support for Tier 1: Local Spill < 20 Tons.

ITEM	QTY	DESCRIPTION	EXPLANATION OF DESCRIPTION
CONTAINER I	250 Meters	INFLATABLE SEA BOOM WITH SINGLE POINT INFLATION SYSTEM	Inflatable type Sea Boom with single point inflation system in containerized winder, integrated with powerpack
	1 Set	OFFSHORE TYPE CONTAINERIZED HYDRAULIC WINDER INTEGRATED WITH POWERPACK	Offshore Type container should be used so it can be airlifted for offshore operations
	1 Set	TOWING EQUIPMENT FOR INFLATABLE OIL BOOM	Two towing equipment for each Set of Sea Boom for versatility

ITEM	QTY	DESCRIPTION	EXPLANATION OF DESCRIPTION
CONTAINER II	1 set	OFFSHORE WEIR SKIMMER CAPACITY 30 TONS/HR	Weir skimmer to recover all types of oils
	1 set	OFFSHORE TYPE SERVICE CONTAINER	Service Container should be included to store skimmer and accessories
	1 set	STANDARD HOSE SET & REEL	Hoses for Offshore Skimmer
	1 set	MULTIPURPOSE 25KW HYDRAULIC POWERPACK	Diesel Driven Hydraulic Powerpack with automatic overspeed shutdown valve and spark arrestor capable of operating the winder, skimmer and inflating the storage tank.
	1 set	Dispersant Spray System including powerpack and pump	Dispersant Spray System with 100 liters per minute output with two nozzles capable of spraying up to 50 ft. No lances/spray arms
	1 Set	Temporary Floating Oil Storage Tank	Temporary Oil Storage Tank with 5 tons capacity
	1 Set	Oil Transfer Pump	Transfer Pump to transfer oil from storage tank

2. IESG Stockpile

There are 2 locations at Songkhla and Sriracha that have been assigned to be the Stockpiles for IESG. The details of oil spill response equipment are presenting as below;

IESG OSR Equipment Stockpiles
Information as of 18 December 2018

A. Sattahip Stockpile						
No.	Equipment	Make	Model	Inventory Quantity	Available Quantity	Remark
	Boom					
1	Solid flotation boom	Elastec	Supermax	150 m	150 m	American Marine
2	Inflatable boom (on reel)	Vikoma	Sentinel75	500 m	200 m	
3	Inflatable boom (on reel)	Ro-Clean	Ro-Boom 1500	600 m	600 m	
4	Beach boom	Vikoma	ShoreGuardian	360 m	120 m	20m/section
	Skimmer					
5	Weir skimmer	Ro-Clean	Desmi 250	1 set	1 set	
6	Disc skimmer	Vikoma	T12	4 set	4 set	Oleophilic type
7	Rope mop skimmer	Ro-Clean	OM240	2 set	2 set	Oleophilic type
8	Multi skimmer	Lamor	LMS/P	1 set	1 set	
9	Vacuum skimmer	Vikoma	PowerVac	4 set	4 set	
	Dispersant Sprayer					
10	Boat spray (AFEDO)	Lamor	BS100Dual	1 set	1 set	
11	Portable dispersant sprayer			3 set	3 set	
	Temporary Storage					
12	On land storage tank	Lamor	LCT TSC 11.4 m3	4 set	4 set	
	Dispersant					
13	Dispersant, Slickgone NS	Dasic	Slickgone	15 dr	15 dr	

A. Sattahip Stockpile						
No.	Equipment	Make	Model	Inventory Quantity	Available Quantity	Remark
	Sorbent					
14	Sorbent boom	MAXX		25 bag	25 bag	
15	Sorbent sheet	MAXX		5 bag	5 bag	
16	Sorbent roll	MAXX		13 bag	13 bag	
	Ancillaries and others					
17	Transfer pump	Spate	75C	1 set	1 set	
18	Water pump	Honda	WB30XT, GX160	1 set	1 set	For beach boom
19	Cargo basket, 70"x70"x50"			2 set	2 set	for equip. trans.
20	Storage container 10 Ft		10 Ft	1 set	1 set	for equip. trans.
21	Power pack	Vikoma		2 set	2 set	For Sentinel boom
22	Power pack w/air blower	Ro-Clean		2 set	2 set	For Ro-Boom

B. Songkhla Stockpile						
No.	Equipment	Make	Model	Inventory Quantity	Available Quantity	Remark
	Boom					
1	Solid flotation boom	Vikoma	Flexi boom 900	405 m	405 m	Flexi 900
2	Solid flotation boom	SK	SKC105U	400 m	400 m	
3	Inflatable boom (on reel)	Vikoma	Sentinel	400 m	150 m	
4	Inflatable boom (manual)	Vikoma	Sentinel	200 m	200 m	25m/section
5	Inflatable boom	Lamor	AutoBoom	200 m	200 m	offshore
6	Beach boom	Vikoma	ShoreGuardian	100 m	100 m	20m/section
	Skimmer					
7	Weir skimmer	Ro-Clean	Desmi Mini-max	1 set	1 set	
8	Delta weir skimmer	Vikoma	Delta system	1 set	1 set	
9	Disc skimmer	Vikoma	T12	1 set	none	Oleophilic type
10	Rope mop skimmer	Ro-Clean	OM260DP	1 set	1 set	Oleophilic type
11	Vacuum skimmer	Vikoma	PowerVac	2 set	2 set	
	Dispersant Sprayer					
12	Boat spray (AFEDO)	Lamor	BS100Dual	1 set	1 set	
	Temporary Storage					
13	On land storage	Fast Eng.	FASTANK 2000	2 set	2 set	
	Dispersant					
14	Dispersant, AGMA	AGMA	DR379	7 drum	7 drum	
15	Dispersant, Slickgone NS	Dasic	Slickgone	9 drum	9 drum	Year 2011
16	Dispersant, Slickgone NS	Dasic	Slickgone	32 pail	32 pail	25L/pail = 800L= 4 dr

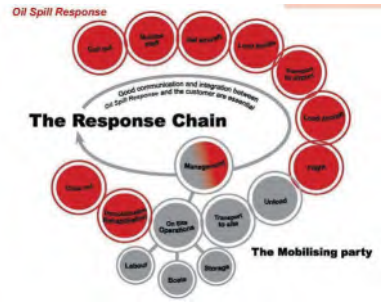
B. Songkhla Stockpile						
No.	Equipment	Make	Model	Inventory Quantity	Available Quantity	Remark
	Sorbent					
17	Sorbent boom	Abasco	A-8-10	50 BDL	50 BDL	bundle
18	Sorbent sheet	Abasco	A-150	20 roll	20 roll	
	Ancillaries and others					
19	Water pump	Honda	WB20X	1 set	1 set	
20	Water pump	Yanmar		1 set	1 set	
21	Air compressor	Puma	XM-2525	1 set	1 set	
22	Cargo basket, 70"x70"x50"	Saftrol		4 set	4 set	for equip. trans.
23	Storage container 40 Ft		40 Ft	3 set	3 set	for equip. trans.
24	Storage container 10 Ft		10 Ft	2 set	2 set	for equip. trans.
25	Container 20 Ft		20 Ft	1 set	1 set	mobile office
26	Water tank	COMOS	1600 L	1 set	1 set	for equip. testing
27	Power pack	Vikoma	Type H	1 set	1 set	for Sentinel boom
28	Power pack	Lamor	LPP 7HA B8	1 set	1 set	for Lamor AutoBoom
29	Air inflator	Vikoma	PB4600	5 set	3 set	for Sentinel boom
30	Air inflator	Lamor		1 set	1 set	for Lamor AutoBoom

IESG OSR Equipment Stockpiles
Summary of Available Quantity
As of 18 December 2018, excluded ancillaries

	Sattahip	Songkhla
Nearshore Solid Flotation Boom	150 m	805 m
Nearshore Inflatable Boom	320 m	450 m
Offshore Inflatable Boom	600 m	200 m
Total Boom	**1070 m**	**1,455 m**
Weir Skimmer	1 set	2 set
Oleophilic Skimmer	6 set	1 set
Multi Skimmer	1 set	0 set
Vacuum Skimmer	4 set	2 set
Dispersant sprayer (for vessel)	1 set	1 set
Dispersant sprayer (portable for beach)	3 set	0 set
Dispersant	15 dr	20 dr
Temporary storage	4 set	2 set

3. OSRL Equipment

Company has an agreement with the well-known international oil spill response service company called Oil Spill Response Limited (OSRL) for the major spill response service at Tier 3 level.



The Response Chain of OSRL to response with Tier 3

12 APPENDIX G : NOTIFICATION AND ACTIVATION OF CONTRACTOR / IESG/ OSRL

1. Activation of OIL SPILL RESPONSE CONTRACTOR (OSCT)

1
- Emergency Call (24 hours)
- Bangkok Thailand
- +66(0)8 1550 1121, +66(0)8 1911 3941, +66(0)8 7065 5271

2
- Confirm mobilization by phone
- Fax +66(0) 2894 0889

3
- Mobilization of personnel and resouces

4
- Debrief and invoice close out

OIL SPILL
INCIDENT REPORT FORM

NOTE: Complete as fully as possible, but do not delay transmission in the event of missing information

A. Details of the incident

Source: Ship (if so give name, call sign & flag), Offshore Platform, Pipeline, Storage Facility, Unknown, Others.

Date & Time of incident:

Position: (latitude/longitude or nearest landmark)

Cause:

Estimate of Spill Quantity:

Likelihood of Further Spillage (Including quantity of potential spillage, e.g. quantity of oil remaining onboard vessel):

Type of Oil Spilled:

Resources impacted (if any)

B. Weather and Sea Conditions

Wind Force & Direction:

Sea State:

C. Response Actions

Actions being taken to limit further discharge:

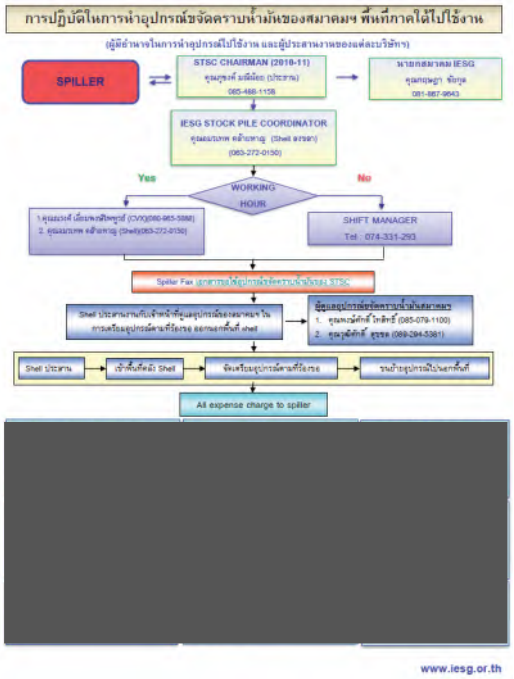
Details of Clean-up Response:

D. Report Information

Date & Time Report Received:
Report Received from: Name:
Organisation:
Position;
Contact Details
SAFTROL Reporting Officer: Name:
Position;
Contact Details

2. Activation of IESG

a) Southern Area (Southern Sub-Committee: STSC)



IESG

ส่วนที่ 1 แบบฟอร์มการขอใช้อุปกรณ์ขจัดคราบน้ำมันของ STSC

วันที่ .....

ถึง ☐ ประธาน STSC
☐ นายกสมาคมฯ

จาก จ.สงขลา
☐ JV-CVX-Shell
☐ CTEP
☐ CEC
☐ PTT
☐ PTTEP

จ.สุราษฎร์ธานี
☐ JV-CVX-Bangchak
☐ JV-ESSO-Shell
☐ PTT

จ.ชุมพร
☐ IRPC

จ.ภูเก็ต
☐ PTT

[redacted]

รายการอุปกรณ์ขจัดคราบน้ำมันของ STSC ที่ร้องขอ

.....

.....

การจัดส่ง
☐ Spiller มารับอุปกรณ์เอง

ลงชื่อผู้ร้องขอ .....

วันที่ ..... เวลา ..... โทรศัพท์/ โทรสาร .....

****

ส่วนที่2 แบบตอบรับการร้องขอ

รายละเอียดการสนับสนุนอุปกรณ์

.....

.....

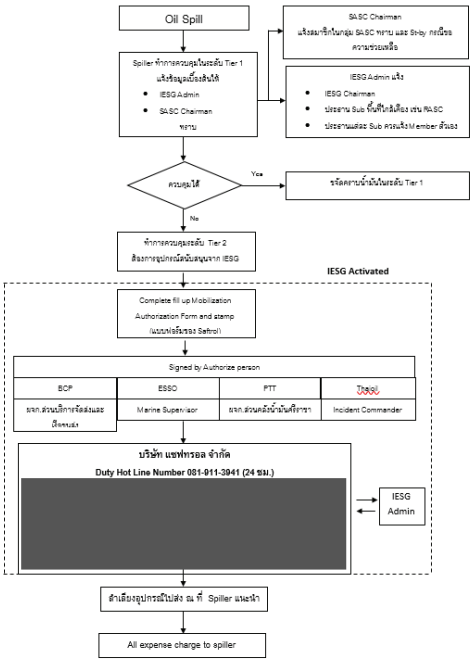
ลงชื่อผู้อนุมัติ .....

วันที่ ..... เวลา ..... โทรศัพท์/ โทรสาร .....

จัดทำโดย : ตและอนุกรรมการงานป้องกันและแก้ไขการรั่วไหลของน้ำมัน เขตพื้นที่ภาคใต้ (STSC)

b) East Area (Sriracha Area Sub-Committee: SASC)

การ Activated Oil Spill equipment ของกลุ่ม IESG SASC



แบบฟอร์มการขอใช้อุปกรณ์ขจัดคราบน้ำมันระหว่างสมาชิก SASC

วันที่ .....

ถึง..... ☐ESSO
☐ PTT(ศรีราชา)
☐ PTT(เขาบ่อยา)
☐ Thaioil

จาก..... ☐ESSO
☐ PTT(ศรีราชา)
☐ PTT(เขาบ่อยา)
☐ Thaioil

[redacted]

รายละเอียดขอรับการสนับสนุนอุปกรณ์

.....

.....

สถานที่จัดส่ง
☐ รับเอง
☐ จัดส่งให้ (โปรดระบุสถานที่จัดส่ง).....

ลงชื่อผู้ร้องขอ .....

วันที่ ..... เวลา .....

โทรศัพท์.....

.....

ส่วนที่2
แบบตอบรับการร้องขอ
รายละเอียดการสนับสนุนอุปกรณ์

.....

.....

ลงชื่อ ..... (ผู้ยืนยันให้นำของออก)

วันที่ ..... เวลา .....

โทรศัพท์.....

3. Activation of OSRL

1. •Emergency Call (24 hours)
   •Singapore
   •+65 6266 1566
2. • Complete Notification forms and Mobilization forms
   •Fax +65 6266 2312
3. •OSRL response and mobilization of personnel and resources
4. •Debrief and invoice close out

Shared Responsibilities during an oil spill response

Duty Manager:

- Send a technical advisor on-site free of charge for initial 48 hours
- Advise customer of names of Duty Manager and all response personnel
- Agree a suitable package compromising both personnel and equipment with customer
- Fax equipment list and daily hire charge to the customer
- Arrange air transport of the equipment and personnel and advise customer of estimated time of arrival
- Inform customer of logistic requirement:
  - Boat for deployment
  - Helicopter
  - Road Transport hired cars
- Request assistance with immigration and customer if required

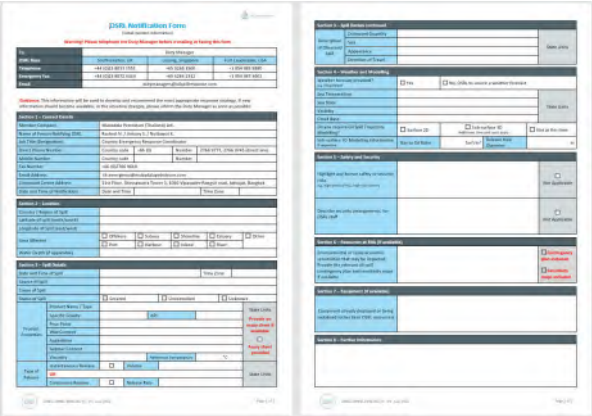
Customer:

- Ensure the response team is met and directed to the command center
- Provide transport for the equipment from the arrival airport, or other location, to the equipment storage area, vessel or worksite
- Provide accommodation for the response team
- Ensure that insurance cover is provided for equipment against loss or damage
- Ensure that there is response management team in place

3.1 OSRL Notification Form

Oil Spill Response's details:

WARNING! Ensure telephone contact has been established with the Duty Manager before using e-mail and fax communication.

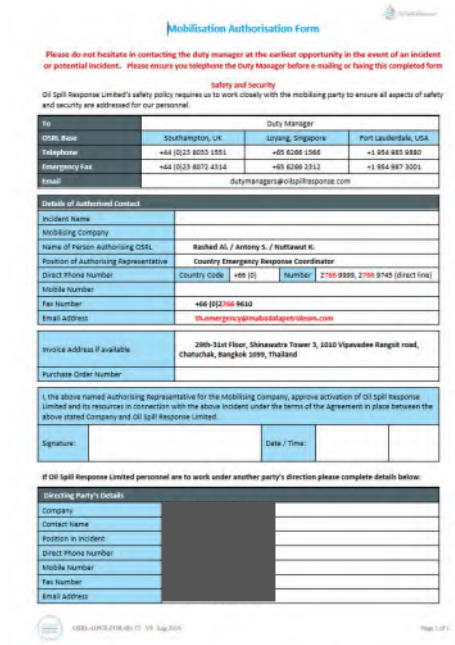


OSRL Notification Form

3.2 OSRL MOBILIZATION FORM

Oil Spill Response's details:

WARNING! Ensure telephone contact has been established with the Duty Manager before using e-mail and fax communication.



Mobilisation Authorisation Form

Please do not hesitate in contacting the duty manager at the earliest opportunity in the event of an incident or potential incident. Please ensure you telephone the Duty Manager before e-mailing or faxing this completed form

Safety and Security

Oil Spill Response Limited's safety policy requires us to work closely with the mobilising party to ensure all aspects of safety and security are addressed for our personnel.

To	Duty Manager		
OSRL Base	Southampton, UK	Loyang, Singapore	Port Lauderdale, USA
Telephone	+44 (0)23 8033 1551	+65 6266 1566	+1 954 987 9880
Emergency Fax	+44 (0)23 8072 4314	+65 6266 2312	+1 954 987 3001
Email	dutymanagers@oilspillresponse.com		

Details of Authorised Contact				
Incident Name				
Mobilising Company				
Name of Person Authorising OSRL	Rashed AL / Antony S. / Nuttawut K.			
Position of Authorising Representative	Country Emergency Response Coordinator			
Direct Phone Number	Country Code	+66 (0)	Number	2766 9999, 2766 9745 (direct line)
Mobile Number				
Fax Number	+66 (0)2766 9610			
Email Address	th.emergency@mubadalapetroleum.com			
Invoice Address if available	29th-31st Floor, Shinawatra Tower 3, 1010 Vipavadee Rangsit road, Chatuchak, Bangkok 1099, Thailand			
Purchase Order Number				

I, the above named Authorising Representative for the Mobilising company, approve activation of Oil Spill Response Limited and its resources in connection with the above incident under the terms of the Agreement in place between the above stated Company and Oil Spill Response Limited.

Signature:		Date / Time:		

If Oil Spill Response Limited personnel are to work under another party's direction please complete details below:

Directing Party's Details		
Company		
Contact Name		
Position in Incident		
Direct Phone Number		
Mobile Number		
Fax Number		
Email Address		

13 APPENDIX H: GOVERNMENT NOTIFICATION FORMS

1. The Royal Thai Navy and Marine Department

ภาคผนวก 6 แบบฟอร์มการรับแจ้งเหตุ

1.	The Royal Thai Navy Tel: Region 1 038-43 8592, 1696 (Hot Line) Region 2 074-32 5798, 1696 (Hot Line)	2.	Marine Department Tel: 02-233-1311/ - 8, 1199 (Hot Line)
3.	ชื่อผู้แจ้งเหตุ (Name of Reporter)		
4.	หมายเลขโทรศัพท์ (Telephone) 02-792-9777		
	ที่อยู่ที่สามารถติดต่อกลับได้ (Contact Address) 29th-31st Floor, Shinnawatra Tower 3, 1010 Vipavadee Rangsit road, Chaktuchak, Bangkok 10900		
5.	วันที่พบเห็นคราบน้ำมัน (Date Observation)	เวลา (Time)	
	วันที่เกิดเหตุ (Date of Incident)	เวลา (Time)	
	ระยะเวลาที่รั่วไหล Estimated Spill (Length)	ชั่วโมง Hrs.	
6.	พื้นที่ที่พบเห็นคราบน้ำมัน (Position of Pollution)		
	สถานที่ที่พบคราบน้ำมัน (Location)	ชอบ (Soil)	
	ถนน (Road) อำเภอ (Amphur)	จังหวัด (Province)	
	สิ่งที่สังเกตที่อยู่ใกล้ที่สุด (Marked)		
	แลตติจูด (Latitude)	ลองจิจูด (Longitude)	
7.	สันเหตุของการรั่วไหล (Spill Source)		
	☐ เรือชนกัน (Collision) ☐ เรือจม (Sunk)	☐ คลังน้ำมัน (Petroleum Storage)	☐ เรือรั่ว (Leaked)
	☐ แท่นขุดเจาะน้ำมัน (Drilling Platform) ☐ ท่อส่งน้ำมัน (Petroleum Pipeline)	☐ ไม่ทราบสาเหตุ (Unknow)	☐ สาเหตุอื่นๆ (ระบุ) (Other, specify)
8.	รายละเอียดเรือ (Detail of vessel)		
	ชื่อเรือ (Vessel Name)	ประเภทของเรือ (Type of vessel)	
	ชื่อเจ้าของเรือ/หรือตัวแทนเรือ (Vessel Owner / Vessel Representative)		
	ความเสียหายของเรือ (Description of Accident / Incident)		
9.	ชนิด ลักษณะและปริมาณของคราบน้ำมัน (Characteristics of Pollution)		
	☐ น้ำมันดิบชนิด Crude Oil	ปริมาณ Quantity	
	☐ น้ำมันเตา Bunker Oil	ปริมาณ Quantity	
	☐ น้ำมันอื่นๆ Others (Specify)		
	ลักษณะของคราบน้ำมัน (Color/Appearance)		
	☐ หนา สีดำ (Collision) (Thick/Black) ☐ บาง สีดำหรือสีน้ำตาล (Light/Black or Brown)	☐ บาง สีรุ้งเงิน (Thin/Rainbow/Silver)	☐ กระจายเป็นหย่อมๆ (Spread)
10.	คราบน้ำมันครอบคลุมพื้นที่กว้าง เมตร ยาว เมตร Estimated Spill Size (length + width in Meters)		
11.	กระแสน้ำ ทิศทาง (Current or Tide Direction)	ความเร็ว (Speed)	
	กระแสลม ทิศทาง (Wind Direction)	ความเร็ว (Speed)	
	สภาพอากาศและทัศนวิสัย (Weather Forecast/Visibility)		

12.	มีการดำเนินการเพื่อแก้ไขสถานการณ์แล้วอย่างไรบ้าง Summarize Immediate Actions Taken
13.	มีผู้เสียชีวิตหรือบาดเจ็บ (No. of Fatality or Injury)
	☐ มี จำนวนผู้เสียชีวิต คน จำนวนผู้บาดเจ็บ คน YES, No. of Fatality No. of Injured Person
	ลักษณะการบาดเจ็บ Description of Injury
	☐ ไม่มี (NO)
14.	ต้องการความช่วยเหลือใดเป็นการเร่งด่วน Urgent Need Required
15.	ผู้รับแจ้งเหตุ (Name of Receiver) หน่วยงาน (Department)
	หมายเลขโทรศัพท์ (Telephone) โทรสาร (Fax) เวลา (Time) น. (Hrs.)

2. Petroleum Operations Notice (PON)

To: Dept. of Mineral Fuels (DMF)	**Khun Supawich Tel: 02-794-3373** **Emergency Tel. 02-794-3357**	
To: Pollution Control Department	**Tel: 02-298-2000, 1650 (Hot Line)**	
Operator: COMPANY	**Incident Location:**	
Identity of Observer/Reporter		
Full Name	**Organization/Company:**	
Contact Telephone No: 02-766-9999	**Contact e-mail:** [email]	
Incident Details		
Operator/Organization/Company responsible for incident:		
Date of incident:	Time of incident:	
Installation/Facility:	Fixed / mobile (delete as applicable)	Field name:
Latitude:	Longitude:	Concession no.:
Oil Spill / Chemical Spill or Sheen Notification (tick below and complete column details as applicable)		
Oil spill notification:	Chemical spill notification:	Produced water sheen report:
Quantity spilled (tons):	Quantity spilled (kg):	Oil in PW concentration. (ppm):
Type of oil:	Chemical spilled:	PW discharge rate m^3/hr.:
%Oil if OBM or base oil:	Chemical use:	Appearance:
Appearance:	Warning label: Appearance:	
Approx. spill area on sea surface if known (m^2 or km^2):		
Tier of response (1,2 or 3): (As per Oil Spill Contingency Plan)		Approx. sheen area on sea surface if known (m^2 or km^2):
Is spillage ongoing? YES / NO		

(If YES the following details must be updated and faxed each 24 hrs. period for duration of incident) **Spillage since last report (tons):** **Total spillage to date (tons):**	
Source of pollution:	
Cause of pollution:	
Steps taken to prevent re-occurrence / respond to spill:	
Spill likely to hit : Median line YES / NO : Shore YES / NO If YES approx. location/time:	
Photographs taken: YES / NO	**Samples taken for analysis: YES / NO**
Weather Conditions	
Wind speed (knots):	**Wind direction (0-360):**
Beaufort scale (1-12):	**Wave height (meters):**

Useful information:

1 barrel of oil = 159 liters (1 liter = 0.001 m3)

1 m3 / hr = 6.3 barrels / hr or 151 barrels / day

(Continued)

OIL SPILL OR SLICK AMOUNT ESTIMATION PROCEDURE

1) Width _____ Meters (A)

2) Length _____ Miles (B) OR Length _____ Meters (C)

Converting Miles (B) to Meters (C):

1,609.3 meters per mile X _____ = Length in Meters _____

(B) Length in Miles (C) Length in Meters

Multiply Width (A) by the Length (C) to get the Square Meters

4) _____ Width in Meters X _____ Length in Meters = ___ ___Sq. Meters

(A) From line 1 (C) from line 2 or 3 (D)

5) Converting Square Meters (D) to Square Yards (E):

1.1960 Sq. Yards per Sq. Meter X _____ = Area in Sq. yards_____

(D) From line 4 (E)

6) _____ Sq. Yards X _____ = _____ Gallons on Water

(E) From line 5 Spill Color Factor *Report This Amount*

3. POLLUTION CONTROL DEPARTMENT (PCD)

คพ.01

กรมควบคุมมลพิษ

คำขออนุญาตใช้สารเคมีขจัดคราบน้ำมัน

เขียนที่.....

วันที่.....เดือน.....พ.ศ.....

เรียน อธิบดีกรมควบคุมมลพิษ

หน่วยงาน.....

ขออนุญาตใช้สารเคมีขจัดคราบน้ำมันชนิด.....

เพื่อขจัดคราบน้ำมันที่รั่วไหลจากสาเหตุ.....

พิกัด.....

วันที่เกิดเหตุ.....เดือน.....พ.ศ.....เวลา.....

ชนิดน้ำมันที่รั่วไหล.....ปริมาตร.....ลิตร

น้ำมันรั่วไหลมาแล้ว.....วันโดยทางหน่วยงานมีความประสงค์ในการใช้สารเคมีขจัดคราบน้ำมันดังกล่าวข้างต้น เพื่อขจัดคราบน้ำมันบริเวณ.....

จำนวน.....ลิตร โดยวิธี.....

ลงชื่อ.....ผู้ยื่นคำขอ

(.....)

ตำแหน่ง.....

สถานที่ติดต่อของผู้ยื่นคำขอ.....

โทรศัพท์.....โทรสาร.....

e-mail.....

สถานที่ติดต่อกรมควบคุมมลพิษ

โดยเวลาราชการ	นอกเวลาราชการ	
กรมควบคุมมลพิษ 92 ซอยพหลโยธิน 7 ถนนพหลโยธิน แขวงสามเสนใน เขตพญาไท กรุงเทพฯ 10400 โทรศัพท์ 0-2298-2239, 0-2298-2241-2, 0-2298-2246 โทรสาร 0-2298-2240 e-mail : marpol.m@pcd.go.th e-mail : marinepollution_pcd@yahoo.com	อธิบดีกรมควบคุมมลพิษ รองอธิบดีกรมควบคุมมลพิษ รองอธิบดีกรมควบคุมมลพิษ ผอ.สำนักจัดการคุณภาพน้ำ ผอ.ส่วนแหล่งน้ำทะเล	0-2521-8682/ 081-896-3594 0-2235-6536/ 081-838-8019 0-2465-8938/ 081-442-2661 0-2411-1341/ 081-622-4124 0-2973-4088/081-816-4280

สำหรับเจ้าหน้าที่กรมควบคุมมลพิษ

วันที่.....เดือน.....พ.ศ.....

กรมควบคุมพิจารณาแล้ว ดังนี้

☐ ไม่อนุญาตการใช้สารเคมีขจัดคราบน้ำมันชนิด.....

เนื่องจาก.....

☐ อนุญาตการใช้สารเคมีขจัดคราบน้ำมันชนิด.....

ปริมาตร.....ลิตร ในบริเวณ.....

ทั้งนี้ การอนุญาตจะมีผลสำหรับการขจัดคราบน้ำมันในกรณีนี้เท่านั้น และจะต้องรายงานผลการใช้สารเคมีขจัดคราบน้ำมันมายังกรมควบคุมมลพิษหลังจากเสร็จสิ้นการดำเนินการขจัดคราบน้ำมันแล้ว

(ลงนาม).....

อธิบดีกรมควบคุมมลพิษ

14 APPENDIX I : MANUAL ON OIL POLLUTION IV: COMBATING OIL SPILLS

Manual on Oil Pollution IV: Combating Oil Spills

Table 6-2 – *Guide to boom length requirements*

Application	Quantity
Booming to aid a stricken vessel (encircle)	3 × ship's length
Containment of an operational spill from a vessel at a terminal	1.5 × ship's length plus distance bow and stern to shore
Protection of an entrance to estuary, stream, river etc.	3–4 × width of the body of water
General booming in bays and harbours	1.5 + current in knots × width of water body

Depending on the circumstances and the desired aim of the operations, there are a variety of different deployment methods:

.1 *Encircling:* This method may be employed at an early stage of the spill to try to prevent oil from escaping much beyond the stricken vessel, or to try to capture further losses. In practice, the sea conditions may preclude an effective operation and the booming may well impede lightering and salvage operations. Anchoring may also prove difficult or impractical. The length of boom in this application generally needs to be at least three times the length of the object, e.g., a ship, to be encircled. This method is employed primarily in calm or sheltered sea area. If the source of the spill is a shore facility, the shoreline may constitute a part of the encircling barrier or when it is a ship, the ship's hull may constitute a part of the barrier.

.2 *Waylaying:* Waylaying deployment may be used in situations where sufficient lengths of boom are not available, but an attempt is desired nonetheless, to try to capture oil before it spreads far from the vessel. In this case booms are laid at some distance from the source of spill to intercept the approaching oil. However, sea conditions and any variation in wind direction will tend to restrict or preclude success. This method should be employed primarily in calm or sheltered sea areas. In tidal waters, there is the added complication that another set of booms needs to be laid on the other side of the source, in anticipation of a reverse of the current.

15 APPENDIX J: DASIC SLICKGONE NS

DASIC INTERNATIONAL

SLICKGONE NS HIGH EFFICIENCY CONCENTRATE OIL DISPERSANT

SLICKGONE NS is one of the world's best selling Type 2/Type 3 dispersant concentrates and is exceptionally efficient on a broad spectrum of oils. Unlike many other dispersants, **SLICKGONE NS** even gives excellent results on high wax content crudes.

SLICKGONE NS is also more effective than most dispersants on heavy oils and water-in-oil emulsions (chocolate mousses).

SLICKGONE NS meets the stringent efficiency and toxicity requirements of the UK MARINE MANAGEMENT ORGANISATION.

SLICKGONE NS is also approved/accepted in many other countries. Please consult **DASIC International** for an updated list of approvals/acceptances.

SLICKGONE NS is highly effective at emulsifying crude oils, fuel oils and water-in-oil emulsions even at low temperatures, producing oil droplets minute enough to be retained beneath the sea surface where they are rapidly diluted by subsurface mixing and are eventually biodegraded by microorganisms.

APPLICATION METHODS

AT SEA

SLICKGONE NS has been developed for use undiluted and is most effective applied in this way. It is, however, compatible with seawater and can be used diluted to 10% with good results.

Extensive field trials in the UK indicate that an effective treatment rate for dispersants is approximately 1 part dispersant to 20-30 parts of oil. If the average thickness of the oil slick is 0.1mm, then an application rate of 3-5 imp. gal./acre (30-50 litres/hectare) is required. Slicks, however, tend not to be uniform and thicknesses can vary from microns to several millimetres. It is important, therefore, to try to estimate the thickness of the oil being treated at any given moment and adjust the treatment rate accordingly.

FROM AIRCRAFT

Dispersant should be applied to the slick from suitable spray booms in the form of a spray with a volume median diameter of approximately 500 microns. A spray such as this gives good uniform coverage, avoids excessive windborne losses, and prevents falling droplets from achieving sufficient momentum to penetrate the oil and become lost to the underlying water.

FROM BOATS

SLICKGONE NS is best applied undiluted provided that suitable spray equipment is available.

Using older type spray equipment, **SLICKGONE NS** can be diluted in the application equipment with 9 parts seawater to form a 10% solution. This solution should be sprayed at a treatment rate of 1 part diluted dispersant to 2-3 parts of oil. The efficiency loss on dilution of dispersant is partly compensated for by the use of breaker boards to provide energy to emulsify the oil.

Details of suitable spray equipment are available from **DASIC**.

ON BEACHES

SLICKGONE NS is extremely effective applied undiluted on beaches, rocks, harbour walls, etc. It should be applied at a treatment rate of approximately 1 part dispersant to 10 parts of oil in a fine spray such as from a knapsack sprayer or from other beach spraying equipment.

If possible, **SLICKGONE NS** should be applied approximately 10-30 minutes before an advancing tide so that the surf line provides energy to disperse the oil. If the energy of the surf line is insufficient, then fire hoses can be directed on to the water adjacent to the beach to provide additional energy.

HEALTH AND SAFETY INFORMATION

SLICKGONE NS is of low toxicity and irritancy. However, as with all emulsifiers, contact with the eyes and prolonged contact with skin should be avoided. The wearing of protective goggles is recommended. Avoid breathing spray mists or product vapours. **SLICKGONE NS** will support combustion and should be kept away from sources of ignition.

Consult the **DASIC** safety data sheet on this material before use.

SLICKGONE NS
HIGH EFFICIENCY CONCENTRATE OIL DISPERSANT

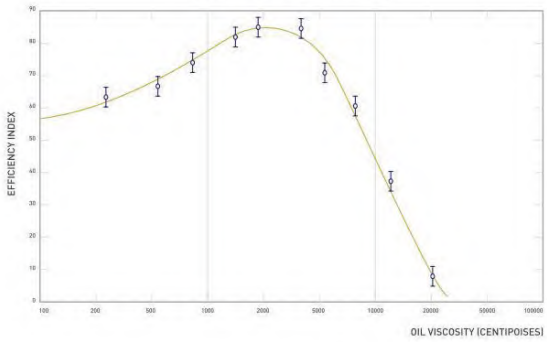
TYPICAL PROPERTIES

1.pH		Neutral	
2. Specific Gravity		0.86 at 20°C	
3. Viscosity (Viscometers UK)		30-60 cP at 0°C	
4. Flash Point (PMCC)		71°C	
5. Corrosivity	**Test**	168 hours total immersion at ambient temperature	
	Test limits	+ 1.0mg, - 5.0mg	
	Test pieces	75mm x 25mm x 0.91mm	
	Magnesium (B.S.3370, type AZ31)		-0.3mg
	Aluminium (B.S.L165, acid chromate pickled)		-0.1mg
	Steel (B.S.1449, CRIFF, burnished)		-0.1mg
	Cadmium plated steel (B.S.1449 plated to Def Stan 03-19)		-0.7mg
	Copper (B.S.899, C104 ½H pickled to DTD901F)		+0.2mg
6. Storage Life		Conforms to the UK, LR448 (OP) specification when stored in supplier's original unopened containers.	
7. Efficiency		Efficiency tests were carried out according to the LR448 revolving flask technique using a standard medium fuel oil, a heavy oil and on mixtures of these fuel oils with kerosene to adjust the viscosity.	

Summary of Test 0.2mls of dispersant is added dropwise into 5ml of oil on to the surface of seawater at 10°C contained in a conical separating funnel. The separating funnel is rotated for 2 minutes at 33 rev./min. then stopped and unstoppered. After 1 minute standing time 50ml of oily water is run off through the bottom tap. The oil is then extracted and the amount present is expressed as a percentage of the oil that would be present if it were uniformly distributed throughout the water at the time of sampling (efficiency index).

Results See graph.

EFFICIENCY TEST RESULTS - SLICKGONE NS



เอกสารแนบที่ 59

OSRE Rental Services

Release Order

TYPE: Release Order Ref Agreement No.:1157	**DATE:** 17-JUL-2024 **STATUS:** APPROVED	**DESTINATION:** BKK Office AGREEMENT RELEASE NUNBER AND DESTINATION MUST APPEAR ON ALL DOCUMENTS AND PACKAGES	**NO.: 201210VGOT**

SUPPLIER/CONTRACTOR: **OSCT (THAILAND) CO., LTD.**	**INVOICE TO:** **Valeura Energy (Gulf of Thailand) Ltd.**
ADDRESS: 221 Bangkhuntien-Chaitalay Rd., Samaedum, Bangkhuntien Bangkok, 10150, THAILAND **ATTN:** - Receive payment **E-MAIL:** operation.th@osct.com **PHONE:** **FAX:**	**ADDRESS:** 10TH, 30TH-31ST FLOOR, SHINAWATRA TOWER 3 1010 VIPHAVADI RANGSIT ROAD CHATUCHAK BANGKOK 10900, THAILAND **ATTN:** ACCOUNTS PAYABLE **BLOCK:** 2511-VEGOT - Wassana JV
SHIP TO / CONSIGNEE: **Valeura Energy (Gulf of Thailand) Ltd.** 30TH-31ST FLOOR, SHINAWATRA TOWER 3 1010 VIPHAVADI RANGSIT ROAD CHATUCHAK BANGKOK 10900, THAILAND **ATTN:** SUCHADA JIRAWAN	**SHIPPING INSTRUCTIONS:** 1. It is the Supplier/Contractor's responsibility to supply written information to Company on all items of a hazardous or potentially hazardous nature and ensure that all items are packed securely for transportation. 2. Partial shipment is not allowed unless otherwise agreed. 3. A copy of approved order must accompany with Delivery Ticket.
PURCHASING TERM: **SHIP BY:**	**PORT OF ENTRY:**
SUPPLIER/CONTRACTOR'S REF NO:	**SUPPLIER/CONTRACTOR'S REF DATE:**
REQUISITIONER: Suchada Jirawan	**REQUISITION NO:** 101645
OBJECTIVE/SUBJECT:	**CURRENCY:** THB **PAYMENT TERMS:** 60 Days
ATTACHMENTS:	**PROJECT/WO:** 2024

IMPORTANT NOTES TO SUPPLIER/CONTRACTOR:
1. This Release Order is subject to the terms and conditions of the Agreement/Contract referred to above.
2. The terms and conditions of such Agreement/Contract shall prevail over all such previous communications, conditions, documents submitted by Supplier/Contractor.
3. If Supplier/Contractor notices any non-compliance, please immediately notify Company Legal and Compliance Group via e-mail: legal@valeuraenergy.com.

NOTE:

NO.	ITEM CODE	QUANTITY	UOM	DESCRIPTION, MFG & P/N	MSDS / CERT / VDR (If required)	DELIVERY DATE	ALL PRICES (EX – VAT)	
							UNIT PRICE	EXTENDED PRICE
1		7,000,000	Job	2024 Provision of Oil Spill Response Services and Equipment for G10 Operations Start Date: 01-MAY-2024 To 31-MAR-2025 2511.850055.172.000000.000.0000			1.00	7,000,000.00
							TOTAL (THB):	**7,000,000.00**

MARKINGS: Valeura Energy (Gulf of Thailand) Ltd. RO.: 201210VGOT DEST: BKK Office	REQUESTOR: Alisa Jankrajang E-MAIL: alisa.j@valeuraenergy.com	PHONE: +66 2 766 9614
	Expense	TYPE: Services

Release Order

TYPE: Release Order Ref Agreement No.:1157	**DATE:** 17-JUL-2024 **STATUS:** APPROVED	**DESTINATION:** BKK Office AGREEMENT RELEASE NUNBER AND DESTINATION MUST APPEAR ON ALL DOCUMENTS AND PACKAGES	**NO.: 201210VGOT**

SUPPLIER/CONTRACTOR: **OSCT (THAILAND) CO., LTD.**	**INVOICE TO:** **Valeura Energy (Gulf of Thailand) Ltd.**

IMPORTANT: PLEASE CONFIRM YOUR ACCEPTANCE OF THIS ORDER BY SIGNING AT THE SPACE PROVIDED BELOW AND RETURNING THIS PAGE TO **Alisa Jankrajang** WITHIN 2 WORKING DAYS BY E-MAIL TO **alisa.j@valeuraenergy.com**

CONFIRMED ACCEPTANCE OF THIS ORDER FOR AND ON BEHALF OF:

SUPPLIER/CONTRACTOR: **OSCT (THAILAND) CO., LTD.**

CONFIRMED DELIVERY DATE:

AUTHORIZED SIGNATURE:

PRINT NAME:

POSITION:

DATE:

On behalf of Company
APPROVED BY,

Punnada Kanokrattanachot

MARKINGS: Valeura Energy (Gulf of Thailand) Ltd. RO.: 201210VGOT DEST: BKK Office	REQUESTOR: Alisa Jankrajang E-MAIL: alisa.j@valeuraenergy.com	PHONE: +66 2 766 9614
	Expense	TYPE: Services

Release Order

TYPE: Release Order Ref Agreement No.:1157	**DATE:** 17-JUL-2024 **STATUS:** APPROVED	**DESTINATION:** BKK Office AGREEMENT RELEASE NUNBER AND DESTINATION MUST APPEAR ON ALL DOCUMENTS AND PACKAGES	**NO.: 201210VGOT**

SUPPLIER/CONTRACTOR: **OSCT (THAILAND) CO., LTD.**	**INVOICE TO:** **Valeura Energy (Gulf of Thailand) Ltd.**
ADDRESS: 221 Bangkhuntien-Chaitalay Rd., Samaedum, Bangkhuntien Bangkok, 10150, THAILAND **ATTN:** - Receive payment **E-MAIL:** operation.th@osct.com **PHONE:** **FAX:**	**ADDRESS:** 10TH, 30TH-31ST FLOOR, SHINAWATRA TOWER 3 1010 VIPHAVADI RANGSIT ROAD CHATUCHAK BANGKOK 10900, THAILAND **ATTN:** ACCOUNTS PAYABLE **BLOCK:** 2511-VEGOT - Wassana JV
SHIP TO / CONSIGNEE: **Valeura Energy (Gulf of Thailand) Ltd.** 30TH-31ST FLOOR, SHINAWATRA TOWER 3 1010 VIPHAVADI RANGSIT ROAD CHATUCHAK BANGKOK 10900, THAILAND **ATTN:** SUCHADA JIRAWAN	**SHIPPING INSTRUCTIONS:** 1. It is the Supplier/Contractor's responsibility to supply written information to Company on all items of a hazardous or potentially hazardous nature and ensure that all items are packed securely for transportation. 2. Partial shipment is not allowed unless otherwise agreed. 3. A copy of approved order must accompany with Delivery Ticket.
PURCHASING TERM: **SHIP BY:**	**PORT OF ENTRY:**
SUPPLIER/CONTRACTOR'S REF NO:	**SUPPLIER/CONTRACTOR'S REF DATE:**
REQUISITIONER: Suchada Jirawan	**REQUISITION NO:** 101645
OBJECTIVE/SUBJECT:	**CURRENCY:** THB **PAYMENT TERMS:** 60 Days
ATTACHMENTS:	**PROJECT/WO:** 2024

IMPORTANT NOTES TO SUPPLIER/CONTRACTOR:
1. This Release Order is subject to the terms and conditions of the Agreement/Contract referred to above.
2. The terms and conditions of such Agreement/Contract shall prevail over all such previous communications, conditions, documents submitted by Supplier/Contractor.
3. If Supplier/Contractor notices any non-compliance, please immediately notify Company Legal and Compliance Group via e-mail: legal@valeuraenergy.com.

NOTE:

NO.	ITEM CODE	QUANTITY	UOM	DESCRIPTION, MFG & P/N	MSDS / CERT / VDR (If required)	DELIVERY DATE	ALL PRICES (EX – VAT) UNIT PRICE	EXTENDED PRICE
1		[redacted]	Job	2024 Provision of Oil Spill Response Services and Equipment for G10 Operations Start Date: 01-MAY-2024 To 31-MAR-2025 2511.850055.172.000000.000.0000			1.00	[redacted]
							TOTAL (THB):	[redacted]

MARKINGS: Valeura Energy (Gulf of Thailand) Ltd. RO.: 201210VGOT DEST: BKK Office	REQUESTOR: Alisa Jankrajang E-MAIL: alisa.j@valeuraenergy.com	PHONE: +66 2 766 9614
	Expense	TYPE: Services

Release Order

TYPE: Release Order Ref Agreement No.:1157	**DATE:** 17-JUL-2024 **STATUS:** APPROVED	**DESTINATION:** BKK Office AGREEMENT RELEASE NUNBER AND DESTINATION MUST APPEAR ON ALL DOCUMENTS AND PACKAGES	**NO.: 201210VGOT**

SUPPLIER/CONTRACTOR: **OSCT (THAILAND) CO., LTD.**	**INVOICE TO:** **Valeura Energy (Gulf of Thailand) Ltd.**

IMPORTANT: PLEASE CONFIRM YOUR ACCEPTANCE OF THIS ORDER BY SIGNING AT THE SPACE PROVIDED BELOW AND RETURNING THIS PAGE TO **Alisa Jankrajang** WITHIN 2 WORKING DAYS BY E-MAIL TO **alisa.j@valeuraenergy.com**

CONFIRMED ACCEPTANCE OF THIS ORDER FOR AND ON BEHALF OF:

SUPPLIER/CONTRACTOR: **OSCT (THAILAND) CO., LTD.**

CONFIRMED DELIVERY DATE:

AUTHORIZED SIGNATURE:

PRINT NAME:

POSITION:

DATE:

On behalf of Company
APPROVED BY,

Punnada Kanokrattanachot

MARKINGS: Valeura Energy (Gulf of Thailand) Ltd. RO.: 201210VGOT DEST: BKK Office	REQUESTOR: [redacted] E-MAIL: [redacted]	PHONE: [redacted]
	Expense	TYPE: Services

เอกสารแนบที่ 60

เอกสารการฝึกอบรมสำหรับพนักงานที่ทำงานเกี่ยวกับสารเคมี

HSSE training and event participation form

valeura energy

Subject	**Basic Safety Data Sheet (SDS) Training**				
Venue	**G10 Wassana MOPU Ingenium – CCR**				
Date	**01 Feb 2025**	**Start**	Day : 06:00 AM Night: 06:00 PM	**End**	Day : 06:30 AM Night: 06:30 PM

No.	Name	Last name	Position	Company	Signature
1	[redacted]		Field Manager	Valeura Energy	[redacted]
2			Operation Supervisor	Connect Energy	
3			Safety Technician	Connect Energy	
4			Radio Operator	Connect Energy	
5			Sr. CCR Operator	Connect Energy	
6			Sr. CCR Operator	Connect Energy	
7			Production Operator	Connect Energy	
8			Production Operator	Connect Energy	
9			Production Operator	Connect Energy	
10			Store Man	Connect Energy	
11			EIO	Connect Energy	
12			EIO	Connect Energy	
13			EIO	Connect Energy	
14			Mechanical Technician	Connect Energy	
15			Mechanical Technician	Connect Energy	
16			Deck Foreman	Connect Energy	
17			Crane Operator	Connect Energy	
18			Deck Crew	Connect Energy	
19			Deck Crew	Connect Energy	
20			Deck Crew	Connect Energy	
21			Medic	ISOS	
22			Asset Integrity Supervisor	Valeura Energy	

Prepared by	[redacted]	**Signature**	[redacted]
Date			

HSSE training and event participation form

valeura energy

Subject	**Basic Safety Data Sheet (SDS) Training**				
Venue	**G10 Wassana MOPU Ingenium – Mess Room**				
Date	**01 Feb 2025**	**Start**	07:00 AM	**End**	07:30 AM

No.	Name	Last name	Position	Company	Signature
1	[redacted]		Cook/Campboss	Sodexo	[redacted]
2			Cook	Sodexo	
3			Steward	Sodexo	
4			Steward	Sodexo	
5			Steward	Sodexo	

Prepared by	[redacted]	**Signature**	[redacted]
Date			

valeura energy

Basic Safety Data Sheet (SDS) Training

valeura energy

PENNSTATE

Globally Harmonized System (GHS) Change from Material Safety Data Sheet (MSDS) to Safety Data Sheet (SDS)

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In March 2012, Occupational Safety and Health Administration (OSHA) published a final rule to align its Hazardous Communication Standards (HCS) regulations with the Globally Harmonized System (GHS) of Classification and labeling of chemicals

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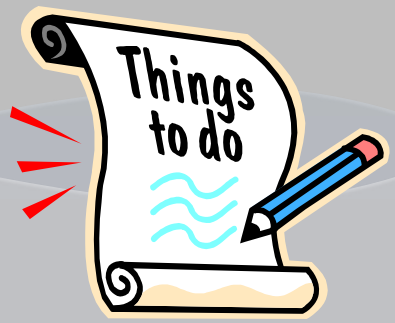
The primary goal of GHS is improved protection of human health and the environment by providing chemical users and handlers with enhanced and consistent information on chemical hazards.

Major Changes Under GHS

Changes

- MSDS to SDS Format
- Labeling Requirements/Pictograms
- Hazard Classification



Changes

- **MSDS to SDS Format**
  - MSDS will now be referred to as Safety Data Sheets (SDS).
  - There is now a specified 16-section format that must be followed.

Section 1
Identification of Substance and Supplier
ประกอบด้วยชื่อสารเคมีผลิตภัณฑ์และชื่อผู้ผลิตหรือผู้จำหน่ายข้อมูล

- **Includes**
  - Product identifier (Product Name).
  - Manufacturer's or distributor's name, address and phone number.
  - Emergency phone number.
  - Recommended use.
  - Restrictions on use.

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SECTION 1: Identification: Product identifier and chemical identity

Product identifier

Product name	Slickgone NS
Product No.	F315

Relevant identified uses of the substance or mixture and uses advised against

Application	Internationally approved dispersant for treating oil spills in the marine environment.

Details of the supplier of the safety data sheet

Supplier	Dasic International OSD Ltd Winchester Hill, Romsey, Hampshire, SO51 7YD, UK +44 1794 512419 +44 1794 522346 info@dasicinter.com
Contact Person	Enviropacific Services Pty Ltd 1/4 Revelation Close, Tighes Hill, NSW 2297, Australia PO Box 295, Wickham NSW 2293 Email: donc@enviropacific.com.au Web: www.enviropacific.com.au

Emergency telephone number

Emergency telephone	+61 (0) 2 4961 7100

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Section 2
Hazard Identification
ประกอบด้วยข้อมูลบ่งชี้อันตราย

- **Includes:**
  - All hazards regarding the chemical.
  - Required label elements:
    - Pictograms.
    - Signal Word.
    - Hazard Statements.

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Section 2
Hazard Identification
ประกอบด้วยข้อมูลบ่งชี้อันตราย

Signal Words (OSHA):

- Warning.
- Danger.

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SECTION 2: Hazard(s) identification

Classification of the substance or mixture

Physical hazards	Flam. Liq. 4 - H227
Health hazards	Asp. Tox. 1 - H304
Environmental hazards	Not Classified

Label elements

Pictogram

Signal word	Danger
Hazard statements	H227 Combustible liquid. H304 May be fatal if swallowed and enters airways.
Precautionary statements	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P260 Do not breathe spray. P313 Get medical advice/ attention. P210 Keep away from heat/ sparks/ open flames/ hot surfaces. - No smoking. P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction. P403+P235 Store in a well-ventilated place. Keep cool. P501 Dispose of contents/ container in accordance with national regulations.
Contains	Distillates (petroleum), hydrotreated light

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Section 3
Composition/Information on Ingredients

ประกอบด้วยส่วนประกอบหรือส่วนผสมของสารเคมีที่มีอยู่ในผลิตภัณฑ์

- **Includes:**
  - Composition/information on ingredients:
    - Common Name.
    - CAS number.
    - Concentration.
  - Information on chemical ingredients.
  - Trade secret claims.

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SECTION 3: Composition and information on ingredients

Mixtures

Distillates (petroleum), hydrotreated light CAS number: 64742-47-8	**60-100%**
Classification Asp. Tox. 1 - H304	
Sodium dioctyl sulphosuccinate CAS number: 577-11-7	**5-10%**
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319	

The full text for all hazard statements is displayed in Section 16.

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Section 4
First Aid Measures

ประกอบด้วยข้อมูลการปฐมพยาบาล

- **Includes:**
  - Important symptoms.
  - Acute symptoms.
  - Delayed symptoms.
  - Required treatment based on route of exposure.

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SECTION 4: First aid measures

Description of first aid measures

Inhalation	Considered to be a low inhalation hazard at normal workplace temperatures. Get medical attention if symptoms are severe or persist.
Ingestion	Do not induce vomiting. Rinse mouth thoroughly with water. Give plenty of water to drink. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. Get medical attention if a large quantity has been ingested. If in doubt, get medical attention promptly. Never give anything by mouth to an unconscious person.
Skin Contact	Remove contaminated clothing and rinse skin thoroughly with water. Get medical attention if symptoms are severe or persist.
Eye contact	Remove any contact lenses and open eyelids wide apart. Rinse with water. Continue to rinse for at least 15 minutes and get medical attention.

Most important symptoms and effects, both acute and delayed

Inhalation	No specific symptoms known.
Ingestion	Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
Skin contact	May cause irritation.
Eye contact	May cause severe eye irritation.

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Section 5
Firefighting Measures
ประกอบด้วยวิธีปฏิบัติเมื่อเกิดเพลิงไหม้

- **Includes:**
  - Suitable extinguishing techniques.
  - Equipment needed.
  - Chemical hazards from fire.

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SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Hazardous combustion products	Acrid smoke or fumes.

Advice for firefighters

Protective actions during firefighting	Cool containers exposed to flames with water until well after the fire is out.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

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Section 6
Accidental Release Measures
ประกอบด้วยวิธีปฏิบัติเมื่อสารเคมีหกหรือรั่วไหล

- **Includes:**
  - Emergency procedures.
  - Protective equipment.
  - Proper methods of containment and cleanup.

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SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet.

Environmental precautions

Environmental precautions	Avoid the spillage or runoff entering drains, sewers or watercourses. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Methods for cleaning up	Absorb spillage with sand or other inert absorbent. Collect spillage for reclamation or disposal in sealed containers via a licensed waste contractor. Flush contaminated area with plenty of water.

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Section 7
Handling and Storage

ประกอบด้วยข้อมูลข้อมูลการใช้งานและการจัดเก็บ

- **Includes:**
  - Precautions for safe handling.
  - Precautions for safe storage.
  - Incompatibilities.

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SECTION 7: Handling and storage, including how the chemical may be safely used

Precautions for safe handling

Usage precautions	Wear protective clothing as described in Section 8 of this safety data sheet.

Conditions for safe storage, including any incompatibilities

Storage precautions	Keep out of the reach of children. Store away from the following materials: Strong oxidising agents.

Specific end use(s)

Specific end use(s)	Obtain special instructions before use.

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Section 8
Precautions to Control Exposure/ Personal Protection

ประกอบด้วยข้อมูลการป้องกันและควบคุมการเข้าสู่ร่างกาย

- **Includes:**
  - OSHA's Permissible Exposure Limits (PELs).
  - Threshold Limit Values (TLVs).
  - Appropriate engineering controls.
  - Personal Protective Equipment (PPE) requirements.

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SECTION 8: Exposure controls and personal protection

Control parameters

Occupational exposure limits

Distillates (petroleum), hydrotreated light

CEFIC-HSPA : 1200 mg/m3

Exposure controls

Appropriate engineering controls	Provide adequate ventilation.
Eye/face protection	Wear chemical splash goggles.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.
Other skin and body protection	Wear suitable protective clothing as protection against splashing or contamination.
Respiratory protection	Respiratory protection may be required if excessive airborne contamination occurs. Wear a respirator fitted with the following cartridge: Organic vapour + dust and mist filter.

Section 9
Physical and Chemical Properties

ประกอบด้วยข้อมูลสมบัติทางกายภาพ

- **Includes:**
  - Chemical's characteristics.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Viscous liquid.
Colour	Brown.
Odour	Slight. Petroleum.
Odour threshold	No information available.
pH	pH (concentrated solution): 5 - 7
Melting point	< -10°C
Initial boiling point and range	192°C @ 760 mm Hg
Flash point	72°C PMCC (Pensky-Martens closed cup).
Evaporation rate	No information available.
Flammability Limit - Lower(%)	No information available.
Vapour pressure	No information available.
Vapour density	> 1 (air = 1)
Relative density	0.88 @ 20°C
Solubility Value (g/100g H2O 20°C)	Forms an emulsion with water.
Partition coefficient	Not applicable.
Auto-ignition temperature	225°C
Decomposition Temperature	No information available.
Viscosity	Kinematic viscosity ≤ 20.5 mm²/s.
Other information	Conductivity 5.4 x 10↑7 pS/m (Concentrate product).

Section 10
Stability and Reactivity

ประกอบด้วยข้อมูลความว่องไวในการทำปฏิกิริยาและความเสถียร

- **Includes:**
  - Stability of chemical.
  - Chemical characteristics.

SECTION 10: Stability and reactivity	
Stability	No particular stability concerns.
Possibility of hazardous reactions	The following materials may react strongly with the product: Oxidising agents.
Conditions to avoid	Thermal decomposition or combustion products may include the following substances: Acrid smoke or fumes.
Materials to avoid	Oxidising agents.

Section 11
Toxicological Information
ประกอบด้วยข้อมูลความเป็นพิษ

- **Includes:**
  - Routes of exposure.
  - Related symptoms.
  - Acute effects.
  - Chronic effects.
  - Numerical measures of toxicity.
    - LD_{50} values and LC_{50} values.

SECTION 11: Toxicological information	
Information on toxicological effects	
Acute toxicity - oral	
ATE oral (mg/kg)	21,978.02
Acute toxicity - dermal	
ATE dermal (mg/kg)	21,978.02
Aspiration hazard	
Aspiration hazard	Aspiration hazard if swallowed.
Ingestion	Aspiration hazard if swallowed. Nausea, vomiting.
Skin Contact	Prolonged contact may cause dryness of the skin.
Eye contact	May cause severe eye irritation.

Section 12
Ecological Information
ประกอบด้วยข้อมูลทางนิเวศวิทยา

- **Includes:**
  - Eco-toxicity.
  - Mobility.
    - Does it move in air, soil, or water.
  - Degradability.
    - Is it biodegradable.
  - Bioaccumulation.

SECTION 12: Ecological Information	
Toxicity	Ecotoxicity: Overall, slightly toxic to practically non-toxic (IMO/GESAMP classification). Dasic Slickgone NS meets the Australian Maritime Safety Authority eco-toxicity acceptability criteria for Oil Spill Control Agent product listing under the Australian National Plan. The following Australian test species data was obtained: Penaeus monodon (crustacean), 96-hr EC50, 29.7 ppm; Allorchestes compressa (crustacean), 96-hr EC50, 2.6 ppm; Seriola lalandi (fish), 96-hr EC50, 23.8 ppm; Lates calcarifer (fish), 96-hr EC50, 42.0 ppm; Heliocidaris tuberculata (urchin), 72-hr EC50, 15.2 ppm; Isochrysis aff. galbana (alga), 72-hr IC50, 6.4 ppm; Hormosia banksii (alga), 72-hr EC50, >100 ppm.
Persistence and degradability	
Persistence and degradability	Expected to be readily biodegradable.
Phototransformation	Data lacking.
Stability (hydrolysis)	Data lacking.
Biodegradation	Data lacking.
Biological oxygen demand	Data lacking.
Chemical oxygen demand	Data lacking.
Bioaccumulative potential	
Bioaccumulative Potential	The product does not contain any substances expected to be bioaccumulating.
Partition coefficient	Not applicable.
Mobility in soil	
Mobility	Semi-mobile.
Adsorption/desorption coefficient	Not applicable.
Henry's law constant	Not applicable.

Section 13
Waste Disposal Consideration
ประกอบด้วยข้อแนะนำในการกำจัดกากหรือสารเคมีเหลือใช้

- **Includes:**
  - Advise to contact local wasted disposal authority for direction on disposal.
  - Information that directs washing liquids should not be allowed to enter drains.
  - Directions for container disposal.
  - Recommendations for disposal if recycling is not an option.

SECTION 13: Disposal considerations	
Waste treatment methods	
General information	Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.
Disposal methods	Dispose of waste product or used containers in accordance with local regulations External recovery, treatment, recycling and disposal of waste should comply with all applicable local and/or national regulations.

Section 14
Transportation Information
ประกอบด้วยข้อมูลเกี่ยวกับการขนส่ง

- **Includes:**
  - Proper shipping name.
  - Hazard class.
  - Secondary risk.
  - Identification information.
  - Packing group.
  - Label required.
  - Marine pollutant identification.

SECTION 14: Transport information

General	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).
UN number	
UN No. (ADG)	Not regulated.
UN No. (IMDG)	Not regulated.
UN No. (ICAO)	Not regulated.
UN proper shipping name	
Not applicable.	
Proper shipping name (ADG)	Not regulated.
Proper shipping name (IMDG)	Not regulated.
Proper shipping name (ICAO)	Not regulated.
Packing group	
Not applicable.	
Environmental hazards	
Environmentally hazardous substance/marine pollutant	
No.	
Special precautions for user	
Not applicable.	
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

Section 15
Regulatory Information
ประกอบด้วยข้อมูลตามที่กฎหมายบังคับไว้

For pesticides this is the area where any FIFRA information would be included, for example:

"Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:"

SECTION 15: Regulatory information

Inventories

Australia - AICS

All the ingredients are listed or exempt.

Section 16
Other Information
ประกอบด้วยข้อมูลอื่น

- **Includes:**
  - Department issuing SDS.
  - Email address.
  - Training necessary.
  - Reissue date/reason for reissue.
  - General intended use of the product.

SECTION 16: Any other relevant information	
Revision date	5/04/2017
Revision	13
Supersedes date	4/01/2017
SDS No.	4607
Hazard statements in full	H227 Combustible liquid. H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H312 Harmful in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation.

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Pictograms

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We Keep It Safe and Sustainable

THANK YOU

เอกสารแนบที่ 61

คู่มือการเข้าเทียบเรือ และการขนถ่ายน้ำมันดิบ

VALEURA ENERGY (GULF OF THAILAND)

G10 WASSANA FIELD

WASSANA TERMINAL REGULATIONS & BERTHING HANDBOOK

Document No.

WAS-OP-03-MN-2023-0001

Revision	Date	Description	Prepared	Checked	Approved
0	15/05/2023	Issued for Use	Suriyan P.	Suriyan P.	Vorathep O.
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1. DISCLAIMER

This Handbook has been prepared for the benefit of Masters, owners and agents of Export Tankers by Valeura Energy Thailand Ltd, who are the Wassana Field operators the FSO is operated by PT Gemilang Bina Lintas Tirta (PT GBLT) on behalf of Valeura Energy. While believing the information contained herein to be correct, Valeura Energy Ltd on its own behalf, and on behalf of PT Gemilang Bina Lintas Tirta (PT GBLT) makes no warranties in respect of and accepts no responsibility for its accuracy or completeness (regardless of its purpose of use) and reserves the right to amend the information contained herein as and when required. It is the user's responsibility to ensure that the latest edition of this Handbook and the Terminal Conditions are being referred to. This handbook may be reissued and revised from time to time.

2. INTRODUCTION

PT Gemilang Bina Lintas Tirta (PT GBLT) is the operator of the Oil Carrier Storage Service Jaka Tarub,and shall be called FSO Jaka Tarub moored at the Wassana Oil Field G10/48 located in the Gulf of Thailand, about 65 nm NE of Songkhla. This operation is supervised and managed via a contract by Valeura Energy

CALM buoy is in position Latitude 07 deg 56' 37.994" North Longitude 101 deg 24'14.618" East (765001.02 mE 878794.19 mN)

The field consists of Mobile Offshore Production Unit, an SPM CALM Buoy and an FSO (Floating, Storage and Offloading) facility, called FSO Jaka Tarub

Figure 1 Wassana Field Gulf of Thailand

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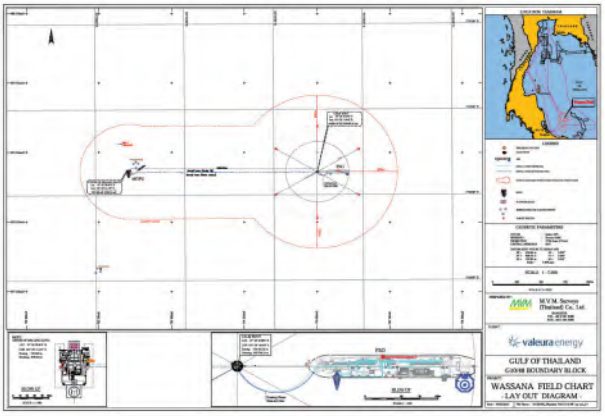
Figure 2 Wassana Field Layout



Vessels using the Terminal are moored in tandem with the Export Vessel's bow moored to the stern of the Terminal Vessel. Vessels are to fully comply with the terms, conditions, rules and directives set out in the Terminal Regulation Handbook and Terminal Conditions. In conducting operations at the Terminal references shall be made to the latest versions of the following Oil/Marine Industry Recommendations contained in, but not limited to:

- Oil Companies International Safety Guide for Oil Tankers and Terminals, (ISGOTT)
- Effective Mooring, (OCIMF)
- Recommendations for Oil Tanker Manifolds and Associated Equipment, (OCIMF)
- Required Boarding Arrangements for Pilots (IMO/IMPA)
- International Convention for Safety of Life at Sea (SOLAS)
- International Convention on Marine Pollution 73 and Modified by the Protocol 1978

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3. PURPOSE

The purpose of this Terminal handbook is to assist with the efficient selection of Export Tankers for the export of the oil cargos and to inform the owners of the proposed vessel of the minimum standards which are required before a vessel will be accepted at the terminal.

Terminal operations take place on 24 hours a day basis in normal weather conditions.

- Berthing operations take place in DAYLIGHT only. Latest Pilot Boarding Time 1600 hrs.
- The weather criteria for Tandem berthing operation are within the followings.
  - At constant wind speeds less than 25 knots.
  - Maximum wave height less than 2.5 meter.
  - Visibility is greater than 3 nautical miles.
- The weather criteria for Side by side berthing operation are within the followings
  - At constant wind speeds less than 20 knots.
  - Maximum wave height less than 2 meters.
  - Visibility is greater than 3 nautical miles.

The weather criteria for personal transfer by Utility vessel or workboat to Low Freeboard Tanker which provide the suitable boarding platform to maintain the boarding height at least 2 meters above the water, are within the followings.

- At constant wind speeds less than 15 knots.
- Maximum wave height less than 1.5 meters

The Terminal may be closed if the Company considers weather or other conditions make the continued operation of the Terminal unsafe. Periods of Terminal Closure and the reasons for closure will be notified to Terminal users in writing.

Vessels waiting to berth, berthing or moored to the Terminal, must display the national flag of the Kingdom of Thailand during daylight hours.

The basic principle underlying this document is the protection of life, the environment and property.

No commercial consideration shall ever influence decisions where the safety of life or protection of the environment and property is involved.

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4. SCOPE

This Terminal handbook covers all vessels which wish to be proposed as Export vessels and the standards and conditions which are required before the vessel is accepted and the vessel must maintain while at the terminal, it also lists and covers the services available and provided by the Terminal. The scope of these procedures is applicable to all Valeura Energy asset, all FSO Jaka Tarub employees, its contractors, and service providers and to all tankers visiting the Wassana Marine Terminal.

This document does not in any way extend to vessel operating procedures which are the responsibility of the individual ship operator. It does complement these procedures and provides a mechanism for the Marine Terminal Representative to coordinate and monitor the terminal and tanker operations.

The handbook is intended to provide the following:

- Safety Information
- Convenience of Information
- Marine Terminal Rules
- Marine Terminal Operations Information

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5. DEFINITIONS AND ABBREVIATIONS

Abbreviations Words & Expressions	Definition
API	American Petroleum Institute
Approved Equipment	Means equipment of a design that has been tested and approved by an appropriate authoritysuch as a government department or classification society. The authority shall have certified the equipment as safe for use in a specified hazardous atmosphere.
Authorised Craft	Means any tug, barge, or launch authorised by the OIM of the FSO OIM Marine Terminal or his authorised deputy, to operate at FSO OIM Marine Terminal and which complies with the safety requirements of the terminal.
bbl/s	Standard measure of oil volume. US bbl/s is tobe used.
Berthing crew	Consists of VE provided Marine Reps and crew from the Export Tanker
Boarding crew	Consists of all or any of the following people forthe duration of Export: 1 Pilot, 1 Assistant Pilot,1 Independent Surveyor, up to 3, but usually 1,Customs Immigration and Quarantine (CIQ) Officers, 1 Owner's Shipping Agent / Owners Protected Agent (OPA), 1 Field operator Management Representative
BOL	Bill of Lading
CBT	Clean Ballast Tanks. (Vessel has dual use cargo / ballast tanks. Ballast is not segregated)
DWT	Dead Weight Tonnage
FSO	The Jaka Tarub Floating Storage and Offloading
ISV	In Field Service Vessel
MOPO	Manual of Permitted Operations
MOPU	Mobile Offshore Production Unit
IMO	International Maritime Organization
ISGOTT	International Safety Guide for Oil Tankers andTerminals
OIM	Offshore Installation Manager
MARPOL	International Convention on Marine Pollution1973 and as modified by the Protocol 1978
MSDS	Material Safety Data Sheet

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Abbreviations Words & Expressions	Definition
ISGOTT	International Safety Guide for Oil Tankers andTerminals
SDS	Safety Data Sheet
MARPOL	International Convention on Marine Pollution1973 and as modified by the Protocol 1978
DMF	Department Of Mineral Fuel
Mooring Master (Terminal Pilot)	One or more qualified Marine personnel approved by VE to carry out selected duties including pilotage on board the export tanker asper VE's requirements and provided by VE to assist in mooring, loading and unmooring of theexport tanker. One of the Pilot(s) will be designated Load Master under the direction of VE.
OCIMF	Oil Companies International Maritime Forum
SBTs	Segregated Ballast Tanks (Vessel hasdedicated ballast tanks)
Shall	A mandatory instruction
Should	A recommended instruction
SOLAS	International Convention for Safety of Life atSea
TOVLAP	Tanker Owners Voluntary Agreementconcerning Liability for Oil Pollution

6. GENERAL FACILITY INFORMATION

6.1 FSO Jaka Tarub

The FSO Jaka Tarub is a converted Panamax tanker size 74,999 DWT and 475,454 bbls total crude oil storage capacity. Crude Oil is delivered through a CALM buoy and floating hose system at a maximum rate of 9,000 bbls/hr

6.2 Location

The location of the FSO Jaka Tarub is:

- Latitude 07-56' 37.994 N
- Longitude 101-24' 14.618 E

Charts for area

British Admiralty Charts Numbers: 66
Electronic Nautical Chart number: TH400229

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6.3 Radio Communication with FSO Jaka Tarub & Valeura Energy Platform

FSO Jaka Tarub has radio communication 24 hours a day.

FSO Jaka Tarub call sign:	YDXS2
FSO Jaka Tarub MMSI No:	525121038
FSO Jaka Tarub Bridge:	FBB +870 773 140 552
FSO VSAT Phone	+66 2-460-7188
FSO Jaka TarubMaster :	+62 81261619118
Valeura Energy OIM:	+66 2-026-5748
E- mail Master:	jaka.tarub@gemilang-sm.com
E- mail Valeura Energy OIM:	Wassana.OIM@valeuraenergy.com

Incoming Export Vessels may communicate with the FSO Jaka Tarub, whichshall listen on VHF Channel 16 and 08. The Facility shall use VHF Channel 08 as a working frequency.

6.4 Time

This facility operates on the following time: UTC + 0700 hours.

6.5 Environmental monitoring procedures

6.5.1 General

Masters should consult the latest edition of the sailing directions for information on weather and environmental conditions, namely:

British Admiralty: China Sea Pilot Vol. 1, published by the Hydrographer of the Royal Navy.

The Gulf of Thailand covers an area of approximately 350,000 km2, opens to the South China Sea and extends from Mui Bai Bung (6° 37' N, 104° 40' E) on the south-western tip of Vietnam to Sungai Kelantan (6°. 13' N, 102° 14' E) on the east coast of Peninsular Malaysia).

6.5.2 Currents

Currents in the Gulf are generally weak and variable. From October to May, during the northeast monsoon, wind-driven, mainly near shore surface currents in the Gulf circulate in a counterclockwise direction. These currents are reversed by prevailing southwest winds from June to September and develop a clockwise flow. Current speeds of greater

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than 1.35 knots have been reported in the northeastern Gulf, but average speeds are usually less than 0.54 knots.

6.5.3 Winds

The Gulf is fairly sheltered from the winds of the two monsoons and as a result, has a high percentage of calm to light conditions throughout the year. The direction of prevailing winds is determined by monsoonal activity. Between May and September, the southwest monsoon period, southwesterly winds are predominant. Wind direction is variable in October and then during the north- east monsoon from October to January, the winds are from the north to east.

In February and March, the dominant wind direction is south-east and in April, winds are again variable with the transition from the winter to summer monsoons. Shelter from the Asian landmass has an effect on wind speeds in the Gulf such that during the northeast monsoon, wind speeds are lighter in the north of the Gulf than in the south. In the southwest monsoon light winds are less frequent in the north than in the south. Strong winds are more frequent during the northeast monsoon than the southwest monsoon. In an average year, storm winds may exceed 73km/h. Typhoons, which can create wind speeds over 200 km/h are uncommon in the Gulf, in fact the occurrence of typhoons is less than once every 10 years.

Squalls, associated with rapid increases in wind speed, change in direction, heavy rain and electrical activity, are prevalent during the change in summer to winter monsoons.

6.5.4 Waves

Sea conditions are generally calm to slight in the sheltered conditions of the Gulf. In February, when sea conditions are bad in the China Sea, the frequency of sea waves less than 1 m in height is more than 80%. It is reported that over an average year, most waves in the central Gulf were less than 2 m with a period of about 5 seconds. Storm waves can reach 7 m, the greatest proportion of waves in the central Gulf region in an average year approached from the east to southeast and from the west to southwest.

6.5.5 Climate

The region, influenced by the northeast and southwest monsoonal systems, is subject to seasonal wind shifts. Prevailing south-westerly winds and high rainfalls (about 160mm/month) characterize the southwest or summer monsoon period, which extends from May to September.

The northeast or winter monsoon, from November to January, is a period of predominantly northeast winds and lower rainfall (about 80 mm/month). During the change from the winter monsoon to the summer monsoon (February to April), winds are variable, and rainfall is low (about 35mm/month).

6.5.6 Sea Water Temperature and Salinity

The average monthly sea surface temperature in the central Gulf region ranges from 27.6° C in January to 32.0° C in May and June. In general, surface salinities in the Gulf are between 30.5 and

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33 parts per thousand (ppt). Salinities at the deepest part of the central basin, where South China Sea water flows in, are generally higher (33-34 ppt or above).

6.5.7 Weather Reports

The Terminal receives regular, site specific, weather reports and will relay these reports to visiting Vessels, both when they are at anchor awaiting berth and when connected to the Terminal.

The Terminal will discuss the method of relaying weather reports when the Vessel first arrives.

6.5.8 Terminal Operational Restrictions

This table provides a general guide to the status of the Terminal based on sea and weather conditions.

OPERAION STATUS	MAXWAVE HT (MRTS)	WIND (KTS)	VISIBILITY (NM)	TIME
MAX BERTHING OP LIMIT	<2.5	<25	>3	DAYLIGHT ONLY
MAX OFFTAKE OP LIMIT	>2.5	>30	<1	24 Hours
CLOSED	>3.0	>35	<1	N/A

Berthing op limit: Mooring limited to daylight hours, No time limitations on disconnection of Mooring

Offtake op limit: No Export Tanker is usually allowed to moor. An Export Tanker already moored may continue Export operations on the basis the Terminal Representative and the Export Tanker master deem it safe and appropriate to do so.

Closed: No Export Tanker is allowed to moor. An Export Tanker already moored will be required to depart.

The decision to unmoor an Export Tanker will be based on several factors and this will be discussed with the Export Tanker master and Terminal Representative.

The Export Tanker may also be unmoored if the following conditions occur:

The weather conditions and forecasts are closely monitored before the arrival of the Export Vessel and during the actual Export operation. In the event of deteriorating weather conditions or the approach of a typhoon, mooring may be delayed. If an ExportVessel is already moored, then the Export Vessel may be unmoored in a timely manner.

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For mooring operations, the limiting maximum wave height is 2.5 m. For Export Vessels already moored, the design limits for the hawser will be approached when the maximum wave height reaches 2.0 -2.5 m and winds reach 30+ knots.

The recommended criteria for when Export Vessels should be unmoored is:

- Three occurrences of a peak mooring hawser tension greater than 100 tonnesforce within one hour.
- A single occurrence of a peak mooring hawser tension greater than 150 tonnesforce.

The Offshore Installation Manager shall have absolute discretion to determine:

- The suitability of weather conditions for mooring operations to be conducted.
- The suitability of weather conditions for Export operations to be continued.

This does not in any way derogate from the Export Vessel Master's responsibility for the safety of the Export Vessel and other responsibilities as defined in the Terminal Conditions.

Crude Export Tankers may be moored only during daylight hours but unmoored at any time - day or night all subject to the prevailing weather. Valeura Energy reserves the rightnot to moor a vessel if it arrives after 16.00 Local Hrs

More detail see: British Admiralty Sailing direction: China Sea Pilot Vol. 1

6.5.9 Typhoons

Export operations will be greatly influenced by forecasts of Typhoon and intensity,prevailing wind speeds, and sea/swell periods and heights.

Due to the erratic nature of Monsoons it is not possible to lay down absolute criteria regarding the status of the Terminal but the following table provides a general guide:

- TERMINAL STATUS TYPHOON ALERT STATUS
- Open Blue
- Restricted Yellow
- Closed Red

6.6 Anchor's

Export Tankers entering the Terminal's 5 nautical mile Restricted Zone shall have both anchors hauled firmly "home" in the hawse pipe and securely fastened by chains and the pawls on both anchors will be in place.

The Export Vessels shall not anchor within the exclusion zones. An exclusion zone is centred on

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the MOPU and FSO Jaka Tarub extends in a five hundred (500) meters radius off both facilities.

The offtake vessel shall not anchor within the Restricted zone. This zone extends to a distance of 5 nautical mile radius around the FSO where other vessels may pass through but should not anchor.

6.7 Fishing

No fishing shall be permitted from the Export Vessel within the Limits of the terminal.

6.7.1 Anchoring

The designated anchoring position for Vessels awaiting berth lies approximately 5 nautical miles East of the FSO in a water depth of approximately 50 meters. To avoid danger to sub-sea installations, no anchors may be dropped in the Terminal area except at the designated anchoring position and only with prior approval from the Terminal.

It is recommended that whenever possible vessels time their arrival to coincide with the agreed Mooring Master boarding time and avoid anchoring.

6.8 Hazards to Navigation

MOPU is located at:

- Latitude 07-56' 38.8" N
- Longitude 101-23' 11.3" E

SPM CALM Buoy is located at:

- Latitude 07-56' 35.3" N
- Longitude 101-24' 16.1" E

Coordinates taken from Valuera Energy Field Layout drawing – VE-G1048-WA-GA-001

6.9 Supplies and Services

The remote, deep-sea location of the Facility severely limits the provision of services. Export Vessels should ensure that they carry supplies adequate for a return journey.

6.10 Bunker Fuels

Bunker fuels are not available.

6.11 Freshwater

Fresh Water is not available.

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6.12 Stores

Stores are not available.

6.13 Dirty Ballast, Slops & Refuse

Dirty ballast, slops and refuse cannot be accepted at the Facility and under no circumstances can dirty ballast, slops or refuse be discharged to the sea.

6.14 Medical & Dental Service

Medical and dental services are not available at this Facility. In emergencies, medical evacuation to Songkhla can be arranged by the Export Vessels agent.

6.15 Shore Leave

Shore leave is not permitted.

6.16 Crew Change

Crew changes are not permitted.

6.17 Repairs

Repairs are not permitted whilst the Export vessel is moored to the Facility. Under no circumstances are the Export Vessel's main engines to be disabled for any period.

6.18 Fire Fighting

Each facility has a responsibility to deal with its own emergency and should at all times inform the FSO Master and the field offshore operations manager if a situation arises.

6.19 Pollution Control

Without derogating from the Terminal Conditions, liability for any pollution caused by oil which has passed the Export Vessel's permanent hose connection, will be for the account of, and recoverable from, the Export Vessel Owners (as defined in the Terminal Conditions).

Export Vessel shall comply fully with all relevant provisions of the MARPOL Convention.

During cargo loading operations, all scuppers shall be effectively plugged. Fixed and portable manifold oil containments shall be in place, and no leakage or spillage of oil or water, that can possibly contain oil, shall be allowed to escape overboard. Scupper plugs shall be removed to drain off accumulation of water periodically but must be replaced immediately after the water has been drained off. Manifold containments shall be drained before loading operations commence.

Any spillage or leakage must be reported immediately to the OIM and the Mooring Master.

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Should oil spillage occur during the loading or de-ballasting operations, then all such operations shall cease immediately, and action be taken to control and contain the spillage. Cleaning up operations shall start immediately and loading operations will not be resumed until remedial action has been completed to the satisfaction of the Mooring Master.

- No materials shall be thrown overboard.

6.20 Visitors to the Facility

Access to the Facility is by approximately 30 minutes Helicopter flight from Songkhla airport to the Facility or 4.5 hrs by boat from Songkhla in good weather. Because of the limited capacity of scheduled flights, the difficulties in arranging extra flights and the accommodation constraints on board the Facility, the attendance of visitors is not normally possible.

Customs, Department of Transport officers, independent surveyors, ships agents, buyer's representatives and any others intending to visit shall seek permission of the Offshore Operations Manager at least two days before scheduled arrival of the Export Vessel. Earlier advice would be appreciated. Should permission be granted, the Company may require full cost recovery in relation to the costs of transporting visitorsto the Facility. Normal visits that align with our boat and planned travel scheduleswould not be charged.

6.21 Fees, Charges and Liability in Respect to Services

Valeura energy do not intend to make any charges for mooring services supplied to Export Vessels by the Facility. This policy and is subject to periodic review and may be varied with discussion with the buyer in the event that Thai authorities alter any legislation or regulations.

All services provided or performed by the Company/BULL in connection withloading from the Facility (whether on board the Export Vessel or otherwise) are provided and performed strictly subject to the Terminal Conditions. Before any servicesare provided or performed by the Company/BULL, the Master of the Export Vesselshall be required to confirm its agreement to accept, observe, perform and comply with the Terminal Conditions. In signing a copy of the Terminal Conditions, the Master shall also be held to have signed for and on behalf of the Export Vessel Owners (as defined in the Terminal Conditions).

6.22 Custom Requirements

The Kingdom of Thailand Government Customs, Immigration and Port Health officials will board the Vessel at the same time as the Mooring Master. They will provide inwardand outward clearance and free pratique services.

6.23 Agency

Customs and Health Officials require the following forms:

1. Vessel Certificate of Registration	5 copies

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2. General Manifest Inwards	5 copies
3. Inward Cargo Manifest	5 copies
4. Through Cargo Manifest	5 copies
5. Safety Equipment Certificate	(for inspection)
6. Safety Construction Certificate	(for inspection)
7. Safety Radio Certificate	(for inspection)
8. Current Freeboard Survey Certificate	(for inspection)
9. De-rat Certificate	5 copies
10. Last Port Outward Clearance	original
11. Crew List	5 copies
12. Passenger List	5 copies
13. Through passenger list	5 copies
14. Crew and Passenger declaration	5 copies
15. List of Deck stores	5 copies
16. List of Engine stores	5 copies
17. List of Ships Equipment and Stores	5 copies

The Terminal does not perform any general agency work; therefore, the VesselOwner(s) /Charterer(s) must appoint a Vessel's Agent in Thailand

6.24 Wassana Crude Properties

The typical properties of Wassana crude oil as per Intertek Crude Oil Analysis dated 19Nov 2010 (ROI-003-P-00-FD-000023 (this may be superseded if there is an updated analysis)

- Density at 15 DegC – 0.92 kg/l
- API Gravity – 21
- Pour Point Deg C (Upper) – 15 deg C
- Reid Vapour Pressure – 4.65 psi

The properties listed above are indicative only and no warranty is given for the qualityof the crude.

The Material Safety Data Sheet (MSDS) of the crude shall be supplied by the Mooring Master at the Facility.

7. STANDARD OF EXPORT VESSELS

Export Vessels between 25,000 and 150,000 DWT can be accommodated at the Facility. The maximum displacement tonnage for Export vessels is 175,000 tonnes.

Annexure A is a sample of the Export Vessel Questionnaire, which the operator of the Export Vessel shall have completed (including the Forecastle Plan) and transmitted to the FSO Offshore Installation Manager. The Export Vessel shall provide answers to all questions before being cleared

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to visit the Facility. It is imperative that if at any time the particulars given in those answers should be seen to be inaccurate or should change in any respect, the Offshore Installation Manager Shall be notified by the Export Vessel operator, forthwith in writing. Without prejudice to any other consequence of such inaccuracy or change, failure to so notify, and to provide all necessary details relating thereto, may cause delay at the Facility.

Export Vessels shall be aware of the OCIMF publication "Recommendations for Equipment Employed in the Mooring of Ships at Single Point Moorings", and shall be fitted with the appropriate equipment in accordance with these recommendations. Winches used to handle moorings shall be capable of lifting at least 15 tonnes. Only vessels which are fitted with an approved OCIMF Chain Stopper suitable for a 76mm chain shall be accepted for berthing at the Terminal.

The bow windlass or winch that will be used for mooring shall be capable of picking up the mooring hawser and chafing chain which will have a combined weight of not more than 10 tonnes. When assessing the capabilities of the windlass or winch, allowance should be made for the efficiency loss due to friction, and change of direction of the mooring messenger line between the bow Panama lead and the windlass or winch. The drum shall have a good hauling lead from the Panama lead directed through the chain stopper in order to retrieve the hawser and chafing chains. The windlass or winch shall have one drum empty capable of accepting a 150 m x 72 mm polypropylene line and 220m x 28mm messenger line, on arrival at the Facility.

Under no circumstances shall the warp end be used to heave in the mooring system. ONLY a winch drum is acceptable.

Export Vessels shall have manifolds and associated Export equipment conforming to OCIMF standards and a manifold derrick or crane rated at 10 tonnes SWL as a minimum.

Given the particular requirements of the Facility, Export Vessels should ensure that their mooring arrangements and equipment are checked for suitability and can comply in all respects with the terminal requirements before finalization of charter arrangements and before arrival at a Facility. Failure to comply in all respects with these requirements could result in difficulties and delays at the Facility; all and any costs so incurred shall be to the Export Vessel Owners' (as defined in the Terminal Conditions) account.

Export Vessels shall comply with SOLAS and MARPOL conventions and protocols. Tankers found deficient and substandard in any safety requirements shall be refused to berth and load.

The inert gas system, on the Export Vessel, shall be capable of operating throughout the Export Vessel's operations at the Facility. The representative of the Facility may check the condition of the Export Vessel's tanks on arrival, and throughout the operations. In the event of failure of the system or, when the Export Vessel's tank atmospheres depart the SOLAS permissible safe limits, the Export Vessel shall be unmoored from the Facility. Vessels shall maintain all cargo tanks in Inerted condition at all times whilst at the Terminal. Vessels should arrive with tanks inerted so the Oxygen content is less than 6%. Upon boarding, the Pilot/Mooring Master will check random tanks for inert gas content and if any tank is found to have an oxygen content of above 6% the vessel will not be permitted to berth until all tanks have been satisfactorily inerted (below 6%)

The owner of the Export Vessel or bareboat charterers shall have in place the maximum pollution liability insurance available from and through a P & I Club in the International Group of P & I Clubs.

Export Vessels shall be covered by a current ITF certificate or equivalent. Export Vessels shall also be required to provide board and accommodation, where available, for all or any of the following people for the duration of Export:

- 2 Mooring/Loading Master from the Facility

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- Independent Surveyor
- Customs Officers
- Shipping Agent

The Owner or Demise Owner of the Export Vessel shall be a member of theInternational Tanker Owners Pollution Federation.

8. SAFETY & ENVIRONMENTAL PROTECTION PROCEDURES

Nothing contained in these Terminal Regulations shall relieve Masters of theirresponsibility from observing the normal precautions to prevent: -

- Fire
- Oil Spill
- Tank over pressurization or vacuum
- Environmental pollution
- Damage to the Mooring System
- Damage to the Loading Hose System
- Damage to the Terminal

The Master remains at all times wholly and fully responsible for his or her vessel and itsofficers and crew.

The Mooring Master is authorized to advise and request Masters to take any additional measures that may be necessary to ensure safe operations and eliminate risks should the circumstances require.

The Mooring Master is authorized to suspend oil transfer operations in the event that,in his or her opinion, safety is compromised, or a hazardous situation exists.

Operations at the Terminal and onboard Vessels shall be conducted in accordance with the latest ISGOTT, a copy of which shall be available on-board Vessels.

8.1 Vessel Vetting & Acceptance

A nomination for a Vessel to berth and load at the Terminal will not be accepted unless the vessel has been cleared through the Company Vetting System. Notwithstanding prior approval, all Vessels shall be subject to final inspection by the Mooring Master on boarding.

8.2 Export Vessel Safety Check

On arrival at the Facility, the Export Vessel shall be subject to a safety check by the Facility operator. Appendix D is a sample of the Export Vessel Safety Checklist used to perform the safety

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check and is based on the Ship/shore Safety Checklist from the International Safety Guide for Oil Tankers and Terminals. The Terminal Conditions (Appendix C) provides that the Facility may refuse to allow the Export Vessel to berth or may order the Export Vessel away from the berth, or otherwise suspend or terminate provision or performance of services to the Export Vessel if at any time the Export Vessel fails to meet the relevant safety standards.

8.3 Anchors

Export Tankers entering the Terminal's 5 nautical mile Restricted Zone shall have both anchors hauled firmly "home" in the hawse pipe and securely fastened by chains and the pawls or bottle screws on both anchors will be in place.

8.4 Scupper Plugs

Scupper Plugs must be secured in place before entering the Terminal's 5) nautical mileRestricted Zone. Rags, wooden plugs, and cement combination is not considered an acceptable arrangement for scupper plugs. Air driven pumps shall be located on both sides, at the aft end of the tank deck and connected to the slops tank(s) in order that any spilt oil or rainwater may be cleared from the deck and prevent it from flowing to the sea.

The Mooring Master shall confirm that these air driven pumps are operational beforethe commencement of cargo operations.

8.5 Tank Entry

Tank entry is strictly prohibited within the Terminal's 5 nautical mile Restricted Zone.

8.6 Boiler "Blowing Tubes" Release

Export Tankers shall not blow down boilers whilst within the Terminal's 5 nautical mile Restricted Zone.

8.7 Tank Cleaning

Cargo Tank washing within the Terminal's 5 nautical mile 'Restricted Zone' is strictly prohibited without prior approval of the Wassana Terminal.

8.8 Maintenance of Hull Equipment

Repairs and maintenance to the Export Tanker's machinery and equipment shall not impair the safe operation of the vessel and the repairs and maintenance shall be limited to those items which do not impair the following:

- Safe and efficient use and operation of the Inert Gas System.
- Safe and efficient use and operation of the pump room lighting and ventilation.
- Safe and efficient handling of slops.
- Propulsive power or manoeuvrability.

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- Firefighting or fire detection capability.
- Safe and efficient handling of cargo, ballast, bunkers and slops.
- Safe operation and integrity of the mooring system.
- Safe operation of electrical equipment in hazardous zones.
- Safe operation and integrity of communications equipment.
- Safe and efficient operation of the cargo hose lifting equipment as well as cargo Winches.
- Safe and efficient operation of the main deck lighting.

8.9 Segregated Ballast (Permanent Ballast)

Only Oil Tankers that have segregated ballast tanks will be approved for lifting from theTerminal. Segregated ballast tanks are tanks that are for the sole purpose of carrying clean sea water only; at no time shall any oil be loaded or discharged in/out ofsegregated ballast tanks.

8.10 Testing of the Main Engines and Steering Gear

Mooring astern of the Jaka Tarub requires close quarters maneuvering and it is imperative that all possible steps are taken to avoid loss of power of the main engine and the steering gear at this critical time. The Mooring Master will function test the operation of the main engine and steering gear before the commencing of approach to Jaka Tarub. Whilst berthed at the terminal, Main Engines, Auxiliary engines, Steering Gear and boilers must be maintained on Immediate Stand-by and available forimmediate use at any time.

8.11 Drug & Alcohol Policy

It is a terminal requirement that all Export Vessels have in place, and comply with, a Drug and Alcohol Policy that accords to the OCIMF guidelines. Such action if not complying with this requirement, could result in the Export Vessel being rejected for further lifting's from any Facility operated by the Company in the future.

If at any time, anyone involved in, or connected with the loading operation, is found to be under the influence of drugs or alcohol, loading will be stopped immediately. The Drug and Alcohol Policy applies equally to the Vessel and Terminal Personnel. The penalties in the Kingdom of Thailand for illegal drug usage and trafficking are severe, and are up to and including the death penalty.

8.12 No Smoking Policy

Export Vessels shall have in place and comply with a No Smoking Policy for the period that the Export Vessel is within the exclusion zone of the Facility. The No Smoking Policy shall be in accordance with the OCIMF guidelines. Smoking shall only beallowed in places that have been jointly approved, in writing, by the Master andMooring Master. The carrying of matches and lighters is prohibited on board the off-take vessel whilst approaching and at moored, except under controlled conditions in the designated smoking areas

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Sources of Ignition - The carrying of electrical equipment unless Ex rated and/or use of matches, cigarette lighters or other possible sources of ignition, which may include battery-operated equipment such as mobile telephones and cameras on open decks of vessels while moored to the FSO Terminal is strictly prohibited.

8.13 Hot Work

Whilst the Export vessel is secured to the Terminal it shall be maintained in a state of readiness to leave the Terminal immediately, under full engine power:

No Export Vessel shall conduct any hot work anywhere on the Vessel at any time whenthe Export Vessel is within the exclusion zone and whilst moored at the Facility.

This prohibition covers all types of hot work and includes, but is not limited to, the prohibition of the use of welding equipment, cutting and grinding equipment, blow torches, soldering equipment and naked lights (except as permitted by the No SmokingPolicy). This prohibition extends to and includes, but is not limited to, such operations in the engine room. It also includes the use of cameras, laptops, telephones, portable radios or any other equipment not Certified as "Intrinsically Safe for use in a hazardous area".

Nothing in this section shall prohibit the Export Vessel Master from undertaking any action required for the immediate safety of the Export Vessel or its personnel. The Mooring Master shall be notified of any intention to undertake an action requiring the use of hot work.

8.14 Inert Gas (IG)

The inert gas system shall be fully operational and cargo tanks shall be inerted so that the oxygen content of the tanks is below 5% at all times. The Mooring Master will check tanks at random to ensure that this requirement is met. If the tank atmosphere is found to have oxygen content in excess of 5% the vessel will be rejected for loading until the oxygen content of the tank atmosphere is reduced below 5%. Any time thus used shall not count as laytime and a vessel may lose her berthing priority.

8.15 Tank Gauging

The above operations shall be carried out following the procedures and taking the precautions outlined in ISGOTT Edition6 12.8 Cargo measurement, ullaging, dipping and sampling.

In vessels not fitted with vapour locks to enable the above operations to be undertaken with the tanks under pressure, the procedures outlined in ISGOTT Edition6 12.8.1 shall be followed.

8.16 Communications

Effective and efficient communications are essential to safe operations. Break downs in communications, both by radio at a distance and interpersonal communications face to face, can and do, lead to accidents. Every care shall be taken to ensure that communication equipment is in good working order and that all spoken communications are received AND understood. All orders and instructions shall be repeated back, so that the person giving the orders or instructions will know that the person receiving the order or instructions has correctly understood it. The working language of the Terminal is ENGLISH and all communications shall be carried out inthe English Language.

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9. EMERGENCY RESPONSE

A ship is a self-contained unit, fully equipped to deal with major fires and other emergencies on board and capable of providing the initial response to most incidents.

The type of incident that can occur on board ships in tandem moored operations can insome instances have a significant impact on the integrity of the facility and the safety ofits personnel. Incidents with the potential to develop into a significant event are:

- Fire/explosion.
- Pollution through cargo and/or bunker fuel spills.
- Uncontrolled release of cargo vapour.

Other examples of incidents, which will require a response to minimise outcome oravoid escalation into a significant event are.

- Mechanical failure (affecting cargo operations).
- Man overboard.
- Accident (medical emergency).
- Failure of the moorings.
- Collision.

The following section deals with the specific immediate actions to be taken by the principal parties in the event of incidents listed. Subsequent actions to be taken willdepend on how the particular incident develops and how well it is managed.

9.1 Fire/Explosion On board an Export Tanker

9.1.1 Action by Tanker with an Emergency

- Initiate emergency shutdown procedures; ensure all manifold(s) and tank valvesare closed.
- Mobilise on board fire-fighting response.
- Establish communications with FSO Master facility Control Room and advise nature and location of incident.

9.1.2 Action by Master FSO Jaka Tarub Facility

- Initiate emergency shutdown, stop cargo operations.
- Implement facility Emergency Response Procedure.
- Start log of events.
- Instruct stand-by ISV's (tugs) to start fire pumps and assist as directed.

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9.1.3 Action by Tugs & Mooring Master

- Stand-by ISV's (tugs) to start fire pump and assist as directed by FSO Master Control Room or the Mooring Master on board the tanker
- Prepare to remove vessel from berth under direction of Mooring Master and/orMaster.

9.1.4 Other Actions taken by Tanker

- Prepare to let go vessel.
- Maintain listening watch on VHF/UHF channels and await further instructions.

9.2 Oil Spill from Tanker

Specific action to be taken in the event of an oil spill will depend on the nature, typeand amount of the product spilled and will be listed in the tanker's SOPEP plan. The following general rules should be adhered to in order to ensure a fast and efficient response at the same time minimising the environmental impact.

For all spills, regardless of the product involved, a total ban on smoking on board is to be imposed on the vessel concerned. In the event of any oil spill the smoking ban will apply to all ships, including the terminal's marine craft within the Wassana terminal area.

- All sources of ignition should be isolated / secured.
- All loading or cargo related operations are to be stopped and cargo tank valvesclosed.

The FSO Master facility will automatically advise the authorities of any oil spills emanatingfrom ships or from the FSO Jaka Tarub facility.

- Action by polluting ship (Instigate internal ship's Emergency Procedure andSOPEP plan).
- Action by FSO Master facility Instigate Oil Pollution Response.
- Action by ISV's (tugs) Instigate Emergency Response Plan or FSO Jaka Tarub Offshore Oil Spill Response Plan.

9.3 Man Overboard (MOB)

The response to this type of incident will depend on the particular circumstances. Extreme caution is required by the search vessels, particularly during hours of darkness, when approaching or entering the search area.

- Action to be taken by tanker Instigate internal ship's Emergency Procedure
- Action to be taken by FSO Jaka Tarub Master facility Control Room Instigate Emergency Action Plan

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9.4 Other Ship Related Incidents

The response to the type of incident described will depend to a large extent to the nature, location and severity of the event. Swift action will in the majority of cases prevent an escalation of these events. Where the ISV's (tugs) are required to approach or to go alongside the tanker concerned they must only do so after FSO Master Jaka Tarub facility Central Control Room has confirmed that loading has been stopped.

10. POLLUTION AND THE ENVIRONMENT

The following are a list of measures that will be in force at FSO Jaka Tarub in order to avoid pollution.

- No oil or mixture containing oil shall be discharged or allowed to escape from any vessel while at the Wassana Terminal or in the approaches to the terminal.
- In the event of any leakage or spillage of oil or oil contaminated liquids onboard,the Loading Master must be advised immediately in order that loading operations can be stopped until the spill has been cleaned up.
- Sorbent materials or sawdust used for mopping spills shall be collected for disposal after departure of the vessel then either incinerated on board or landedat a subsequent port for approved disposal.
- While a vessel is within the terminal limits, the internal transfer of any oil, slops or bunkers on board is prohibited unless required for loading the cargo and pre- approved by the Loading Master.
- During the loading operations deck scuppers and drain holes must be suitably plugged. Any excess water that may accumulate must be drained off as required by a watchkeeper attending at all times to ensure no oil residues on the deck are drained away to sea. Drip trays must be placed under manifold connections, and any accumulation of water drained off at regular intervals.
- Prior to commencement, and at regular intervals throughout loading, checks areto be made to ensure that oil or oily water is not escaping through sea valves.

11. BALLAST

There are no ballast water reception facilities at the Wassana Terminal; therefore all vessels must arrive at the terminal with clean ballast in segregated ballast tanks (SBT). Vessels arriving at the FSO Terminal will be required to strictly comply with Thai and IMO resolutions relating to ballast water management.

Vessels are required to follow the requirements of the on board Ballast Water Management Plans for deep sea ballast water exchange prior to arrival to avoiddischarge of contaminated ballast water.

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Ballast tank sampling may be required at the terminal for ongoing ballast water quality assessment and monitoring. Only clean ballast water from SBT tanks can be discharged overboard, subject to inspection and approval by the Loading Master.

Comprehensive record keeping as evidence with compliance with vessels Ballast Water Management Plan shall be required and may be inspected at any time.

12. AIR POLLUTION

All vessels calling at the Wassana Terminal including supply vessels must comply with the requirements of MARPOL rules Annex V in order to minimise any air pollution.

Vessels will be required to maintain manufacturers and the relevant class machinery certification relating to emission of airborne contaminants categorised as NOX and SOX.

13. MOORING MASTER AND MOORING OPERATIONS

13.1 Notice of Readiness (NOR)

Notice of Readiness may be tendered at any time, day or night, in order to establish theVessel's arrival in relation to its agreed Laytime. However, for purposes of commencement of Laytime, Notice of Readiness can only be accepted during daytime, and when prevailing weather conditions permit safe mooring. The Mooring Master will sign the Notice of Readiness to acknowledge its receipt, when the vessel is all fast in the berth. This receipt does not constitute acceptance of the Notice of Readiness or agreement that the Vessel is in all respects ready to load.

13.2 Pre-Mooring Inspection

When the Mooring Master boards the Vessel he will conduct a general operational safety inspection of the vessel which will include, but not be limited to:

- bow mooring arrangements
- anchor & cables and their security
- cargo loading manifold
- crane(s) or derricks and associated gear
- poop deck arrangements
- cargo control room
- any other area that the initial inspection may indicate
- Oxygen content of the cargo tanks atmosphere

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The Terminal requires Oxygen content of the cargo tanks to be maintained at <6% throughout the vessels stay at the terminal. The Mooring Master will make checks of random tanks on arrival and may make further random checks at any time whilst the vessel is at the terminal.

If the Mooring Master has reason to believe that the Vessel is in any way defective or substandard, so that it is unacceptable for mooring and loading at the Terminal, he will immediately advise the Master and the Offshore Installation Manager.

13.3 Watch keeping

A responsible, English speaking, Vessel officer is required to be on deck or in the control room at all times. A continuous deck watch shall be maintained to ensure the mooring hawser and cargo hose are under observation at all times.

The Export Vessel shall establish and maintain, at all times, reliable radiocommunications between the Export tankers crew on duty and the Facility. All communications shall be in English and the qualified officer shall be fluent in that language.

The Vessel shall always have her engines available for immediate use and be ready to leave the berth, and consequently adequate coverage of the engine room by qualified personnel is required at all times.

13.4 Static Tow

Mooring operations for exports a single hold back ISV (tug) should be secured during the initial approach to the facility. Once a holdback tug is connected it will position itself almost directly astern of the tanker. The ISV will only use appropriates pulling power to maintain position with the tanker during the initial approach to the FSO Jaka Tarub.

13.5 Export Vessels Engines

For the complete period the Export Vessel is made fast at the Facility, it shall be ready to respond to requests for engine movements immediately. The Export Vessel may be required to run its main engines astern for extended periods of time on low engine revolutions.

Export Vessels Shall be required to operate their engines astern to prevent creeping upon the Facility or jack knifing when required. All engine movements should be made with due care. If for any reason there is a main engine failure on the Export Vessel, the Mooring Master and the Offshore Installation Manager shall be informed immediately.

13.6 Approach

The Mooring Master shall advise final instructions to the Master of the Export Vessel.

Anchoring within an exclusion zone surrounding a facility is prohibited. If an Export Vessel cannot moor on arrival at the Facility and wishes to anchor, it shall be within the Permitted Anchoring Areas. Contact should be made with the Offshore Installation Manager for information and guidance on this matter.

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Export Vessels shall arrive with propeller fully submerged and in association with a trimby the stern of not greater than 0.015L. Masters should note that in event of arrival withexcessive trim or too light a draught, mooring may be refused.

13.7 Mooring Master / Marine Advisor

A Mooring Master is compulsory for all visiting Export tankers

A charge may be payable by the owners of the Export Tanker for berthing at the Terminal. The fee is currently ZERO United States dollars. The fee charged for berthing services supplied by the Terminal is subject to periodic review and may be adjusted with discussion and agreement with the buyer.

Services supplied by the Terminal are provided and performed strictly subject to the Terminal Conditions. Accordingly, prior to any services being supplied by the Terminal, the Export Tanker master shall be required to confirm agreement to accept, observe, perform and comply with the Terminal Conditions.

All berthing, mooring and unmooring operations within the Terminal area are to be conducted with a Mooring Master on board the Export Vessel to advise the Master on the Export Vessel's manoeuvring and mooring/unmooring operations. The Master of the Export Vessel remains at all times in command of his or her vessel and fully responsible for the safety of life, the vessel, the environment and third party property. With the Master's agreement, the Mooring Master's advice will take the form of direct instructions, which the Master will monitor in the case of helm or engine orders, for example, and pass on to his or her officers, in the case of line deployment etc. If the Master does not agree with a Mooring Master's directions or actions, he or she may question or countermand such directions or actions at any time. The Export Crew shall transfer to the Export Vessel when it reaches the anchorage or reaches a distance of 5n.m from the Facility.

It is in all respects ready to load the nominated cargo, and the Facility is ready to receive the Export Vessel. Suitable board and accommodations shall be provided for these personnel.

Mooring services are provided strictly subject to the Terminal Conditions.

Masters shall provide safe access to and from his or her vessels at all times inaccordance with SOLAS convention and IMO recommendations. Failure to comply could incur a delay in berthing or sailing, and all costs shall be borne by the Export Vessel.

13.8 Declaration of Security

A Declaration of Security, as per the International Ship and Port Facility Security Code (ISPS) shall be exchanged and signed prior to commencement of operations. ISPS is arequirement under SOLAS Regulation XI-2 for all vessels of 500 gross tonnes and overon International Voyages and for Port Facilities and Terminals, servicing vessels.

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14. RESPONSIBILITIES

14.1 Purpose and Responsibilities

Another purpose of this handbook is to outline the process required for vessels arriving at the FSO location and to define the responsibilities of those involved in the export of crude.

14.2 FSO MASTER

The Master has the sole responsibility for the safe operation of the FSO facility and resources operating within the designated safety zonearound the facility. The following are a number of marine tasks performed by the Master:

- Responsibility for Marine and Logistics Processes that assure the safety of people, the environment and the asset, Helicopter Control Procedures, Marine vessel procedures, and Collision Avoidance.
- Compliance with Regulatory and Company Standards, Policies andRequirements
- Management of the implementation of operating and sales agreement
- Management of key interfaces between the facility and vessels loading at the terminal to achieve required Business Performance.
- Ensure safe cargo transfer operations are conducted at the FSO facility.

14.3 Mooring Master / Marine Superintendent / Mooring Advisor

The Mooring Master / Marine Advisor / Superintendent is responsible to the Offshore Operations Manager for the following marine tasks:

- Accountable for the deliverables of the Marine team on site.
- Monitor the general state of work sites and safety awareness and behaviour ofpersonnel through systematic auditing, inspection and review of working practices to ensure adherence to HSE practices and procedures.
- Ensures tanker berthing and loading activities are overseen within parameters of the Marine ops without accidents/incidents or demurrage.
- Ensure suitability of all tankers nominated for FSO Jaka Tarub loading. Ensures minimum level of demurrage for vessels loading at the facility. Monitor issues with cargo quantity and quality.
- Ensure stability of FSO Jaka Tarub is monitored and maintained within operatingparameters.

Complete execution of the maintenance plan for the marine aspects of the facility.Provide input to marine mooring and marine equipment.

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14.4 Export Tanker Master

The Loading Master at the export tanker will undertake the safe and efficient marine services of tanker pilotage, berthing/un-berthing and loading activities to facilitate product export from the FSO Jaka Tarub facility.

Additionally, the loading Master will assist with the connection of the export hose and provide specialist knowledge and experience in offshore marine terminal operations. The Loading Master will report to the Marine superintendent and liaise closely with the Control Room on FSO Jaka Tarub during cargo transfer operations.

15. TERMINAL OPERATIONS

15.1 Conditions of Use

Masters of all ship's using the FSO Terminal will be required to sign a copy of the Conditions of Use in acknowledgement of the ship's responsibilities and liabilities whilstcalling at the terminal. A copy of the Conditions of Use (COU) will be developed later inthe project and attached to this document.

16. PILOTAGE

Pilotage is compulsory for all vessels berthing at the FSO Jaka Tarub facility. TheMooring/Loading Master will remain on board the vessel while it is moored at thefacility. The Mooring Master will also acts as the Loading Master for all cargo operations.

The Mooring Master will board in a position 5 nautical miles East of the Terminal inposition: -

Latitude: 07-56' 37.994 N Longitude: 101-24' 14.618 E

Before entering the 3 miles Restricted Area, the Terminal must be contacted on VHFCh 08 and permission to enter obtained.

A pilot/combination ladder shall be rigged in accordance with current SOLAS regulations as advised by the Mooring Master. The bottom of the ladder should bepositioned two metres above water.

- A suitable lee must be provided for embarkation of personnel and equipment.

A Responsible Officer must be on deck to meet the Mooring Master and the vessel's crane or derrick, fitted with a suitable safety hook, will be required to transfer equipment from the ISV. Ship's crew will be required to prepare the vessel for mooring and hose connection operations under the supervision of the Valeura Energy Representative.

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16.1 Accommodation Requirements

Whilst at the Terminal, suitable single berth accommodation and messing facilities will be required for the mooring master/s and surveyor. Additional visitors such as the Thai Customs Service may attend the vessel on occasions and require accommodation.

17. OFFSHORE SECURITY / SAFETY ZONE (500 MTERES)

Export vessels SHALL only enter the Offshore Safety (Security) Zone with the permission of the OIM; the Mooring Master must also be on board at this time and the ISV's (tugs) must be in attendance.

The extent of the Offshore Safety (Security) Zone round the FSO Jaka Tarub is 500 meters.

18. TUG REQUIRMENTS (ISV)

For mooring operations for exports a single hold back ISV (tug) should be secured during the initial approach to the facility. Once a holdback tug is connected it will position itself almost directly astern of the tanker. The ISV will only use minimum powerto maintain position with the tanker during the initial approach to the FSO Jaka Tarub.

19. EXPORT HOSE CONNECTION

After the mooring hawser has been made fast, an ISV shall pull the floating hose to the Export Vessel. At the Facility the hose shall be connected to the port side of the Export Vessel. The hose end shall then be lifted on board using the Export Vessel's manifold derrick or crane.

The connection of the hose is the responsibility of the Export Vessel's crew, under the guidance of the Mooring Master. The hose end connection is a 12 inch "CAMLOCK" quick release coupling and will fit standard 12 inch ANSI 150 pound flanges.

The floating hose is fitted with a self-sealing breakaway coupling. Manifold reducers to suit the above flange and should be supplied by the Export Vessel.

20. SAFETY WHILST MOORED

The FSO Jaka Tarub Master is responsible for controlling marine emergencies within the limits of the safety zone. Should it be required the FSO Master will liaison with the Offshore Operations Manager and will co-ordinate the facility response to the emergency.

The tanker is responsible for dealing with any emergency on board, utilizing such assistance that is available from the FSO Master. The FSO Radio Control Room will co-ordinate with the tanker regarding any necessary assistance should it be required. The Mooring Master or his deputy is responsible for providing marine adviceto the FSO Master facility on the extent of the emergency on board the tanker.

The Master is responsible for the safe operation of his ship (including cargo-handling operations) and the safety of ship's personnel at all times. The Master will be requiredto sign a letter acknowledging his responsibility in this respect. The Responsible Ship's Officer delegated the task of controlling cargo operations and other related duties must be qualified and competent to do so and either himself, or a delegated ship's duty officer, should remain in the ship's cargo control room

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throughout cargo operations in order to ensure that the ship/FSO liaison is continuously maintained. In addition to the Responsible Ship's Officer, or his deputies, sufficient personnel should be available in order to maintain an efficient deck and cargo watch.

A Ship/Shore Safety checklist will be completed jointly by the Responsible Ship'sOfficer and the Loading Master following the safety inspection.

The safety checklist must be completed and signed by both ship and FSO representatives prior to the start of any cargo operations. Follow-up safety checks will be conducted at agreed intervals throughout the loading period and the checklist will besigned accordingly.

21. GENERAL MOORING AND UNMOORING PROCEDURES

- When an Export vessel is maneuvering within the limits of the FSO Terminal theMaster or a senior officer, a second navigation officer, a helmsman and a lookout must be on the bridge at all times.
- Export tankers must arrive with ballast equivalent to at least 30% of their DWT and trim by the stern no greater than 0.015 x L. The forward draught should remain sufficient to immerse the bulbous bow at all times in order to prevent thefloating hose from becoming trapped underneath.
- It is the responsibility of the ship's Master to ensure that his vessel remains securely moored at all times.
- The FSO infield support vessels maybe used when passing the messenger line and will be used during the connection of the export hose.

21.1 Ships Main Engine & Steering Gear

The ship's engines must remain on "Standby" for the duration of the offload, and under no circumstances should they be immobilised for repair or maintenance as they may berequired at any time. If there is a failure of the main engine, the mooring master must be informed immediately and the Export vessel shall prepare for an immediate disconnect.

Steering gear is to be kept fully operational or available for an immediate start, at alltimes whilst moored to the terminal.

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22. COMMUNICATIONS

22.1 Pre Arrival Messages

At least 72 Hours before arrival and on departure from discharge port if more than 72hours.

AA Ship's name, call sign and IMO number.
BB Departure date & time.
CC ETA and arrival draught at FSO Master Terminal.
DD Estimated quantity of cargo quantity to load.
EE Estimated time for loading.
FF OBQ and slops on board.
GG Any known deficiencies affecting vessel performance.
HH ISPS security level adopted and disclosure of notifiable security incidents.
II Is ballast condition compliant with the Ballast Water Management plan.

22.2 During Voyage (72 hrs, 48 hrs and 24 hrs before arrival)

If the ETA deviates more than 12 hours from that initially advised on departure and/orthere are any changes to CC or DD, then the terminal must be advised.

22.3 Updated ETA

AA Ship's name & call sign.
BB Updated ETA

22.4 48 Hours Prior to Arrival

The following questionnaire is to be answered:

AA Ship's name & call sign.
BB ETA and arrival draught.
CC Readiness for loading.
DD Confirm the following have been tested and/or are fully operational.

- Navigation, mooring, safety & main engine systems.
- Inert gas system.
- Cargo tank high level alarms.
- Remotely operated valves.

EE Cargo tanks/lines are free of oxygen and fully inerted.

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FF No tank leakage.

If the ETA changes by more than 6 hours following the issuance of the 72 and 48 hourmessages and before sending the 24 hour message then the revised ETA must be advised to the terminal.

22.5 24 Hours Prior to Arrival

AA Ship's name & call sign.

BB Confirm ETA.

CC Send pratique message.

If the ETA changes by more than 2 hours after sending the 24 hour message then theterminal must be advised of the revised ETA.

22.6 6 Hours Prior to Arrival

AA Ship's name & call sign.

BB Confirm ETA.

CC Confirm all overboard discharge valves are shut.

22.7 Contact with FSO Terminal & Mooring Masters on Arrival

AA Ship's name & call sign.

22.8 Departure Communications

On departure from FSO Terminal.

AA Ship's name & call sign.

BB If any outstanding port logs items they should be reported.

CC ETA discharge port.

23. CRUDE BERTHING PROCEDURE

23.1 Pre-Arrival Preparations

The pre-arrival message will contain instructions on the mooring procedure and preparations to be carried out by the Export tanker. On the forecastle a fixed winch drum is to be clear of all wires or ropes and be able to take 200 metres of messenger line. A small rope messenger is to be provided by the Export tanker along with a bow stopper to be used. At the time of boarding the Export tanker, the Mooring Master andhis Assistant will inspect the forecastle and manifold arrangements to confirm they areready and compatible with the requirements for mooring and hose connections at the FSO Jaka Tarub facility.

The anchors shall be secured in the sea going condition before the tanker enters theOffshore Security Zone.

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A Port amidships manifold blank is to be removed and should be prepared and fitted toreceive one 12-inch connection. The manifold crane or derrick is to be ready to bring on board the hose connecting equipment. At the same time the mooring masters toolbox which contains all of the necessary chains, hooks, lifting strops, spanners and gaskets to secure the hose at the Export tankers manifold should also be loaded.

23.2 Safety Checks

Prior to the loading commencing, safety checks will be carried out and the safety checklist completed by the Mooring Master and the Responsible Ship's Officer on theExport tanker.

23.3 Pre-Loading Meeting

The pre-loading meeting is carried out by the Mooring Master/Loading Master andResponsible Ship's Officer. The meeting includes the following ship/FSO data:

- Ship and terminal safety information
- Ship/FSO communication details
- Cargo volume required by the tanker
- Minimum loading rate
- Maximum loading rate
- Cargo – API and temperature
- Notice required by the terminal to alter loading rate and to stop the transfer
- Who will initiate the completion of loading – ship or FSO
- Emergency procedures and stops
- Contingency plans
- Ballast water discharge
- Inerted condition of cargo tanks on arrival
- Gauging process/fiscal metering.

The Mooring Master will not inspect cargo tanks prior to loading, and will not sign certificates attesting to the emptiness, cleanliness, or suitability of tanks for loading.

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24. CRUDE LOADING OPERATIONS

The loading operation will commence once the safety checks have been completed and the both the Export tanker and FSO Jaka Tarub facility confirm readiness. The Mooring Master will advise the tanker to open the receiving tank, line and manifold. Hewill open the hose end valve. When this is done, he will then request the facility to startthe crude transfer at a slow rate. The tanker will confirm receipt of crude into the designated first tank. A check will be made to ensure that there is no leakage of crude on board the tanker, or in the hose system. When confirmed that slow speed checks are completed and all is well then the loading rate can be gradually increased to a maximum agreed rate. Checks will continue until the full loading rate is achieved to ensure there are no leaks on board or overside.

The loading rate will be reduced as necessary to suit shipboard activities on board thecrude tanker such as topping off tanks, and completing loading. The Mooring Master and his assistant will liaise with the FSO control room for all of the tanker requirements. Agreed notice periods for reducing the loading rate etc should be complied with at all times.

24.1 Avoidance of Surge Pressure

Masters are reminded that surge pressure occurs when cargo valves are closed against high flow rates. Such surge pressure problems are exacerbated when cargo valves close at a faster speed than that which is optimum for the size of valve and pipeline. Masters' are encouraged to regularly check closing speeds of cargo valves against requisite minimum timings corresponding to the size of valve. Periodic valve opening/closing times shall be verified and recorded. This is especially so when changes in outside temperature, affect valve operating speeds due to varying viscosityof hydraulic oil within cargo valve operating systems.

As a guide an absolute minimum for cargo valve closing timings correspond to one second per inch diameter of pipeline and size of valve. Please refer to ship's buildingspecifications for definitive cargo valve closing timings.

24.2 Oil Spill Precautions

During the loading period the loading hoses as well as the sea around the Export tanker and the FSO Jaka Tarub facility will be constantly monitored for any sign of oil/oily sheen. If oil/oil sheen is observed in the sea, loading will be suspended and an investigation made into the source of the oil. Loading will not be resumed until the source is found and addressed or it is determined that the oil is not emanating from theFSO Jaka Tarub facility or vessel operations.

25. LOADING AND DEBALLASTING OPERATIONS

The Facility shall control the transfer of oil in a manner and at a rate mutually agreed between the Facility and the Master of the Export Vessel. It shall be the responsibilityof the Export Vessel's officers and personnel to monitor the loading of oil into their cargo tanks, and the discharge of their ballast.

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25.1 Pre-Loading

Prior to the commencement of loading operations, the Mooring Master will discuss with the Master or his designated Deck Officer the procedures to be followed throughout the loading/deballasting operation. This briefing shall be in sufficient detail to enable the Mooring Master to monitor the operations so that he or she will be aware if a departure from the agreed loading plan is taking place. At this time the Vessel/Terminal Safety Checklist (Appendix D) shall be completed and signed by the Mooring Master and Master or his designated Deck Officer. A record that the meeting took place shall be recorded in the cargo log.

The Vessel shall provide the Mooring Master with a detailed loading plan and de- ballasting plan, which shall always provide for stress limitations never to be exceeded and which shall indicate any critical times when the trim and deadweight may approachthe limits.

25.2 Lining up and Readiness to Load

Provided that the Vessel/Terminal Safety Checklist has been satisfactorily completed, the loading hose is connected and the butterfly valve at the tail/rail hose end is open, the Vessel will be advised that the Terminal is ready to commence loading and be requested to open the tank valves and manifold valve in readiness to receive cargo.

25.3 Custody transfer measurement

The Cargo Oil Tank (COT) measured and calibrated as per API chapter 2 section 8A is used to prove and measure the quantity of crude oil offload to the export tanker. The COT measurement and calibration method has been approved and verified for use by the DMF Thailand. The volume measured by the calibrated UTI tape ullages is measurement that the Thai government and customs will accept for the bill of landing documents. Any dispute over volume discrepancy will be dealt with by letter of protest.

25.4 Commence Loading

During the commencement of loading, and until the full loading rate is achieved, the Mooring Master accompanied by a vessel officer, will remain at the Vessel's manifold. When the Vessel confirms that its tank valves and manifold valve are open, theMooring Master will request the Terminal to start the loading pumps at slow rate. The Vessel will observe the flow of oil into the Vessel's tanks and once satisfied that the oil is flowing into the designated tanks, will advise the Terminal that the Vessel is ready to receive cargo at full rate.

During the period of slow loading and build up to full rate, the area around the floating hose shall be under constant observation. The Mooring Master will request the Terminal to increase the loading rate to full rate.

VESSELS ARE CAUTIONED NOT TO SHUT VALVES AGAINST THE FLOW OF OIL AT ANY TIME DURING THE LOADING. UNLESS ARRANGEMENTS ARE MADE WITH THE MOORING MASTER AND THE LOADING RATE IS REDUCED TO SLOW. THERE SHALL BE AT LEAST TWO (2) OF THE VESSEL'S CARGO TANKS OPEN AT ALL TIMES DURING LOADING.

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25.5 During Loading

The Export Vessel's Cargo Control Room shall be manned at all times and be under the control of a Vessel's Officer. An efficient deck watch shall be maintained so that the mooring assembly, the loading hose and the manifold are under constant observation.

The loading rate may be reduced at any time by requesting the Terminal to reduce the loading rate.

25.6 De-Ballasting

The time of commencement of de-ballasting shall be agreed between the Master or Chief Officer and the Mooring Master prior to the commencement of loading.

There are no ballast or slop reception facilities at the Terminal. Vessels must arrivewith clean ballast suitable for discharging directly to sea in accordance with the standards set by the International Conventions. Vessels arriving with ballast unsuitable for discharge to sea will be rejected for loading. Any Vessel rejected because of contaminated ballast or sea pollution will automatically invalidate her Notice of Readiness and will lose any priority of loading.

Vessels discharging contaminated ballast overboard shall be subject to the anti- pollution laws of Thailand. Penalties for pollution are severe. Vessels shall preferably have the ability to de-ballast concurrently with loading operations and any crossovers between cargo and ballast system shall be blanked.

25.7 Monitoring of Cargo Operations

In line with industry practices, the Export tanker is required to provide personnel whocan maintain a constant watch on the deck. Sufficient personnel should be on the tanker to provide regular relief. The vessel is to provide overside lighting at night to detect any oil on the water surface.

The Export tanker is to station a watchman on the forecastle of the ship at all times theship is moored to the FSO Jaka Tarub facility. His duties will include:

- Observe the relative position of the crude tanker and the FSO Jaka Tarub facility.
- Watch for any oil in the water.
- Observe the mooring hawser for loading, damage or over stressing.
- Monitor the loading hose for leaks.
- Report to the Responsible Ship's Officer any situation that is abnormal.

The forecastle watchman may rotate with manifold duty.

A second watchman will be positioned by the Port side manifold to monitor the hoseconnection. His duties will include:

- Check locally at the manifold that the manifold valve is not closing whilst loading is in progress.
- Watch for any oil on the water.

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- Watch for any oil in the bight of the floating hose.
- Observe the floating hose for any signs of leak – or distortion in the hose (Asign of damage to the inner carcass)
- Report to the Responsible Ship's Officer any situation that is abnormal.
- Monitor manifold cargo pressure.

The manifold watchman may rotate with the forecastle head watchman.

25.8 Suspension of Cargo Operations

In any of the following conditions the Master in consultation with the Mooring Master and the Offshore Installation Manager shall ensure that loading and/or de-ballasting operations are stopped and if the circumstances require the hose disconnected and theVessel unmoored

- If storms are forecast for the Terminal Area.
- On the approach of or during electrical storms or disturbances, strong winds or heavy rain.
- If an oil spill occurs either on or from the Vessel.
- If an oil spill occurs either on or from the Facility.
- If an oil spill occurs on the floating hose.
- If a fire occurs in the Vessel.
- If a fire occurs in the Facility.
- If the Tension in the Mooring Hawser appears excessive.
- If the Mooring Hawser appears damaged.
- If the tug on static tow is unable for any reason to prevent the possibility of theVessel from riding up on the Facility or from "fish tailing" excessively.
- Any other conditions which in the opinion of the Master, the Mooring Master andthe Terminal Superintendent present a risk to life, the environment or property.

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25.9 Cargo Samples

Cargo samples will be distributed as per the Lifters Instructions. If the auto-sampler is not in operation or fails during the Export, the independent surveyor will obtain composite cargo samples, in sealed cans, from the Export Tanker, which will beretained as instructed. Taking, bottling and sealing of the samples on board the Export Tanker shall be supervised by the Independent Surveyor. Additional samples may be provided at Lifters request.

25.10 Notice of Protest

If the Master of an Export Tanker wishes to lodge a Note of Protest, he must deliver itin writing to the Mooring Master before departing the Terminal. The Mooring Master, on behalf of the Terminal, is authorized to sign the Export Tanker's Note of Protest "For Receipt Only".

The Mooring Master may issue Notes of Protest on behalf of the Terminal. Masters of Export Tankers are advised that protest letters will be issued prior to the ExportTankers departure from the Terminal and may be signed for receipt only.

25.11 Mooring Master and Assistant/s

The Mooring Master and the Assistant will share responsibility for monitoring the activities of the Export tanker staff in loading the tanker and for maintaining contact withthe FSO Jaka Tarub facility. They will actively observe the loading procedures, especially at such times:

- Commence loading
- Commence de-ballasting
- Complete de-ballasting
- Topping off of tanks
- Completion of loading.

They will request a reduced loading rate to suit the critical loading operations. They willcarry out the following periodic checks – Normally at least every hour and more often ifthe circumstances require:

- The ship/shore figures - these are to be compared to ensure no leakage in thesubsea line
- The weather conditions
- The ship/FSO safety checklist – to ensure no infringements by the tanker
- Overside checks of the sea for signs of oil leakage
- Routine inspection of the hose for signs of deformation (indication of failure ofthe inner carcass)

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- Monitor the manifold pressure recorder for any indication of high pressure in the hose
- The relative position of the tanker to the facility
- Routine contact with the hold back ISV (tug).

The ISV (tug) will be remain on the stern of the crude tanker throughout the loading, and being down wind and current from the tanker will be in a position to detect any oil on the sea as it drifts onto its position. An additional ISV will be available in the area toinvestigate any suspected leak.

The Mooring Master and Assistant are to be provided with separate cabins for restperiods while on board the Export tanker.

25.12 Completion of Crude Loading

On completing of loading, the pumps will be reduced its speed and 10-15 mins before pump stop the export hose should be dosing chemical to prevent waxy incurred and later the pump will be stopped and both the shipboard and facility valves will be closed. The cargo figures will be fiscalised. Once cargo oil figuresare agreed the or flushed with sea water to the Export tankers slop tank. The disconnection operations will only be performed under the direction of the Mooring Master in compliance with strict FSO Jaka Tarub facility procedures and Safetycriteria and in accordance with OCIMF recommendations.

26. CARGO DOCUMENTATION AND CARGO SAMPLES

The Mooring Master will prepare the following gauging/custody transfer documents anddeliver them to the crude tanker Master.

- Bill of lading
- Certificate of origin
- Certificate of quantity
- Certificate of quality
- Statement of facts/time report
- Cargo manifest
- Master's receipt of cargo Samples
- Master's receipt for documents
- Customs clearance documentation.

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26.1 Hose Disconnection

On completion of loading, the terminal may request the hose be flushed with clean seawater to the export vessels slop tanks. The loading hose will then be disconnected by the Vessel's crew under the supervision of a responsible Vessel officer acting on theadvice of the Mooring Master. Before starting hose disconnection, the personnel involved shall be warned of the danger of sudden wave induced hose movement, that could cause the hose end to strike or pin personnel against the manifold structure.

Hose system maintenance, particularly in bad weather, is extremely difficult and involves possible danger to personnel. For this reason, vessels are requested to giveas much assistance as possible by taking seaman like care of the mooring and hose equipment, and returning it to the water ready for the next Vessel.

Hose and Mooring System maintenance is expensive. If the Terminal judges that the Vessel has misused the hose or any part of the mooring system, the vessel will beliable for the expenditure involved in making repairs, including, but not limited to, any consequential costs due to Terminal downtime.

27. EXPORT TANKER UNMOORING

27.1 Preparation for Unmooring

After the hose is disconnected and all parties are ready to unmoor, the tug astern will remain moored to the Vessel's stern to assist with unmooring. The Mooring Master in consultation with the Master will decide the time unmooring will commence.

27.2 Release from Mooring System

The weight will be allowed to come off the mooring hawser, it may be necessary to use the Vessel's engine for this purpose. When the weight comes off the hawser, the chafe chain will be released from the bow stopper and the pickup rope carefully paid out as the Vessel moves astern and clears from the berth. Care shall be taken to ensure that the mooring hawser and pickup rope is not dropped over the hose string.

28. DEPARTURE AFTER BERTHING AND EARLY DEPARTURE PROCEDURES

At the completion of the transfer of cargo and the completion of all documentation before the Export Vessel is cleared for sailing. However an Early Departure Procedure is preferred for operational and safety reasons, and is as follows:

- The quantity of cargo loaded is monitored by the Terminal. The floating hose shall be disconnected, and the mooring hawser slipped. The Independent surveyor shall complete the calculation of the figures on the Export Vessel and then return to the Facility with the Mooring Crew and the Export Vessel's Agent.

  The Export Vessel is then released from any further obligations at the Terminaland may commence its voyage.

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- The Export Vessel's Master shall provide written authorization to the Export Vessel's Agent to sign all necessary documentation.

- After departure of the Export Vessel, a final density, sediment and water content of the cargo shall be determined by the Operator and witnessed by the independent surveyor. After this determination the Operator shall inform the Export Vessel of gross and net cargo (gross cargo less base sediment and water at 15°C) quantity loaded. The net quantity shall be introduced on the Billof Loading in the designated "quantity report" section and signed for by the Operator and by the Export Vessel's agent on behalf of the Export Vessel's Master.

29. REJECTION AND TERMINATION

If the Company, or the Mooring Master, form the opinion that the Export Vessel is unsuitable for any reason, then the Company, or the, Mooring Master shall have the right to reject the Export Vessel or terminate the provision of any services including loading of oil to the Export Vessel at any time prior to its arrival at the Facility or whilstat the Facility as the case may be. All and any cost incurred by the Export Vessel by such a rejection or termination shall be to the Export Vessel's Owner's (as defined inthe Terminal Conditions) account.

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30. APPENDICES

30.1 Export Tanker Pre-Arrival Questionnaire

TO:

ATTENTION:

FAX No:

FROM:

DATE:

The following vessel details are required prior to acceptance to lift from the Jaka Tarub Floating Production Storage and Export Vessel.

NOTES: **A legible copy of the forecastle deck arrangement plan must be supplied showing the proposed lead from the Panama Center lead to the winch drum.**

1) **The plan shall be signed, stamped with the company name and dated to acknowledge that the plan is accurate and that all equipment shown is in service.**

2) **For YES or NO answers, tick the box that applies.**

3) **A copy of the completed Questionnaire and the forecastle plan must be sent to the Master of the Export Tanker and FSO Master**

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SECTION 1.0 - GENERAL VESSEL DETAILS

1. Name of vessel… .....
2. Previous Names, if any: .....
3. Port of Registry and/or Flag: .....
4. Name of Owner: .....
5. Registered Address: .....
6. Nationality of Officers and Crew: .....
7. Vessel classification society / classed as:.....
8. Year of build:……
9. Type of vessel. Crude Oil Tanker, Product Oil Tanker, OBO.
   .....

   If the vessel is an Oil/Bulk Ore or Bulk/Oil Carrier answer questions 9.1 and 9.2

9.1 What were the last three cargoes? .....

9.2 Are the following personnel familiar with oil carrying operations?
   Master ..... YES ☐ NO ☐
   1st Mate ..... YES ☐ NO ☐
   2nd Mate ..... YES ☐ NO ☐
   Chief Engineer ..... YES ☐ NO ☐
   Second Engineer ..... YES ☐ NO ☐

9.3 Do the following personnel who are familiar with oil carrying operations have the appropriate endorsements to their certificates?
   Master ..... YES ☐ NO ☐
   1st Mate ..... YES ☐ NO ☐
   2nd Mate ..... YES ☐ NO ☐
   Chief Engineer ..... YES ☐ NO ☐
   Second Engineer ..... YES ☐ NO ☐

9.4 Is all equipment used on deck intrinsically safe in preventing ignition sources..... YES ☐ NO ☐

9.5 Is there a permit-to-work system in place? ..... YES ☐ NO ☐

9.6 Are there NO SMOKING regulations in place? ..... YES ☐ NO ☐

9.7 Are there at least two certificated personnel on board to undertake
   Crude Oil Washing operations? ..... YES ☐ NO ☐

10. Call sign: .....
11. INMARSAT No: .....
12. Length overall (m): .....
13. Breadth (m): .....
14. Distance, bow to manifold (m): .....
15. Distance, ship side to manifold (m): .....
16. Diameter of manifold (mm): .....
17. Number and diameters of available manifold reducers (mm): .....

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18. Does the manifold and associated equipment comply with the latest edition of OCIMF's "Standards for Oil Tanker Manifolds and Associated Equipment"? ..... YES ☐ NO ☐
If NO, what does not comply? .....
19. Safe working load of manifold crane/derrick:.....
19.1 Is the manifold crane/derrick positioned on the vessel's centre line? ..... YES ☐ NO ☐
20. Are the vessel's main engines capable of being run astern for prolonged periods of time at low engine revolutions ..... YES ☐ NO ☐
21. Summer/Tropical/Winter dead weight tonnes:. .....
22. Cargo capacity at 98% full:. .....
23. Maximum loading rate (m3/hr):. .....
24. Arrival draughts (m): Forward……..Aft: .....
(For trim calculation purposes)
(Export Tankers shall arrive with propeller fully submerged and in association with a trim by the stern of not greater than 0.015L)
25. Has vessel Segregated Ballast Tanks (SBT)? ..... YES ☐ NO ☐
26. Has the vessel Clean Ballast Tanks (CBT)? ..... YES ☐ NO ☐
If YES, complete 26.1 and 26.2
26.1 Does the vessel monitor ballast discharges from CBT using the oil in water monitor that complies with the latest IMO (MARPOL) regulations? ..... YES ☐ NO ☐
26.2 Can vessel load and deballast simultaneously with two valve separation? ..... YES ☐ NO ☐
27. Has the vessel a panama lead on the forecastle head for acceptance of the mooring hawser?..... YES ☐ NO ☐
28. Dimensions of the forward Panama closed chock lead that shall be used for the mooring hawser ..... (mm)
29. Has vessel a chain stopper that complies with the latest edition of OCIMF's "Recommendations for Equipment employed in the mooring of ships at a single point mooring"? ..... YES ☐ NO ☐
30. Can chain stopper accept 76 mm diameter chain? ..... YES ☐ NO ☐
31. Distance, panama lead to chain stopper (m) ……..
Distance Chain Stopper to first pedestal roller (m) ……..
32. What is the lifting capability of the Mooring Winch?
Sufficient capacity on storage drum to manage/install pick-up arrangement (150m x 72mm)
33. Does the lead of the mooring hawser allow it to be hauled from the panama lead via the chain stopper onto an empty storage drum?
(Not the warping drum end): ..... YES ☐ NO ☐
34. Do the Senior Personnel speak English? ..... YES ☐ NO ☐
35. Does the vessel comply with the requirements of the International Transport Federation (ITF) Agreement? ..... YES ☐ NO ☐

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36. Does the vessel have in place a Drug and Alcohol Policy complying with (as a minimum) the statement issued in the latest edition of the OCIMF's Guidelines for the Control of Drugs and Alcohol Onboard Ship? ..... YES ☐ NO ☐
37. Vessel's last port of call ? .....
38. Protection and Indemnity (P & I) Club insuring the vessel?.....
39. What is the Pollution Liability Insurance limit? .....
40. At which port may the Vessel be inspected by /ROI representative?
41. Has the vessel /ROI Berthing and Terminal Handbook(s) on board? ..... YES ☐ NO ☐
If YES for what revision number?……
42. Does the vessel operate a management system certified to ISO 9002 or equivalent? ..... YES ☐ NO ☐
43. Does the vessel have a dedicated helicopter winching area? ..... YES ☐ NO ☐
If YES, complete Section 1.1 and Section 2.0
If NO, complete Section 2.0

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31. SECTION 2

31.1 Acknowledgement of Stated Information

All information stated in this questionnaire is accurate at the date of completion shown below;

Signed:

Date:

Position:

Name:

31.1.1 Terminal Conditions For The Use Of Jaka Tarub In Wassana Oil Field,Thailand

In the Terminal Conditions the following words shall have the following meanings:

- "The Company" means VALEURA ENERGY (WASSANA) LTD
- "Handbook" means the Wassana Terminal Regulations & Berthing Handbook
- "Facility" means the Jaka Tarub Floating Storage and Offloading Facility (FSO).

"Mooring Master" means a person who advises the Master of the Export vessel on all aspects of navigation and maneuvering of the vessel within pilotage area of terminal, including, but not limited to, mooring and unmooring. Conduct as the Loading coordinator between the Export vessel and the Terminal.

"Facility Services" means all and any services (with or without goods or property) of any description (whether compulsory, voluntary or otherwise) provided or performed (whether for consideration or otherwise) by or on behalf of the Company at or on or about the Facility and/or the Export Vessel or within 3 nautical miles of the Facility directly or indirectly in connection with the Export of crude oil from the Facility, including without limit to the foregoing, Mooring Master services, navigation, berthing, mooring, towage, tug services, personnel and equipment transfer via supply boat or other means, Export, communications, watch or other services assistance, direction, advice, instruction or conduct whatsoever.

- "Offshore Operations Manager" means the person employed by Valeura Energy in charge of the Wassana Field.
- "FSO" means the FSO Jaka Tarub, or its replacement.
- "FSO Contractors" mean any contractors employed or engaged by the FSO or the Company.
- "Export Vessel" means any Oil Tanker nominated to load crude at the Terminal.

"Export Vessel Owners" shall mean, in relation to the Vessel, the registered Owner(s), deponent owner(s), part owner(s), operator(s), charterer(s), manager(s), mortgagee(s) or beneficial owner(s) of all or part of a vessel.

The provision or performance of any Facility Services by the Company or the FSO or the FSO contractors in or in connection with the Terminal is in consideration of, and accepted by the Export Vessel Owners strictly upon and subject to, the following conditions:-

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All services, facilities and assistance provided by or on behalf of the Company or the FSO or FSO Contractors in or in connection with the Terminal, whether or not any charge is made bythe Company therefore, are provided subject to all applicable Laws, By-Laws and Harbor Regulations, Safety Regulations, and Towage Conditions for the time being in force and to the further conditions contained herein.

The services of the Mooring Master are provided on the express understanding and condition that when any Mooring Master furnished by the Company or the FSO Contractors goes on board a Vessel for the purpose of assisting such Vessel, he becomes for such purposes the servant of the Owner(s) or Charterer(s) of the Vessel; and the Company, including members of the Block G10/48 concession joint venture, their parent companies, subsidiaries, and affiliates and the FSO Contractors, shall in no way be liable for any damage or personal injury, including death, of any nature whatsoever, incurred by any person whomsoever, in any way connected with, contributed by, or resulting from the advice or assistance given or for any action taken by such Mooring Master, whether negligent or otherwise, while on board or in the vicinity of such assisted Vessel.

Similarly, the services of mooring launches and mooring personnel, if any, and the furnishing of mooring lines and hosing-up gear are under the supervision and control of the Mooring Master, and the Company, including members of the Block G10/48 concession joint venture, their parent companies, subsidiaries, and affiliates, and/or the FSO Contractors, even if negligent, shall inno way be liable for any damage or personal injury, including death, of any nature whatsoever, incurred by any person whomsoever, in any way connected with, contributed to by, or resulting from the performance of these additional services, or furnishing of equipment, whether or notany of such are utilized by any Vessel.

In addition, neither the Company, including members of the Block G10/48 concession joint venture, their parent companies, subsidiaries, or affiliates, nor its or their servants, agents or contractors in whatever capacity they may be acting (including the FSO Contractors), shall be inany way whatsoever responsible for or liable for any contribution with respect to any loss, personal injury, including death, damage or delay, from whatsoever cause, including the negligence of the Company or its servants, co-venturers, agents, contractors (including the FSOContractors), arising whether directly or indirectly in consequence of any assistance, advice or instructions whatsoever given or tendered in respect of any Vessel, whether by way of tugs, pilotage or berthing services, hose connection and disconnection, the provision of navigation facilities, including buoys or other channel markings, ballasting, prevention and control of pollution or contamination, pollution or contamination remediation or otherwise howsoever. In allcircumstances the Master of any Vessel shall remain solely responsible on behalf of his or her Owner(s) for safety, conditions, operations and proper navigation of his or her Vessel.

Although the Company exercises due care to ensure that the berths, premises, facilities, property, gear, craft and equipment provided by the Company, including members of the Block G10/48 concession joint venture, are safe and suitable for Vessels permitted or invited to use them, no guarantee, express or implied, of such safety and suitability is given by the Company or the FSO Contractors that such berths, premises, facilities, property, gear, craft, and equipment are devoid of defects or fit for the service or use to which it is put, and every Vessel shall be and remain at the sole risk of the Owner(s) and Master thereof; and neither the Company, including members of the Block G10/48 concession joint venture, their parent companies, subsidiaries, and affiliates, nor the FSO Contractors shall be responsible (or liable for any contribution) with respect to any loss, personal injury including death, damage, or delayswhatsoever, that may be sustained whether directly or indirectly by, or occur to, any Vessel or toher Owner(s) or her crew or cargo or for any part thereof (whether such cargo is on board or in the course of loading) by whomsoever and by whatsoever cause such as loss, injury, damage, or delay is occasioned, and whether or not it is caused, occasioned, or contributed to, in whole or in part, to any act, neglect, omission or default on the part of the Company, including members of the Block G10/48 concession joint venture, or any servant, agent or contractor of the Company, including the FSO Contractors, or by fault or

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defect in any berth, premises, facilities, property, gear, craft, or equipment of any sort of the Company or its servants, co-venturers, agents or contractors or the FSO or FSO Contractors.

Neither the Company or its servants, co-venturers, agents or contractors including the FSO will be responsible for any loss, damage or delay directly or indirectly caused or contributed toby or arising from, strikes, lock-outs, or labour disputes or disturbances whether the Companyor its servants, co-venturers, agents or contractors including the FSO Contractors are parties thereto or not.

Export Vessel Owners shall be responsible for, and shall indemnify Facility Venturers for, all liability (including contractual, tortious, statutory and other liability) for pollution or contamination(including without limitation any crude oil, bunkers or other fluids, materials or substances of whatever description) or the direct or indirect consequences of same (including, without limitation, death, injury or illness or any person, loss or damage to property, statutory and civil liability for penalties and/or damages, liability to all persons having a claim against the Facility, Facility Venturers and/or the Export Vessel resulting directly or indirectly from pollution contamination or its consequences) if and to the extent that such pollution or contamination is either caused directly or indirectly by the Export Vessel Owners, whether negligently or otherwise, or if the pollution or contamination occurs as a result of escape (for whatever reason)of oil or any other pollutant from any point on the Export Vessel.

If the Export Vessel or part thereof sinks, becomes a constructive loss, or otherwise becomes, in the opinion of the Company, an obstruction or danger to any part of the Facility, the approaches to it, or any subsea installations related or connected to it, and the owners or Master of the Export Vessel fails for any reason to remove such obstruction or danger within such reasonable time as may be required by the Company, then the Company shall be empowered to take all such necessary actions as may be required to effect removal of the obstruction or danger (or to otherwise deal with it to that end) at the sole risk, cost and expenseof the Export Vessel Owners and such cost and expense shall be recoverable as a debt presently due, owing and payable to the Company.

These Terminal Conditions and procedures, including the Terminal Handbook, shall be construed and interpreted in accordance with the Laws of England, and the Vessel and herOwner(s) shall submit to the jurisdiction of the courts of England.

Export Vessel Owners acknowledge having received or had access to a copy of, and shall at all times observe, perform and comply with the provisions and requirements of, the current edition of the Terminal Handbook, including the Drug and Alcohol Policy requirements of the Company.

The Field Superintendent is entitled to suspend provision or performance of Facility Services inthe event that:

- Export Vessel fails, or is likely to fail, to comply with the provisions andrequirements of the Handbook or the OCIMF standards; or
- Export Vessel, is not, or is likely not, to be in all respects fit to berth or load at theFacility; or
- such suspension is necessary due to landing or departure at the Facility of ahelicopter; or
- Weather or other safety conditions exceed, or are likely to exceed normaloperations limits.

Vessels shall be entered under TOVLAP. For any oil pollution caused by the Vessel, her masteror crew, the Vessel and her Owners shall protect, defend, indemnify, and hold harmless the Company including members of the Block G10/48 concession joint venture, their parent companies, subsidiaries and affiliates, or its or their servants, agents, and contractors, including the FSO Contractors from and against any loss, damage, liability, suit, claim, or expense arising therefrom.

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Export Vessel Owners acknowledge and agree that the Company provide and perform Facility Services strictly subject to these Terminal Conditions. Export Vessel shall at all times observe, perform and comply with these Terminal Conditions, the requirements of the Handbook and all relevant OCIMF requirements and shall indemnify and at all times keep fully and effectually indemnified the Company against all and any obligations, liabilities, losses, damage, costs or expenses whatsoever and howsoever sustained, incurred or suffered directly or indirectly as a consequence of failure to so observe, perform and comply.

It is a requirement hereof that the Vessel's Master shall sign a copy of this Section on behalf of the Vessel Owners. In the event, this section is not so signed (or otherwise accepted), Companyshall be under no obligation to perform or provide any services referred to in this section or elsewhere in the Terminal Handbook

RECEIPT AND ACCEPTANCE of these Terminal Condition and procedures, including Terminal Handbook are hereby acknowledged

Dated: _____

Signed: _____

Signed for and on behalf of Vessel Owner
Master of the M.V.

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32. EXPORT VESSEL SAFETY CHECKLIST

Export Vessel Safety Checklist				
Name of the Export Vessel:				
Name of the FSO Facility :				
Date of arrival :				
Time of arrival :				
CHECKLIST QUESTIONS		**TICK BOX THAT APPLIES**		**REMARKS**
1	Is the ship securely moored?	YES		
		NO		
2	Is the ship ready to move under its own power?	YES		
		NO		
3	Is there an effective deck watch in attendance on board, adequate supervision of operations on board who speak English and have effective means of communication with each other?	YES		
		NO		
4	Is the agreed Export vessel/FSO communication system operative?	YES		Working VHF/UHF Ch :
		NO		Standby VHF/UHF Ch :
5	Have the Export vessel cargo and ballast handling procedure and been agreed?	YES		
		NO		
6	Have the emergency shutdown requirements of the Berthing and Terminal Handbook been understood?	YES		
		NO		
7	Are hoses and firefighting equipment on board positioned to cover the cargo deck and manifold and ready for immediate use?	YES		
		NO		
8	Are scuppers and "save alls" on board effectively plugged and drip trays in position and empty?	YES		
		NO		
9	Temporarily removed scupper plugs will be constantly monitored?	YES		
		NO		
10	Is the cargo transfer system sufficiently isolated and drained to allow safe removal of blank flanges prior to connection?	YES		
		NO		
11	Are the ship's unused cargo and bunker connections are properly secured with blank flanges fully bolted?	YES		
		NO		
12	Are the sea and overboard discharge valves, when not in use, closed and visibly secured?	YES		
		NO		
13	Are all cargo tanks atmospheres at positive pressure with oxygen content of 8% or less by volume?	YES		
		NO		
14	Is the requirements for closed operations been agreed?	YES		
		NO		

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Export Vessel Safety Checklist				
CHECKLIST QUESTIONS		**TICK BOX THAT APPLIES**		**REMARKS**
15	Are independent high level alarms, if fitted, operational and have been tested?	YES		
		NO		
16	Is the operation of P/V system been verified?	YES		
		NO		
17	Is material safety data sheet (MSDS) for the cargo transfer been exchanged?	YES		
		NO		
18	Are all cargo, ballast and bunker lids closed?	YES		
		NO		
19	Is the tank venting system to be use been agreed?	YES		Method :
		NO		
20	Are all hand held torches of an approved intrinsically safe type?	YES		
		NO		
21	Are portable VHF/UHF transceivers of an approved, intrinsically safe type?	YES		
		NO		
22	Are the ship's main radio transmitter aerials earthed, radars switched off, fixed VHF/UHF transceivers and AIS equipment are on the correct mode or switched off?	YES		
		NO		
23	Are all electric cables to portable electrical equipment in hazardous zones disconnected and removed from power?	YES		
		NO		
24	Are all external doors, ports and windows in the accommodation, stores and machinery spaces closed? Engine room vents may be open	YES		
		NO		
25	Are air conditioning intakes which may permit the entry of cargo vapours closed and positive pressure is being maintained inside accommodation?	YES		
		NO		
26	Have smoking rooms been identified and smoking requirements being observed?	YES		Nominated smoking room: 1.2
		NO		
27	Are only electric cooking appliances in use in the galley?	YES		
		NO		
28	Are naked light requirements being observed?	YES		
		NO		
29	Are there sufficient lifeboats for an emergency escape and ready for immediately for use?	YES		
		NO		
30	Is the pump room mechanically ventilated and able to be kept running throughout the Export operation?	YES		
		NO		
31	Have the drug and alcohol requirements of the Berthing and Terminal Handbook been understood?	YES		
		NO		
32	Are the maximum wind and swell criteria for operation been agreed?	YES		Stop cargo at : Disconnect hose at : Unberth at :
		NO		
Export Vessel Safety Checklist				
CHECKLIST QUESTIONS		**TICK BOX THAT APPLIES**		**REMARKS**

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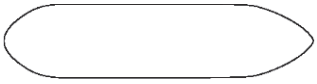
COMMUNICATION AGREEMENT	
The equipment described below shall be utilised as the communications system between the Export Vessel and the FSO throughout the Export operation:	
Equipment Description / model / make	**Channel / frequency / number**
For Export Vessel	**For FSO**
Name :	Name :
Rank :	Position :
Signature	Signature :

32.1 Cargo Loading Plan

CARGO LOADING PLAN

Export Tanker: Date: Export NIL:

HEEL / ROB



Last Three Cargoes

1 _____

2 _____

3 _____

STOWAGE / LOADING PLAN

_____ m² @15°C

33. APPROVED SMOKING AREA NOTICE

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valeura energy

APPROVED SMOKING AREA

(For the duration the Export Tanker remain within the Terminal's five (5) nautical miles Restricted Zone)

Export Tanker Name:…….. Date:……

1) ……

2) ……

3) ……

Signature ……

Master Export Tanker

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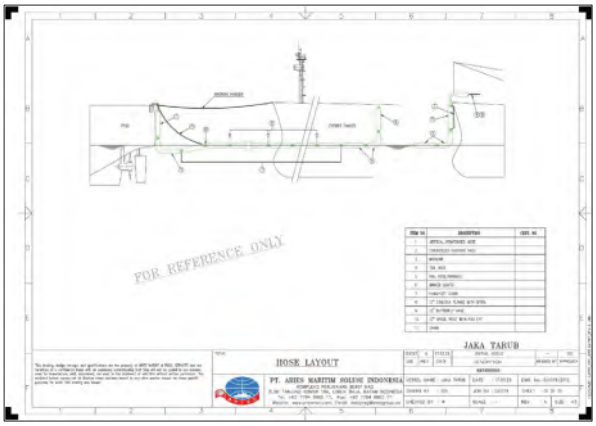
34. WASSANA FIELD FSO TERMINAL LAYOUT



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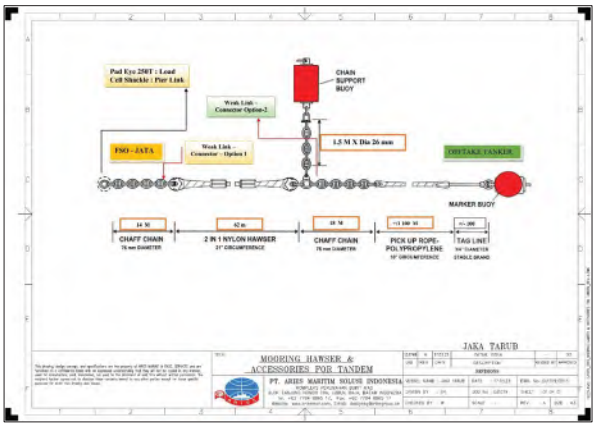
34.1 Mooring Hawser



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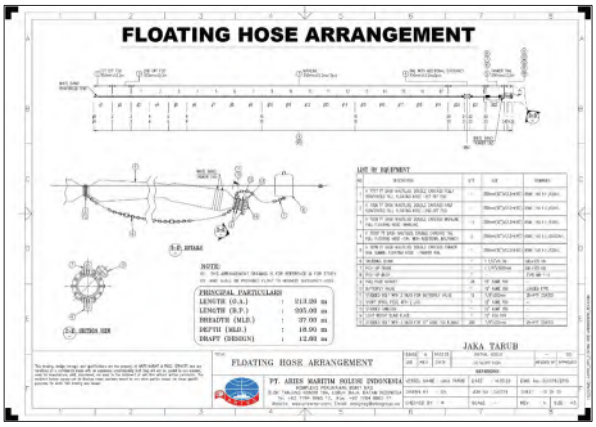
34.2 Floating Hose



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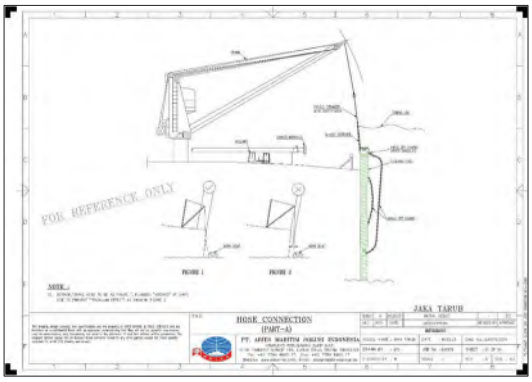
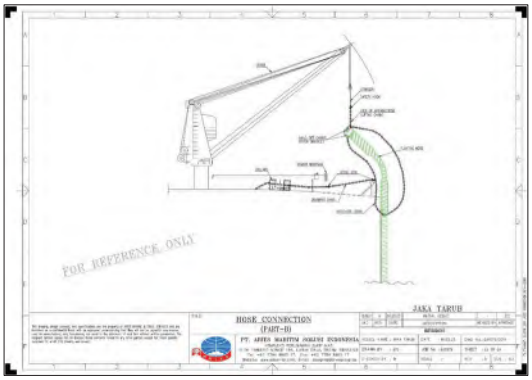
34.3 Floating Hose Pick Up





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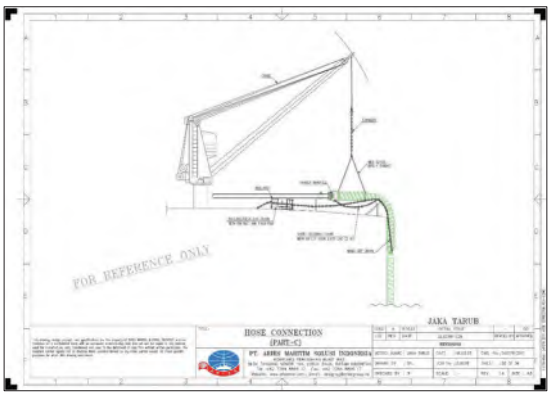

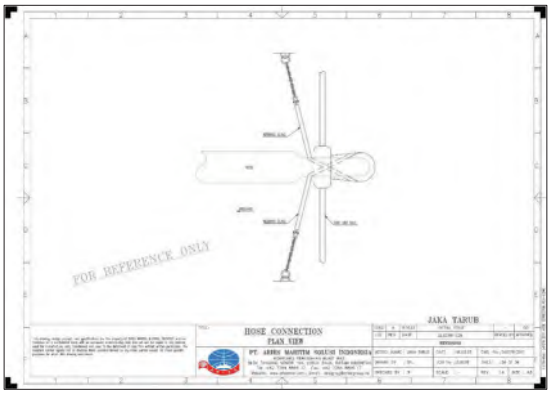

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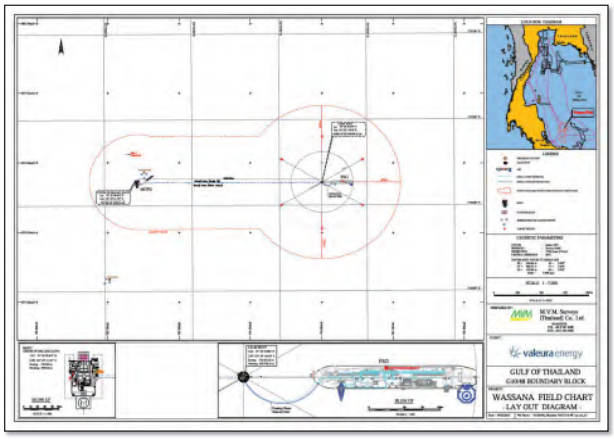
34.4 Wassana Field Layout Chart



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เอกสารแนบที่ 62

ตัวอย่าง Maintenance จากโปรแกรม CWorks™

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

	SAFETY	PM	CM	BM	CB	IN	U-(CM)
	PLAN:	17					
	COMPLETE:	17					
	PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72-ES	6645226	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1	PM	Low	02-Jan-25	Completed	4-Jan-25	Wisit D.				
2	MOPU-72-LR	6645229	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1	PM	Low	02-Jan-25	Completed	2-Jan-25	Wisit D.				
3	MOPU-72-OSK	6645230	PM-MOPU-HSE OIL SPILL KITS INSPEC 1	PM	Low	02-Jan-25	Completed	5-Jan-25	Wisit D.				
4	MOPU-72-OSR	6645283	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1	PM	Low	04-Jan-25	Completed	8-Jan-25	FSO crew				
5	MOPU-72-EW	6645257	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1	PM	Low	04-Jan-25	Completed	4-Jan-25	Wisit D.				
6	MOPU-72-EL	6645268	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1	PM	Low	04-Jan-25	Completed	4-Jan-25	Wisit D.				
7	MOPU-75-HC	6645281	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	06-Jan-25	Completed	2-Jan-25	Wisit D.				
8	MOPU-72-PTB	6645269	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	06-Jan-25	Completed	1-Jan-25	Wisit D.				
9	MOPU-75-DCT	6645225	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1	PM	Medium	08-Jan-25	Completed	7-Jan-25	Wisit D.				
10	MOPU-72-BA	6645276	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1	PM	Low	08-Jan-25	Completed	7-Jan-25	Wisit D.				
11	MOPU-75-HR	6645290	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1	PM	Medium	09-Jan-25	Completed	19-Jan-25	Chalermporn L.				
12	MOPU-72-LJ	6645282	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1	PM	Low	10-Jan-25	Completed	3-Jan-25	Wisit D.				
13	MOPU-72-GB	6645228	PM-MOPU-HSE GRAB BAGS INSPECTION 1	PM	Medium	10-Jan-25	Completed	3-Jan-25	Wisit D.				
14	MOPU-72	6645184	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY	PM	Low	15-Jan-25	Completed	5-Jan-25	Wisit D.				
15	MOPU-75-FE	6645227	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1	PM	Low	15-Jan-25	Completed	1-Jan-25	Wisit D.				
16	MOPU-75-DS	6645196	PM-MOPU-EI DELUGE SYSTEM 1	PM	SCE	17-Jan-25	Completed	20-Jan-25	Chalermporn L.				
17	MOPU-72-FGD	6645231	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1	PM	Low	20-Jan-25	Completed	1-Jan-25	Wisit D.				

MAINTENANCE

TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

MAINTENANCE

TYPE: BREAKDOWN MAINTENANCE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | STORE | Material Status | SUMMARY WO | SUM BY PLATFORM

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

	SAFETY	PM	CM	BM	CB	IN	U-(CM)
	PLAN:	17					
	COMPLETE:	17					
	PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-75-FE	6646202	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1	PM	Low	01-Feb-25	Completed	4-Feb-25	Wisit D.				
2	MOPU-72-PTB	6646231	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	01-Feb-25	Completed	1-Feb-25	Wisit D.				
3	MOPU-72-PGD	6646209	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1	PM	Low	01-Feb-25	Completed	2-Feb-25	Wisit D.				
4	MOPU-75-HC	6646205	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	02-Feb-25	Completed	1-Feb-25	Wisit D.				
5	MOPU-72-LR	6646206	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1	PM	Low	02-Feb-25	Completed	4-Feb-25	Wisit D.				
6	MOPU-72-LJ	6646207	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1	PM	Low	03-Feb-25	Completed	7-Feb-25	Wisit D.				
7	MOPU-72-GB	6646204	PM-MOPU-HSE GRAB BAGS INSPECTION 1	PM	Medium	03-Feb-25	Completed	5-Feb-25	Wisit D.				
8	MOPU-72-EL	6646199	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1	PM	Low	04-Feb-25	Completed	9-Feb-25	Wisit D.				
9	MOPU-72-EW	6646201	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1	PM	Low	04-Feb-25	Completed	3-Feb-25	Wisit D.				
10	MOPU-72-ES	6646200	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1	PM	Low	04-Feb-25	Completed	3-Feb-25	Wisit D.				
11	MOPU-72-OSK	6646208	PM-MOPU-HSE OIL SPILL KITS INSPEC 1	PM	Low	05-Feb-25	Completed	3-Feb-25	Wisit D.				
12	MOPU-72-BA	6646197	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1	PM	Low	07-Feb-25	Completed	6-Feb-25	Wisit D.				
13	MOPU-75-DCT	6646198	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1	PM	Medium	07-Feb-25	Completed	6-Feb-25	Wisit D.				
14	MOPU-72-OSR	6646225	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1	PM	Low	08-Feb-25	Completed	5-Feb-25	FSO Team.				
15	MOPU-72	6646169	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY	PM	Low	15-Feb-25	Completed	1-Feb-25	Wisit D.				
16	MOPU-75-HR	6646203	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1	PM	Medium	19-Feb-25	Completed	13-Feb-25	Wisit D.				
17	MOPU-72	6646500	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	16-Feb-25	Completed	8-Feb-25	Wisit D.	Refer: WO 6646169 PM ELECTRICAL RESCUE KITS INSPECTION on 01 Feb 25			

MAINTENANCE

TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

MAINTENANCE

TYPE: BREAKDOWN MAINTENANCE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | STORE | Material Status | SUMMARY WO | SUM BY PLATFORM

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

SAFETY	PM	CM	BM	CB	IN	U-(CM)
PLAN:	18					
COMPLETE:	18					
PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

N	PF	WO	DESCRIPTION	TYP	CRITICA	TARGET DA	STATU	COMPLETE DAT	NAME	NOTE	Next day plan Date	Next day plan Rema	Required Yes / N
1	MOPU-72-PTB	6646827	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	04-Mar-25	Completed	1-Mar-25	Chalermporn L.				
2	MOPU-75-HC	6646826	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	04-Mar-25	Completed	1-Mar-25	Chalermporn L.				
3	MOPU-72-PGD	6646849	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	05-Mar-25	Completed	1-Mar-25	Chalermporn L.				
4	MOPU-72-ES	6646848	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONT	PM	Low	06-Mar-25	Completed	1-Mar-25	Chalermporn L.				
5	MOPU-72-EW	6646854	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Low	06-Mar-25	Completed	1-Mar-25	Chalermporn L.				
6	MOPU-72-OSK	6646857	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	Low	06-Mar-25	Completed	2-Mar-25	Chalermporn L.				
7	MOPU-75-FF	6646855	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Low	07-Mar-25	Completed	7-Mar-25	Chalermporn L.				
8	MOPU-72-LR	6646856	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	Low	07-Mar-25	Completed	1-Mar-25	Chalermporn L.				
9	MOPU-72-OSR	6646858	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	08-Mar-25	Completed	1-Mar-25	FSO crew				
10	MOPU-75-DS	6646863	PM-MOPU-EI DELUGE SYSTEM 1 - 1 MONTH	PM	SCE	08-Mar-25	Completed	17-Mar-25	Wisit D.				
11	MOPU-72-GB	6646879	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Medium	08-Mar-25	Completed	13-Mar-25	Wisit D.				
12	MOPU-72-BA	6646878	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	09-Mar-25	Completed	2-Mar-25	Chalermporn L.				
13	MOPU-75-DCT	6646865	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MON	PM	Medium	09-Mar-25	Completed	2-Mar-25	Chalermporn L.				
14	MOPU-72-LJ	6646866	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	Low	10-Mar-25	Completed	13-Mar-05	Wisit D.				
15	MOPU-72-EL	6646896	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	12-Mar-25	Completed	1-Mar-25	Chalermporn L.				
16	MOPU-72	6646837	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Mar-25	Completed	2-Mar-25	Chalermporn L.				
17	MOPU-75-HR	6646873	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	Medium	16-Mar-25	Completed	2-Mar-25	Chalermporn L.				
18	MOPU-72	6647472	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Mar-25	Completed	20-Mar-25	Wisit D.				

MAINTENANCE — TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

MAINTENANCE — TYPE: BREAKDOWN MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | STORE | Material Status | SUMMARY WO | SUM BY PLATFORM

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

SAFETY	PM	CM	BM	CB	IN	U-(CM)
PLAN:	19	1				
COMPLETE:	19	1				
PROGRESS:	100.0%	100.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

N	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-75-HC	6647539	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	01-Apr-25	completed	5-Apr-25	Chalermporn L.				
2	MOPU-72-PTB	6647562	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	01-Apr-25	completed	8-Apr-25	Chalermporn L.				
3	MOPU-72-LR	6647537	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 YEAR	PM	Low	01-Apr-25	completed	4-Apr-25	Chalermporn L.				
4	MOPU-72-EW	6647537	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Low	01-Apr-25	completed	15-Apr-25	Chalermporn L.				
5	MOPU-72-OSR	6647563	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	01-Apr-25	completed	15-Apr-25	FSO Crew				
6	MOPU-72-ES	6647561	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	Low	01-Apr-25	completed	8-Apr-25	Chalermporn L.				
7	MOPU-72-PGD	6647541	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	01-Apr-25	completed	8-Apr-25	Chalermporn L.				
8	MOPU-72-EL	6647536	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	01-Apr-25	completed	7-Apr-25	Chalermporn L.				
9	MOPU-72-OSK	6647540	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	Low	02-Apr-25	completed	8-Apr-25	Chalermporn L.				
10	MOPU-72-BA	6647535	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	02-Apr-25	completed	11-Apr-25	Chalermporn L.				
11	MOPU-75-DCT	6647851	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	Medium	02-Apr-25	completed	11-Apr-25	Chalermporn L.				
12	MOPU-75-HR	6647538	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	Medium	02-Apr-25	completed	19-Apr-25	Chalermporn L.				
13	MOPU-75-FF	6647852	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Low	07-Apr-25	completed	16-Apr-25	Chalermporn L.				
14	MOPU-75-DS	6647553	PM-MOPU-EI DELUGE SYSTEM 1 - 2 MONTH	PM	SCE	08-Apr-25	completed	28-Apr-25	Wisit D.				
15	MOPU-72-LJ	6647875	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	Low	13-Apr-25	completed	22-Apr-25	Chalermporn L.				
16	MOPU-72-GB	6647874	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Medium	13-Apr-25	completed	22-Apr-25	Chalermporn L.				
17	MOPU-72	6647487	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Apr-25	completed	8-Apr-25	Chalermporn L.				
18	MOPU-75-DS	6647864	PM-MOPU-EI DELUGE SYSTEM 1 - 1 MONTH	PM	SCE	17-Apr-25	completed	17-Apr-25	Chalermporn L.				
19	MOPU-72	6648572	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	16-Apr-25	completed	26-Apr-25	Wisit D.	Refer WO-6647487_PM Electrical rescue kits on 08 Apr 25			

MAINTENANCE — TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE
1	MOPU-75-DS	6645425	CM-Install Flange Adaptor for Deluge-WisitD	CM	SCE	29-Apr-25	completed	30-Mar-25	Wisit D.	

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | STORE | Material Status | SUMMARY WO | SUM BY PLATFORM

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

SAFETY	PM	IN	U-(CM)
PLAN:	20		100.0%
COMPLETE:	20		
PROGRESS:	100.0%	0.0%	100.0%

TYPE: PREVENTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72-HA	6648621	PM-MOPU-HSE SAFETY HARNESS INSPEC 1	PM	1-May-25	Wisit D.				
2	MOPU-72-FB	6648610	PM-MOPU-HSE FIRE BLANKET INSPEC 1	PM	1-May-25	Wisit D.				
3	MOPU-75-HC	6648614	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	2-May-25	Wisit D.				
4	MOPU-72-LR	6648615	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	3-May-25	Wisit D.				
5	MOPU-72-EL	6648607	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	10-May-25	Wisit D. and Deck Crew				
6	MOPU-72-ES	6648608	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	4-May-25	Wisit D.				
7	MOPU-72-PGD	6648620	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	8-May-25	Wisit D.				
8	MOPU-72-OSK	6648618	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	3-May-25	Wisit D.				
9	MOPU-72-PTB	6648645	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	1-May-25	Wisit D.				
10	MOPU-72-BA	6648605	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	5-May-25	Wisit D. and Deck Crew				
11	MOPU-75-DCT	6648606	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	5-May-25	Wisit D.				
12	MOPU-72	6648581	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	4-May-25	Wisit D.				
13	MOPU-72-OSR	6648619	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	5-May-25	FSO JAKA TARUB Team				
14	MOPU-72-EW	6648609	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	10-May-25	Wisit D. and Deck Crew				
15	MOPU-75-FF	6648611	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	6-May-25	Wisit D.				
16	MOPU-75-DS	6648590	PM-MOPU-EI DELUGE SYSTEM 1 - 1 MONTH	PM	11-May-25	Wisit D.				
17	MOPU-75-HR	6648612	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	21-May-25	Chalermporn L.				
18	MOPU-72-GB	6648613	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	6-May-25	Wisit D.				
19	MOPU-72-LJ	6648617	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	6-May-25	Wisit D.				
20	MOPU-72-LB	6648616	PM-MOPU-HSE LIFE BUOY INSPECTION 1	PM	5-May-25	Wisit D.				

MAINTENANCE — TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	COMPLETE DATE	NAME	NOTE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | STORE | Material Status | SUMMARY WO | SUM BY PLATFORM

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

SAFETY	PM	CM	BM	CB	IN	U-(CM)
PLAN:	18					100.0%
COMPLETE:	18					
PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%

TYPE: PREVENTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72	6649389	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Jun-25	Completed	3-Jun-25	Chalermporn L.				
2	MOPU-72-BA	6649416	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	05-Jun-25	Completed	5-Jun-25	Wisit D.				
3	MOPU-75-DCT	6649417	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	Medium	05-Jun-25	Completed	5-Jun-25	Wisit D.				
4	MOPU-72-EL	6649418	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	18-Jun-25	Completed	2-Jun-25	Chalermporn L.				
5	MOPU-72-ES	6649419	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	Low	04-Jun-25	Completed	3-Jun-25	Chalermporn L.				
6	MOPU-72-EW	6649420	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Low	10-Jun-25	Completed	10-Jun-25	Wisit D.				
7	MOPU-75-FF	6649421	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Low	07-Jun-25	Completed	8-Jun-25	Wisit D.				
8	MOPU-75-HR	6649422	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	Medium	21-Jun-25	Completed	19-Jun-25	Wisit D.				
9	MOPU-72-GB	6649423	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Medium	06-Jun-25	Completed	7-Jun-25	Wisit D.				
10	MOPU-75-HC	6649424	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	02-Jun-25	Completed	3-Jun-25	Chalermporn L.				
11	MOPU-72-LR	6649425	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	Low	03-Jun-25	Completed	2-Jun-25	Chalermporn L.				
12	MOPU-72-OSK	6649426	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	Low	03-Jun-25	Completed	2-Jun-25	Chalermporn L.				
13	MOPU-72-PGD	6649427	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	08-Jun-25	Completed	2-Jun-25	Chalermporn L.				
14	MOPU-72-LJ	6649445	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	Low	06-Jun-25	Completed	7-Jun-25	Wisit D.				
15	MOPU-72-PTB	6649446	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	01-Jun-25	Completed	3-Jun-25	Chalermporn L.				
16	MOPU-72-OSR	6649453	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	05-Jun-25	Completed	4-Jun-25	FSO Crew				
17	MOPU-75-DS	6649438	PM-MOPU-EI DELUGE SYSTEM 1 - 2 MONTH	PM	SCE	11-Jun-25	Completed	23-Jun-25	Wisit D.				
18	MOPU-72	6649878	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Jun-25	Completed	15-Jun-25	Wisit D.				
19													
20													

MAINTENANCE — TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

MAINTENANCE — TYPE: BREAKDOWN MAINTENANCE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | STORE | Material Status | SUMMARY WO | SUM BY PLATFORM

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

	PM	CM	RM	CB	IN	U-(CM)
SAFETY	PM	CM	RM	CB	IN	U-(CM)
PLAN:	17					
COMPLETE:	17					
PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72-LR	6650284	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	Low	03-Jul-25	Completed	1-Jul-25	Chalermporn L.				
2	MOPU-72-EL	6650311	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	03-Jul-25	Completed	1-Jul-25	Chalermporn L.				
3	MOPU-72-OSK	6650285	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	Low	03-Jul-25	Completed	10-Jul-25	Chalermporn L.				
4	MOPU-72-PGD	6650286	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	03-Jul-25	Completed	10-Jul-25	Chalermporn L.				
5	MOPU-72-ES	6650281	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	Low	04-Jul-25	Completed	10-Jul-25	Chalermporn L.				
6	MOPU-75-DCT	6650280	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	Medium	06-Jul-25	Completed	14-Jul-25	Chalermporn L.				
7	MOPU-72-GB	6650283	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Medium	08-Jul-25	Completed	16-Jul-25	Chalermporn L.				
8	MOPU-75-FF	6650282	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Low	09-Jul-25	Completed	13-Jul-25	Chalermporn L.				
9	MOPU-72-EW	6650313	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Low	11-Jul-25	Completed	10-Jul-25	Chalermporn L.				
10	MOPU-72	6650236	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Jul-25	Completed	9-Jul-25	Chalermporn L.				
11	MOPU-75-DS	6650253	PM-MOPU-EI DELUGE SYSTEM 1 - 1 MONTH	PM	SCE	24-Jul-25	Completed	10-Jul-25	Chalermporn L.				
12	MOPU-72-DSR	6650330	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	15-Jul-25	Completed	9-Jul-25	FSO Crew				
13	MOPU-72-PTB	6650331	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	04-Jul-25	Completed	10-Jul-25	Chalermporn L.				
14	MOPU-75-HC	6650325	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	04-Jul-25	Completed	9-Jul-25	Chalermporn L.				
15	MOPU-72-BA	6650326	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	06-Jul-25	Completed	14-Jul-25	Chalermporn L.				
16	MOPU-72-LJ	6650329	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	Low	08-Jul-25	Completed	16-Jul-25	Chalermporn L.				
17	MOPU-75-HR	6650327	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	Medium	20-Jul-25	Completed	10-Jul-25	Chalermporn L.				
18													
19													
20													

MAINTENANCE

TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | STORE | Material Status | SUMMARY WO | SUM BY PLATFORM | 7 Days Look Ahead PM Plan | CM,CB

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

	PM	CM	RM	CB	IN	U-(CM)
SAFETY	PM	CM	RM	CB	IN	U-(CM)
PLAN:	17					
COMPLETE:	17					
PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72-LR	6651019	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	Low	03-Aug-25	Completed	1-Aug-25	Wisit D.				
2	MOPU-72-EL	6651016	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	03-Aug-25	Completed	7-Aug-25	Chalermporn L.				
3	MOPU-72-OSK	6651020	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	Low	04-Aug-25	Completed	6-Aug-25	Chalermporn L.				
4	MOPU-75-HC	6651018	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	05-Aug-25	Completed	3-Aug-25	Wisit D.				
5	MOPU-72-ES	6651017	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	Low	05-Aug-25	Completed	4-Aug-25	Wisit D.				
6	MOPU-72-OSR	6651045	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	09-Aug-25	Completed	7-Aug-25	FSO Crew				
7	MOPU-72-PGD	6651075	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	10-Aug-25	Completed	2-Aug-25	Wisit D.				
8	MOPU-72-PTB	6651046	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	10-Aug-25	Completed	2-Aug-25	Wisit D.				
9	MOPU-72-EW	6651043	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Low	10-Aug-25	Completed	4-Aug-25	Wisit D.				
10	MOPU-75-HR	6651044	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	Medium	10-Aug-25	Completed	17-Aug-25	Chalermporn L.				
11	MOPU-75-FF	6651074	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Low	13-Aug-25	Completed	12-Aug-25	Chalermporn L.				
12	MOPU-75-DCT	6651053	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	Medium	14-Aug-25	Completed	1-Aug-25	Wisit D.				
13	MOPU-72-BA	6651083	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	14-Aug-25	Completed	1-Aug-25	Wisit D.				
14	MOPU-72-GB	6651054	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Medium	15-Aug-25	Completed	15-Aug-25	Chalermporn L.				
15	MOPU-72	6651009	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	16-Aug-25	Completed	3-Aug-25	Wisit D.				
16	MOPU-72-LJ	6651084	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	Low	15-Aug-25	Completed	15-Aug-25	Chalermporn L.				
17	MOPU-75-DS	6651080	PM-MOPU-EI DELUGE SYSTEM 1 - 2 MONTH	PM	SCE	10-Aug-25	Completed	5-Aug-25	Wisit D.				

MAINTENANCE

TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

MAINTENANCE

TYPE: BREAKDOWN MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | Material Status | SUMMARY WO | SUM BY PLATFORM | 7 Days Look Ahead PM Plan

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

SAFETY	PM	CM	BM	CB	IN	U-(CM)
PLAN:	17					
COMPLETE:	17					
PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

N	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72-BA	6651652	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	01-Sep-25	Completed	4-Sep-25	Wisit D.				
2	MOPU-75-DCT	6651653	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	Medium	01-Sep-25	Completed	4-Sep-25	Wisit D.				
3	MOPU-72-PTB	6651660	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	02-Sep-25	Completed	1-Sep-25	Wisit D.				
4	MOPU-72-PGD	6651659	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	02-Sep-25	Completed	1-Sep-25	Wisit D.				
5	MOPU-72-LR	6651108	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	Low	03-Sep-25	Completed	2-Sep-25	Wisit D.				
6	MOPU-72-EL	6651105	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	03-Sep-25	Completed	5-Sep-25	Wisit D.				
7	MOPU-72-OSK	6651109	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	Low	04-Sep-25	Completed	6-Sep-25	Wisit D.				
8	MOPU-72-EW	6651654	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Low	04-Sep-25	Completed	13-Sep-25	Wisit D.				
9	MOPU-72-OSR	6651658	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	05-Sep-25	Completed	6-Sep-25	FSO Team				
10	MOPU-75-DS	6651640	PM-MOPU-EI DELUGE SYSTEM 1 - 1 MONTH	PM	SCE	05-Sep-25	Completed	2-Sep-25	Wisit D.				
11	MOPU-75-HC	6651107	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	05-Sep-25	Completed	1-Sep-25	Wisit D.				
12	MOPU-72-ES	6651106	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	Low	06-Sep-25	Completed	3-Sep-25	Wisit D.				
13	MOPU-75-FF	6651655	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Low	11-Sep-25	Completed	9-Sep-25	Wisit D.				
14	MOPU-72-GB	6651656	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Medium	15-Sep-25	Completed	12-Sep-25	Wisit D.				
15	MOPU-72	6651625	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Sep-25	Completed	3-Sep-25	Wisit D.				
16	MOPU-72-LJ	6651657	PM-MOPU-HSE MARIN LIFEJAKET INSPEC 1 - 1 MONTH	PM	Low	15-Sep-25	Completed	11-Sep-25	Wisit D.				
17	MOPU-75-HR	6651679	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 YEAR	PM	Medium	17-Sep-25	Completed	16-Sep-25	Wisit D.				

MAINTENANCE — TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

MAINTENANCE — TYPE: BREAKDOWN MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | Material Status | SUMMARY WO | SUM BY PLATFORM | 7 Days Look Ahead PM Plan

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

SAFETY	PM	CM	BM	CB	IN	U-(CM)
PLAN:	19					
COMPLETE:	19					
PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

N	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72-PGD	6652479	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	02-Oct-25	Completed	2-Oct-25	Chalermporn L.				
2	MOPU-72-PTB	6652474	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	Medium	02-Oct-25	Completed	2-Oct-25	Chalermporn L.				
3	MOPU-75-HC	6652471	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	SCE	02-Oct-25	Completed	4-Oct-25	Chalermporn L.				
4	MOPU-72-LR	6652472	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	Low	03-Oct-25	Completed	4-Oct-25	Chalermporn L.				
5	MOPU-72-ES	6652470	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	Low	04-Oct-25	Completed	2-Oct-25	Chalermporn L.				
6	MOPU-72-BA	6652468	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	05-Oct-25	Completed	5-Oct-25	Chalermporn L.				
7	MOPU-75-DCT	6652469	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	Low	05-Oct-25	Completed	4-Oct-25	Chalermporn L.				
8	MOPU-72-EL	6652537	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	06-Oct-25	Completed	4-Oct-25	Chalermporn L.				
9	MOPU-72-OSR	6652538	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	07-Oct-25	Completed	6-Oct-25	FSO Crew				
10	MOPU-72-OSK	6652491	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	SCE	07-Oct-25	Completed	3-Oct-25	Chalermporn L.				
11	MOPU-75-FF	6652507	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Medium	10-Oct-25	Completed	7-Oct-25	Chalermporn L.				
12	MOPU-72-LJ	6652556	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	Low	12-Oct-25	Completed	13-Oct-25	Wisit D.				
13	MOPU-72-GB	6652513	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Low	13-Oct-25	Completed	14-Oct-25	Wisit D.				
14	MOPU-72-EW	6652562	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Medium	14-Oct-25	Completed	9-Oct-25	Wisit D.				
15	MOPU-72	6652455	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Oct-25	Completed	3-Oct-25	Chalermporn L.				
16	MOPU-75-HR	6652571	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	Low	17-Oct-25	Completed	12-Oct-25	Wisit D.				
17	MOPU-72-FB	6652590	PM-MOPU-HSE FIRE BLANKET INSPEC 1	PM	Medium	28-Oct-25	Completed	3-Oct-25	Chalermporn L.				
18	MOPU-72-HA	6652581	PM-MOPU-HSE SAFETY HARNESS INSPEC 1	PM	Medium	28-Oct-25	Completed	4-Oct-25	Chalermporn L.				
19	MOPU-75-DS	6652481	PM-MOPU-EI DELUGE SYSTEM 1 - 2 MONTH	PM	SCE	03-Oct-25	Completed	5-Oct-25	Chalermporn L.				

MAINTENANCE — TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | Material Status | SUMMARY WO | SUM BY PLATFORM | 7 Days Look Ahead PM Plan

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

SAFETY	PM	CM	BM	CB	IN	U-(CM)
PLAN:	18					
COMPLETE:	18					
PROGRESS:	100.0%	0.0%	0.0%	0.0%	0.0%	

100.0%

100.0%

TYPE: PREVENTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72-PGD	6653474	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	02-Nov-25	Completed	3-Nov-25	Chalermporn L.				
2	MOPU-72-PTB	6653505	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	02-Nov-25	Completed	3-Nov-25	Chalermporn L.				
3	MOPU-72-ES	6653502	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	Low	02-Nov-25	Completed	7-Nov-25	Chalermporn L.				
4	MOPU-75-DS	6653438	PM-MOPU-EI DELUGE SYSTEM 1 - 1 MONTH	PM	SCE	03-Nov-25	Completed	3-Nov-25	Chalermporn L.				
5	MOPU-72-OSR	6653473	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	Low	03-Nov-25	Completed	3-Nov-25	Chalermporn L.				
6	MOPU-72-OSR	6653520	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	03-Nov-25	Completed	4-Nov-25	FSO Crew				
7	MOPU-75-HC	6653471	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	04-Nov-25	Completed	3-Nov-25	Chalermporn L.				
8	MOPU-75-DCT	6653527	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	Medium	04-Nov-25	Completed	5-Nov-25	Chalermporn L.				
9	MOPU-72-LR	6653532	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	Low	04-Nov-25	Completed	23-Nov-25	Wisit D.				
10	MOPU-72-EL	6653468	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	04-Nov-25	Completed	21-Nov-25	Wisit D.				
11	MOPU-72-BA	6653467	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	05-Nov-25	Completed	21-Nov-25	Wisit D.				
12	MOPU-75-FF	6653619	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Low	07-Nov-25	Completed	23-Nov-25	Wisit D.				
13	MOPU-72-EW	6653469	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Low	09-Nov-25	Completed	11-Nov-25	Chalermporn L.				
14	MOPU-75-HR	6653470	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	Medium	12-Nov-25	Completed	11-Nov-25	Chalermporn L.				
15	MOPU-72-LJ	6653504	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	Low	13-Nov-25	Completed	21-Nov-25	Wisit D.				
16	MOPU-72-GB	6653503	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Medium	14-Nov-25	Completed	17-Nov-25	Chalermporn L.				
17	MOPU-72	6653425	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	15-Nov-25	Completed	20-Nov-25	Wisit D.				
18	MOPU-72-LB	6653472	PM-MOPU-HSE LIFE BUDY INSPECTION 1	PM	Low	01-Nov-25	Completed	21-Nov-25	Wisit D.				

MAINTENANCE

TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | Material Status | SUMMARY WO | SUM BY PLATFORM | 7 Days Look

SAFETY : MONTHLY WORK ORDER PLANNING

Oracle code : HSE

BACK TO SHEET SUMMARY | Name List

SAFETY	PM	CM	BM	CB	IN	U-(CM)
PLAN:	17					
COMPLETE:	2					
PROGRESS:	11.8%	0.0%	0.0%	0.0%	0.0%	

11.8%

11.8%

TYPE: PREVENTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE	Next day plan Date	Next day plan Remar	Required parts Yes / No
1	MOPU-72-PGD	6654182	PM-MOPU-HSE PERSONAL GAS DETECTOR INSPEC 1 - 1 MONTH	PM	Low	03-Dec-25	Ongoing						
2	MOPU-72-PTB	6654183	PM-MOPU-HSE PERSONAL TRANSFER BASKET INSPEC 1	PM	SCE	03-Dec-25	Ongoing						
3	MOPU-75-HC	6654177	PM-MOPU-HSE HELICOPTER CRASH CABINET INSPEC 1	PM	Medium	04-Dec-25	Completed	1-Dec-25	Waiting submit data				
4	MOPU-72-OSK	6654180	PM-MOPU-HSE OIL SPILL KITS INSPEC 1 - 1 MONTH	PM	Low	04-Dec-25	Ongoing						
5	MOPU-72-OSR	6654181	PM-MOPU-HSE OIL SPILL RESPONSE INSPEC 1 - 1 MONTH	PM	Low	05-Dec-25	Ongoing						
6	MOPU-75-DCT	6654170	PM-MOPU-HSE DAMAGE CONTROL TEAM CABINET INSPEC 1 - 1 MONTH	PM	Medium	06-Dec-25	Ongoing						
7	MOPU-72-ES	6654172	PM-MOPU-HSE EMERGENCY SHOWER STATIONS INSPECT 1 - 1 MONTH	PM	Low	08-Dec-25	Ongoing						
8	MOPU-72-EW	6654173	PM-MOPU-HSE EYE WASH STATIONS INSPECT 1 - 1 MONTH	PM	Low	12-Dec-25	Ongoing						
9	MOPU-75-HR	6654175	PM-MOPU-HSE FIRE HOSE REEL STATIONS INSPEC 1 - 1 MONTH	PM	Medium	12-Dec-25	Ongoing						
10	MOPU-72	6654141	PM ELECTRICAL RESCUE KITS INSPECTION 1 MONTHLY - 1 MONTH	PM	Low	16-Dec-25	Completed	1-Dec-25	Waiting submit data				
11	MOPU-72-GB	6654176	PM-MOPU-HSE GRAB BAGS INSPECTION 1 - 1 MONTH	PM	Medium	15-Dec-25	Ongoing						
12	MOPU-72-LJ	6654179	PM-MOPU-HSE MARIN LIFE JAKET INSPEC 1 - 1 MONTH	PM	Low	22-Dec-25	Ongoing						
13	MOPU-72-EL	6654171	PM-MOPU-HSE EMBARKATION LADDERS INSPECTION 1 - 1 MONTH	PM	Low	22-Dec-25	Ongoing						
14	MOPU-72-LR	6654178	PM-MOPU-HSE INFLAT LIFERAFT&DECK CRADLE INSPEC 1 - 1 MONTH	PM	Low	24-Dec-25	Ongoing						
15	MOPU-72-BA	6654169	PM-MOPU-HSE BREATHING APPARATUS INSPEC 1 - 1 MONTH	PM	Low	24-Dec-25	Ongoing						
16	MOPU-75-FF	6654174	PM-MOPU-HSE FIRE EXTINGUISHERS INSPEC 1 - 1 MONTH	PM	Low	24-Dec-25	Ongoing						
17	MOPU-75-DS	6654196	PM-MOPU-EI DELUGE SYSTEM 1 - 2 MONTH	PM	SCE	04-Dec-25	Ongoing						

MAINTENANCE

TYPE: CORRECTIVE MAINTENANCE

No	PF	WO	DESCRIPTION	TYPE	CRITICAL	TARGET DATE	STATUS	COMPLETE DATE	NAME	NOTE

SAFETY | EIO | OPERATOR | MECHANIC | RADIO | DECK | Material Status | SUMMARY WO | SUM BY PLATFORM | 7 Days Look