

ภาคผนวก

แทนผลิตภัณฑ์เคลื่อนย้ายได้

(MOPU)

ภาคผนวกแทนผลิตภัณฑ์เคลื่อนย้ายได้-1

MOPU Aurora Producer 1 (AP1)

- | | |
|--|--|
| <ul style="list-style-type: none"> o ภาคนวทนแบบผลิตแบบเคลื่อนย้ายได้-1.1 o ภาคนวทนแบบผลิตแบบเคลื่อนย้ายได้-1.2 | <p>แผนผังของ MOPU AP1</p> <p>ตัวอย่างบันทึกการตรวจสอบอุปกรณ์</p> <p>ความปลอดภัยของเรือ</p> |
|--|--|

ภาคผนวกแทนผลิตภัณฑ์เคลื่อนย้ายได้-1.1

แผนผังของ MOPU AP1



AURORA

AURORA PRODUCER 1

AURORA MARINE PTE. LTD.

Designers: Naval Architect / Structure / Marine



Cybermarine

CYBERMARINE TECHNOLOGIES PTE. LTD.

10, Budei Bataik Crescent,
#11-02, The Spire Building, Singapore-08079
Tel : +65- 6396 6553 / Fax: +65- 6396 6541
E-mail : sg@cybermarine.net
Website : www.cybermarine.net

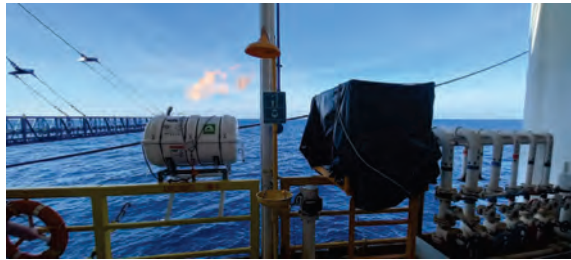
THIS DOCUMENT AND THE INFORMATION IT CONTAINS IS COPYRIGHTED AND REMAINS THE PROPERTY OF "CYBERMARINE TECHNOLOGIES PTE. LTD." (CYBERMARINE KNOWLEDGE SYSTEMS PTE. LTD.) AND IS NOT TO BE COPIED OR REPRODUCED IN WHOLE OR IN PART OR TRANSLATED TO ANY THIRD PARTY FOR ANY PURPOSE, WHATSOEVER WITHOUT PRIOR WRITTEN CONSENT.

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-1.2

ตัวอย่างบันทึกการตรวจสอบอุปกรณ์ความปลอดภัยของเรือ

Life-saving inspection record

Operation	Unit	Class	Type	Date	Time
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	22/09/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	16/09/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	09/09/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	01/09/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	26/08/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	18/08/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	11/08/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	04/08/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	28/07/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	21/07/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	14/07/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	07/07/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	23/06/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	16/06/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	09/06/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	02/06/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	20/05/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	20/05/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	10/05/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	10/05/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	28/04/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	24/04/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	16/04/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	09/04/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	31/03/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	24/03/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	12/03/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	12/03/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	03/03/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	26/02/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	19/02/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	13/02/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	06/02/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	30/01/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	30/01/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	22/01/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	07/01/2024	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	29/12/2023	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	24/12/2023	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	18/12/2023	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	17/12/2023	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	17/12/2023	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	09/12/2023	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Event Based	Check	25/11/2023	10:00:00:001
UPEBOATS - WEEKLY CHECKS	Mechanical	Event Based	Check	25/11/2023	10:00:00
UPEBOATS - WEEKLY CHECKS	Mechanical	Preventative Maintenance	Check	24/11/2023	10:00:00



GALLEY FIRE SUPPRESSION SYSTEM - MONTHLY ROUTINE

Details

Vessel: Aurora Producer 1

Next due: 10/27/2024

Active: ☒

Technical: 819.010 GALLEY FIRE SUPPRESSION SYSTEM

Equipment: 819.WET-CHEM-FIRE SYS.CI

Class ref: 819.WET-CHEM-FIRE SYS.CI

Location: 819.WET-CHEM-FIRE SYS.CI

Original instruction: 819.WET-CHEM-FIRE SYS.CI

Cost allocation: 819.WET-CHEM-FIRE SYS.CI

Job class: Preventative Maintenance

Priority: High

Job type: Check

Duration: 2.00

Job grade: Planned preventative work

Dept: Marine

Add description

PLANNED WORK INSTRUCTION: CHECK GALLEY FIRE SUPPRESSION SYSTEM, 1M

EQUIPMENT: FIRE SUPPRESSION SYSTEM

FREQUENCY: MONTHLY

CRAFT: MARINE/HSE

Caution

- Ensure all necessary Safety precautions are taken while work is performed.
- Refer to the OEM manuals, instructions and drawings as required.
- Observe all permit to work, isolation procedures and any applicable Risk Assessment.

DOCUMENT REFERENCE:

SPECIAL TOOLS/EQUIPMENT:

Preliminary

- Obtain permit to work form prior to performing task.

WORK DESCRIPTION

Galley suppression system, monthly inspection.

- Inspect the suppression system components and distribution pipework, for physical damage and/or displacement.
- Inspect all nozzles, check for possible obstructions to the discharge of the suppression fluid.
- Inspect all detectors, if applicable.
- Inspect each cylinder and valve assembly. Pay special attention to any gauge content indicators.
- Inspect manual alarm stations are unobstructed and in clear view, within the area.
- Inspect all tamper seals are intact and the system is in a ready condition.
- Verify the inspection tags or certificates are in place and current.

All findings must be recorded in Work History, any outstanding issues will be recorded in an Unplanned Corrective Work Order, including reference to the Original Planned Work Order ID Number.

Base description

PLANNED WORK INSTRUCTION: CHECK GALLEY WET CHEMICAL FIRE SUPPRESSION SYSTEM, 1M

EQUIPMENT: WET CHEMICAL FIRE SUPPRESSION SYSTEM

FREQUENCY: MONTHLY

CRAFT: MARINE/HSE

Caution

- Ensure all necessary Safety precautions are taken while work is performed.
- Refer to the OEM manuals, instructions and drawings as required.
- Observe all permit to work, isolation procedures and any applicable Risk Assessment.

DOCUMENT REFERENCE:

SPECIAL TOOLS/EQUIPMENT:

Preliminary

- Obtain permit to work form prior to performing task.

WORK DESCRIPTION

WET CHEMICAL SYSTEM, MONTHLY CHECKS / MAINTENANCE ROUTINE:

- Inspect all system components, agent distribution pipe, and conduit runs for physical damage and/or displacement.
- Inspect all nozzles to see if foil seal caps (if applicable) are in place. Check for possible obstructions to the discharge of the wet chemical.
- Inspect all detectors (Fusible-links and Thermo-bulbs) for contamination. If contamination is found, contact an authorized Distributor for service.
- Inspect each Cylinder and Valve Assembly. The pointer on the pressure gauge should be in the "green" range. The cylinder should not show evidence of corrosion or damage.
- Inspect manual pull stations are unobstructed and in clear view and labeled for intended use.
- Inspect all tamper seals are intact and the system is in a ready condition.
- Verify the inspection tag or certificate is in place and current.
- A record of the monthly inspection is to be kept reflecting the date inspected, initials of the person performing the inspection, and any corrections required.
- If wall mounted, the XV Control System must be tightly secured to the wall. If cylinder mounted, the XV Control System must be tightly bolted to the SVA. The Cam/Flag on the XV Control System indicator should point to the "Set" position.
- The safety pin and seal wire on the local manual release handle should be in place. If no Remote Manual Release is installed, the path to the local manual release on the cylinder should be clear and unobstructed and within reach.
- If any discrepancies are noted while making this inspection, DO NOT CONTINUE OPERATING HAZARDOUS PROCESSES OR TURN ON PROTECTED EQUIPMENT. Immediately contact an authorized Distributor for service and/or repair.
- The hood, duct, and protected cooking appliances have not been replaced, modified, or relocated.

All findings must be recorded in Work History, any outstanding issues will be recorded in an Unplanned Corrective Work Order, including reference to the Original Planned Work Order ID Number.

Connections

History (latest 5)

18.09.2024	2024-81651	GALLEY FIRE SUPPRESSION SYSTEM - MONTHLY ROUTINE	819.010	<Not Set>
16.08.2024	2024-81482	GALLEY FIRE SUPPRESSION SYSTEM - MONTHLY ROUTINE	819.010	<Not Set>
25.07.2024	2024-81337	GALLEY FIRE SUPPRESSION SYSTEM - MONTHLY ROUTINE	819.010	<Not Set>
25.06.2024	2024-81149	GALLEY FIRE SUPPRESSION SYSTEM - MONTHLY ROUTINE	819.010	<Not Set>
02.06.2024	2024-80903	GALLEY FIRE SUPPRESSION SYSTEM - MONTHLY ROUTINE	819.010	<Not Set>

Change log (latest 2)

Date	Site	Description	Name	Sch	Due	Cost	Test	User
7/15/2019	10:34:00A	Aurora Maritime Office	Edit	-	-	-	-	-
7/12/2019	3:35:31P	Aurora Maritime Office	Edit work instruction	-	-	-	-	-

Comments (latest 2)

Approved for use

Page 2 of 2

Scheduling

Operational mode	Type	Interval type	Length	Scheduling	Root	Alt. interval type	Alt. interval
Regular	PRODUCTION	Month	1,0	Fixed	10,0		0,0

Page 3 of 3

STAR Information Systems

Page 3 of 3

Scheduled job: 815.FIXED-CO2-SYSTEM.C001

FIXED CO2 SYSTEM - MONTHLY INSPECTION

Details

Vessel: Aurora Producer 1

Tech acc: 815.100 CO2 RELEASE STATIONS

Equipment:

Class ref:

Original instruction: 815.FIXED-CO2-SYSTEM.C01

Cost allocation:

Job class: Preventative Maintenance

Job type: Check

Job grade: Planned preventative work

Dept: Marine

Next due: 10/29/2024

Criticality:

Serial no.:

Priority: High

Duration: 2.00

Where:

Ref Id:

Status:

Comments:

815.100.011 CO2 CYLINDERS, SCR ROOM, AC GEN. ROOM, ELDV ROOM

815.100.012 CO2 CYLINDERS, PAINT LOCKER

815.100.013 CO2 CYLINDERS, EMERGENCY GENERATOR ROOM

815.100.014 CO2 CYLINDERS, GALLEY

Add 1 description: No need to be added

Base description:

EQUIPMENT: Fixed CO2 System

FREQUENCY: Monthly

TITLE: W1-Monthly Maintenance of Fixed CO2 Fire Fighting System

CRAFT: HSE

CAUTION:

- ENSURE ALL NECESSARY SAFETY PRECAUTIONS ARE TAKEN WHILE WORK IS PERFORMED

- REFER TO THE OEM MANUALS, INSTRUCTIONS AND DRAWINGS AS REQUIRED

- OBSERVE ALL PERMIT TO WORK, ISOLATION PROCEDURES AND ANY APPLICABLE JSA

SPECIAL TOOLS/EQUIPMENT:

1. Manufacturer's technical manual

DESCRIPTION

Preliminary

1. Obtain permit to work form prior to performing task.

A. Safety Maintenance

- Remember Safe Job Analysis, and obtain Work Permit prior to commencing this job.

A1. Monthly Routine

Inspect the cylinder fastening arrangements and tighten up any loose connections. This is particularly important after cylinders have been moved for weighing and/or refilling.

Star IPS STAR Information Systems Page 1 of 25

Check that the control (selector) valves and three-way valves in the distribution lines in the cabinet are fully closed.

Confirm the operation of the discharge alarms and mechanical ventilation shut-down arrangements by opening the doors of the release cabinets.

Check the pressure gauge on the manifold pipe in the cabinet. If it shows that any pressure is present in the manifold, this would indicate that one or more cylinders have leaked or been released.

Check Control Boxes situated locally and in the Cabinet and the Fire Control Station(s). See that Pilot Cylinders and connections are secure. Function test detector units and confirm that alarm works.

NOTE:
If components have been repaired or replaced, this is to be reported in details under Work Report.

Connections

History (latest 5)

24.09.2024 2024-81690 FIXED CO2 SYSTEM - MONTHLY INSPECTION 815.100 <Not Set>

14.08.2024 2024-81465 FIXED CO2 SYSTEM - MONTHLY INSPECTION 815.100 <Not Set>

27.07.2024 2024-81210 FIXED CO2 SYSTEM - MONTHLY INSPECTION 815.100 <Not Set>

13.07.2024 2024-81209 FIXED CO2 SYSTEM - MONTHLY INSPECTION 815.100 <Not Set>

02.06.2024 2024-80915 FIXED CO2 SYSTEM - MONTHLY INSPECTION 815.100 <Not Set>

Change log (latest 2)

No data to be shown

Comments (latest 2)

No data to be shown

Scheduling

Operational mode: Regular

Type: PRODUCTION

Interval type: Month

Length: 1.0

Scheduling: Fixed

Float: 10.0

Alt. interval type:

Alt. interval: 0.0

Star IPS STAR Information Systems Page 2 of 25

Work Order (filed)

2023-80186

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details

Plant: Aurora Producer 1

Status: Completed

Tech acc: 955.020

Equipment:

Reference:

Cost allocation:

FLAME/SMOKE/HEAT DETECTORS, PROCESS

Location:

Date done: 20/12/2023

Criticality:

Serial no:

Counter value:

Job class: Preventative Maintenance

Job type: Function Test

Grade: Planned preventative work

Department: Electrical

Priority: Medium

Duration: 4.00

Interval: Month

Length: 3.00

Schedule: Fixed

Float: 15.00

Where

Ref Id

Status

955.020.001 DETECTOR, FIRE, FD-001 OK

955.020.002 DETECTOR, FIRE, FD-002 OK

955.020.003 DETECTOR, FIRE, FD-003 OK

Work Report

Functional tested. Macesure next test dont forget production PLC baypas.

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA

FREQUENCY: 3 MONTH

TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION

CRAFT: INST / ELECT

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed

-Refer to the OEM manuals, instructions and drawings as required

-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:

Manufacturer's technical manual

DESCRIPTION

Preliminary

1.Obtain permit to work form prior to performing task.

2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

- Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
- Check the following,
 - All signs, instructions, identification tags and systems are secure and legible.
 - Damage to the component.
 - Obstructions to call points.
 - Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - Damaged cabling, cable tray and/or glands.
 - Excessive dirt on optical detection device lenses.

Star IPS STAR Information Systems Page 1 of 25

Work Order (filed)

2023-80186

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

- Dirt and/or mud on detectors. Clean as required.
- Fastenings for covers are secure, tighten and or replace as necessary.
- Check the gasket and sealing faces before reassembly, repair and replace as necessary.
- Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
 - Smoke detectors in accordance with OEM approved test smoke
 - Heat detectors in accordance with OEM approved test heat gun
 - Manual call point with OEM special key
- Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

NOTE:
If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

Other Work History top 3 for WH/top 6 for WH&WO

Date: 05/12/2024

Work Order: 2024-82193

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

TA Ref ID: 955.020

Status: Completed

02/09/2024

2024-81551

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

955.020

Completed

28/06/2024

2024-81030

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

955.020

Completed

Failure Reporting

Condition: Good

Downtime hours:

Condition comments: Ready to us

Equipment group:

Equipment sub-group:

Failure mode:

Failure description:

Failure cause:

Hours:

Production loss:

Done by

Star IPS STAR Information Systems Page 2 of 25

Work Order (filed)
2023-80186

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Creator	: Chief Electrician A	Created date	: 20/12/2023	Original due date	: 04/12/2023
Approved by	: Chief Electrician A	Approved date	: 20/12/2023		
Printed by	:	Printed date	:		
Completed by	: Chief Electrician A	Completed date	: 20/12/2023		
Closed by	: Technical Marine Superinr	Closed date	: 20/12/2023		
Filed by	: Technical Marine Superinr	Filed date	: 20/12/2023		
Status comments	: Functional tested				

Change log (latest 2)

Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
12/20/2023	10:58:00AM	Aurora Maritime Office	Work Done Report				*	*	Chief Electrician A

Work Order (filed)
2024-80392

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details				Plant: Aurora Producer 1			
Status	: Completed			Date done	: 07/03/2024		
Tech acc	: 955.020	FLAME/SMOKE/HEAT DETECTORS, PROCESS		Criticality	:		
Equipment	:			Serial no	:		
Reference	:	Location	:	Counter value	:		
Cost allocation	:						
Job class	: Preventative Maintenance	Priority	: Medium	Interval	: Month		
Job type	: Function Test	Duration	: 4.00	Length	: 3.00		
Grade	: Planned preventative work			Schedule	: Fixed		
Department	: Electrical			Float	: 15.00		

Where

	Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001	<Not Set>
955.020.002	DETECTOR, FIRE, FD-002	<Not Set>
955.020.003	DETECTOR, FIRE, FD-003	<Not Set>

Work Report

Functional tested one sensor. Macensure next test dont forget production PLC baypas.

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed
-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

Star IPS	STAR Information Systems	Page 3 of 25
----------	--------------------------	--------------

Work Order (filed)
2024-80392

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Failure Reporting			
Condition	: Good		
Downtime hours	:	Hours	:
Condition comments	: Functional tested one sensor		
Equipment group	:		
Equipment sub-group	:		
Failure mode	:		
Failure description	:		
Failure cause	:		

Done by

Creator	: Chief Electrician A	Created date	: 07/03/2024	Original due date	: 04/03/2024
Approved by	: Chief Electrician A	Approved date	: 07/03/2024		
Printed by	:	Printed date	:		
Completed by	: Chief Electrician A	Completed date	: 07/03/2024		
Closed by	: Technical Marine Superinr	Closed date	: 07/03/2024		
Filed by	: Technical Marine Superinr	Filed date	: 07/03/2024		
Status comments	: Functional tested one sensor				

Change log (latest 2)

Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
3/7/2024	4:59:24AM	Aurora Maritime Office	Work Done Report				*	*	Chief Electrician A

Work Order (filed)
2024-81030

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details				Plant: Aurora Producer 1			
Status	: Completed			Date done	: 28/06/2024		
Tech acc	: 955.020	FLAME/SMOKE/HEAT DETECTORS, PROCESS		Criticality	:		
Equipment	:			Serial no	:		
Reference	:	Location	:	Counter value	:		
Cost allocation	:						
Job class	: Preventative Maintenance	Priority	: Medium	Interval	: Month		
Job type	: Function Test	Duration	: 4.00	Length	: 3.00		
Grade	: Planned preventative work			Schedule	: Fixed		
Department	: Electrical			Float	: 15.00		

Where

	Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001	<Not Set>
955.020.002	DETECTOR, FIRE, FD-002	<Not Set>
955.020.003	DETECTOR, FIRE, FD-003	<Not Set>

Star IPS	STAR Information Systems	Page 5 of 25
----------	--------------------------	--------------

Work Order (filed)
2024-80392

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION
Preliminary

- 1.Obtain permit to work form prior to performing task.
- 2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

1. Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
2. Check the following,
 - a. All signs, instructions, identification tags and systems are secure and legible.
 - b. Damage to the component.
 - c. Obstructions to call points.
 - d. Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - e. Damaged cabling, cable tray and/or glands.
 - d. Excessive dirt on optical detection device lenses.
 - e. Dirt and/or mud on detectors. Clean as required.
 - f. Fastenings for covers are secure, tighten and or replace as necessary.
 - g. Check the gasket and sealing faces before reassembly, repair and replace as necessary.
3. Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
 - a. Smoke detectors in accordance with OEM approved test smoke
 - b. Heat detectors in accordance with OEM approved test heat gun
 - c. Manual call point with OEM special key
4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

Other Work History top 3 for WH/top 6 for WH&WO)

Date	Work Order		TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed

Star IPS	STAR Information Systems	Page 4 of 25
----------	--------------------------	--------------

Work Order (filed)
2024-81030

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work Report

Functional tested one sensor. Macensure next test dont forget production PLC baypas.

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed
-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION
Preliminary

- 1.Obtain permit to work form prior to performing task.
- 2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

1. Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
2. Check the following,
 - a. All signs, instructions, identification tags and systems are secure and legible.
 - b. Damage to the component.
 - c. Obstructions to call points.
 - d. Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - e. Damaged cabling, cable tray and/or glands.
 - d. Excessive dirt on optical detection device lenses.
 - e. Dirt and/or mud on detectors. Clean as required.
 - f. Fastenings for covers are secure, tighten and or replace as necessary.
 - g. Check the gasket and sealing faces before reassembly, repair and replace as necessary.
3. Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
 - a. Smoke detectors in accordance with OEM approved test smoke
 - b. Heat detectors in accordance with OEM approved test heat gun
 - c. Manual call point with OEM special key
4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Star IPS	STAR Information Systems	Page 6 of 25
----------	--------------------------	--------------

Work Order (filed)
2024-81030

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Connections

Other Work History top 3 for WH/top 6 for WH&WO

Date	Work Order		TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
07/03/2024	2024-80392	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed

Failure Reporting

Condition : Good

Downtime hours : Hours : Production loss : ☐

Condition comments : Functional tested one sensor.Enather visual inspected.

Equipment group :

Equipment sub-group :

Failure mode :

Failure description :

Failure cause :

Done by

Creator : Chief Electrician A Created date : 07/06/2024 Original due date : 04/06/2024

Approved by : Chief Electrician A Approved date : 28/06/2024

Printed by : Chief Electrician A Printed date : 07/06/2024

Completed by : Chief Electrician A Completed date : 28/06/2024

Closed by : Technical Marine Superinr Closed date : 28/06/2024

Filed by : Technical Marine Superinr Filed date : 28/06/2024

Status comments : Functional tested one sensor.

Change log (latest 2)

Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
6/28/2024 1:52:23AM	Aurora Maritime Office	Work Done Report					+	+	Chief Electrician A

Work Order (filed)
2024-81551

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details

Plant: Aurora Producer 1

Star IPS

STAR Information Systems

Page 7 of 25

Work Order (filed)
2024-81551

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

- c. Obstructions to call points.
d. Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
e. Damaged cabling, cable tray and/or glands.
d. Excessive dirt on optical detection device lenses.
e. Dirt and/or mud on detectors. Clean as required.
f. Fastenings for covers are secure, tighten and or replace as necessary.
g. Check the gasket and sealing faces before reassembly, repair and replace as necessary.
3. Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
verifying that the detector status and alarm show on the Fire and Repeater Panels:
a. Smoke detectors in accordance with OEM approved test smoke
b. Heat detectors in accordance with OEM approved test heat gun
c. Manual call point with OEM special key
4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC80079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:
If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

Other Work History top 3 for WH/top 6 for WH&WO

Date	Work Order		TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
07/03/2024	2024-80392	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed

Failure Reporting

Condition : Good

Downtime hours : Hours : Production loss : ☐

Condition comments : good

Equipment group :

Equipment sub-group :

Failure mode :

Failure description :

Failure cause :

Done by

Work Order (filed)
2024-81551

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Status : Completed

Tech acc : 955.020

Equipment :

Reference :

Cost allocation :

FLAME/SMOKE/HEAT DETECTORS, PROCESS

Location :

Date done : 02/09/2024

Criticality :

Serial no :

Counter value :

Job class : Preventative Maintenance

Job type : Function Test

Grade : Planned preventative work

Department : Electrical

Priority : Medium

Duration : 4.00

Interval : Month

Length : 3.00

Schedule : Fixed

Float : 15.00

Where

Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001
955.020.002	DETECTOR, FIRE, FD-002
955.020.003	DETECTOR, FIRE, FD-003

Work Report

only visual checks done

operations not allow phisical testing

no damage seen

nothing obscuring sensors

liased with production supervisor

operating as normal

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

CAUTION:
-Ensure all necessary safety precautions are taken while work is performed
-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION
Preliminary

- 1.Obtain permit to work form prior to performing task.
2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

1. Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
2. Check the following.
a. All signs, instructions, identification tags and systems are secure and legible.
b. Damage to the component.

Work Order (filed)
2024-81551

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Creator : Chief Electrician B

Approved by : Chief Electrician B

Printed by :

Completed by : Chief Electrician B

Closed by : Technical Marine Superinr

Filed by : Technical Marine Superinr

Status comments : In operation

Created date : 02/09/2024

Approved date : 02/09/2024

Printed date :

Completed date : 02/09/2024

Closed date : 02/09/2024

Filed date : 02/09/2024

Original due date : 04/09/2024

Change log (latest 2)

Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
9/2/2024 5:34:56AM	Aurora Maritime Office	Work Done Report					+	+	Chief Electrician B

Work Order (filed)
2024-82193

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details

Plant: Aurora Producer 1

Status : Completed

Tech acc : 955.020

Equipment :

Reference :

Cost allocation :

FLAME/SMOKE/HEAT DETECTORS, PROCESS

Location :

Date done : 05/12/2024

Criticality :

Serial no :

Counter value :

Job class : Preventative Maintenance

Job type : Function Test

Grade : Planned preventative work

Department : Electrical

Priority : Medium

Duration : 4.00

Interval : Month

Length : 3.00

Schedule : Fixed

Float : 15.00

Where

Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001
955.020.002	DETECTOR, FIRE, FD-002
955.020.003	DETECTOR, FIRE, FD-003

Work Report

only visual checks done

operations not allow phisical testing

no damage seen

nothing obscuring sensors

liased with production supervisor

operating as normal

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

Work Order (filed)
2024-82193

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

CAUTION:
-Ensure all necessary safety precautions are taken while work is performed
-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION
Preliminary

- 1.Obtain permit to work form prior to performing task.
2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

- Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
- Check the following.
 - All signs, instructions, identification tags and systems are secure and legible.
 - Damage to the component.
 - Obstructions to call points.
 - Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - Damaged cabling, cable tray and/or glands.
 - Excessive dirt on optical detection device lenses.
 - Dirt and/or mud on detectors. Clean as required.
 - Fastenings for covers are secure, tighten and or replace as necessary.
 - Check the gasket and sealing faces before reassembly, repair and replace as necessary.
- Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following.

verifying that the detector status and alarm show on the Fire and Repeater Panels:

 - Smoke detectors in accordance with OEM approved test smoke
 - Heat detectors in accordance with OEM approved test heat gun
 - Manual call point with OEM special key
- Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:
If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections			
Other Work History top 3 for WH/top 6 for WH&WO)			
Date	Work Order	TA Ref ID	Status
Star IPSSTAR Information SystemsPage 11 of 25			

Work Order (filed)
2019-00404

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Job class : Preventative Maintenance
Job type : Function Test
Grade : Planned preventative work
Department : Electrical
Priority : Medium
Duration : 4.00
Interval : Month
Length : 3.00
Schedule : Fixed
Float : 15.00

Where	Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001	OK
955.020.002	DETECTOR, FIRE, FD-002	OK
955.020.003	DETECTOR, FIRE, FD-003	OK

Work Report
This job is not for warm stuck.
We don't using this equipment during the warm stuck.

Work Description
EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

CAUTION:
-Ensure all necessary safety precautions are taken while work is performed
-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION
Preliminary

- 1.Obtain permit to work form prior to performing task.
2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

- Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
- Check the following.
 - All signs, instructions, identification tags and systems are secure and legible.
 - Damage to the component.
 - Obstructions to call points.
 - Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - Damaged cabling, cable tray and/or glands.
 - Excessive dirt on optical detection device lenses.
 - Dirt and/or mud on detectors. Clean as required.
 - Fastenings for covers are secure, tighten and or replace as necessary.
 - Check the gasket and sealing faces before reassembly, repair and replace as necessary.
- Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following.

verifying that the detector status and alarm show on the Fire and Repeater Panels:

Work Order (filed)
2024-82193

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
07/03/2024	2024-80392	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed

Failure Reporting				
Condition	: Good			
Downtime hours	:	Hours	:	Production loss : <input type="checkbox"/>
Condition comments	: Ready to use			
Equipment group	:			
Equipment sub-group	:			
Failure mode	:			
Failure description	:			
Failure cause	:			

Done by				
Creator	: Chief Electrician A	Created date	: 04/12/2024	Original due date : 04/12/2024
Approved by	: Chief Electrician A	Approved date	: 05/12/2024	
Printed by	:	Printed date	:	
Completed by	: Chief Electrician A	Completed date	: 05/12/2024	
Closed by	: Technical Marine Superinr	Closed date	: 05/12/2024	
Filed by	: Technical Marine Superinr	Filed date	: 05/12/2024	
Status comments	: only visual checks done operations not allow physical testing no damage seen nothing obscuring sensors based with production supervisor operating as normal			

Change log (latest 2)										
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User	
12/5/2024	5:27:08AM	Aurora Maritime Office	Work Done Report				+	+	Chief Electrician A	

Work Order (filed)
2019-00404

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details				Plant: Aurora Producer 1	
Status	: Completed			Date done	: 23/02/2020
Tech acc	: 955.020	FLAME/SMOKE/HEAT DETECTORS, PROCESS		Criticality	:
Equipment	:			Serial no	:
Reference	:	Location	:	Counter value	: 0.00
Cost allocation					

Work Order (filed)
2019-00404

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

- Smoke detectors in accordance with OEM approved test smoke
 - Heat detectors in accordance with OEM approved test heat gun
 - Manual call point with OEM special key
4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:
If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections				
Other Work History top 3 for WH/top 6 for WH&WO)				
Date	Work Order		TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed

Done by				
Creator	: Barry Wilkinson	Created date	: 10/10/2019	Original due date : 22/06/2019
Approved by	: EP7 Chief Electrician A	Approved date	: 23/02/2020	
Printed by	:	Printed date	:	
Completed by	: EP7 Chief Electrician A	Completed date	: 17/08/2023	
Closed by	: Star Admin User	Closed date	: 17/08/2023	
Filed by	: Star Admin User	Filed date	: 17/08/2023	
Status comments	: Follow warm stacking maintenance.			

Change log (latest 2)										
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User	
2/23/2020	3:25:47PM	Aurora Producer 1	Work Done Report				+			
2/23/2020	3:20:08PM	Aurora Producer 1	Work Done Report					+		

Work Order (filed)
2019-00444

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details				Plant: Aurora Producer 1	
Status	: Completed			Date done	: 23/02/2020
Tech acc	: 955.020	FLAME/SMOKE/HEAT DETECTORS, PROCESS		Criticality	:
Equipment	:			Serial no	:
Reference	:	Location	:	Counter value	: 0.00
Cost allocation					

Work Order (filed)
2019-00444

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Status	: Completed	FLAME/SMOKE/HEAT DETECTORS, PROCESS		Date done	: 21/09/2020
Tech acc	: 955.020			Criticality	:
Equipment	:			Serial no	:
Reference	:	Location	:	Counter value	: 0.00
Cost allocation	:				
Job class	: Preventative Maintenance	Priority	: Medium	Interval	: Month
Job type	: Function Test	Duration	: 4.00	Length	: 3.00
Grade	: Planned preventative work			Schedule	: Fixed
Department	: Electrical			Float	: 15.00

Where	Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001	OK
955.020.002	DETECTOR, FIRE, FD-002	OK
955.020.003	DETECTOR, FIRE, FD-003	OK

Work Report

Visual check over system & equipment
Process system not in use during the warm stack.

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

CAUTION:
-Ensure all necessary safety precautions are taken while work is performed
-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION
Preliminary

1. Obtain permit to work form prior to performing task.
2. De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

1. Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
2. Check the following,
 - a. All signs, instructions, identification tags and systems are secure and legible.
 - b. Damage to the component.
 - c. Obstructions to call points.
 - d. Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - e. Damaged cabling, cable tray and/or glands.
 - d. Excessive dirt on optical detection device lenses.

Work Order (filed)
2020-00180

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details				Plant: Aurora Producer 1	
Status	: Completed	Date done	: 22/09/2020		
Tech acc	: 955.020	FLAME/SMOKE/HEAT DETECTORS, PROCESS	Criticality	:	
Equipment	:	Serial no	:		
Reference	:	Location	:	Counter value	: 0.00
Cost allocation	:				
Job class	: Preventative Maintenance	Priority	: Medium	Interval	: Month
Job type	: Function Test	Duration	: 4.00	Length	: 3.00
Equipment	: Planned preventative work	Schedule	: Fixed	Float	: 15.00
Department	: Electrical				

Where	Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001	OK
955.020.002	DETECTOR, FIRE, FD-002	OK
955.020.003	DETECTOR, FIRE, FD-003	OK

Work Report

This job is not for warm stack.
We don't using this equipment during the warm stack.

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

CAUTION:
-Ensure all necessary safety precautions are taken while work is performed
-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION
Preliminary

1. Obtain permit to work form prior to performing task.
2. De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

1. Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
2. Check the following,
 - a. All signs, instructions, identification tags and systems are secure and legible.
 - b. Damage to the component.
 - c. Obstructions to call points.
 - d. Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.

Work Order (filed)
2019-00444

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

- e. Dirt and/or mud on detectors. Clean as required.
 - f. Fastenings for covers are secure, tighten and or replace as necessary.
 - g. Check the gasket and sealing faces before reassembly, repair and replace as necessary.
3. Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
verifying that the detector status and alarm show on the Fire and Repeater Panels:
 - a. Smoke detectors in accordance with OEM approved test smoke
 - b. Heat detectors in accordance with OEM approved test heat gun
 - c. Manual call point with OEM special key
 4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:
If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

Other Work History top 3 for WH/top 6 for WH&WO				
Date	Work Order		TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed

Done by

Creator	: Barry Wilkinson	Created date	: 10/10/2019	Original due date	: 22/09/2019
Approved by	: EP7 Chief Electrician A	Approved date	: 21/09/2020		
Printed by	:	Printed date	:		
Completed by	: EP7 Chief Electrician A	Completed date	: 17/08/2023		
Closed by	: Star Admin User	Closed date	: 17/08/2023		
Filed by	: Star Admin User	Filed date	: 17/08/2023		
Status comments	: Visual check over system & equipment Process system not in use during the warm stack.				

Change log (latest 2)										
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User	
9/21/2020	4:11:51PM	Aurora Producer 1	Work Done Report				+	+		

Work Order (filed)
2020-00180

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

- e. Damaged cabling, cable tray and/or glands.
 - d. Excessive dirt on optical detection device lenses.
 - e. Dirt and/or mud on detectors. Clean as required.
 - f. Fastenings for covers are secure, tighten and or replace as necessary.
 - g. Check the gasket and sealing faces before reassembly, repair and replace as necessary.
3. Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
verifying that the detector status and alarm show on the Fire and Repeater Panels:
 - a. Smoke detectors in accordance with OEM approved test smoke
 - b. Heat detectors in accordance with OEM approved test heat gun
 - c. Manual call point with OEM special key
 4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:
If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

Other Work History top 3 for WH/top 6 for WH&WO				
Date	Work Order		TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed

Failure Reporting

Condition	:	Alert			
Downtime hours	:	Hours	:	Production loss	: <input type="checkbox"/>
Condition comments	:				
Equipment group	:				
Equipment sub-group	:				
Failure mode	:				
Failure description	:				
Failure cause	:				

Done by

Work Order (filed)
2020-00180

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Creator : EP7 Chief Electrician A Created date : 23/02/2020 Original due date : 22/12/2019
Approved by : EP7 Chief Electrician A Approved date : 23/02/2020
Printed by : Printed date :
Completed by : EP7 Chief Electrician A Completed date : 17/08/2023
Closed by : Star Admin User Closed date : 17/08/2023
Filed by : Star Admin User Filed date : 17/08/2023
Status comments : This job is not for warm stack.
We don't using this equipment during the warm stack.

Change log (latest 2)									
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
9/22/2020	2:49:51PM	Aurora Producer 1	Work Done Report				*	*	
2/23/2020	3:20:40PM	Aurora Producer 1	Work Done Report					*	

Work Order (filed)
2020-00181

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details				Plant: Aurora Producer 1			
Status	: Completed			Date done	: 22/09/2020		
Tech acc	: 955.020	FLAME/SMOKE/HEAT DETECTORS, PROCESS		Criticality	:		
Equipment	:			Serial no	:		
Reference	:	Location	:	Counter value	: 0.00		
Cost allocation	:						
Job class	: Preventative Maintenance	Priority	: Medium	Interval	: Month		
Job type	: Function Test	Duration	: 4.00	Length	: 3.00		
Grade	: Planned preventative work			Schedule	: Fixed		
Department	: Electrical			Float	: 15.00		

Where

	Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001	OK
955.020.002	DETECTOR, FIRE, FD-002	OK
955.020.003	DETECTOR, FIRE, FD-003	OK

Work Report

This job is not for warm stack.
We don't using this equipment during the warm stack.

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed

Work Order (filed)
2020-00181

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed

Done by

Creator : EP7 Chief Electrician A Created date : 23/02/2020 Original due date : 22/03/2020
Approved by : EP7 Chief Electrician A Approved date : 23/02/2020
Printed by : Printed date :
Completed by : EP7 Chief Electrician A Completed date : 17/08/2023
Closed by : Star Admin User Closed date : 17/08/2023
Filed by : Star Admin User Filed date : 17/08/2023
Status comments : This job is not for warm stack.
We don't using this equipment during the warm stack.

Change log (latest 2)									
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
9/22/2020	2:51:24PM	Aurora Producer 1	Work Done Report				*	*	
2/23/2020	3:22:40PM	Aurora Producer 1	Work Done Report					*	

Work Order (filed)
2020-00734

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details				Plant: Aurora Producer 1			
Status	: Completed			Date done	: 21/06/2020		
Tech acc	: 955.020	FLAME/SMOKE/HEAT DETECTORS, PROCESS		Criticality	:		
Equipment	:			Serial no	:		
Reference	:	Location	:	Counter value	: 0.00		
Cost allocation	:						
Job class	: Preventative Maintenance	Priority	: Medium	Interval	: Month		
Job type	: Function Test	Duration	: 1.00	Length	: 3.00		
Grade	: Planned preventative work			Schedule	: Fixed		
Department	: Electrical			Float	: 15.00		

Where

	Ref Id	Status
955.020.001	DETECTOR, FIRE, FD-001	OK
955.020.002	DETECTOR, FIRE, FD-002	OK
955.020.003	DETECTOR, FIRE, FD-003	OK

Work Report

This job is not for warm stuck.
We don't using this equipment during the warm stuck.

Work Order (filed)
2020-00181

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION

Preliminary

- 1.Obtain permit to work form prior to performing task.
- 2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

1. Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
2. Check the following,
 - a. All signs, instructions, identification tags and systems are secure and legible.
 - b. Damage to the component.
 - c. Obstructions to call points.
 - d. Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - e. Damaged cabling, cable tray and/or glands.
 - d. Excessive dirt on optical detection device lenses.
 - e. Dirt and/or mud on detectors. Clean as required.
 - f. Fastenings for covers are secure, tighten and or replace as necessary.
 - g. Check the gasket and sealing faces before reassembly, repair and replace as necessary.
3. Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
 - a. Smoke detectors in accordance with OEM approved test smoke
 - b. Heat detectors in accordance with OEM approved test heat gun
 - c. Manual call point with OEM special key
4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

Other Work History top 3 for WH/top 6 for WH&WO)

Date	Work Order	TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020 Completed

Work Order (filed)
2020-00734

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work Description

EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA
FREQUENCY: 3 MONTH
TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION
CRAFT: INST / ELECT

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed
-Refer to the OEM manuals, instructions and drawings as required
-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:
Manufacturer's technical manual

DESCRIPTION

Preliminary

- 1.Obtain permit to work form prior to performing task.
- 2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

1. Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
2. Check the following,
 - a. All signs, instructions, identification tags and systems are secure and legible.
 - b. Damage to the component.
 - c. Obstructions to call points.
 - d. Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - e. Damaged cabling, cable tray and/or glands.
 - d. Excessive dirt on optical detection device lenses.
 - e. Dirt and/or mud on detectors. Clean as required.
 - f. Fastenings for covers are secure, tighten and or replace as necessary.
 - g. Check the gasket and sealing faces before reassembly, repair and replace as necessary.
3. Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
 - a. Smoke detectors in accordance with OEM approved test smoke
 - b. Heat detectors in accordance with OEM approved test heat gun
 - c. Manual call point with OEM special key
4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

Work Order (filed)
2020-00734

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Other Work History top 3 for WH/top 6 for WH&WO				
Date	Work Order		TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
Done by				
Creator	: EP7 Chief Electrician A	Created date	: 21/06/2020	Original due date : 22/06/2020
Approved by	: EP7 Chief Electrician A	Approved date	: 21/06/2020	
Printed by	:	Printed date	:	
Completed by	: EP7 Chief Electrician A	Completed date	: 17/08/2023	
Closed by	: Star Admin User	Closed date	: 17/08/2023	
Filed by	: Star Admin User	Filed date	: 17/08/2023	
Status comments	:			

Change log (latest 2)									
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
6/21/2020 11:48:57AM	Aurora Producer 1	Work Done Report					+	+	

Work Order (filed)
2020-01343

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work History Details				Plant: Aurora Producer 1	
Status	: Completed			Date done	: 22/09/2020
Tech acc	: 955.020	FLAME/SMOKE/HEAT DETECTORS, PROCESS		Criticality	:
Equipment	:			Serial no	:
Reference	:	Location	:	Counter value	: 0.00
Cost allocation					
Job class	: Preventative Maintenance	Priority	: Medium	Interval	: Month
Job type	: Function Test	Duration	: 4.00	Length	: 3.00
Grade	: Planned preventative work			Schedule	: Fixed
Department	: Electrical			Float	: 15.00

Where	Ref Id	Status
955.020.001 DETECTOR, FIRE, FD-001		OK
955.020.002 DETECTOR, FIRE, FD-002		OK
955.020.003 DETECTOR, FIRE, FD-003		OK

Work Order (filed)
2020-01343

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections				
Other Work History top 3 for WH/top 6 for WH&WO)				
Date	Work Order		TA Ref ID	Status
05/12/2024	2024-82193	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
02/09/2024	2024-81551	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
28/06/2024	2024-81030	FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE	955.020	Completed
Failure Reporting				
Condition	: Alert			
Downtime hours	:	Hours	:	Production loss : <input type="checkbox"/>
Condition comments	: This job is not for warm stack.			
	: We don't using this equipment during the warm stack.			
Equipment group	:			
Equipment sub-group	:			
Failure mode	:			
Failure description	:			
Failure cause	:			
Done by				
Creator	: EP7 Chief Electrician A	Created date	: 22/09/2020	Original due date : 22/09/2020
Approved by	: EP7 Chief Electrician A	Approved date	: 22/09/2020	
Printed by	:	Printed date	:	
Completed by	: EP7 Chief Electrician A	Completed date	: 17/08/2023	
Closed by	: Star Admin User	Closed date	: 17/08/2023	
Filed by	: Star Admin User	Filed date	: 17/08/2023	
Status comments	:			

Change log (latest 2)									
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
9/22/2020 2:52:49PM	Aurora Producer 1	Work Done Report					+	+	

Work Order (filed)
2020-01343

FIRE AND GAS SYSTEM PROCESS AREA - QUARTERLY PREVENTIVE MAINTENANCE ROUTINE

Work Report
This job is not for warm stack. We don't using this equipment during the warm stack.
Work Description
EQUIPMENT: FIRE AND GAS SYSTEM PROCESS AREA FREQUENCY: 3 MONTH TITLE: F&GSPA - QUARTERLY MAINTENANCE INSPECTION CRAFT: INST / ELECT
CAUTION: -Ensure all necessary safety precautions are taken while work is performed -Refer to the OEM manuals, instructions and drawings as required -Observe all permit to work, isolation procedures and any applicable JSA
SPECIAL TOOLS/EQUIPMENT: Manufacturer's technical manual
DESCRIPTION Preliminary

- 1.Obtain permit to work form prior to performing task.
- 2.De-energize power source to equipment in accordance with lockout/tagout procedures.

WORK DESCRIPTION

1. Walk the areas described and check the integrity of the flame, smoke, heat and fire detectors, call points, cabling and junction boxes.
2. Check the following,
 - a. All signs, instructions, identification tags and systems are secure and legible.
 - b. Damage to the component.
 - c. Obstructions to call points.
 - d. Unauthorised covering of sensors, check the integrity of the isolation certificate if authorised.
 - e. Damaged cabling, cable tray and/or glands.
 - f. Excessive dirt on optical detection device lenses.
 - g. Dirt and/or mud on detectors. Clean as required.
 - h. Fastenings for covers are secure, tighten and or replace as necessary.
 - i. Check the gasket and sealing faces before reassembly, repair and replace as necessary.
3. Perform testing of the flame/smoke/heat detectors and manual call points in the F&G group or loop as per the following,
 - a. Smoke detectors in accordance with OEM approved test smoke
 - b. Heat detectors in accordance with OEM approved test heat gun
 - c. Manual call point with OEM special key
4. Ensure the fire detection and alarm system is back to normal operational condition.

Where the equipment is of an Ex classification it is to be maintained and inspected in accordance with the recommendations provided by manufacturers and relevant standards. i.e. IEC60079-17 Inspection and maintenance of electrical installations in hazardous areas.

Refer to Hazardous Area Equipment Register for the appropriate "Ex" type of classification.

Note:		
Star IPS	STAR Information Systems	Page 24 of 25

Work Order (filed)
2023-80296

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Work History Details				Plant: Aurora Producer 1	
Status	: Completed			Date done	: 24/12/2023
Tech acc	: 955.010	GAS DETECTORS, PROCESS		Criticality	:
Equipment	:			Serial no	:
Reference	:	Location	:	Counter value	:
Cost allocation					
Job class	: Preventative Maintenance	Priority	: High	Interval	: Month
Job type	: Clean/Inspect/Maintain as Required	Duration	: 8.00	Length	: 3.00
Grade	: Planned preventative work			Schedule	: Fixed
Department	: Production			Float	: 15.00
Where	Ref Id	Status			
955.010.001 DETECTOR, GAS, GD-001(H2S)		OK			
955.010.002 DETECTOR, GAS, GD-002(H2S)		OK			
955.010.003 DETECTOR, GAS, GD-003(H2S)		OK			
955.010.004 DETECTOR, GAS, GD-004(H2S)		OK			
955.010.005 DETECTOR, GAS, GD-005(H2S)		OK			
955.010.006 DETECTOR, GAS, GD-006(H2S)		OK			
955.010.007 DETECTOR, GAS, GD-007(H2S)		OK			
955.010.008 DETECTOR, GAS, GD-008(H2S)		OK			
955.010.011 DETECTOR, GAS, GD-001 (CH4)		OK			
955.010.012 DETECTOR, GAS, GD-002 (CH4)		OK			
955.010.013 DETECTOR, GAS, GD-003 (CH4)		OK			
955.010.014 DETECTOR, GAS, GD-004 (CH4)		OK			
955.010.015 DETECTOR, GAS, GD-005 (CH4)		OK			
955.010.016 DETECTOR, GAS, GD-006 (CH4)		OK			
955.010.017 DETECTOR, GAS, GD-007 (CH4)		OK			
955.010.018 DETECTOR, GAS, GD-008 (CH4)		OK			
955.010.019 DETECTOR, GAS, GD-009 (CH4)		OK			

Work Report
COMPLETED AS PER WO
Weerasak Sungkaew -(ToNo)
Production Supervisor
Work Description
PLANNED WORK INSTRUCTION: CHECK GAS DETECTION SYSTEM, 3M EQUIPMENT: GAS DETECTION SYSTEM FREQUENCY: 3 MONTHLY CRAFT: EIT

- Caution**
- Ensure all necessary Safety precautions are taken while work is performed.
 - Refer to the OEM manuals, instructions and drawings as required.
 - Observe all permit to work, isolation procedures and any applicable Risk Assessment.

DOCUMENT REFERENCE:
SPECIAL TOOLS/EQUIPMENT:

WORK DESCRIPTION

Work Order (filed)
2023-80296

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

FUNCTION 1:

To measure the concentration of flammable gas across a defined range. Upon detection of sufficient quantities of flammable gas will generate the appropriate indications and panel alarms and to initiate executive actions as detailed in the Fire & Gas Cause and Effects.

FLAMMABLE GAS DETECTION FUNCTION TEST AND CALIBRATION CHECK

Gas Detectors:

The detectors for area monitoring and/or HVAC ducting shall alarm at the following levels:

a) Point Detectors:

Check Low Level Gas (LLG): 20% of Lower Explosive Limit (LEL)
Check High Level Gas (HLG): 60% of LEL

b) Beam Detectors:

Check Low Level Gas (LLG): 1 LEL - metre [20% of Full Scale Deflection (FSD)]
Check High Level Gas (HLG) 3 LEL - metre [60% of FSD]

FLAMMABLE GAS DETECTION CALIBRATION CHECK

The Flammable Gas Detectors shall meet the following calibration criteria:

- The span (i.e. the measured scale deflection minus the scale deflection value with no gas present - [zero value]) does not deviate by more than 20% LEL below the range value (e.g. for 60% deflection the span must be greater than 40% LFL) AND
- The measured range does not deviate by more than 20% LEL below the desired range value (e.g. for 60% deflection, the calibrated value must be greater than 40% LEL)

The performance standard is not met if a single detector fails to detect, or it fails the calibration test criteria.

FLAMMABLE GAS DETECTION ALARM FUNCTION

Upon activation of a single detector, a visual and audible alarm, clearly indicating the affected zone, shall be initiated as detailed by the Fire & Gas Cause and Effects.

Failure of any single function constitutes failure to meet the performance standard.

NOTE:

If components have been replaced or repaired, this is also to be reported under Work Report.

Connections

Other Work History top 3 for WH/top 6 for WH&WO

Date	Work Order		TA Ref ID	Status
18/11/2024	2024-82034	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed
14/08/2024	2024-81466	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed

Work Order (filed)
2024-80191

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Where

Ref IdStatus

955.010.001	DETECTOR, GAS, GD-001(H2S)	OK
955.010.002	DETECTOR, GAS, GD-002(H2S)	OK
955.010.003	DETECTOR, GAS, GD-003(H2S)	OK
955.010.004	DETECTOR, GAS, GD-004(H2S)	OK
955.010.005	DETECTOR, GAS, GD-005(H2S)	OK
955.010.006	DETECTOR, GAS, GD-006(H2S)	OK
955.010.007	DETECTOR, GAS, GD-007(H2S)	OK
955.010.008	DETECTOR, GAS, GD-008(H2S)	OK
955.010.011	DETECTOR, GAS, GD-001 (CH4)	OK
955.010.012	DETECTOR, GAS, GD-002 (CH4)	OK
955.010.013	DETECTOR, GAS, GD-003 (CH4)	OK
955.010.014	DETECTOR, GAS, GD-004 (CH4)	OK
955.010.015	DETECTOR, GAS, GD-005 (CH4)	OK
955.010.016	DETECTOR, GAS, GD-006 (CH4)	OK
955.010.017	DETECTOR, GAS, GD-007 (CH4)	OK
955.010.018	DETECTOR, GAS, GD-008 (CH4)	OK
955.010.019	DETECTOR, GAS, GD-009 (CH4)	OK

Work Report

Weerasak Sungkaew Production Supervisor on board

Work Description

PLANNED WORK INSTRUCTION: CHECK GAS DETECTION SYSTEM, 3M
EQUIPMENT: GAS DETECTION SYSTEM
FREQUENCY: 3 MONTHLY
CRAFT: EIT

Caution

- Ensure all necessary Safety precautions are taken while work is performed.
- Refer to the OEM manuals, instructions and drawings as required.
- Observe all permit to work, isolation procedures and any applicable Risk Assessment.

DOCUMENT REFERENCE:
SPECIAL TOOLS/EQUIPMENT:

WORK DESCRIPTION

FUNCTION 1:

To measure the concentration of flammable gas across a defined range. Upon detection of sufficient quantities of flammable gas will generate the appropriate indications and panel alarms and to initiate executive actions as detailed in the Fire & Gas Cause and Effects.

FLAMMABLE GAS DETECTION FUNCTION TEST AND CALIBRATION CHECK

Gas Detectors:

The detectors for area monitoring and/or HVAC ducting shall alarm at the following levels:

a) Point Detectors:

Check Low Level Gas (LLG): 20% of Lower Explosive Limit (LEL)
Check High Level Gas (HLG): 60% of LEL

b) Beam Detectors:

Check Low Level Gas (LLG): 1 LEL - metre [20% of Full Scale Deflection (FSD)]
Check High Level Gas (HLG) 3 LEL - metre [60% of FSD]

Work Order (filed)
2023-80296

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

16/02/20242024-80191GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK955.010Completed

Failure Reporting

Condition	:			
Downtime hours	:	Hours	:	Production loss
Condition comments	:	GOOD		
Equipment group	:			
Equipment sub-group	:			
Failure mode	:			
Failure description	:			
Failure cause	:			

Done by

Creator	:	Technical Marine Superin	Created date	:	23/12/2023	Original due date	:	22/11/2023
Approved by	:	Technical Marine Superin	Approved date	:	24/12/2023			
Printed by	:	Technical Marine Superin	Printed date	:	23/12/2023			
Completed by	:	Technical Marine Superin	Completed date	:	24/12/2023			
Closed by	:	Technical Marine Superin	Closed date	:	24/12/2023			
Filed by	:	Technical Marine Superin	Filed date	:	24/12/2023			
Status comments	:	GOOD						

Change log (latest 2)

Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
12/24/2023	9:17:17AM	Aurora Maritime Office	Work Done Report				*	*	Technical Marine Superintendent

Work Order (filed)
2024-80191

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Work History Details

Plant: Aurora Producer 1

Status	:	Completed	Date done	:	16/02/2024
Tech acc	:	955.010	GAS DETECTORS, PROCESS	Criticality	:
Equipment	:			Serial no	:
Reference	:	Location	:	Counter value	:
Cost allocation	:				

Job class	:	Preventative Maintenance	Priority	:	High	Interval	:	Month
Job type	:	Clean/Inspect/Maintain as Required	Duration	:	8.00	Length	:	3.00
Grade	:	Planned preventative work				Schedule	:	Fixed
Department	:	Production				Float	:	15.00

Where

Ref IdStatus

Work Order (filed)
2024-80191

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

FLAMMABLE GAS DETECTION CALIBRATION CHECK

The Flammable Gas Detectors shall meet the following calibration criteria:

- The span (i.e. the measured scale deflection minus the scale deflection value with no gas present - [zero value]) does not deviate by more than 20% LEL below the range value (e.g. for 60% deflection the span must be greater than 40% LFL) AND
- The measured range does not deviate by more than 20% LEL below the desired range value (e.g. for 60% deflection, the calibrated value must be greater than 40% LEL)

The performance standard is not met if a single detector fails to detect, or it fails the calibration test criteria.

FLAMMABLE GAS DETECTION ALARM FUNCTION

Upon activation of a single detector, a visual and audible alarm, clearly indicating the affected zone, shall be initiated as detailed by the Fire & Gas Cause and Effects.

Failure of any single function constitutes failure to meet the performance standard.

NOTE:

If components have been replaced or repaired, this is also to be reported under Work Report.

Connections

Other Work History top 3 for WH/top 6 for WH&WO

Date	Work Order		TA Ref ID	Status
18/11/2024	2024-82034	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed
14/08/2024	2024-81466	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed
16/02/2024	2024-80192	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed

Failure Reporting

Condition	:			
Downtime hours	:	Hours	:	Production loss
Condition comments	:	good		
Equipment group	:			
Equipment sub-group	:			
Failure mode	:			
Failure description	:			
Failure cause	:			

Done by

Work Order (filed)
2024-80191

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Creator	: Technical Marine Superinr	Created date	: 13/02/2024	Original due date	: 22/02/2024
Approved by	: Technical Marine Superinr	Approved date	: 16/02/2024		
Printed by	:	Printed date	:		
Completed by	: Technical Marine Superinr	Completed date	: 16/02/2024		
Closed by	: Technical Marine Superinr	Closed date	: 16/02/2024		
Filed by	: Technical Marine Superinr	Filed date	: 16/02/2024		
Status comments	: good				

Change log (latest 2)

Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
2/16/2024 5:27:57AM	Aurora Maritime Office	Work Done Report					*	*	Technical Marine Superintendent

Work Order (filed)
2024-80192

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Work History DetailsPlant: Aurora Producer 1

Status	: Completed	Date done	: 16/02/2024
Tech acc	: 955.010	Criticality	:
Equipment	: GAS DETECTORS, PROCESS	Serial no	:
Reference	: Location :	Counter value	:
Cost allocation	:		

Job class	: Preventative Maintenance	Priority	: High	Interval	: Month
Job type	: Clean/Inspect/Maintain as Required	Duration	: 8.00	Length	: 3.00
Grade	: Planned preventative work	Schedule	: Fixed		
Department	: Production	Float	: 15.00		

Where

Ref Id	Status
955.010.001 DETECTOR, GAS, GD-001(H2S)	OK
955.010.002 DETECTOR, GAS, GD-002(H2S)	OK
955.010.003 DETECTOR, GAS, GD-003(H2S)	OK
955.010.004 DETECTOR, GAS, GD-004(H2S)	OK
955.010.005 DETECTOR, GAS, GD-005(H2S)	OK
955.010.006 DETECTOR, GAS, GD-006(H2S)	OK
955.010.007 DETECTOR, GAS, GD-007(H2S)	OK
955.010.008 DETECTOR, GAS, GD-008(H2S)	OK
955.010.011 DETECTOR, GAS, GD-001 (CH4)	OK
955.010.012 DETECTOR, GAS, GD-002 (CH4)	OK
955.010.013 DETECTOR, GAS, GD-003 (CH4)	OK
955.010.014 DETECTOR, GAS, GD-004 (CH4)	OK
955.010.015 DETECTOR, GAS, GD-005 (CH4)	OK
955.010.016 DETECTOR, GAS, GD-006 (CH4)	OK
955.010.017 DETECTOR, GAS, GD-007 (CH4)	OK
955.010.018 DETECTOR, GAS, GD-008 (CH4)	OK
955.010.019 DETECTOR, GAS, GD-009 (CH4)	OK

Work Report

Star IPS	STAR Information Systems	Page 6 of 14
----------	--------------------------	--------------

Work Order (filed)
2024-80192

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

zone, shall be initiated as detailed by the Fire & Gas Cause and Effects.

Failure of any single function constitutes failure to meet the performance standard.

NOTE:
If components have been replaced or repaired, this is also to be reported under Work Report.

Connections

Other Work History top 3 for WH/top 6 for WH&WO

Date	Work Order	TA Ref ID	Status
18/11/2024	2024-82034	955.010	Completed
14/08/2024	2024-81466	955.010	Completed
16/02/2024	2024-80191	955.010	Completed

Failure Reporting

Condition	:			
Downtime hours	:	Hours	:	Production loss : <input type="checkbox"/>
Condition comments	: good			
Equipment group	:			
Equipment sub-group	:			
Failure mode	:			
Failure description	:			
Failure cause	:			

Done by

Creator	: Technical Marine Superinr	Created date	: 13/02/2024	Original due date	: 22/05/2024
Approved by	: Technical Marine Superinr	Approved date	: 16/02/2024		
Printed by	: Technical Marine Superinr	Printed date	: 13/02/2024		
Completed by	: Technical Marine Superinr	Completed date	: 16/02/2024		
Closed by	: Technical Marine Superinr	Closed date	: 16/02/2024		
Filed by	: Technical Marine Superinr	Filed date	: 16/02/2024		
Status comments	: good				

Change log (latest 2)

Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User
2/16/2024 5:30:40AM	Aurora Maritime Office	Work Done Report					*	*	Technical Marine Superintendent

Star IPS	STAR Information Systems	Page 8 of 14
----------	--------------------------	--------------

Work Order (filed)
2024-80192

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Weerasak Sungkaew Production Supervisor on board

Work Description

PLANNED WORK INSTRUCTION: CHECK GAS DETECTION SYSTEM, 3M EQUIPMENT: GAS DETECTION SYSTEM FREQUENCY: 3 MONTHLY CRAFT: EIT

Caution

- Ensure all necessary Safety precautions are taken while work is performed.
- Refer to the OEM manuals, instructions and drawings as required.
- Observe all permit to work, isolation procedures and any applicable Risk Assessment.

DOCUMENT REFERENCE:
SPECIAL TOOLS/EQUIPMENT:

WORK DESCRIPTION

FUNCTION 1:

To measure the concentration of flammable gas across a defined range. Upon detection of sufficient quantities of flammable gas will generate the appropriate indications and panel alarms and to initiate executive actions as detailed in the Fire & Gas Cause and Effects.

FLAMMABLE GAS DETECTION FUNCTION TEST AND CALIBRATION CHECK

Gas Detectors:

The detectors for area monitoring and/or HVAC ducting shall alarm at the following levels:

- a) Point Detectors:
Check Low Level Gas (LLG): 20% of Lower Explosive Limit (LEL)
Check High Level Gas (HLG): 60% of LEL
- b) Beam Detectors:
Check Low Level Gas (LLG): 1 LEL - metre [20% of Full Scale Deflection (FSD)]
Check High Level Gas (HLG) 3 LEL - metre [60% of FSD]

FLAMMABLE GAS DETECTION CALIBRATION CHECK

The Flammable Gas Detectors shall meet the following calibration criteria:

- The span (i.e. the measured scale deflection minus the scale deflection value with no gas present - [zero value]) does not deviate by more than 20% LEL below the range value (e.g. for 60% deflection the span must be greater than 40% LFL) AND
- The measured range does not deviate by more than 20% LEL below the desired range value (e.g. for 60% deflection, the calibrated value must be greater than 40% LEL)

The performance standard is not met if a single detector fails to detect, or it fails the calibration test criteria.

FLAMMABLE GAS DETECTION ALARM FUNCTION

Upon activation of a single detector, a visual and audible alarm, clearly indicating the affected

Star IPS	STAR Information Systems	Page 7 of 14
----------	--------------------------	--------------

Work Order (filed)
2024-81466

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Work History DetailsPlant: Aurora Producer 1

Status	: Completed	Date done	: 14/08/2024
Tech acc	: 955.010	Criticality	:
Equipment	: GAS DETECTORS, PROCESS	Serial no	:
Reference	: Location :	Counter value	:
Cost allocation	:		

Job class	: Preventative Maintenance	Priority	: High	Interval	: Month
Job type	: Clean/Inspect/Maintain as Required	Duration	: 8.00	Length	: 3.00
Grade	: Planned preventative work	Schedule	: Fixed		
Department	: Production	Float	: 15.00		

Where

Ref Id	Status
955.010.001 DETECTOR, GAS, GD-001(H2S)	OK
955.010.002 DETECTOR, GAS, GD-002(H2S)	OK
955.010.003 DETECTOR, GAS, GD-003(H2S)	OK
955.010.004 DETECTOR, GAS, GD-004(H2S)	OK
955.010.005 DETECTOR, GAS, GD-005(H2S)	OK
955.010.006 DETECTOR, GAS, GD-006(H2S)	OK
955.010.007 DETECTOR, GAS, GD-007(H2S)	OK
955.010.008 DETECTOR, GAS, GD-008(H2S)	OK
955.010.011 DETECTOR, GAS, GD-001 (CH4)	OK
955.010.012 DETECTOR, GAS, GD-002 (CH4)	OK
955.010.013 DETECTOR, GAS, GD-003 (CH4)	OK
955.010.014 DETECTOR, GAS, GD-004 (CH4)	OK
955.010.015 DETECTOR, GAS, GD-005 (CH4)	OK
955.010.016 DETECTOR, GAS, GD-006 (CH4)	OK
955.010.017 DETECTOR, GAS, GD-007 (CH4)	OK
955.010.018 DETECTOR, GAS, GD-008 (CH4)	OK
955.010.019 DETECTOR, GAS, GD-009 (CH4)	OK

Work Report

Insp carried out by PSA operators by a visual insp. with full insp. calibration to be carried out in November with 3rd party, no issues reported no defects to report.

Work Description

PLANNED WORK INSTRUCTION: CHECK GAS DETECTION SYSTEM, 3M EQUIPMENT: GAS DETECTION SYSTEM FREQUENCY: 3 MONTHLY CRAFT: EIT

Caution

- Ensure all necessary Safety precautions are taken while work is performed.
- Refer to the OEM manuals, instructions and drawings as required.
- Observe all permit to work, isolation procedures and any applicable Risk Assessment.

DOCUMENT REFERENCE:
SPECIAL TOOLS/EQUIPMENT:

WORK DESCRIPTION

FUNCTION 1:

Star IPS	STAR Information Systems	Page 9 of 14
----------	--------------------------	--------------

Work Order (filed)
2024-81466

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

To measure the concentration of flammable gas across a defined range. Upon detection of sufficient quantities of flammable gas will generate the appropriate indications and panel alarms and to initiate executive actions as detailed in the Fire & Gas Cause and Effects.

FLAMMABLE GAS DETECTION FUNCTION TEST AND CALIBRATION CHECK

Gas Detectors:

The detectors for area monitoring and/or HVAC ducting shall alarm at the following levels:

a) Point Detectors:

Check Low Level Gas (LLG): 20% of Lower Explosive Limit (LEL)
Check High Level Gas (HLG): 60% of LEL

b) Beam Detectors:

Check Low Level Gas (LLG): 1 LEL - metre [20% of Full Scale Deflection (FSD)]
Check High Level Gas (HLG) 3 LEL - metre [60% of FSD]

FLAMMABLE GAS DETECTION CALIBRATION CHECK

The Flammable Gas Detectors shall meet the following calibration criteria:

- The span (i.e. the measured scale deflection minus the scale deflection value with no gas present - [zero value]) does not deviate by more than 20% LEL below the range value (e.g. for 60% deflection the span must be greater than 40% LFL) AND
- The measured range does not deviate by more than 20% LEL below the desired range value (e.g. for 60% deflection, the calibrated value must be greater than 40% LEL)

The performance standard is not met if a single detector fails to detect, or it fails the calibration test criteria.

FLAMMABLE GAS DETECTION ALARM FUNCTION

Upon activation of a single detector, a visual and audible alarm, clearly indicating the affected zone, shall be initiated as detailed by the Fire & Gas Cause and Effects.

Failure of any single function constitutes failure to meet the performance standard.

NOTE:

If components have been replaced or repaired, this is also to be reported under Work Report.

Connections				
Other Work History top 3 for WH/top 6 for WH&WO				
Date	Work Order	TA Ref ID	Status	
18/11/2024	2024-82034	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed
16/02/2024	2024-80191	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed
16/02/2024	2024-80192	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed
Failure Reporting				
Star IPS	STAR Information Systems	Page 10 of 14		

Work Order (filed)
2024-82034

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Where	Ref Id	Status
955.010.006	DETECTOR, GAS, GD-006(H2S)	OK
955.010.007	DETECTOR, GAS, GD-007(H2S)	OK
955.010.008	DETECTOR, GAS, GD-008(H2S)	OK
955.010.011	DETECTOR, GAS, GD-001 (CH4)	OK
955.010.012	DETECTOR, GAS, GD-002 (CH4)	OK
955.010.013	DETECTOR, GAS, GD-003 (CH4)	OK
955.010.014	DETECTOR, GAS, GD-004 (CH4)	OK
955.010.015	DETECTOR, GAS, GD-005 (CH4)	OK
955.010.016	DETECTOR, GAS, GD-006 (CH4)	OK
955.010.017	DETECTOR, GAS, GD-007 (CH4)	OK
955.010.018	DETECTOR, GAS, GD-008 (CH4)	OK
955.010.019	DETECTOR, GAS, GD-009 (CH4)	OK

Work Report
Completed by night shift PS operator
Work Description

PLANNED WORK INSTRUCTION: CHECK GAS DETECTION SYSTEM, 3M
EQUIPMENT: GAS DETECTION SYSTEM
FREQUENCY: 3 MONTHLY
CRAFT: EIT

Caution

- Ensure all necessary Safety precautions are taken while work is performed.
- Refer to the OEM manuals, instructions and drawings as required.
- Observe all permit to work, isolation procedures and any applicable Risk Assessment.

DOCUMENT REFERENCE:
SPECIAL TOOLS/EQUIPMENT:

WORK DESCRIPTION

FUNCTION 1:

To measure the concentration of flammable gas across a defined range. Upon detection of sufficient quantities of flammable gas will generate the appropriate indications and panel alarms and to initiate executive actions as detailed in the Fire & Gas Cause and Effects.

FLAMMABLE GAS DETECTION FUNCTION TEST AND CALIBRATION CHECK

Gas Detectors:

The detectors for area monitoring and/or HVAC ducting shall alarm at the following levels:

a) Point Detectors:

Check Low Level Gas (LLG): 20% of Lower Explosive Limit (LEL)
Check High Level Gas (HLG): 60% of LEL

b) Beam Detectors:

Check Low Level Gas (LLG): 1 LEL - metre [20% of Full Scale Deflection (FSD)]
Check High Level Gas (HLG) 3 LEL - metre [60% of FSD]

FLAMMABLE GAS DETECTION CALIBRATION CHECK

The Flammable Gas Detectors shall meet the following calibration criteria:

Work Order (filed)
2024-81466

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Condition	: Good	Hours	:	Production loss	:	<input type="checkbox"/>
Downtime hours	:					
Condition comments	: nsp carried out by PSA operators by a visual insp, with full insp, calibration to be carried out in November with 3rd party, no issues reported no defects to report, and no faults or alarms detected on VDU screens					
Equipment group	:					
Equipment sub-group	:					
Failure mode	:					
Failure description	:					
Failure cause	:					

Done by						
Creator	: Technical Marine Superinr	Created date	: 14/08/2024	Original due date	:	22/08/2024
Approved by	: Technical Marine Superinr	Approved date	: 14/08/2024			
Printed by	:	Printed date	:			
Completed by	: Technical Marine Superinr	Completed date	: 14/08/2024			
Closed by	: Technical Marine Superinr	Closed date	: 14/08/2024			
Filed by	: Technical Marine Superinr	Filed date	: 14/08/2024			
Status comments	: nsp carried out by PSA operators by a visual insp, with full insp, calibration to be carried out in November with 3rd party, no issues reported no defects to report, and no faults or alarms detected on VDU screens					

Change log (latest 2)										
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User	
8/14/2024 12:24:37PM	Aurora Maritime	Office	Work Done Report				+	+	Technical Marine Superintendent	

Work Order (filed)
2024-82034

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Work History Details				Plant: Aurora Producer 1	
Status	: Completed			Date done	: 18/11/2024
Tech acc	: 955.010	GAS DETECTORS, PROCESS		Criticality	:
Equipment	:			Serial no	:
Reference	:	Location	:	Counter value	:
Cost allocation	:				
Job class	: Preventative Maintenance	Priority	: High	Interval	: Month
Job type	: Clean/Inspect/Maintain as Required	Duration	: 8.00	Length	: 3.00
Grade	: Planned preventative work			Schedule	: Fixed
Department	: Production			Float	: 15.00
Where				Ref Id	Status
955.010.001	DETECTOR, GAS, GD-001(H2S)				OK
955.010.002	DETECTOR, GAS, GD-002(H2S)				OK
955.010.003	DETECTOR, GAS, GD-003(H2S)				OK
955.010.004	DETECTOR, GAS, GD-004(H2S)				OK
955.010.005	DETECTOR, GAS, GD-005(H2S)				OK
Star IPS	STAR Information Systems	Page 11 of 14			

Work Order (filed)
2024-82034

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

- The span (i.e. the measured scale deflection minus the scale deflection value with no gas present - [zero value]) does not deviate by more than 20% LEL below the range value (e.g. for 60% deflection the span must be greater than 40% LFL) AND
- The measured range does not deviate by more than 20% LEL below the desired range value (e.g. for 60% deflection, the calibrated value must be greater than 40% LEL)

The performance standard is not met if a single detector fails to detect, or it fails the calibration test criteria.

FLAMMABLE GAS DETECTION ALARM FUNCTION

Upon activation of a single detector, a visual and audible alarm, clearly indicating the affected zone, shall be initiated as detailed by the Fire & Gas Cause and Effects.

Failure of any single function constitutes failure to meet the performance standard.

NOTE:

If components have been replaced or repaired, this is also to be reported under Work Report.

Connections				
Other Work History top 3 for WH/top 6 for WH&WO)				
Date	Work Order		TA Ref ID	Status
14/08/2024	2024-81466	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed
16/02/2024	2024-80191	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed
16/02/2024	2024-80192	GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK	955.010	Completed

Failure Reporting					
Condition	: Good	Hours	:	Production loss	:
Downtime hours	:				
Condition comments	: Completed visual check by night shift PS operator				
Equipment group	:				
Equipment sub-group	:				
Failure mode	:				
Failure description	:				
Failure cause	:				

Done by					
---------	--	--	--	--	--

Work Order (filed)
2024-82034

GAS DETECTION SYSTEM - PERFORMANCE STANDARD CHECK

Creator : Technical Marine Superint
Approved by : Technical Marine Superint
Printed by :
Completed by : Technical Marine Superint
Closed by : Technical Marine Superint
Filed by : Technical Marine Superint
Status comments : Completed visual check by night shift PS operator

Created date : 18/11/2024
Approved date : 18/11/2024
Printed date :
Completed date : 18/11/2024
Closed date : 18/11/2024
Filed date : 18/11/2024
Original due date : 22/11/2024

Change log (latest 2)										
Date	Site	Description	Txt	Due	Cod	TA	Stat	Rep	User	
11/18/2024 11:50:52PM	Aurora Maritime Office	Work Done Report					*	*	Technical Marine Superintendent	

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2

ข้อกำหนดและนโยบายต่าง ๆ ของ MOPU AP1

- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.1 ตัวอย่างเอกสารการขออนุญาตปฏิบัติงาน
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.2 ตัวอย่างเอกสารข้อมูลความปลอดภัยของสารเคมี
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.3 Corrosion Prevention
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.4 เอกสารเกี่ยวกับปั้นจั่น
 - ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.4.1 แบบทดสอบการติดตั้งปั้นจั่น และ
Crane Deficiency Report
 - ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.4.2 ตัวอย่างเอกสารการวิเคราะห์งานเพื่อ
ความปลอดภัยของปั้นจั่น

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.1
ตัวอย่างเอกสารการขออนุญาตปฏิบัติงาน

WORK PERMIT AUDIT CHECKLIST

Date:	Permit Type & No. <i>CNP-0597</i>	Active:	Yes / No
Reviewed By:		Suspended:	Yes / No
Isolation Certificate Numbers:	<i>N/A</i>	Completed:	Yes / No

If any unsafe conditions are found, the work must be stopped, and the Area Authority and Nominated Persons informed immediately.

CHECKS	YES	N/A	NO
1. Where Risk Assessments (e.g. Hazard Identification, MSDS sheets, Manual handling) are specified? Have they been carried out and properly documented?	<input checked="" type="checkbox"/>		
2. Have all the hazards been identified on the PTW?	<input checked="" type="checkbox"/>		
3. Have appropriate control measures been specified to address these hazards?	<input checked="" type="checkbox"/>		
4. Are all copies of permits and certificates posted or filed correctly?	<input checked="" type="checkbox"/>		
5. Are all copies of permits, certificates or attachments legible?	<input checked="" type="checkbox"/>		
6. Are all necessary signatures in place on permits and certificates?	<input checked="" type="checkbox"/>		
7. Are permit numbers cross referenced to certificates and vice versa?		<input checked="" type="checkbox"/>	
8. Are specific instructions necessary and are they adequate?		<input checked="" type="checkbox"/>	
9. Have all permit users signed the declaration?	<input checked="" type="checkbox"/>		
10. Are all persons aware of correct actions to be taken in an emergency?	<input checked="" type="checkbox"/>		
11. Is work being carried out in accordance with permit requirements?	<input checked="" type="checkbox"/>		
12. If required, has the area operator been informed?	<input checked="" type="checkbox"/>		
13. Is the work free from conflict with other activities?	<input checked="" type="checkbox"/>		
14. Is PPE appropriate and being used correctly?	<input checked="" type="checkbox"/>		
15. Are tools and equipment in good condition and suitable for the job?	<input checked="" type="checkbox"/>		
16. Are housekeeping standards satisfactory?	<input checked="" type="checkbox"/>		
17. Are all personnel involved in the PTW competent?	<input checked="" type="checkbox"/>		

COMMENTS

Every entry in "NO" column must be explained here:

ACTION REQUIRED	COMPLETED	
	YES	NO
Is formal investigation required?	YES	NO

Date: <i>13-11-24</i>	Signed:	(Reviewer)
Date: <i>13-11-24</i>	Signed:	(Responsible Person)
Date:	Signed:	(Supervisory Person)
Date:	Signed:	(Nominated Person)

COLD WORK PERMIT FORM

PTW NO: CWP *0597*

SECTION 1: To be completed by Permit Holder (PH)

Description of the work including equipment to be worked on:

To perform inspection/service/testing Fusible Plug loop & Esp Loop.

Exact location of Work:

AP1 - Process / Metall area

Permit Holder Name:

Position/Company
Sr. opr. / PS.Date & Time:
12-Nov-24

PH Signature:

SECTION 2A: Potential Hazard Identified (Permit Holder to mark 'X' in the boxes provided)

Liquid or gas under pressure	Hot surfaced / hot materials	Flying particles or sparks	Equipment generating spark
Toxic materials	Oxygen deficiency	Electricity	Crane Operation
Corrosive materials	Hydrogen Sulphide (H2S)	Radioactive	Pressure testing
Flammable materials	Naked Flame or arch	Moving parts / machinery	Adjacent Operation
Adverse weather, sea state	Danger of falling	Access, escape, egress	Confined space
Substance harmful to health	Explosive	Isolation of safety system	DROPPED Object
Oil Spill	Work over the side	Vision hazards	Noise hazards

Others, please specify:

SECTION 2B: Safety measures that must be taken to complete the work safely (to be completed by PH)

PREPARATIONS		PRECAUTIONS	
De-pressurize	Drainage	<input checked="" type="checkbox"/> Hard hat	Competent person
Flush	Inert Gas Pressure	<input checked="" type="checkbox"/> Safety boot	Safeguarding
Ventilate	Cover drains	<input checked="" type="checkbox"/> Work vest / life jacket	Breathing apparatus
Remove flammable	Communications	<input checked="" type="checkbox"/> Eyes protection	Life lines
Erect barriers	Warning signs	<input checked="" type="checkbox"/> Ear protection	Clear escape routes
Adequate lighting	Gas / O2 level monitoring	<input checked="" type="checkbox"/> Face mask/shield	Grounding/Bonding
Alert standby vessel	Weather forecast	<input checked="" type="checkbox"/> Respirator	Tool box Talk/PJSM
Scaffolding inspection	Lock Out Tag Out	<input checked="" type="checkbox"/> Chemical suits	Oil Spill Response Equipment
De-energize	Adequate escape route	<input checked="" type="checkbox"/> Harness/fall protection	Dust mask/filter mask
Lifting Plan	<input checked="" type="checkbox"/> Testing	<input checked="" type="checkbox"/> Isolation/OTO	<input checked="" type="checkbox"/> Shut in process
Standby boat	<input checked="" type="checkbox"/> JSA/Procedures/Manual	<input checked="" type="checkbox"/> Well control monitoring	

SECTION 2C: LIST OF ASSOCIATED CERTIFICATES (to be completed by PH)

1	2
3	4

SECTION 3: DECLARATION BY PERMIT HOLDER (PH)

I hereby accept responsibility for this task. I have communicated the job with Production Supervisor/Area Authority personnel. I shall conduct a pre-job safety meeting and verify all appropriate control measures are in place.

PH SIGNATURE:

DATE/TIME: *12-Nov-24*

SECTION 4: DECLARATION BY PRODUCTION SUPERVISOR (PS) OR AREA AUTHORITY (AA)

I, the Production Supervisor / Area Authority affected by this work has been made aware of this task. I confirm to the best of my knowledge the work can be carried out safely. The permit can be issued provided the stated preparations and precautions are taken and in place throughout the duration of the work to control risks arising from the work.

PS/AA SIGNATURE:

DATE/TIME: *12-Nov-2024 / 0600*

SECTION 5: APPROVALS BY BM/PIC

I certify that adequate safety preparations / pre-cautions have been completed. The Production/AA affected by this work has been made aware. I approved the work, provided the stated pre-cautions are taken and in place.

SECTION 6: ACTIVE LINE MONITORING / AUDIT (by PS/AA)

I have carried out active monitoring/checking or audit the permit and found All safety measures are implemented to control risks arising from the work.

BM SIGNATURE:

DATE/TIME:

PS / AA SIGNATURE:

DATE/TIME: *12-Nov-24*

SECTION 7: EXTENSION, RE-VALIDATION & HANDOVER (to be completed by PH and PS/AA)

I certify that all safety measures, pre-cautions, associated certificates are still valid, work detailed above may be continued under this permit.

Date	<i>13-Nov-24</i>				
Extension time	<i>18:00</i>				
Isolation re-checked & sign					
Gas checked by AGT & sign					
Permit Holder sign					
PS / Area Authority Sign					

SECTION 8: COMPLETION/SUSPENSION (to be completed by PS / AA)

The work detailed above have been:

☒ Completed ☐ Suspended

Reason for suspension:

The worksite has been cleared and left in safe and tidy condition.

Name

13-Nov-24 / 1700
Date/Time

SECTION 9: CLOSE OUT (to be completed by BM/PIC)

Permit reviewed by the BM/PIC

Associated certificates have been CLOSED

Isolation have been REMOVED

Isolation recorded as LONG TERM ISOLATIONS

NORMAL OPERATIONS

☒ MAY RESUME

☒ MAY NOT RESUME

Name

13/11/24
Date/Time

Original Copy - Displayed on Permit Board

2nd copy - retained & displayed at worksite by PH3rd copy - Remained for record

0691

Isolation Deep well PORT

PH Signature: _____

X	Competent person
	Safeguarding
	Breathing apparatus
	Life lines
	Clear escape routes
	Grounding/Bonding
	Tool box Talk/PJSM
	Oil Spill Response Equipment
	Dust mask/filter mask
	Shut in process

2	
4	

DATE/TIME: 13 Nov 2007 14:00

DATE/TIME:

SECTION 6: ACTIVE LINE MONITORING / A / DIT / BY PS/AA

I have carried out active monitoring/checking or audit the permit and found
All safety measures are implemented to control risks arising from the work.

DATE/TIME: 12/15/2014

PS/AA SIGNATURE _____

DATE/TIME

I certify that all safety measures, pre-cautions, associated certificates are still valid, work detailed above may be continued under this permit.

Date	14 Nov 2014	15 Nov 2014				
Extension time	06:00-17:00	06:00-18:00				
Isolation re-checked & sign	✓	✓				
Gas checked by AGT & sign	✓	✓				
Permit Holder sign	✓	✓				
PS / Area Authority Sign	✓	✓				

☒ Completed ☐ Suspended

Reason for suspension: _____

The work site has been cleared and left in safe and tidy condition

Name: John Dorn Signature: [Signature] Date/Time: 15 Nov 24

Original Copy – Displayed on Permit Board

2nd copy – retained & displayed at worksite by PH

3rd copy – Remained for record

Associated certificates have been CLOSED

Isolation have been REMOVED.

Isolation recorded as LONG TERM ISOLATIONS

NORMAL OPERATIONS ☒ MAY RES

TABLE 1. *Continued*

H. P. BULCSKAND *H. P. Bulcskand* 15/11/24
Name Signature Date/Time 18.00

ภาคผนวกแทนผลิตภัณฑ์เคลื่อนย้ายได้-2.2
ตัวอย่างเอกสารข้อมูลความปลอดภัยของสารเคมี



SAFETY DATA SHEET

SECTION 1 Identification of the substance/mixture and of the company/undertaking

- 1.1 Product identifier
- Product Name: RO SCALE CONTROL
 - Product Part Number: 777716
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
- Use of the substance/mixture:
 - water treatment
 - Membrane Antiscalant
- 1.3 Details of the supplier of the safety data sheet
- Name of Supplier: Wilhelmsen Ships Service AS
 - Address of Supplier: Willem Barentszstraat 50, 3165AB Rotterdam, The Netherlands
 - Telephone: Telephone: +31 4877 777 Fax: +31 4877 888
 -
 - Head office: Wilhelmsen Ships Service AS
 - Strandveien 20, N1324 Lysaker
 - Norway, Tel. (47) 6349 440 35
 -
 -
 - Other suppliers SEE SECTION 16!!!
 - For quotations contact your local Customer Services
 -
 - Responsible Person: Product HSE Manager
 - Telephone: +31 10 4877775
 - Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com
 - Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com
- 1.4 Emergency telephone number
- ****ONLY TO BE USED IN CASE OF AN INCIDENT****
 -
 - International 24hrs Emergency NCEC: +44 1865 407333
 - American 24hrs Emergency CHEMTREC (800) 424 9300
 - American Chemistry Council 24hrs +1 703 527 3887
 - Greece: Poisoning emergency center, +30 210 7793777
 - Norway: Poison information centre, +47 22581300
 - Sweden: Poison information centre, +46 08 33 12 31
 - China NRCC 24hrs emergency telephone number: +86-0532-8388 9090
 - Wilhelmsen Ships Service, Melbourne, AUSTRALIA Emergency 24hrs: +61 3 9630 0998

SECTION 2 Hazards identification

- 2.1 Classification of the substance or mixture
- Not classified as hazardous for users
- 2.2 Label elements
- Not applicable
 - Hazard phrases
Not applicable
 - Precautionary Phrases
Not applicable

Datasheet Number 777716 - v3.0.0
Prometheus version 1.4.1.3

1

Revision: 8/29/2014

SECTION 6 Accidental release measures (...)

- Shut off source of leak if safe to do so
 - Wear protective clothing as per section 8
- 6.2 Environmental Precautions
- Avoid release to the environment (P273).
 - Do not flush spilt material into any public water system
- 6.3 Methods and material for containment and cleaning up
- Absorb spillage in earth or sand
 - Place in appropriate container
 - Seal containers and label them
- 6.4 Reference to other sections
- See Section 13

SECTION 7 Handling and storage

- 7.1 Precautions for safe handling
- Eyewash bottles should be available
 - Do not get in eyes, on skin, or on clothing (P262).
- 7.2 Conditions for safe storage, including any incompatibilities
- Store in a dry place. Store in a closed container (P402+P404).
 - Store in a well-ventilated place (P403).
- 7.3 Specific end use(s)
- Contact supplier for further information

SECTION 8 Exposure controls/personal protection

- 8.1 Control parameters
- <Chemical Name>
- 8.2 Exposure controls
- No special precautions are required for this product
- 8.3 Occupational exposure controls



- Ensure adequate ventilation
- Wear suitable protective clothing, including eye/face protection and gloves (plastic or rubber are recommended)

SECTION 9 Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
- Odour: Slight smell of ammonia
 - Appearance: Liquid, light, yellow, miscible with water
 - pH 10-11
 - Boiling point 105 °C
 - Density ~1.4 g/cm³ at 20 deg C
- 9.2 Other information
- No information available

Datasheet Number 777716 - v3.0.0
Prometheus version 1.4.1.3

3

Revision: 8/29/2014

SECTION 2 Hazards identification (...)

2.3 Other hazards

- Odour: Slight smell of ammonia
- Appearance: Liquid, light, yellow
- Contact with eyes: May cause redness and irritation
- Contact with skin: Prolonged skin contact will result in defatting of the skin, leading to irritation, and in some cases, dermatitis
- Inhalation: May cause irritation
- Ingestion: Not regarded as a potential route of exposure., May cause irritation

SECTION 3 Composition/information on ingredients

3.1 Mixtures

- Aminotri(methylene phosphonic acid), sodium salt
- Concentration: 10-30%
- CAS Number: 20582-85-2
- EC Number: 243-900-0
- Symbols: Not applicable
- R/H Phrases: Not applicable
- Categories: Not applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P341).
- IF SWALLOWED: rinse mouth. Do NOT induce vomiting (P301+P330+P331).
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338).
- IF ON SKIN: Wash with plenty of soap and water (P302+P352).

4.2 Most important symptoms and effects, both acute and delayed

- Possible redness and irritation of affected areas
- Mildly irritating to respiratory system

4.3 Indication of any immediate medical attention and special treatment needed

- No information available

SECTION 5 Fire-fighting measures

5.1 Extinguishing media

- Not flammable. In case of fire use extinguishing media appropriate to surrounding conditions

5.2 Special hazards arising from the substance or mixture

- See Section 10
- Low hazard

5.3 Advice for firefighters

- Wear chemical protection suit and positive-pressure breathing apparatus

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Datasheet Number 777716 - v3.0.0
Prometheus version 1.4.1.3

2

Revision: 8/29/2014

SECTION 10 Stability and reactivity

10.1 Reactivity

- This article is considered stable under normal conditions

10.2 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose

10.3 Incompatible materials

- None

10.4 Conditions to avoid

- Avoid overheating

10.5 Hazardous Decomposition Products

- Decomposition products may include nitrogen oxides

SECTION 11 Toxicological information

11.1 Information on toxicological effects

- LD50 (oral,rat) (Aminotri(methylene phosphonic acid), acid), sodium salt) 17800 mg/kg
- LD50 (skin,rabbit) (Aminotri(methylene phosphonic acid), acid), sodium salt) 15800 mg/kg

11.2 Contact with eyes

- May cause redness and irritation

11.3 Contact with skin

- In cases of severe exposure, redness and irritation may develop

11.4 Ingestion

- In cases of severe exposure, dizziness, confusion, headache or stupor may develop

11.5 Inhalation

- Mildly irritating to respiratory system

SECTION 12 Ecological information

12.1 Toxicity

- This product does not contain ingredients which are classified in the EU as dangerous for the environment.
- LC50 (fish) (Aminotri(methylene phosphonic acid), sodium salt) 330 mg/l (96 hr)
- EC50 (daphnia) (Aminotri(methylene phosphonic acid), sodium salt) 297 mg/l (48 hr)
- Biodegradability: OECD-test. 28 days >20% - <60 % (Aminotri(methylene phosphonic acid), sodium salt)

12.2 Persistence and degradability

- No information available

12.3 Bioaccumulation Potential

- No information available

12.4 Mobility in soil

- Completely soluble in water

12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII

12.6 Other Adverse Effects

- On available data, substance is not harmful to the environment

Datasheet Number 777716 - v3.0.0
Prometheus version 1.4.1.3

4

SECTION 13 Disposal considerations

13.1 Waste treatment methods

- Disposal should be in accordance with local, state or national legislation
- Dispose of contents/container to an authorised waste collection point (P501)

13.2 Classification

- EU Waste class: none

SECTION 14 Transport information

14.1 UN

- UN No.: Not applicable
- Proper Shipping Name: Not applicable
- Hazard Class: Not applicable
- Packing Group: Not applicable

Not classified as hazardous for transport

14.2 Environmental hazards

- Not Classified

14.3 Special precautions for user

- Not classified as hazardous for transport

14.4 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

- Not applicable

14.5 Road/Rail (ADR/RID)

- ADR UN No.: Not applicable
- Proper Shipping Name: Not applicable
- ADR Hazard Class: Not applicable
- ADR subrisk: Not applicable
- ADR Packing Group: Not applicable

14.6 Sea (IMDG)

- IMDG UN No.: Not applicable
- Proper Shipping Name: Not applicable
- IMDG Hazard Class: Not applicable
- IMDG subrisk: Not applicable
- IMDG Pack Group: Not applicable
- IMDG EmS: Not applicable

14.7 Air (ICAO/IATA)

- ICAO UN No.: Not applicable
- Proper Shipping Name: Not applicable
- ICAO Packing Group: Not applicable
- ICAO Hazard Class: Not applicable
- ICAO subrisk: Not applicable

14.8 DOT / CFR (US Department of Transportation)

- Identification Number: Not applicable
- DOT Proper Shipping Name: Not applicable
- DOT Labels: Not applicable
- Product RQ (lbs): Not applicable

Datasheet Number 777716 - v3.0.0
Prometheus version 1.4.1.3

5

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- This Safety Data Sheet has been prepared in accordance with article 31 and annex II in REACH and Directive 453/2010/EU.
- Council Directive 1999/45/EEC Classification, packing and labelling of dangerous preparations.
- Refer to current The Dangerous Substances Directive (67/548/EEC)
- Regulations 1272/2008/EEC. Classification, labeling and packing of dangerous substances and preparations

15.2 Chemical Safety Assessment

- None

SECTION 16 Other information

The data given here is based on current knowledge and experience. This Safety Data Sheet describes the product in terms of safety requirements and does not signify any warranty with regard to the product's properties

The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications - usage in such may cause risks not mentioned in this sheet. Do not use for other application(s) without seeking advice from manufacturer

The information provided about the product on this Safety Data Sheet has been compiled from knowledge of the individual constituents

The most up-to-date version of this MSDS can be found on www.wilhelmsen.com/shipservice

OTHER CONTACT INFORMATION MAJOR CHEMICAL OFFICES

Wilhelmsen Ships Service Level 17, 636 St Kilda Road Melbourne Vic 3004 AUSTRALIA
Tel. +61 3 9630 0900 Emergency 24hrs: +61 3 9630 0998

Wilhelmsen Ships Service INC 210 Edgewater Street US-10305 Staten Island New York United States
Telephone daytime: (+1) 718 815 1310 Fax: (+1) 718 233 3268

Wilhelmsen Ships Service INC 2200 W. Pacific Coast Highway US-90810 Long Beach California, United States Tel (+1) 562 624 8888 Fax (+1) 562 624 1011

Wilhelmsen Ships Service INC 701 Ashland Ave. Ashland Center Two, Bay 12 US- 19032 Folcroft Pennsylvania United States Tel (+1) 610 586 7801 Fax (+1) 215 701 0646

Wilhelmsen Ships Service INC, 9400 New Century Drive US-77507 Pasadena Texas United States
Telephone daytime: (+1) 281 867 2000 Fax: (+1) 281 867 2800

Wilhelmsen Ships Service Ltd. Unit 3A NewtonsCourt Crossways DA2 6QL Dartford, Kent United Kingdom Tel (+44) 1322 282 412 Fax (+44) 1322 284 774

Wilhelmsen Ships Service Ltda Rua Bispo Lacerda nos.61/67 Del Catilho BR 21051120 Rio de Janeiro Brazil Tel (+55) 21 25 82 8000 Fax (+55) 21 25 82 8001

Wilhelmsen Ships Service (S) Pte Ltd 186 Pandan Loop Singapore 128376 Tel (+65) 6395 4545

Wilhelmsen Ships Service Co., Ltd 12-31 Torihama-cho Kanazawa-ku Yokohama-shi JP-236 0002, Japan Tel (+81) 45 775 0012 Fax (+81) 45 775 0070

Wilhelmsen Ships Service Hellas SA 100, D. Moutsopoulou & Serifou str GR-185 41 Piraeus Greece
Tel (+30) 210 4239100 Fax (+30) 210 4212480

Datasheet Number 777716 - v3.0.0
Prometheus version 1.4.1.3

6

SECTION 16 Other information (....)

Wilhelmsen Ships Service AS U.A.E., Fl 24 Executive Heights, Tecom C Sheikh Zayed Road (East) Dubai United Arab Emirates Tel (+971) 4 382 3888

Wilhelmsen Ships Service AS, Willem Barentszstraat 50 3165 AB Rotterdam-Albrandswaard, the Netherlands. Tel (+31) 10 4877 777



Jotun Thinner No. 7

1. Product and company identification

Trade name	: Jotun Thinner No. 7
Code	: 561
Material uses	: Coatings: Solvent-borne.
Manufacturer	: Jotun Paints, Inc. 9203 Highway 23 Belle Chasse, LA 70037 Telephone: (800) 229-3538 or (504) 394-3538 SDS.Jotun@jotun.com
In case of emergency	: 1-800-424-9300

2. Hazards identification

Physical state	: Liquid.
Odor	: Characteristic.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). WARNING! FLAMMABLE LIQUID AND VAPOR. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA. Flammable liquid. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Avoid contact with skin and clothing. Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use.
Eyes	: May cause eye irritation.
Skin	: May cause skin irritation.
Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
Potential chronic health effects	: CARCINOGENIC EFFECTS: Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [xylene]. Classified A3 (Proven for animals.) by ACGIH, 2B (Possible for humans.) by IARC [ethylbenzene]. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.
Medical conditions aggravated by over-exposure	: None known.
See toxicological information (Section 11)	

Continued on next page

3. Composition/information on ingredients

Name	CAS number	% by weight
xylene	1330-20-7	50 - 100
ethylbenzene	100-41-4	10 - 25

Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).

4. First aid measures

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

5. Fire-fighting measures

Flammability of the product	: Flammable.
Products of combustion	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
Suitable	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Not suitable	: Do not use water jet.
Special exposure hazards	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions	: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Continued on next page

6. Accidental release measures

Methods for cleaning up	: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
-------------------------	--

7. Handling and storage

Handling	: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
Storage	: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Product name	Exposure limits
xylene	ACGIH TLV (United States, 6/2013). STEL: 651 mg/m ³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m ³ 8 hours. TWA: 100 ppm 8 hours. OSHA PEL (United States, 2/2013). TWA: 435 mg/m ³ 8 hours. TWA: 100 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). STEL: 655 mg/m ³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 435 mg/m ³ 8 hours. TWA: 100 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 435 mg/m ³ 8 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m ³ 15 minutes. NIOSH REL (United States, 10/2013).
ethylbenzene	

Continued on next page

8. Exposure controls/personal protection

	TWA: 100 ppm 10 hours. TWA: 435 mg/m ³ 10 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m ³ 15 minutes. OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 435 mg/m ³ 8 hours. ACGIH TLV (United States, 6/2013). Notes: K TWA: 20 ppm 8 hours. Form:
Engineering measures	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Eyes	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Respiratory	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard (NIOSH-approved P95) if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hands	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9. Physical and chemical properties

Physical state	: Liquid.
Flash point	: Closed cup: 27°C (80,6°F)
Color	: Clear.
Odor	: Characteristic.
Relative density	: 0.87 g/cm ³ 7.26 pounds/gallon
VOC	: 7.26 pounds/gallon (US) 100 % (w/w) [ISO 11890-1]
Solubility	: Insoluble in the following materials: cold water and hot water.

Continued on next page

10 . Stability and reactivity	
Stability and reactivity	: The product is stable.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information	
Chronic effects on humans	: CARCINOGENIC EFFECTS: Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [xylene]. Classified A3 (Proven for animals.) by ACGIH, 2B (Possible for humans.) by IARC [ethylbenzene].
Other toxic effects on humans	: Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Swallowing may cause nausea, diarrhea, vomiting, gastro-intestinal irritation and chemical pneumonia.
Specific effects	
Carcinogenic effects	: Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.
Mutagenic effects	: No known significant effects or critical hazards.
Reproduction toxicity	: No known significant effects or critical hazards.
Chronic effects	: No known significant effects or critical hazards.

12 . Ecological information			
Ecotoxicity data			
Product/ingredient name	Species	Period	Result
xylene	Oncorhynchus mykiss (LC50)	96 hour(s)	3.3 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	8.2 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	8.6 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	12 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	13.3 mg/l
ethylbenzene	Pimephales promelas (LC50)	96 hour(s)	13.4 mg/l
	Daphnia magna (EC50)	48 hour(s)	2.93 mg/l
	Daphnia magna (EC50)	48 hour(s)	2.97 mg/l
	Selenastrum capricornutum (EC50)	48 hour(s)	7.2 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	4.2 mg/l
	Pimephales promelas (LC50)	96 hour(s)	9.09 mg/l
	Poecilia reticulata (LC50)	96 hour(s)	9.6 mg/l
Environmental precautions	: No known significant effects or critical hazards.		
Products of degradation	: Products of degradation: carbon oxides (CO, CO ₂) and water.		

Continued on next page

13 . Disposal considerations	
Waste disposal	: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information						
Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	1307	XYLENES RQ (xylene, ethylbenzene)	3	III		Reportable quantity 120,48 lbs / 54,699 kg [16,609 gal / 62,872 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
TDG Classification	1307	XYLENES	3	III		-
ADR/RID Class	1307	XYLENES	3	III		Tunnel restriction code: (D/E) Hazard identification number: 30
IMDG Class	1307	XYLENES	3	III		Emergency schedules (EmS): F-E, S-D Marine pollutant: No.

Continued on next page

14 . Transport information						
IATA-DGR Class	1307	XYLENES	3	III		-
PG* : Packing group						
-						

15 . Regulatory information			
HCS Classification	: Flammable liquid Carcinogen		
U.S. Federal regulations	: TSCA 8(a) CDR Exempt/Partial exemption: Not determined United States inventory (TSCA 8b): All components are listed or exempted. SARA 302/304: No products were found. SARA 311/312 Hazards identification: Fire hazard, Delayed (chronic) health hazard Clean Water Act (CWA) 307: ethylbenzene Clean Water Act (CWA) 311: xylene; ethylbenzene Clean Air Act (CAA) 112 accidental release prevention: No products were found.		
SARA 313			
Product name	CAS number	Concentration	
Form R - Reporting requirements	: xylene	1330-20-7	50 - 100
Supplier notification	: ethylbenzene	100-41-4	10 - 25
	: xylene	1330-20-7	50 - 100
	: ethylbenzene	100-41-4	10 - 25
SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.			
State regulations	: Connecticut Carcinogen Reporting: None of the components are listed. Connecticut Hazardous Material Survey: None of the components are listed. Florida substances: None of the components are listed. Illinois Chemical Safety Act: None of the components are listed. Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed. Louisiana Reporting: None of the components are listed. Louisiana Spill: None of the components are listed. Massachusetts Spill: None of the components are listed. Massachusetts Substances: The following components are listed: XYLENE; ethylbenzene Michigan Critical Material: None of the components are listed. Minnesota Hazardous Substances: None of the components are listed. New Jersey Hazardous Substances: The following components are listed: XYLENES; BENZENE, DIMETHYL-; ethylbenzene New Jersey Spill: None of the components are listed. New Jersey Toxic Catastrophe Prevention Act: None of the components are listed. New York Acutely Hazardous Substances: The following components are listed: Xylene (mixed); Ethylbenzene New York Toxic Chemical Release Reporting: None of the components are listed. Pennsylvania RTK Hazardous Substances: The following components are listed: BENZENE, DIMETHYL-; ethylbenzene Rhode Island Hazardous Substances: None of the components are listed. WARNING: This product contains a chemical known to the State of California to cause cancer.		

Continued on next page

15 . Regulatory information				
Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
EU regulations				
Hazard symbol or symbols				
Risk phrases	: R10- Flammable. R20/21- Harmful by inhalation and in contact with skin. R38- Irritating to skin.			
Safety phrases	: S23- Do not breathe vapor / spray. S36/37- Wear suitable protective clothing and gloves. S38- In case of insufficient ventilation, wear suitable respiratory equipment.			

16. Other information

Label requirements	:	FLAMMABLE LIQUID AND VAPOR - POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.										
Hazardous Material Information System (U.S.A.)	:	<table><tr><td>Health</td><td>2</td></tr><tr><td>Flammability</td><td>3</td></tr><tr><td>Physical hazards</td><td>0</td></tr><tr><td>PERSONAL PROTECTION</td><td>C</td></tr></table>	Health	2	Flammability	3	Physical hazards	0	PERSONAL PROTECTION	C		
Health	2											
Flammability	3											
Physical hazards	0											
PERSONAL PROTECTION	C											
National Fire Protection Association (U.S.A.)	:	<table><tr><td>Health</td><td>1</td><td>Flammability</td></tr><tr><td></td><td></td><td>Instability</td></tr><tr><td></td><td></td><td>Special</td></tr></table>	Health	1	Flammability			Instability			Special	
Health	1	Flammability										
		Instability										
		Special										
Date of issue	:	01.05.2014.										
Version	:	1.03										
Notice to reader	:	To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.										
	:	Indicates information that has changed from previously issued version.										

CLAR13245A

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : CLAR13245A
Other means of identification : Not applicable.
Recommended use : WATER CLARIFIER
Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company : Distributor: MMSVS Group Holding Co., Ltd.
22/30-33 Sukhapiban 2 Road, Pravet, Pravet, Bangkok 10250
TEL: 66 2 006 5500 Ext. 444
Supplier: ChampionX SG Service Pte Ltd / CTI Chemicals Asia Pacific Pte Ltd
11 Ayer Merbau Road
Singapore 627526
TEL: +65 6434-3200
FAX: +65 6434-3391

Emergency telephone number : 001-800-13-203-9987 (CHEMTREC Thailand)


Issuing date : 01.07.2022

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to metals : Category 1
Acute toxicity (Oral) : Category 5
Acute toxicity (Dermal) : Category 5

GHS Label element

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : May be corrosive to metals.
May be harmful if swallowed or in contact with skin.

Precautionary Statements : **Prevention:**
Keep only in original container.
Response:
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Call a POISON CENTER or doctor/ physician if you feel unwell. Absorb spillage to prevent material damage.
Storage:
Store in corrosive resistant container with a resistant inner liner.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

1 / 9

CLAR13245A

Pure substance/mixture : Mixture

Chemical Name : **CAS-No.** : **Concentration: (%)**
Aluminum Chloride Hydroxide 12042-91-0 30 - 60

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.
If swallowed : Rinse mouth. Get medical attention if symptoms occur.
If inhaled : Get medical attention if symptoms occur.
Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician : Treat symptomatically.
Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media : None known.
Specific hazards during firefighting : Not flammable or combustible.
Hazardous combustion products : Hydrogen chloride metal oxides
Special protective equipment for firefighters : Use personal protective equipment.
Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
Environmental precautions : Do not allow contact with soil, surface or ground water.

2 / 9

CLAR13245A

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Avoid contact with skin and eyes. Do not ingest. Wash hands thoroughly after handling.
Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Buna-N, EPDM, Hypalon, Neoprene, PVC, Polyurethane, Polypropylene, Polyethylene, Viton, 100% phenolic resin liner
Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Brass, Epoxy phenolic resin, Mild steel, Stainless Steel 304, Stainless Steel 316L

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : Safety glasses with side-shields
Hand protection : Wear impervious chemical-resistant gloves when handling this product.
The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.
Nitrile-rubber, Butyl-Rubber, or Neoprene gloves.
Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection : Wear suitable protective clothing.
Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne vapour and mist.
Where concentrations in air may exceed the limits given in this section or when significant vapours are generated, use an approved air purifying respirator fitted with a gas and vapour cartridge.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Multi-purpose combination filter
In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA or supplied-air respirator should be used.
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

3 / 9

CLAR13245A

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid
Colour : Colorless
Odour : None
Flash point : does not flash
pH : 4.00 - 4.40,(30 %), (25 °C)
Odour Threshold : no data available
Melting point/freezing point : Freezing Point: -5 °C, ASTM D-1177
Initial boiling point and boiling range : 104 °C
Evaporation rate : no data available
Flammability (solid, gas) : Not applicable.
Upper explosion limit : no data available
Lower explosion limit : no data available
Vapour pressure : similar to water
Relative vapour density : no data available
Relative density : 1.34, (25 °C).
Density : no data available
Water solubility : completely soluble
Solubility in other solvents : no data available
Partition coefficient: n-octanol/water : no data available
Auto-ignition temperature : no data available
Thermal decomposition : no data available
Viscosity, dynamic : no data available
Viscosity, kinematic : no data available
Molecular weight : no data available
VOC : no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : None known.
Incompatible materials : Contact with strong alkalis (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors.
Hazardous decomposition : In case of fire, hazardous decomposition products may be produced such as:

4 / 9

SAFETY DATA SHEET

CLAR13245A

products
Hydrogen chloride
metal oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye irritation.
Skin : May be harmful in contact with skin.
Ingestion : May be harmful if swallowed.
Inhalation : Health injuries are not known or expected under normal use.
Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Irritation
Skin contact : slight irritation
Ingestion : Vomiting
Inhalation : No symptoms known or expected.

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: 4,588 mg/kg
Acute inhalation toxicity : no data available
Acute dermal toxicity : Acute toxicity estimate: 5,000 mg/kg
Skin corrosion/irritation : no data available
Serious eye damage/eye irritation : no data available
Respiratory or skin sensitization : no data available
Carcinogenicity : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive effects : No reproductive toxic effects expected.
Germ cell mutagenicity : Contains no ingredient listed as a mutagen
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : no data available
Aspiration toxicity : No aspiration toxicity classification

Human Hazard Characterization

Based on our hazard characterization, the potential human hazard is: Low

5 / 9

SAFETY DATA SHEET

CLAR13245A

(Chronic toxicity) Species: Ceriodaphnia dubia
Test substance: Product
LOEC: 30 mg/l
Exposure time: 7 Days
Species: Ceriodaphnia dubia
Test substance: Product
EC25 / IC25: 7.2 mg/l
Exposure time: 7 Days
Species: Ceriodaphnia dubia
Test substance: Product
IC50: 10.3 mg/l
Exposure time: 7 Days
Species: Ceriodaphnia dubia
Test substance: Product
NOEC: 7.5 mg/l
Exposure time: 7 Days
Species: Ceriodaphnia dubia
Test substance: Product
LOEC: 15 mg/l
Exposure time: 7 Days
Species: Ceriodaphnia dubia
Test substance: Product

Components

Toxicity to bacteria : Aluminum Chloride Hydroxide
> 4.4 mg/l

Components

Toxicity to fish (Chronic toxicity) : Aluminum Chloride Hydroxide
NOEC: 0.013 mg/l
Exposure time: 60 d

Persistence and degradability

Greater than 95% of this product consists of inorganic substances for which a biodegradation value is not applicable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 30 - 50%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

7 / 9

SAFETY DATA SHEET

CLAR13245A

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : This product has no known ecotoxicological effects.
Product
Toxicity to fish : LC50 Inland Silverside: > 5,000 mg/l
Exposure time: 96 hrs
Test substance: Product
LC50 Rainbow Trout: 590 mg/l
Exposure time: 96 hrs
Test substance: Product
LC50 Fathead Minnow: 1,094 mg/l
Exposure time: 96 hrs
Test substance: Product
NOEC Inland Silverside: 5,000 mg/l
Exposure time: 96 hrs
Test substance: Product
NOEC Rainbow Trout: 250 mg/l
Exposure time: 96 hrs
Test substance: Product
NOEC Fathead Minnow: 313 mg/l
Exposure time: 96 hrs
Test substance: Product
Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna: > 5,000 mg/l
Exposure time: 48 hrs
Test substance: Product
LC50 Mysid Shrimp (Mysidopsis bahia): 4,773 mg/l
Exposure time: 96 hrs
Test substance: Product
LC50 Ceriodaphnia dubia: > 5,000 mg/l
Exposure time: 48 hrs
Test substance: Product
NOEC Daphnia magna: 5,000 mg/l
Exposure time: 48 hrs
Test substance: Product
NOEC Mysid Shrimp (Mysidopsis bahia): 1,250 mg/l
Exposure time: 96 hrs
Test substance: Product
NOEC Ceriodaphnia dubia: 2,500 mg/l
Exposure time: 48 hrs
Test substance: Product
Toxicity to algae : no data available
Toxicity to daphnia and other aquatic invertebrates : NOEC: 15 mg/l
Exposure time: 7 Days

6 / 9

SAFETY DATA SHEET

CLAR13245A

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Low

Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport

UN/ID No. : UN 3264
Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name(s) : Aluminum Chloride Hydroxide
Transport hazard class(es) : 8
Packing group : III

Air transport (IATA)

UN/ID No. : UN 3264
Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name(s) : Aluminum Chloride Hydroxide
Transport hazard class(es) : 8
Packing group : III

Sea transport (IMDG/IMO)

UN/ID No. : UN 3264
Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name(s) : Aluminum Chloride Hydroxide
Transport hazard class(es) : 8
Packing group : III

Section: 15. REGULATORY INFORMATION

APPLICABLE REGULATIONS, THAILAND

Hazardous Substances Act B.E. 2535

Hazard Classification and Communication System for Hazardous Substances B.E. 2555 ("GHS")

8 / 9

SAFETY DATA SHEET

CLAR13245A

INTERNATIONAL CHEMICAL CONTROL LAWS :

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory.

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

On the inventory, or in compliance with the inventory.

Japan. ENCS - Existing and New Chemical Substances Inventory

On the inventory, or in compliance with the inventory.

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Korea. Korean Existing Chemicals Inventory (KECI)

On the inventory, or in compliance with the inventory.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory.

China Inventory of Existing Chemical Substances

On the inventory, or in compliance with the inventory.

Taiwan Chemical Substance Inventory

On the inventory, or in compliance with the inventory.

Section: 16. OTHER INFORMATION

Revision Date : 01.07.2022
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

9 / 9

SAFETY DATA SHEET

CORR10290A

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : CORR10290A
Other means of identification : Not applicable.
Recommended use : CORROSION INHIBITOR
Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company : Distributor: NALCO INDUSTRIAL SERVICES (THAILAND) CO LTD
Rayong Plant, 109/19 M00 4, Eastern Seaboard Industrial Estate, Soi ESIE 6, T.
Pluakdaeng, A. Pluakdaeng
Rayong 21140
THAILAND
TEL: + 66-33-109-021

Supplier: ChampionX SG Service Pte Ltd / CTI Chemicals Asia Pacific Pte Ltd
11 Ayer Merbau Road
Singapore 627526
TEL: +65 6434-3200
FAX: +65 6434-3391

Emergency telephone : 001-800-13-203-9987 (CHEMTREC Thailand)
number

Issuing date : 08.09.2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 5
Skin corrosion/irritation : Category 3
Serious eye damage/eye irritation : Category 1
Skin sensitization : Category 1
Acute aquatic toxicity : Category 2
Chronic aquatic toxicity : Category 2

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : May be harmful if swallowed.
Causes mild skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/ eye protection/ face protection.

1 / 9

SAFETY DATA SHEET

CORR10290A

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Wash contaminated clothing before reuse.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture	CLP Mixture Mixture	CAS-No.	Concentration: (%)
Chemical Name			
Tail Oil, DETA Imidazoline Acetates		68140-11-4	3 - 5
Pyridine, Alkyl derivs., acetates		168612-09-7	2.5 - 5
Ethoxylated tallow alkylamines, acetate salt		68551-33-7	1 - 5
C9-11 alcohols, ethoxylated, phosphate		136504-88-6	1 - 3
2-Butoxyethanol		111-76-2	1 - 5
2-Mercaptoethanol		60-24-2	1 - 2.5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion : Decomposition products may include the following materials: Carbon oxides

2 / 9

SAFETY DATA SHEET

CORR10290A

products	nitrogen oxides (NOx) Sulphur oxides Hydrogen sulfide (H2S)
Special protective equipment for firefighters	: Use personal protective equipment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8. A respirator suitable for H2S may be necessary in the event of a spill. Cover spilled material with a H2S scavenger if available (Hydrogen peroxide, Triazine, Glyoxal).
Environmental precautions	: Do not allow contact with soil, surface or ground water.
Methods and materials for containment and cleaning up	: Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

Advice on safe handling	: Avoid contact with skin and eyes. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Toxic hydrogen sulfide gas may accumulate in the headspace of containers during storage. Containers should be opened cautiously and only in well ventilated areas.
Conditions for safe storage	: Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers. Do not store at elevated temperature. Keep in a cool, well-ventilated place.
Suitable material	: Keep in properly labelled containers.
Unsuitable material	: not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
2-Butoxyethanol	111-76-2	TWA	50 ppm	TH OEL
2-Butoxyethanol	111-76-2	TWA	20 ppm	ACGIH
		TWA	5 ppm	NIOSH REL
		TWA	24 mg/m3	
		TWA	50 ppm	OSHA Z1
		TWA	240 mg/m3	

Engineering measures	: Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.
----------------------	--

Personal protective equipment

Eye protection	: Safety glasses with side-shields
Hand protection	: Wear the following personal protective equipment: Standard glove type. Nitrile

3 / 9

SAFETY DATA SHEET

CORR10290A

	Supported polyvinyl alcohol Butyl rubber Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection	: Wear suitable protective clothing.
Respiratory protection	: No personal respiratory protective equipment normally required.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: Yellow to Brown
Odour	: no data available
Flash point	: no data available
pH	: 3 - 5
Odour Threshold	: no data available
Melting point/freezing point	: no data available
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 0.960 - 1.060, (25 °C),
Density	: no data available
Water solubility	: no data available
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: < 20 mm2/s (25 °C)
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
------------	---

4 / 9

SAFETY DATA SHEET

CORR10290A

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: None known.
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Hydrogen sulfide (H2S)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	: Inhalation, Eye contact, Skin contact
--	---

Potential Health Effects

Eyes	: Causes serious eye damage.
Skin	: Causes mild skin irritation. May cause allergic skin reaction.
Ingestion	: May be harmful if swallowed.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	: Redness, Pain, Irritation
Skin contact	: Redness, Irritation, Allergic reactions
Ingestion	: No symptoms known or expected.
Inhalation	: Drowsiness, Dizziness

Toxicity

Product

Acute oral toxicity	: Acute toxicity estimate: 4,861 mg/kg
Acute inhalation toxicity	: Acute toxicity estimate: > 40 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available

5 / 9

SAFETY DATA SHEET

CORR10290A

Carcinogenicity	: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
-----------------	---

Reproductive effects	: No toxicity to reproduction
Germ cell mutagenicity	: Contains no ingredient listed as a mutagen
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: No aspiration toxicity classification

Human Hazard Characterization

Based on our hazard characterization, the potential human hazard is: High

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects	: Toxic to aquatic life with long lasting effects.
Product	
Toxicity to fish	: no data available
Toxicity to daphnia and other aquatic invertebrates	: no data available
Toxicity to algae	: no data available

Components

Toxicity to fish	: Tall Oil, DETA Imidazoline Acetates LC50 : > 0.23 mg/l Exposure time: 96 h 2-Butoxyethanol LC50 : 1,474 mg/l Exposure time: 96 h 2-Mercaptoethanol LC50 Leuciscus idus (Golden orfe): 37 mg/l Exposure time: 96 h
------------------	---

Components

Toxicity to daphnia and other aquatic invertebrates	: Tall Oil, DETA Imidazoline Acetates EC50 : 0.72 mg/l Exposure time: 48 h 2-Butoxyethanol EC50 : 690 mg/l Exposure time: 48 h 2-Mercaptoethanol EC50 Daphnia magna (Water flea): 0.4 mg/l Exposure time: 48 h
---	--

Components

Toxicity to algae	: Tall Oil, DETA Imidazoline Acetates
-------------------	---------------------------------------

6 / 9

SAFETY DATA SHEET

CORR10290A

EC50 : 0.17 mg/l
Exposure time: 72 h

2-Butoxyethanol
EC50 : 911 mg/l
Exposure time: 72 h

2-Mercaptoethanol
EC50 Desmodesmus subspicatus (green algae): 19 mg/l
Exposure time: 72 h
NOEC Desmodesmus subspicatus (green algae): 1.7 mg/l
Exposure time: 72 h

Components

Toxicity to bacteria : Tall Oil, DETA Imidazoline Acetates
175 mg/l

2-Butoxyethanol
EC50 : 463 mg/l

Components

Toxicity to fish (Chronic toxicity) : 2-Butoxyethanol
NOEC: > 100 mg/l
Exposure time: 21 d

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 2-Butoxyethanol
NOEC: > 100 mg/l
Exposure time: 21 d

2-Mercaptoethanol
NOEC: 0.063 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Persistence and degradability

no data available

Mobility

no data available

Bioaccumulative potential

no data available

Other information

no data available

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Moderate

Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to

7 / 9

SAFETY DATA SHEET

CORR10290A

disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport

UN/ID No. : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name(s) : Fatty acid-amine condensate
Transport hazard class(es) : 9
Packing group : III

Air transport (IATA)

UN/ID No. : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name(s) : Fatty acid-amine condensate
Transport hazard class(es) : 9
Packing group : III

Sea transport (IMDG/IMO)

UN/ID No. : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name(s) : Fatty acid-amine condensate
Transport hazard class(es) : 9
Packing group : III
Marine pollutant : Fatty acid-amine condensate

Section: 15. REGULATORY INFORMATION

APPLICABLE REGULATIONS, THAILAND

Hazardous Substances Act B.E. 2535

Hazard Classification and Communication System for Hazardous Substances B.E. 2555 ("GHS")

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory
not determined

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)
not determined

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

8 / 9

SAFETY DATA SHEET

CORR10290A

not determined

Japan. ENCS - Existing and New Chemical Substances Inventory
not determined

Korea. Korean Existing Chemicals Inventory (KECI)
not determined

Philippines Inventory of Chemicals and Chemical Substances (PICCS)
not determined

China Inventory of Existing Chemical Substances
not determined

Taiwan Chemical Substance Inventory
not determined

Section: 16. OTHER INFORMATION

Revision Date : 08.09.2020
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

EMBR28625A

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : EMBR28625A
Other means of identification : Not applicable.
Recommended use : FOR RESEARCH AND DEVELOPMENT USE ONLY
Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company : Distributor: MMSVS Group Holding Co., Ltd.
22/30-33 Sukhapiban 2 Road, Pravat, Bangkok 10250
TEL: 66 2 006 5500 Ext. 444
Supplier: ChampionX SG Service Pte Ltd / CTI Chemicals Asia Pacific Pte Ltd
11 Ayer Merbau Road
Singapore 627526
TEL: +65 6434-3200
FAX: +65 6434-3391

Emergency telephone number : 001-800-13-203-9987 (CHEMTREC Thailand)

Issuing date : 14.09.2023

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3
Skin corrosion/irritation : Category 2
Serious eye damage/eye irritation : Category 2B
Carcinogenicity : Category 2
Aspiration hazard : Category 1
Acute aquatic toxicity : Category 2
Chronic aquatic toxicity : Category 2

GHS Label element



Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin and eye irritation.
Suspected of causing cancer.
Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid release to the environment. Wear protective gloves/ eye protection/ face protection. Use personal protective equipment as required.
Response:
IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. IF

1 / 9

EMBR28625A

SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage:
Store in a well-ventilated place.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture		CAS-No.	Concentration: (%)
Chemical Name			
Heavy Aromatic Naphtha		64742-94-5	60 - 100
Naphthalene		91-20-3	5 - 10
1,2,4-Trimethylbenzene		95-63-6	5 - 10
Oxyalkylated epoxide polymer		36484-54-5	2.5 - 5
Isopropanol		67-63-0	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.
In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention if irritation develops and persists.
If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.
If inhaled : Get medical attention if symptoms occur.
Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician : Treat symptomatically.
Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
Unsuitable extinguishing media : High volume water jet

2 / 9

SAFETY DATA SHEET

EMBR28625A

Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
Sulphur oxides
Special protective equipment for firefighters : Use personal protective equipment.
Specific extinguishing methods : Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
Environmental precautions : Do not allow contact with soil, surface or ground water.
Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Avoid contact with skin and eyes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Wash hands thoroughly after handling.
Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
Suitable material : Keep in properly labelled containers.
Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m3	OSHA Z1
		TWA	200 mg/m3 (as total hydrocarbon vapor)	ACGIH
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m3	NIOSH REL
		STEL	15 ppm	NIOSH REL

3 / 9

SAFETY DATA SHEET

EMBR28625A

		TWA	75 mg/m3 10 ppm 50 mg/m3	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m3	NIOSH REL
		TWA	25 ppm	ACGIH
Isopropanol	67-63-0	TWA	400 ppm	TH OEL
Isopropanol	67-63-0	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m3	NIOSH REL
		STEL	500 ppm 1,225 mg/m3	NIOSH REL
		TWA	400 ppm 980 mg/m3	OSHA Z1

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield
Hand protection : Wear impervious chemical-resistant gloves when handling this product.
The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.
Viton® gloves
Nitrile rubber
Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection : Wear suitable protective clothing.
Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne vapour and mist.
Where concentrations in air may exceed the limits given in this section or when significant vapours are generated, use an approved air purifying respirator fitted with a gas and vapour cartridge.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Organic vapour cartridge.
In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA or supplied-air respirator should be used.
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
Colour : Clear light yellow
Odour : Characteristic

4 / 9

SAFETY DATA SHEET

EMBR28625A

Flash point	: 42 °C
pH	: 8.13,(5 %), (25 °C), 50/50:IPA/H2O
Odour Threshold	: no data available
Melting point/freezing point	: no data available
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 0.879 - 0.909, (25 °C),
Density	: no data available
Water solubility	: insoluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: < 10 mPa.s (25 °C)
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

Note: properties listed in this section may be typical, calculated, or estimated values and should not be used as product specifications or for system design. For product specifications see the COA or Technical Data sheet.

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: Decomposition products may include the following materials: Carbon oxides Sulphur oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of : Inhalation, Eye contact, Skin contact

5 / 9

SAFETY DATA SHEET

EMBR28625A

Acute inhalation toxicity	: Isopropanol LC50 rat: > 30 mg/l Exposure time: 4 h Test atmosphere: vapour
---------------------------	---

Components

Acute dermal toxicity	: 1,2,4-Trimethylbenzene LD50 rat: 3,440 mg/kg Test substance: Information given is based on data obtained from similar substances. Isopropanol LD50 rabbit: 12,870 mg/kg
-----------------------	---

Human Hazard Characterization

Based on our hazard characterization, the potential human hazard is: Moderate

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects	: Toxic to aquatic life with long lasting effects.
Product	
Toxicity to fish	: no data available
Toxicity to daphnia and other aquatic invertebrates	: no data available
Toxicity to algae	: no data available

Components

Toxicity to fish	: Heavy Aromatic Naphtha LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l Exposure time: 96 h 1,2,4-Trimethylbenzene LC50 Pimephales promelas (fathead minnow): 7.72 mg/l Exposure time: 96 h Oxyalkylated epoxide polymer LC50 Oncorhynchus mykiss (rainbow trout): 1.2 mg/l Exposure time: 96 h Isopropanol LC50 Pimephales promelas (fathead minnow): 9,640 mg/l Exposure time: 96 h
------------------	--

Components

Toxicity to daphnia and other aquatic invertebrates	: 1,2,4-Trimethylbenzene LC50 Daphnia magna (Water flea): 3.6 mg/l Exposure time: 48 h Oxyalkylated epoxide polymer EC50 Daphnia magna (Water flea): 1.1 mg/l Exposure time: 48 h Isopropanol LC50 Daphnia magna (Water flea): > 10,000 mg/l
---	---

7 / 9

SAFETY DATA SHEET

EMBR28625A

exposure

Potential Health Effects

Eyes	: Causes eye irritation.
Skin	: Causes skin irritation.
Ingestion	: May be fatal if swallowed and enters airways.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Suspected of causing cancer.

Experience with human exposure

Eye contact	: Redness, Irritation
Skin contact	: Redness, Irritation
Ingestion	: Vomiting
Inhalation	: No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	: no data available
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Components

Acute oral toxicity	: Heavy Aromatic Naphtha LD50 rat: > 5,000 mg/kg 1,2,4-Trimethylbenzene LD50 rat: 3,280 mg/kg Isopropanol LD50 rat: 5,840 mg/kg
---------------------	--

Components

6 / 9

SAFETY DATA SHEET

EMBR28625A

Components

Toxicity to algae	: Oxyalkylated epoxide polymer EC50 Scenedesmus capricornutum (fresh water algae): 9.4 mg/l Exposure time: 72 h
-------------------	---

Components

Toxicity to bacteria	: Isopropanol 1,050 mg/l
----------------------	-----------------------------

Persistence and degradability

no data available

Mobility

no data available

Bioaccumulative potential

no data available

Other information

no data available

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Moderate

Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods	: The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	: Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport

UN/ID No.	: UN 1993
Proper shipping name	: FLAMMABLE LIQUID, N.O.S.
Technical name(s)	: Heavy Aromatic Naphtha, Isopropanol
Transport hazard class(es)	: 3
Packing group	: III

Air transport (IATA)

UN/ID No.	: UN 1993
-----------	-----------

8 / 9

SAFETY DATA SHEET

EMBR28625A

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Heavy Aromatic Naphtha, Isopropanol
Transport hazard class(es) : 3
Packing group : III

Sea transport (IMDG/IMO)

UN/ID No. : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Heavy Aromatic Naphtha, Isopropanol
Transport hazard class(es) : 3
Packing group : III
Marine pollutant : Naphthalene, 1,2,4-Trimethylbenzene

Section: 15. REGULATORY INFORMATION

APPLICABLE REGULATIONS, THAILAND

Hazardous Substances Act B.E. 2535

Hazard Classification and Communication System for Hazardous Substances B.E. 2555 ("GHS")

INTERNATIONAL CHEMICAL CONTROL LAWS :

Section: 16. OTHER INFORMATION

Revision Date : 14.09.2023
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

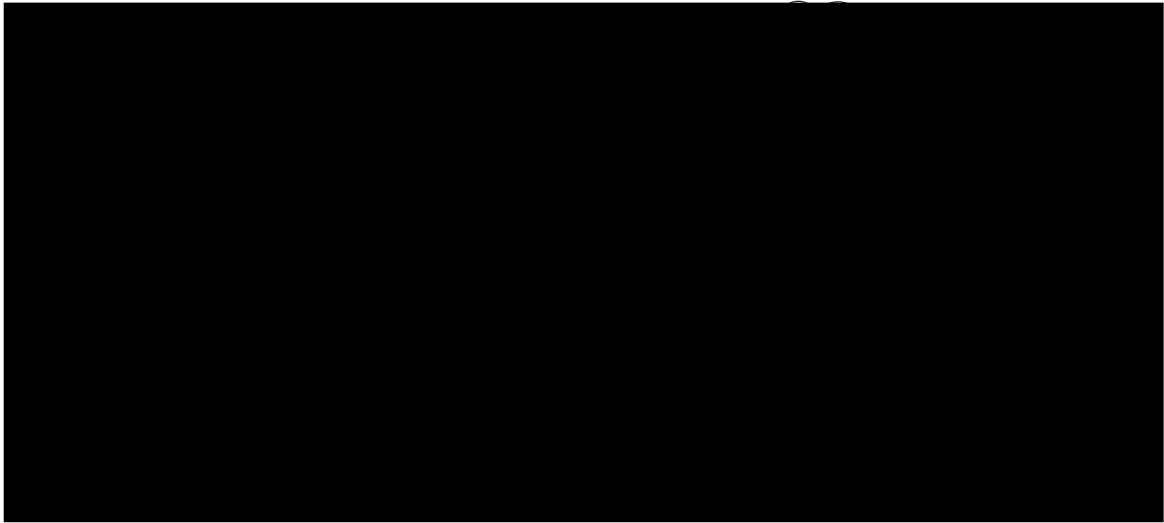
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

ภาคผนวกแทนผลิตภัณฑ์เคลื่อนย้ายได้-2.3

Corrosion Prevention



MATERIAL / SERVICE REQUEST FORM																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 2px;">To :</td> <td style="padding: 2px;">Procurement Dept.</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">AMPL Office</td> </tr> <tr> <td style="padding: 2px;">Attn :</td> <td style="padding: 2px;">Procurement Manager</td> </tr> </table>			To :	Procurement Dept.		AMPL Office	Attn :	Procurement Manager	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">ORIGINATOR</td> <td style="padding: 2px;">ERWIN</td> </tr> <tr> <td style="padding: 2px;">Dept</td> <td style="padding: 2px;">Hull & Mach</td> </tr> <tr> <td style="padding: 2px;">Location</td> <td style="padding: 2px;">Batam PaxOcean</td> </tr> </table>			ORIGINATOR	ERWIN	Dept	Hull & Mach	Location	Batam PaxOcean
To :	Procurement Dept.																
	AMPL Office																
Attn :	Procurement Manager																
ORIGINATOR	ERWIN																
Dept	Hull & Mach																
Location	Batam PaxOcean																
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">MSR #</td> <td style="padding: 2px;">AMPL-MSR-AP10057</td> </tr> <tr> <td style="padding: 2px;">DATE</td> <td style="padding: 2px;">12/07/2023</td> </tr> <tr> <td style="padding: 2px;">ROS Date</td> <td style="padding: 2px;">Immediate</td> </tr> </table>			MSR #	AMPL-MSR-AP10057	DATE	12/07/2023	ROS Date	Immediate						
MSR #	AMPL-MSR-AP10057																
DATE	12/07/2023																
ROS Date	Immediate																
ITEM NO.	DESCRIPTION	UNIT	QTY	EST. VALUE (USD)	REMARK												
1	INSIDE MAT TANKS - ANODES	EA	78	17,862 SGD													
2	ON MATE - ANODES	EA	86	15,695 SGD													
	TOTAL			33,557 SGD													
Reason for Request :																	
1.																	
2.																	
Requested by : <div style="background-color: black; width: 150px; height: 30px; margin: 5px 0;"></div> Name : Position : Project Control Date : 12/07/2023		Reviewed by : <div style="background-color: black; width: 100px; height: 30px; margin: 5px 0;"></div> Name : Position : Project Manager Date :		Approved by : <div style="background-color: black; width: 100px; height: 30px; margin: 5px 0;"></div> Name : Position : Date :													



NOTES:

1. ALL DIMENSIONS SHOWN ARE NOMINAL AND IN MM UNLESS OTHERWISE STATED

A	10/09/14	ISSUED FOR INFORMATION	VINCENT	LI HUIJUN		
REV	DATE	DESCRIPTION	DRAWN BY	APP'D BY	CLIENT	



TRISTAR INDUSTRIES PTE LTD

36 JOO KOON ROAD SINGAPORE 628988
TEL: (065) 62663636 FAX: (065) 62653635

CLIENT:

MOPU HOLDING (SINGAPORE) PTE LTD

DIMET

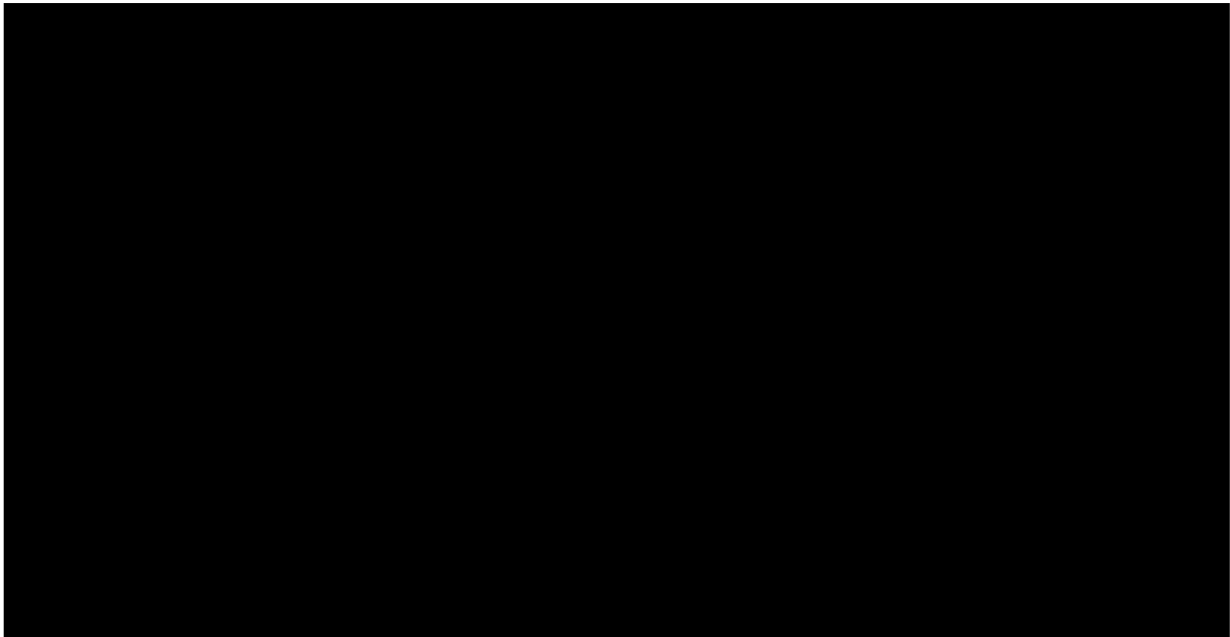
TITLE:

ANODE INSTALLATION ON LEGS (H250)

SCALE : N.T.S

DRAWING NO: SACP14-06-0471-DWG-001

REV. A



NOTES:

1. ALL DIMENSIONS SHOWN ARE NOMINAL AND IN MM UNLESS OTHERWISE STATED
2. ABOVE GIVEN ANODE SPACING IS PROVIDED AS A GUIDELINE ONLY AND IS SUBJECTED TO ACTUAL SPACE CONSTRAINT DURING ANODE INSTALLATION.

A	10/09/14	ISSUED FOR INFORMATION	VINCENT	LI HUIJUN		
REV	DATE	DESCRIPTION	DRAWN BY	APP'D BY	CLIENT	



TRISTAR INDUSTRIES PTE LTD

36 JOO KOON ROAD SINGAPORE 628988
TEL: (065) 62663636 FAX: (065) 62653635

CLIENT:

MOPU HOLDING (SINGAPORE) PTE LTD

DIMET

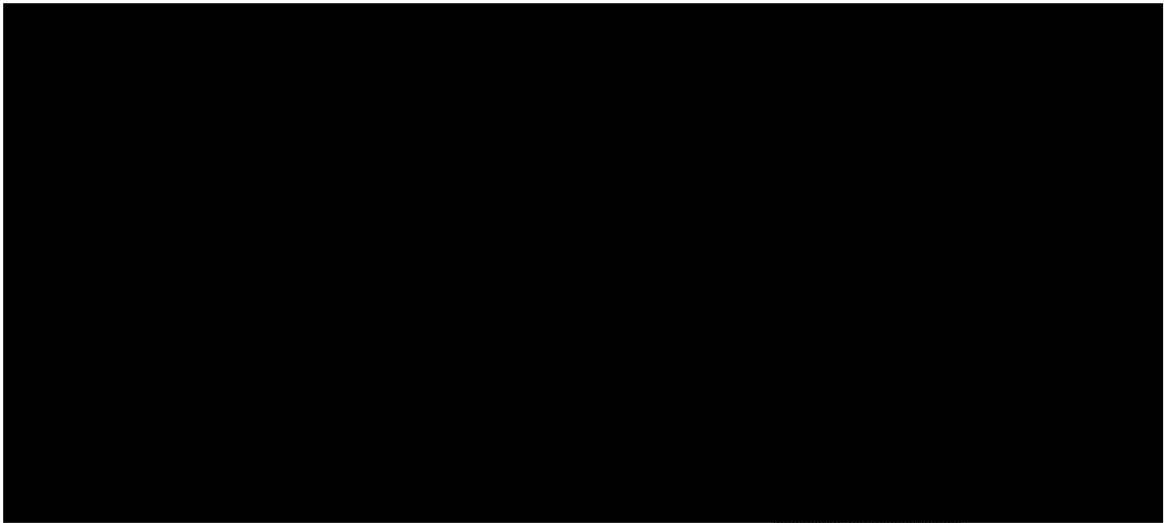
TITLE:

ANODE INSTALLATION ON TANK 3P & 3S

SCALE : N.T.S

DRAWING NO: SACP14-06-0471-DWG-009

REV. A



NOTES:

1. ALL DIMENSIONS SHOWN ARE NOMINAL AND IN MM UNLESS OTHERWISE STATED

A	10/09/14	ISSUED FOR INFORMATION	VINCENT	LI HUIJUN		
REV	DATE	DESCRIPTION	DRAWN BY	APP'D BY	CLIENT	



TRISTAR INDUSTRIES PTE LTD

36 JOO KOON ROAD SINGAPORE 628988
TEL: (065) 62663636 FAX: (065) 62653635

CLIENT:

MOPU HOLDING (SINGAPORE) PTE LTD

DIMET

TITLE:

ANODE INSTALLATION ON LEGS (H250)

SCALE : N.T.S

DRAWING NO: SACP14-06-0471-DWG-001

REV. A

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.4
เอกสารเกี่ยวกับปั่นจั่น

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.4.1
แบบทดสอบการติดตั้งปั้นจั่น และ Crane Deficiency Report

แบบการทดสอบการติดตั้งปั้นจั่นเมื่อติดตั้งเสร็จ เป็นขั้นที่มีภาระผูกพันใช้งาน
และส่วนประกอบและอุปกรณ์ของปั้นจั่นชนิดอยู่กับที่

๑. การทดสอบกรณี

☑ (๑) การทดสอบตามข้อ ๕๔

☐ บันจั่นที่มีการติดตั้งแล้วเสร็จ

☐ กรณีเป็นปั้นจั่นหลังการติดตั้งแล้วเสร็จ ก่อนการใช้งาน

☐ กรณีเป็นปั้นจั่นที่ใช้งานแล้วแต่มีการเปลี่ยนแปลงโครงสร้าง หรือการเพิ่มหรือลดความสูง

☐ บันจั่นหยุดการใช้งานตั้งแต่ ๖ เดือนขึ้นไป ก่อนนำมาใช้งานใหม่

ปั้นจั่นที่ใช้สำหรับประเภทการทำงาน

☑ ประเภทอุตสาหกรรม ตั้งแต่ ๑ ตันขึ้นไป

ขนาดพื้นที่น้ำหนักยกปลอดภัยตามที่ผู้ผลิตหรือวิศวกรกำหนด ขนาด ๒๓.๐ ตัน

☐ ประเภทก่อสร้าง รุกขนาถ

ขนาดพื้นที่น้ำหนักยกปลอดภัยตามที่ผู้ผลิตหรือวิศวกรกำหนด ขนาด ๒๓.๐ ตัน

☑ ประเภทอื่นๆ ระบุ Extraction and production of petroleum, crude oil ตั้งแต่ ๑ ตันขึ้นไป

ขนาดพื้นที่น้ำหนักยกปลอดภัยตามที่ผู้ผลิตหรือวิศวกรกำหนด ขนาด ๒๓.๐ ตัน

☑ (๒) การทดสอบส่วนประกอบและอุปกรณ์ของปั้นจั่นตามข้อ ๕๕

(๒.๑) ประเภท ☑ อุตสาหกรรม ☑ อื่นๆ ระบุ

การทดสอบครั้งนี้เป็นรอบที่ ☑ ๑ ☑ ๒ ☑ ๓ ☑ ๔ ☑ อื่นๆ

การทดสอบครั้งล่าสุดเมื่อวันที่ ๔ พฤศจิกายน ๒๕๖๓

☐ ขนาดพื้นที่น้ำหนักยกปลอดภัยตามที่ผู้ผลิตหรือวิศวกรกำหนดตั้งแต่ ๑ ตัน แต่ไม่เกิน ๓ ตัน

ทดสอบอย่างน้อยปีละ ๑ ครั้ง

☑ ขนาดพื้นที่น้ำหนักยกปลอดภัยตามที่ผู้ผลิตหรือวิศวกรกำหนดมากกว่า ๓ ตัน แต่ไม่เกิน

๕๐ ตัน ทดสอบอย่างน้อย ๖ เดือน ต่อ ๑ ครั้ง

☐ ขนาดพื้นที่น้ำหนักยกปลอดภัยตามที่ผู้ผลิตหรือวิศวกรกำหนดมากกว่า ๕๐ ตันขึ้นไป

ทดสอบอย่างน้อย ๓ เดือน ต่อ ๑ ครั้ง

(๒.๒) ประเภทก่อสร้าง

การทดสอบครั้งนี้เป็นรอบที่ ☑ ๑ ☑ ๒ ☑ ๓ ☑ ๔ ☑ อื่นๆ

การทดสอบครั้งล่าสุดเมื่อวันที่

☐ ขนาดพื้นที่น้ำหนักยกปลอดภัยตามที่ผู้ผลิตหรือวิศวกรกำหนดไม่เกิน ๓ ตัน ทดสอบ

อย่างน้อย ๖ เดือน ต่อ ๑ ครั้ง

☐ ขนาดพื้นที่น้ำหนักยกปลอดภัยตามที่ผู้ผลิตหรือวิศวกรกำหนดมากกว่า ๓ ตันขึ้นไป

ทดสอบอย่างน้อย ๓ เดือน ต่อ ๑ ครั้ง

๒. ผู้ทำการทดสอบ ได้ดำเนินการทดสอบส่วนประกอบและอุปกรณ์ของปั้นจั่น

ชื่อสถานประกอบการ AURORA MARITIME PTE.LTD

เลขทะเบียนนิติบุคคล

ประเภทกิจการ Extraction and production of petroleum, crude oil

ชื่อนายจ้าง/ผู้เช่า/การแทน

สถานที่ประกอบกิจการตั้งอยู่เลขที่ 152 Beach Road#10-01 Gateway East

Singapore 189721 Co.Reg:202101335E

สถานประกอบกิจการมีปั้นจั่น จำนวน ๒ เครื่อง บันจั่นเครื่องที่ทดสอบ เป็นเครื่องที่ ๑

ทำการทดสอบเมื่อวันที่ ๔ พฤศจิกายน ๒๕๖๓ ขณะทดสอบปั้นจั่นใช้งานอยู่ที่ AP1 MUPU (Gulf of thailand)

ชื่อ - สกุล ของผู้บังคับปั้นจั่น

(๑) ☒ ผ่านการอบรม (มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

(๒) ☐ ผ่านการอบรม (มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

ชื่อ - สกุล ของผู้ให้สัญญาณผู้บังคับปั้นจั่น

(๑) ☒ ผ่านการอบรม (มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

(๒) ☐ ผ่านการอบรม (มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

ชื่อ - สกุล ของผู้ควบคุมเครื่อง

(๑) ☒ ผ่านการอบรม (มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

(๒) ☐ ผ่านการอบรม (มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

ชื่อ - สกุล ของผู้ควบคุมการใช้ปั้นจั่น

(๑) ☐ ผ่านการอบรม (มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

(๒) ☐ ผ่านการอบรม (มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

๓. ข้อมูลของผู้ผลิต ผู้สร้าง หรือผู้คำนวณออกแบบปั้นจั่น

โดย : ☑ ชื่อผู้ผลิต/ผู้สร้าง South China Marine machinery co.ltd

☐ ชื่อวิศวกรผู้คำนวณออกแบบ (กรณีไม่ได้มาจากผู้ผลิต)

สถานที่ใบอนุญาตประกอบวิชาชีพวิศวกรรมควบคุม

ผู้ถือ South China Marine machinery co.ltd

ประเทศ China

ปีผลิต ๒๐๑๕

หมายเลขเครื่อง

YQ1352000-1000-1000-1000-1000

รุ่น

มาตรฐาน (ถ้ามี) API SPEC 2C

ผู้นำเข้าผู้จำหน่าย (ถ้ามี)

(ถ้ามี)

ที่อยู่

โทรศัพท์ โทรสาร

๔. ข้อมูลของผู้ดำเนินการทดสอบประกอบด้วย

เจ้าหน้า (นาย/นาง/นางสาว) ☐

หรือนิติบุคคล (ชื่อ) ☐

หมายเลขบัตรประจำตัวประชาชน/เลขทะเบียนนิติบุคคล เลขที่ ☐

ที่อยู่เลขที่ ☐ ซอย ☐ ถนน ☐

แขวง/ตำบล ☐ เขต/อำเภอ ☐

จังหวัด ☐ โทรศัพท์/โทรสาร ☐

E-mail ☐

ผู้ทำการทดสอบมีคุณสมบัติอย่างหนึ่งอย่างใด ดังนี้

☑ (๑) ได้รับอนุญาตประกอบวิชาชีพวิศวกรรมควบคุม ตามกฎหมายว่าด้วยวิศวกร

เลขทะเบียน ☐ สก.๔๒๒๒ ระดับ ☐สามัญวิศวกร หมายเลขวันที่ ๒๐ พฤษภาคม ๒๕๖๔

และใบสำคัญ (ตามมาตรา ๕) เลขที่ ๐๖๐๒-๐๑-๒๕๖๔-๐๑๑๑๑

ซึ่งไม่ได้อยู่ระหว่างถูกสั่งพักใช้ใบอนุญาตหรือถูกเพิกถอนใบอนุญาต

☐ (๒) ได้รับอนุญาตประกอบวิชาชีพวิศวกรรมควบคุม ประเภทนิติบุคคล ตามกฎหมายว่าด้วยวิศวกร

เลขทะเบียน ☐ ระดับ ☐สามัญวิศวกร

และใบสำคัญ (ตามมาตรา ๑๑) เลขที่ ☐

หมดอายุวันที่ ☐ ซึ่งไม่ได้อยู่ระหว่างถูกสั่งพักใช้ใบอนุญาตหรือถูกเพิกถอนใบอนุญาต

โดยมีบุคลากรที่ได้รับอนุญาตประกอบวิชาชีพวิศวกรรมควบคุม ตามกฎหมายว่าด้วยวิศวกร และไม่ได้อยู่ระหว่างถูกสั่งพัก

ใช้ใบอนุญาตหรือถูกเพิกถอนใบอนุญาต เป็นผู้ทำการทดสอบชื่อ ☐

เลขทะเบียน ☐ ระดับ ☐สามัญวิศวกร

หมายเลขบัตรประจำตัวประชาชน ☐

๕. กรณีทดสอบปั้นจั่นชนิดอยู่กับที่ ได้ดำเนินการทดสอบตามรายละเอียดคุณลักษณะและคู่มือการใช้งานที่ผู้ผลิตหรือ

วิศวกรกำหนดและตามรายการ ดังนี้

๑) แบบปั้นจั่น ☐ บันจั่นห้อย (Tower Crane) ☐ บันจั่นเหนือศีรษะ (Overhead Crane)

☐ บันจั่นขาสูง (Gantry Crane) ☒ อื่นๆ (ระบุ) Pedestal Crane

๒) ขนาดพื้นที่การยก

๒.๑) ขนาดพื้นที่น้ำหนักยกอย่างปลอดภัย (Safe Working Load) ☑ ผู้ผลิตกำหนด ☐ วิศวกรกำหนด

☐ บันจั่นขาสูง ☐ ตัน ☐ บันจั่นเหนือศีรษะ ☐ ตัน

☑ อื่นๆ (ระบุ) Radius ๒.๒ metres @ ๒๓.๐ tons ☐ ตัน

๒.๒) ตารางแสดงพื้นที่น้ำหนักยก (Load chart) ☑ ผู้ผลิตกำหนด ☐ วิศวกรกำหนด

สำหรับกรณีปั้นจั่นห้อยให้แนบเอกสารตารางแสดงพื้นที่น้ำหนักยก (Load chart) ประกอบด้วย

☑ ที่แนบเป็นบันจั่นปกติ (รถห้อย) ☐ ๕.๐ ตัน และที่แนบเป็นบันจั่นปกติ ☐ ๒๓.๐ ตัน

☑ ที่แนบเป็นบันจั่นปกติ (รถห้อย) ☐ ๕.๐ ตัน และที่แนบเป็นบันจั่นปกติ ☐ ๕.๐ ตัน

☑ ที่แนบเป็นบันจั่นปกติ (รถห้อย) ☐ ๕.๐ ตัน และที่แนบเป็นบันจั่นปกติ ☐ ๕.๐ ตัน

☑ ที่แนบเป็นบันจั่นปกติ (รถห้อย) ☐ ๕.๐ ตัน และที่แนบเป็นบันจั่นปกติ ☐ ๕.๐ ตัน

☐ อื่นๆ ☐

๓) รายละเอียดคุณลักษณะ (Specification) และคู่มือการใช้งานในการประกอบ การติดตั้ง การทดสอบ การใช้

การซ่อมแซม การบำรุงรักษา การตรวจสอบ การรื้อถอนปั้นจั่นหรืออุปกรณ์อื่นจะปั้นจั่น

☑ มี โดยผู้ผลิตกำหนด ☐ มี โดยวิศวกรกำหนด ☐ ไม่มี เหตุผล ☐

๔) การดัดแปลงแก้ไขส่วนหนึ่งส่วนใดของปั้นจั่น ☐ มี (ระบุ) ☒ ไม่มี

๕) โครงสร้างปั้นจั่น

๕.๑) สภาพโครงสร้างหลักของปั้นจั่น

☑ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๕.๒) สภาพรอยต่อ

☑ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๕.๓) สภาพของรอยต่อ สลักเกลียวยึด และหมุดยึด

☑ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๖) การติดตั้งบนฐานที่มั่นคง

☑ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๗) การติดตั้งน้ำหนักบรรทุก (Counterweight) ที่มั่นคง

☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๘) ระบบกันการสั่น

๘.๑) สภาพและความพร้อมของเครื่องยึด

๘.๑.๑) ระบบข้อต่อ

☑ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๘.๑.๒) ระบบเชือกสลิง

☑ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๘.๑.๓) ระบบระบบควบคุม

☑ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๘.๑.๔) การติดตั้งฉนวนกันเสียง

☑ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) ☐

๘.๑.๕) จีซีหรือเบรคหรือระบบเบรกอัตโนมัติ

☑ มี/เรียบร้อย ☐ ไม่มี/ไม่เรียบร้อย (ระบุ) ☐

- ๘.๒) มอเตอร์และระบบควบคุมไฟฟ้า
- ๘.๒.๑) สภาพของมอเตอร์ไฟฟ้า
- ☐ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๘.๒.๒) การติดตั้งฉนวนฉนวน
- ☐ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๘.๒.๓) สภาพแผงหรือสวิตช์ไฟฟ้า รีเลย์ และอุปกรณ์อื่น
- ☐ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๘.๓) ระบบส่งกำลัง ระบบขับเคลื่อนกำลัง และระบบเบรก
- ๘.๓.๑) สภาพของเพลา ข้อต่อเพลา เฟือง โซ่ และสายพาน
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๘.๓.๒) ระบบคลัตช์
- ☐ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๘.๓.๓) ระบบเบรก
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๘) ครอบปิดหรือกัน (Guard) ส่วนที่หมุน ส่วนที่เคลื่อนไหวยึด หรือส่วนที่อาจเป็นอันตราย
- ☒ มี/เติบโตวัย ☐ ไม่มี/ไม่เติบโตวัย (ระบุ)
- ๙๐) ระบบควบคุมการทำงานของปั้นจั่น
- ๙๐.๑) สภาพของแผงควบคุม
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๙๐.๒) สภาพกลไกที่ใช้ควบคุม
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๙๑) ระบบไฮดรอลิก (Hydraulic) และระบบลม (Pneumatic)
- ๙๑.๑) สภาพของท่อป้อนน้ำมันและข้อต่อ
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๙๑.๒) สภาพของท่อลมและข้อต่อ
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๙๒) สวิตช์หยุดการทำงานของปั้นจั่นโดยอัตโนมัติ (Limit Switches)
- ๙๒.๑) การทำงานของชุดหยุด (Upper Limit Switches)
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๙๒.๒) การทำงานของชุดวางเลื่อน
- ☐ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๙๒.๓) มุมแขนปั้นจั่น
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)

- ๑๒.๒) ในหนึ่งช่วงเคียว (Rope Lay) เส้นลวดเคียวมีน้อยกว่า ๓ เส้น ในเส้นลวดเคียวเดียวกัน (Stand) หรือน้อยกว่า ๒ เส้น ในหลายเส้นลวดรวมกัน
- หรือตามที่มีผู้ผลิตกำหนด (ระบุ)
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๓) ลวดสลิงเคียว (Standing Ropes)
- ๑๓.๑) ขนาดเส้นผ่านศูนย์กลาง มม. ความปลอดภัยต้องไม่น้อยกว่า ๑.๕ (Safety Factor)
- เท่ากับ เมตร เมตร/ปี
- ๑๓.๒) เส้นลวดเคียวต้องน้อยกว่า ๒ เส้น ในหนึ่งช่วงเคียว
- หรือตามที่มีผู้ผลิตกำหนด (ระบุ)
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔) สภาพลวดสลิง
- ๑๔.๑) ลวดเส้นเคียวสลิงไม่น้อยกว่าหนึ่งในสามของเส้นผ่านศูนย์กลางเดิม
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๒) ไม่มีการแตก ถูกกระแทก แตกหักหรือรอยร้าว
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๓) เส้นผ่านศูนย์กลางเล็กไม่เกินร้อยละ ๕ ของเส้นผ่านศูนย์กลางที่ระบุ (Nominal Diameter)
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๔) ไม่ถูกความร้อนทำลายหรือเป็นสนิมจนเกินขีดจำกัด
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๕) ไม่ถูกกัดกร่อนหรือแตกจนเกินขีดจำกัด
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๕) อุปกรณ์ป้องกันการชนหรือป้องกันการชนที่ปลายทั้งสองข้างของราว
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๖) กรณีที่นายจ้างให้ลูกจ้างขึ้นไปทำงานบนปั้นจั่นหรืออุปกรณ์อื่นของปั้นจั่นที่มีความสูงเกิน ๒ เมตร ต้องมีบันไดพร้อมราวจับและโครงโตะกันตก หรือจัดให้มีอุปกรณ์อื่นใดที่มีความเหมาะสม
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๗) การจัดทำบันทึกบันทึกประจำวันและบันทึกตรวจบันทึก (บันทึกต้องจัดทำขึ้นและทบทวน)
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๘) สัญญาณเสียงและแสงให้เบี่ยงเบนความสนใจที่เป็นอันตรายติดตั้งไว้ให้ทันและได้ยินชัดเจน
- ☐ เติบโตวัย ☒ ไม่เติบโตวัย (ระบุ) ไม่มี
- ๑๙) มีป้ายบอกถึงน้ำหนักยกให้ปั้นจั่น และรถของรถ (Hook Block)
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๒๐) ตารางแสดงน้ำหนักบรรทุกยกของ (Load Chart) ติดไว้ในบริเวณที่ผู้ปฏิบัติงานปั้นจั่นเห็นได้ชัดเจน
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)

- ๑๑) การเคลื่อนย้ายน้ำหนักหรือแรงจลน์
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๒) การทำงานของชุดควบคุมที่เกินน้ำหนัก (Overload Limit Switches)
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๓) ม้วนลวดสลิง (Rope Drum) เวน และตะขอ
- ๑๓.๑) สภาพม้วนลวดสลิง
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๓.๒) มีลวดสลิงเหลืออยู่ในม้วนลวดสลิงของตะขอเป็นจำนวนอย่างน้อย ๒ รอบ
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๓.๓) อัตราส่วนระหว่างเส้นผ่านศูนย์กลางของรอกกับเส้นผ่านศูนย์กลางของลวดสลิง เวนและอัตราส่วนระหว่างเส้นผ่านศูนย์กลางของรอกหรือตะขอ กับเส้นผ่านศูนย์กลางของลวดสลิงที่ไปตามที่มีผู้ผลิตกำหนด
- ๑๓.๓.๑) รอกปล่อยแขนปั้นจั่นไม่น้อยกว่า ๑๘ : ๑ หรืออัตราส่วน ที่มีผู้ผลิตกำหนด
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๓.๓.๒) รอกของตะขอไม่น้อยกว่า ๑๘ : ๑ หรืออัตราส่วน ที่มีผู้ผลิตกำหนด
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๓.๓.๓) รอกปล่อยแขนปั้นจั่นไม่น้อยกว่า ๑๘ : ๑ หรืออัตราส่วน ที่มีผู้ผลิตกำหนด
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔) สภาพตะขอ
- ๑๔.๑) การบิดตัวของตะขอ
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๑.๒) การถ่วงของตะขอ ต้องน้อยกว่าร้อยละ ๕
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๑.๓) การสึกหรอที่ช่องตะขอ ต้องน้อยกว่าร้อยละ ๑๐
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๑.๔) ไม่มีส่วนใดเป็นส่วนประกอบของตะขอหักหรือร้าว
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๑.๕) ไม่มีการเสียดสีหรือสึกหรอของพื้นตะขอ
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๔.๑.๖) มีกุญแจล็อกป้องกันการลื่นหลุดจากตะขอ (Safety Latch)
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๖) ลวดสลิงที่เลื่อนที่ (Running Ropes)
- ๑๖.๑) ขนาดเส้นผ่านศูนย์กลาง Main ๒๖ มม. / AUL ๒๐ มม. ค่าความปลอดภัยต้องไม่น้อยกว่า ๕ (Safety Factor)
- เท่ากับ เมตร เมตร/ปี
- ๑๗) อุปกรณ์หรือเครื่องมือที่ใช้ในการเคลื่อนย้าย
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๘) เครื่องกันลื่นหรือใช้งานในที่ที่เปียกชื้นหรือลื่นหรือตำแหน่งที่สามารถใช้งานได้สะดวก
- ☒ เติบโตวัย ☐ ไม่เติบโตวัย (ระบุ)
- ๑๙) อุปกรณ์หรือเครื่องมือที่ใช้ในการเคลื่อนย้าย
- น้ำหนักที่ใช้ทดสอบการรับ น้ำหนัก Water bag Radius ๑๐.๐ m. Boom angle ๗๕.๔ Degrees at part line น้ำหนัก ๒๖๐๐ กก. (รวมรอก) Water bag Radius ๑๐.๐ m. Boom angle ๗๕.๔ Degree apart line น้ำหนัก ๕๐๐ กก. เครื่องยึดรัด Load Cell No.๑๕๕๖๖, Vernier's Calliper วิธีการตรวจสอบแนวเคียว ระบุ สายเคียว
- อื่นๆ ระบุ
- ๒๐) การทดสอบการรับน้ำหนักของปั้นจั่นในกรณีเป็นการทดสอบในกรณี น้ำหนักที่ใช้ทดสอบการยกอาจใช้การทดสอบด้วยน้ำหนักจริงหรือทดสอบด้วยน้ำหนักจำลอง (Load simulation)
- ๒๐.๑) ขึ้นกับ (หลังการติดตั้งแล้วเสร็จ) ที่มีการใช้งาน
- ผลการทดสอบการรับน้ำหนักของปั้นจั่นที่น้ำหนักยกอย่างปลอดภัย (Safety Working Load)
- ☐ ก) ขนาดน้ำหนักยกอย่างปลอดภัยตามที่มีผู้ผลิตหรือวิศวกรกำหนดไม่เกิน ๒๐ ตัน ใช้ทดสอบการรับน้ำหนักที่ ๑ - ๑.๒๕ เท่า
- ☐ ผ่าน ☐ ไม่ผ่าน (ระบุ)
- ☐ ข) ขนาดน้ำหนักยกอย่างปลอดภัยตามที่มีผู้ผลิตหรือวิศวกรกำหนดไม่เกิน ๒๐ ตัน แต่ไม่เกิน ๕๐ ตัน ใช้การรับน้ำหนักเพิ่มอีก ๕ ตัน จากน้ำหนักยกอย่างปลอดภัย
- ☐ ผ่าน ☐ ไม่ผ่าน (ระบุ)
- ☐ ค) ขนาดน้ำหนักยกอย่างปลอดภัยตามที่มีผู้ผลิตหรือวิศวกรกำหนดไม่เกิน ๕๐ ตัน ขึ้นไป ใช้ทดสอบการรับน้ำหนักที่ ๑.๑ เท่า
- ☐ ผ่าน ☐ ไม่ผ่าน (ระบุ)
- ☐ ง) ขนาดน้ำหนักยกอย่างปลอดภัยสูงสุดตามที่มีผู้ผลิตหรือวิศวกรกำหนดสำหรับปั้นจั่นของใช้ในทดสอบการรับน้ำหนักที่ ๑ เท่า จากน้ำหนักยกอย่างปลอดภัยและค่าทดสอบตามแสดงน้ำหนักยก (Load chart) แต่ต้องไม่เกินน้ำหนักยกที่น้ำหนักยกอย่างปลอดภัย (Safety Working Load) ตามที่มีผู้ผลิตหรือวิศวกรกำหนด
- ☐ ผ่าน ☐ ไม่ผ่าน (ระบุ)
- ๒๑.๒) ขึ้นกับที่ใช้งานแล้ว
- ๒๑.๒.๑) ผลการทดสอบการรับน้ำหนักที่ ๑.๒๕ เท่าของน้ำหนักที่ใช้งานจริงสูงสุด โดยไม่เกินขนาดน้ำหนักยกอย่างปลอดภัย (Safety Working Load) ตามที่มีผู้ผลิตหรือวิศวกรกำหนด
- ☐ ตามตาราง เมตร/ปี ☐ ผ่าน ☐ ไม่ผ่าน
- ☐ ไม่มีการติดตั้งเครื่อง (กรณีถ้าติดตั้ง) ☐ ผ่าน ☐ ไม่ผ่าน
- ☐ ผลการดำเนินงาน ๖ เดือนขึ้นไป ☐ ผ่าน ☐ ไม่ผ่าน
- ☐ ผลการซ่อมแซมที่มีผลต่อความปลอดภัย ☐ ผ่าน ☐ ไม่ผ่าน
- ☐ ผลการเปลี่ยนแปลงโครงสร้าง ☐ ผ่าน ☐ ไม่ผ่าน



Star board Crane Service

Inspection Date & Time

กรมสวัสดิการและคุ้มครองแรงงาน

ใบสำคัญ

การขึ้นทะเบียนเป็นผู้ให้บริการทดสอบบับัน

ใบสำคัญเลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

ขึ้นทะเบียนไว้

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

เลขที่ ๐๖๐๖-๐๖-๒๕๖๕-๐๖๐๖

YQHG2500-23t-12m (5t-33m) Load rating charts/General Meth												
Main hook: I Onboard lift, Sheave multiplier w=3, dynamic coefficient: Cv=1.4												
SWL(t)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
吊重 (t)	82.0	79.4	76.9	74.3	71.7	69.1	66.5	64.0	61.4	58.8	56.2	53.7
工作半径 (m)	6.2	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5
Main hook: II Offboard lift (Hsig=2.5m), Sheave multiplier w=3, dynamic coefficient: Cv=2.0												
SWL(t)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
吊重 (t)	82.0	79.4	76.9	74.3	71.7	69.1	66.5	64.0	61.4	58.8	56.2	53.7
工作半径 (m)	6.2	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5
Whip hook: III Onboard / Offboard lift (Hsig=2.5m), Sheave multiplier w=1, dynamic coefficient: Cv=2.1												
SWL(t)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
吊重 (t)	82.0	79.4	76.9	74.3	71.7	69.1	66.5	64.0	61.4	58.8	56.2	53.7
工作半径 (m)	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0
Whip hook: IV Offboard person lift (Hsig=2.5m), Sheave multiplier w=1, dynamic coefficient: Cv=2.2												
SWL(t)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
吊重 (t)	82.0	79.4	76.9	74.3	71.7	69.1	66.5	64.0	61.4	58.8	56.2	53.7
工作半径 (m)	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0
Wire winding Diagram, see 2421HNS1-07B wire winding drawings												
中船华南船舶机械有限公司 South China Marine Machinery Co. Ltd.												
平台号/船号 Platform No./Ship No.												
出厂编号 Serial No.												

การตรวจสอบและทดสอบความปลอดภัยของบับันขึ้น พร้อมภาพถ่ายวีซีอาร์ขณะทำการทดสอบ พร้อมหลักฐานให้พนักงานตรวจสอบความปลอดภัยตรวจสอบได้

ทดสอบน้ำหนักกรอกเหล็ก ๓ Part Line ที่ ๑๐๐% ที่น้ำหนัก ๒๐.๐๕๕ ตัน ที่ระยะ Radius ๑๐ เมตร, Boom angle ๗๖.๕ องศา Load Indicator อ่านค่า ๒๐.๓ ตัน



ทดสอบน้ำหนักกรอกเหล็ก ๓ Part Line ที่ ๑๐๐% ที่น้ำหนัก ๕.๐ ตัน ที่ระยะ Radius ๑๐.๐ เมตร, Boom angle ๗๖.๕ องศา



การตรวจสอบและทดสอบความปลอดภัยของบับันขึ้น พร้อมภาพถ่ายวีซีอาร์ขณะทำการทดสอบ พร้อมหลักฐานให้พนักงานตรวจสอบความปลอดภัยตรวจสอบได้



Crane Deficiency Report

Contact Email: info@tos-global.com
Visit Website: www.tos-global.com

Sales Order No.	Job Type	Date	Location Code	Field:
SO-12410018	Inspection	4-Nov-2024	Port Side	API MOPI
Manufacturer:	Model Number:	Serial No:	Created By:	Customer:
SCM	YQH2500-23-12M(51-33M)	146163Q101	Sommat Dechkoompol	Aurora
				Location: Thailand
				Tag Number: -
				Customer WIO No: -
				Requested By: Alex Apiradapal

General Crane Condition



Risk Assessment Matrix

CONSEQUENCES						FREQUENCY OF OCCURRENCE (Probability)				
Severity	Safety/Health	Asset/Product Loss	Environment	Reputation	Quality	Delivery	Rare (1)	Unlikely (2)	Credible (3)	Likely (4)
Critical (5)	Fatality	Production loss > 1 week and/or Damage > 200 THB	Outside of secondary containment but into environment > 200 lbs.	International	Reject with consequence	No Delivery	20	24	27	29
Major (4)	Lost Time Injury	Production loss 1 day and/or Damage between 100-200 THB	Outside of secondary containment but into environment < 200 lbs.	National	Reject without consequence	Delay > 1 week, with L.D.	15	19	23	26
Moderate (3)	Restricted Workday Case	Production loss 1 day and/or Damage < 100 THB	Outside of secondary containment but not into environment	Community	Replace	Delay > 1 week, without liquidated damage (L.D.)	10	14	18	22
Minor (2)	Medical Treatment	Production loss < 1 day and/or Damage < 100 THB	Spill into secondary containment	Civil	Rework	Delay < 1 week, with L.D.	6	9	13	17
Insignificant (1)	First Aid	Slight damage or loss	Loss of primary containment	Internal	Hold	Delay < 1 week, without liquidated damage (L.D.)	3	5	8	12

Sommat 9

Inspector's Signature

Date: 4-Nov-24

Page 1 of 3

R.O.R. JONGROVA

Customer Rep. Signature

Date: 5/11/24

Page 1 of 3

Date: 5/11/24

Inspector's Signature

Date: 5/11/24

Page 1 of 3

Engineer's Signature (Optional)

Date: 5/11/24

Page 1 of 3

Page 1 of 3

Crane Deficiency Report

Contact Email: info@tos-global.com
Visit Website: www.tos-global.com

Non (0)	No Injury/No Health effect	No loss or damage	No effect	No impact	Accept	On time	1	2	4	7	11
Minor deficiency that is recommended to be promptly addressed, but poses no safety and/or environmental risk. The crane can still be operated at full duty.											
Should be reported during normal document submission to Operations Manager and Client Maintenance personnel.											
Medium deficiency, that is recommended to be promptly addressed, identified that has potential impact on the environment, crane operations and/or safety system that may limit, de-rated or damage the crane, it's surroundings and/or environment. The crane can still be operated at full duty.											
Should be reported during normal document submission to Operations Manager and Client Maintenance personnel.											
Major deficiency found and it is recommended that the crane remove from duty and locked/tagged out until the deficiency is rectified.											
For Risk Level "In Accordance with:" box, select from the following: API RP2D, API 2C, Inspector's Assessment, OEM Customer Spec, Engineer's Assessment.											
For Risk Level "Recommended urgency timeframe to complete the corrective action:" box, select from the following: Prior to Use, Promptly, During Next Scheduled PM, N/A.											

Item	Component	Location
1	Wooden boom support.	Boom Rest.
Risk Level	In accordance with:	Inspector's Assessment
	Description:	Wooden boom support major broken.
	Recommended Action	Should be replaced.
	Recommended urgency timeframe to complete the corrective action:	During Next Scheduled PM.
	Responsible By:	TOS
	Completed Date:	Completed by:

Item	Component	Location
2	Boom Winch.	Behind gantry.
Risk Level	In accordance with:	Inspector's Assessment
	Description:	Boom Winch sight glass very poor.
	Recommended Action	Order part to replace.
	Recommended urgency timeframe to complete the corrective action:	During Next Scheduled PM.
	Responsible By:	Part Required:
	Completed Date:	Completed by:

Sommat 9

Inspector's Signature

Date: 4-Nov-24

Page 1 of 3

R.O.R. JONGROVA

Customer Rep. Signature

Date: 5/11/24

Page 1 of 3

Date: 5/11/24

Inspector's Signature

Date: 5/11/24

Page 1 of 3

Engineer's Signature (Optional)

Date: 5/11/24

Page 1 of 3

Page 1 of 3

Crane Deficiency Report

Contact Email: info@tos-global.com
Visit Website: www.tos-global.com

Item	Component	Motor
3	Location	Motor of Main winch
Risk Level	In accordance with:	Inspector's Assessment
	Description:	Found Hydraulic leak of Motor
	Recommended Action	Need to replace the O-Ring of Fitting
	Recommended urgency timeframe to complete the corrective action:	During Next Scheduled PM.
	Responsible By:	Part Required:
	Completed Date:	Completed by:



Sommat 9

Inspector's Signature

Date: 4-Nov-24

Page 1 of 3

R.O.R. JONGROVA

Customer Rep. Signature

Date: 5/11/24

Page 1 of 3

Date: 5/11/24

Inspector's Signature

Date: 5/11/24

Page 1 of 3

Engineer's Signature (Optional)

Date: 5/11/24

Page 1 of 3

Page 1 of 3

Crane Pull Test Certificate

(In accordance with API RP 2D)



	Number	Job Type	Client	Crane Location	Designation	
Service Order #:	SO-12410018	Inspection/Pull Test	Aurora	Port Crane	Top Deck	Date: 4-Nov-2024
Customer:	Aurora Producer			Location:		API MOPIU / Rossakou
Crane Model:	SCM / YQH2500-23t-12m (5t-33m)			Crane S/N:		146163Q101
Boom Length:	34 <input type="checkbox"/> ft <input checked="" type="checkbox"/> meters			Load Winch Model:		CH1280A-54128064-01-1
Aux. Winch Model:	CH1210A-36-120-01-1			Boom Winch Model:		CH1280A-541280-01P-1

Pull Test Data

Method:	Suspended Weight	Water bag	Cert #	HEU-35T/Code:243509
	Dynamometer	S/N: 9571	Cal. Date:	20-Dec-2024

Pull Test

Main Hoist: 100% of Rated Load as per the load chart per radius / angle chosen for test				
Rated Load	Load-tested	Parts of line	Boom Angle/Foot Radius	Load Indicator (if available)
23 Ton	23 Ton	3	74.5° / 10 M	22.3 Ton
Recorded Pressure:	2200 psi	bar		

Auxiliary Hoist: 100% of Rated Load as per the load chart per radius / angle chosen for test				
Rated Load	Load-tested	Parts of line	Boom Angle/Foot Radius	Load Indicator (if available)
5 Ton	5 Ton	1	76.5° / 10.5 M	5.1 Ton
Recorded Pressure:	1600 psi	bar		

Wire Rope Data:	Size / Construction / length	Parts of Line:	Condition:
Lead Hoist:	26mm/34 (W) K7-WSC 218m.	3	Good condition
Aux. Hoist:	20mm/34 (W) K7-WSC 91m.	1	Good condition
Boom Hoist:	28mm/6x36 WS-1WRC/310m.	8	Good condition

Boom Angle/Foot Radius Reading

Load Chart	Angle	Radius	Measured	Angle	Radius
Low:	79.5°	7.5 m	Low:	79.5°	7.5 m
Mid:	70.4°	12.5 m	Mid:	70.4°	12.5 m
High:	41.9°	24 m	High:	41.9°	24 m

AURORA PRODUCER
R.O.R. JONGROVA
Inspector's Signature
Date: 5/11/24
4-Nov-24

Doc No: FR-SER-04 Rev: 04 Rev. Status: RA-issued for implementation Date: 8/4/2017 Approved By: SER Approved By: TM Created By: TM Page: 1 of 1

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-2.4.2
ตัวอย่างเอกสารการวิเคราะห์งานเพื่อความปลอดภัยของป็นจัน

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-3

ใบรับรองการตรวจสอบแทนผลิตแบบเคลื่อนย้ายได้ AP1

- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-3.1 International Sewage Pollution Prevention Certificate
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-3.2 International Oil Pollution Prevention Certificate

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-3.1

International Sewage Pollution Prevention Certificate



INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE

Issued under the provisions of
the International Convention for the Prevention of Pollution from Ships, 1973
as modified by the Protocol of 1978 relating thereto,
and as amended by resolution MEPC.115(51), (hereinafter referred to as "the Convention")
under the authority of the Government of:

Republic of Liberia
(name of state)

by **American Bureau of Shipping**

Particulars of Ship:

Name of ship	Distinctive number or letters	Port of Registry
AURORA PRODUCER 1	12202 A8EA5	Monrovia
Gross tonnage	Number of persons which the ship is certified to carry	IMO Number ¹
5288	50	8755510

~~New Ship~~ / Existing Ship *

Type of ship for the application of regulation 11.3.*

~~New / Existing Passenger ship~~ *

Ship other than a passenger ship

Date on which keel was laid or ship was at a similar stage of construction or where applicable, date on which work for a conversion or an alteration or modification of a major character was commenced 15 February 1973

THIS IS TO CERTIFY:

- (1) That the ship is equipped with a Sewage Treatment Plant / ~~Comminuter~~ / Holding Tank * and a discharge pipeline in compliance with regulations 9 and 10 of Annex IV of the Convention as follows:

*(1.1) Description of the sewage treatment plant :

Type of sewage treatment plant MSD Type II

Name of manufacturer Owens Manufacturing and Specialty Co., Inc., Model # 2026

The sewage treatment plant is certified by the Administration to meet the effluent standards as provided for in resolution MEPC.2(VI).

~~*(1.2) Description of comminuter~~

Type of comminuter N/A

Name of manufacturer N/A

Standard of sewage after disinfection N/A

*(1.3) Description of holding tank :

Total capacity of the holding tank 3.05 m³

Location Transverse Frame 7, 15' off Center Line to Port

- (1.4) A pipeline for the discharge of sewage to a reception facility, fitted with a standard shore connection.

Certificate No.: 7404370-5899199-047

REPUBLIC OF LIBERIA
MINISTRY OF FINANCE
Bureau of Maritime Affairs

Certificate No.: 7404370-5899199-047

- (2) The ship has been surveyed in accordance with regulation 4 of Annex IV of the Convention.

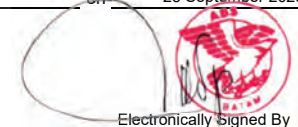
- (3) That the survey shows that the structure, equipment, systems, fittings, arrangements and material of the ship and the condition thereof are in all respects satisfactory and the ship complies with the applicable requirements of Annex IV of the Convention.

N/A

This certificate is valid until 24 September 2028² subject to surveys in accordance with regulation 4 of Annex IV of the Convention.

Completion date of the survey on which this certificate is based: 25 September 2023

Issued at Batam, Indonesia on 25 September 2023



Electronically Signed By
Aksawan, Batam Port
(Surveyor, American Bureau of Shipping)

* Delete as appropriate

¹ In accordance with resolution A.600(15) - IMO Ship Identification Number Scheme, this information may be included voluntarily

² Insert the date of expiry as specified by the Administration in accordance with regulation 8.1 of Annex IV of the Convention. The day and the month of this date correspond to the anniversary date as defined in regulation 1.8 of Annex IV of the Convention.

Endorsement to extend the Certificate if valid for less than 5 years where regulation 8.3 applies.

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 8.3 of Annex IV of the Convention, be accepted as valid until _____.

Signed: _____
(Signature of authorized official)

Place: _____

(Seal or Stamp of the authority, as appropriate)

Date: _____

Endorsement where the renewal survey has been completed and regulation 8.4 applies.

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 8.4 of Annex IV of the Convention, be accepted as valid until _____.

Signed: _____
(Signature of authorized official)

Place: _____

(Seal or Stamp of the authority, as appropriate)

Date: _____

Endorsement where the renewal survey has been completed and regulation 8.5 or 8.6 applies.

This Certificate shall, in accordance with regulation 8.5 or 8.6 of Annex IV of the Convention, be accepted as valid until _____.

Signed: _____
(Signature of authorized official)

Place: _____

(Seal or Stamp of the authority, as appropriate)

Date: _____



ภาคผนวกแทนผลิตภัณฑ์เคลื่อนย้ายได้-3.2

International Oil Pollution Prevention Certificate



Certificate No.: 7404370-5899199-033

INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE

(This Certificate shall be supplemented by a Record of Construction and Equipment)

Issued under the Provisions of the
International Convention for the Prevention of Pollution from Ships, 1973,
as modified by the Protocol of 1978 relating thereto and as amended,
(hereinafter referred to as "the Convention")
under the authority of the Government of

Republic of Liberia

(name of state)

REPUBLIC OF LIBERIA
MINISTRY OF FINANCE
Bureau of Maritime Affairs

by American Bureau of Shipping

Particulars of Ship

Name of Ship	Distinctive Number or Letters	Port of Registry
AURORA PRODUCER 1	12202 A8EA5	Monrovia
Gross Tonnage ¹ a) According to footnote 1 ² b) According to footnote 1 ³	Maximum Deadweight of Ship (metric tons) ⁴	IMO Number
5288	-	8755510

Type of Ship¹:

Oil-Tanker

Ship other than an oil tanker with cargo tanks coming under Regulation 2(2) of Annex I of the Convention

Ship other than any of the above

THIS IS TO CERTIFY:

- That the ship has been surveyed in accordance with Regulation 6 of Annex I of the Convention;
- That the survey shows that the structure, equipment, systems, fittings, arrangement and material of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the applicable requirements of Annex I of the Convention.

This Certificate is valid only when Supplement Form A issued at Batam, Indonesia
on 25 September 2023 is attached.

This certificate is valid until 24 September 2028 ⁵ subject to surveys in accordance with Regulation 6 of Annex I of the Convention.

Completion date of the survey on which this certificate is based: 25 September 2023

Issued at Batam, Indonesia on 25 September 2023
(Place of Issue of Certificate) (Date of Issue)



Electronically Signed By
Aksawan,, Batam Port

Surveyor, American Bureau of Shipping

¹ Delete as appropriate
² The above gross tonnage has been determined in accordance with the International Convention on Tonnage Measurement of Ships, 1969.
³ The above gross tonnage has been determined by the authorities of the Administration in accordance with the national tonnage rules which were in force prior to the coming into force for existing ships of the International Convention on Tonnage Measurement of Ships, 1969.
⁴ For oil tankers.
⁵ Insert the date of expiry as specified by the Administration in accordance with regulation 10.1 of Annex I of the Convention. The day and the month of date corresponds to the anniversary date as defined in regulation 1.27 of Annex I of the Convention, unless amended in accordance with regulation 10.8 of Annex I of the Convention.

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that, at a survey required by Regulation 6 of Annex I of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Annual Survey: Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____

Annual / Intermediate¹ Survey: Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____

Annual / Intermediate¹ Survey: Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____

Annual Survey: Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____



¹ Delete as appropriate

ANNUAL / INTERMEDIATE SURVEY IN ACCORDANCE WITH REGULATION 10.8.3

THIS IS TO CERTIFY that, at an annual / intermediate¹ survey in accordance with Regulation 10.8.3 of Annex I of the Convention, the ship was found to comply with the relevant provisions of the Convention.

Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____

**ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN 5 YEARS
WHERE REGULATION 10.3 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with Regulation 10.3 of Annex I of the Convention, be accepted as valid until _____

Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____

**ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED
AND REGULATION 10.4 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with Regulation 10.4 of Annex I of the Convention, be accepted as valid until _____

Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____

**ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF
SURVEY OR FOR A PERIOD OF GRACE WHERE REGULATION 10.5 OR 10.6 ¹ APPLIES**

This Certificate shall, in accordance with regulation 10.5 /10.6¹ of Annex I of the Convention, be accepted as valid until _____

Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____



¹ Delete as appropriate

**ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE
WHERE REGULATION 10.8 APPLIES**

In accordance with Regulation 10.8 of Annex I of the Convention, the new anniversary date is _____

Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____

In accordance with Regulation 10.8 of Annex I of the Convention, the new anniversary date is _____

Signed: _____
(Surveyor, American Bureau of Shipping)

Place: _____

Date: _____



ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4

บันทึกต่าง ๆ ของแทนผลิตแบบเคลื่อนย้ายได้AP1

- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.1 ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง
 - ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.1.1 ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุงเครื่องยนต์ / เครื่องจักร
 - ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.1.2 ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุงปล่องเผาก๊าซ
 - ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.1.3 ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง Emergency Shutdown Value
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.2 รายการเวชภัณฑ์สำหรับการปฐมพยาบาลและการรักษาพยาบาลเบื้องต้น
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.3 ตัวอย่างรายงานการตรวจประเมินความปลอดภัยและสุขลักษณะของสถานที่ทำงานและที่พักอาศัย
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.4 ตัวอย่างบันทึกปริมาณและรายการน้ำมัน และสารเคมี
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.5 ตัวอย่างรายงานการฝึกซ้อมตอบสนองต่อเหตุฉุกเฉิน
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.6 สถิติพนักงานที่พักอาศัยบนแทนผลิตแบบเคลื่อนย้ายได้

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.1

ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง

ภาคผนวกแทนผลิตภัณฑ์เคลื่อนย้ายได้-4.1.1

ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง
เครื่องยนต์ / เครื่องจักร

Scheduled job: 65.DG-CAT-3516B.MEC.250 H

MAIN GENERATOR ENGINE NO.3 - 250 HOURS ROUTINE

Details			
Vessel: Aurora Producer 1			
Current value	: 2,910.00	Next value	: 10/29/2024 2:29:20AM
Tech acc	: 651.003 ENGINE DIESEL, MAIN GENERATOR NO.3	Next due	: 10/29/2024
Equipment		Active	<input checked="" type="checkbox"/>
Class ref.		Criticality	: Critical to Asset and Operation
Original instruction	: 65.DG-CAT-3516B.MEC.250	Serial no.	: S2200367
Cost allocation		Location	: Engine Room
Job class	: Preventative Maintenance	Priority	: Medium
Job type	: Clean/Inspect/Maintain as Required	Duration	: 2.50
Job grade	: Planned preventative work		
Dept.	: Mechanical		
Add'l description	No data to be shown		
Base description			
EQUIPMENT: CAT 3516B Diesel Generator Set Engine TAG NUMBER: 651.001; 651.002; 651.003 FREQUENCY: (Initial) 250 Hour TITLE: W1-250 Hourly Inspection of CAT 3516B Diesel Generator Set Engine CRAFT: MEC			
CAUTION: - ENSURE ALL NECESSARY SAFETY PRECAUTIONS ARE TAKEN WHILE WORK IS PERFORMED - REFER TO THE OEM MANUALS, INSTRUCTIONS AND DRAWINGS AS REQUIRED - OBSERVE ALL PERMIT TO WORK, ISOLATION PROCEDURES AND ANY APPLICABLE JSA			
SPECIAL TOOLS/PARTS: Special tools: - 1U-5718 Vacuum Pump (if no sampling valve installed) - Torque Wrench Parts: - 169-8373 Fluid Sampling Bottle - Disposable Tubing (If no sampling valve installed) - Replacement Hoses (if needed) - Replacement Clamps (if needed) - Cooling System Filler Cap gasket			
DESCRIPTION			
Preliminary			
1. Obtain permit to work form prior to performing task.			
2. De-energize power source to equipment in accordance with lockout/tagout procedures.			
A. Inspect Belts.			
1. Inspect alternator belt and any accessory belts for wear and for cracking. Replace belts if belts are not in good condition.			
2. Inspect belt tension according to table below.			

3. If adjustment/replacement required belt refer below, otherwise skip to Section B.

NOTE: If belts are too tight, unnecessary stress is placed on components. This reduces service life of components.

4. Remove drive belt guard.
5. Loosen mounting bolts (2), (3), and (4). Loosen adjusting nuts (1).
6. Turn adjusting nuts (1) in order to increase or decrease drive belt tension.
7. Tighten adjusting nuts (1). Tighten mounting bolts (2), (3), and (4).
8. Reinstall drive belt guard.
9. If new drive belts are installed, inspect drive belt tension again after 30 minutes of engine operation at rated rpm.

NOTE: For applications that require multiple drive belts, replace drive belts in matched sets. Replacing one drive belt of a matched set will cause new drive belt to carry more load because older drive belts are stretched. Additional load on new drive belt could cause new drive belt to fail.

B. Cooling System Coolant Sample (Level 1) - Obtain.

NOTE: Obtaining a Coolant Sample (Level 1) is optional if cooling system is filled with Cat ELC (Extended Life Coolant). Cooling systems that are filled with Cat ELC should have a Coolant Sample (Level 2) that is obtained at recommended interval that is stated in Maintenance Interval Schedule.

NOTE: Obtain a Coolant Sample (Level 1) if cooling system is filled with any or coolant instead of Cat ELC. This includes following types of coolants:

Commercial long life coolants that meet Caterpillar Engine Coolant Specification -1 (Caterpillar EC-1)
Cat DEAC (Diesel Engine Antifreeze/Coolant)
Commercial heavy-duty coolant/antifreeze

Recommended Interval

Type of Coolant	Level 1	Level 2
Cat DEAC Every	250 Hours (1)	Yearly (1)(2)
Cat ELC	Optional (2)	Yearly (2)

(1) This is recommended interval for coolant samples for all conventional heavy-duty coolant/antifreeze. This is also recommended interval for coolant samples of commercial coolants that meet Cat EC-1 specification for engine coolant.

(2) Level 2 Coolant Analysis should be performed sooner if a problem is suspected or identified.

NOTE: Always use a designated pump for oil sampling, and use a separate designated pump for coolant sampling. Using same pump for both types of samples may contaminate samples that are being drawn. This contaminate may cause a false analysis and an incorrect interpretation that could lead to concerns by both dealers and customers.

NOTE: Obtain sample of coolant as close as possible to recommended sampling interval. In order to receive full effect of S-O-S analysis, you must establish a consistent trend of data. In order to establish a pertinent history of data, perform consistent samplings that are evenly spaced.

1. Use following guidelines sampling of coolant:
 - a) Complete information on label for sampling bottle before you begin to take samples.
 - b) Keep unused sampling bottles stored in plastic bags.
 - c) Obtain coolant samples directly from coolant sample port. You should not obtain samples from any other location.
 - d) Keep lids on empty sampling bottles until you are ready to collect sample.
 - e) Place sample in mailing tube immediately after obtaining sample in order to avoid contamination.
 - f) Never collect samples from expansion bottles.
 - g) Never collect samples from drain for a system.
 - h) Submit sample for Level 1 analysis.

C. Obtain Engine Oil Sample.

CAUTION: Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

1. Before you take oil sample, complete Label for identification of sample. In order to help obtain most accurate analysis, provide following information:
 - a) Engine model
 - b) CMMS number
 - c) Service hours on engine
 - d) Number of hours that have accumulated since last oil change
 - e) Amount of oil that has been added since last oil change

NOTE: To ensure that sample is representative of oil in crankcase, obtain a warm, well mixed oil sample. To avoid contamination of oil samples, tools and supplies that are used for obtaining oil samples must be clean.

2. Engine oil sampling valve is located on engine oil cooler. Take sample that fills sampling pot.

NOTE: Do not use same vacuum sampling pump for extracting oil samples that is used for extracting coolant samples. A small residue of either type sample may remain in pump and may cause a false positive analysis for sample being taken. Always use a designated pump for oil sampling and a designated pump for coolant sampling. Failure to do so may cause a false analysis which could lead to customer and dealer concerns.

3. If engine is not equipped with a sampling valve, use 1U-5718 Vacuum Pump. Pump is designed to accept sampling bottles. Disposable tubing must be attached to pump for insertion into sump.

4. Log oil sample in Oil Usage Log.

D. Inspect/Replace Hoses and Clamps.

1. Inspect all hoses for leaks that are caused by following conditions:

- a) Cracking
- b) Softness
- c) Loose clamps

NOTE: Do not bend or strike high pressure lines. Do not install bent or damaged lines, tubes or hoses. Repair any loose or damaged fuel and oil lines, tubes and hoses. Leaks can cause fires. Inspect all lines, tubes and hoses carefully. Tighten all connections to recommended torque.

2. Inspect for following conditions:

- a) End fittings that are damaged or leaking
- b) Outer covering that is chafed or cut
- c) Exposed wire that is used for reinforcement
- d) Outer covering that is ballooning locally
- e) Flexible part of hose that is kinked or crushed
- f) Armouring that is embedded in outer covering

3. Replace any damaged hoses.

E. Restore to Normal Operation.

1. Remove lock, safety tags, return valves to normal operation position, re-energise, place unit in operation and inspect for leaks.
2. Record findings in CMMS, report any defects found during this task which were rectified as part of standard operations listed.
3. Complete and close out permit to work form.

Note:

All findings must be recorded in CMMS, and additional corrective Work Orders to be established as necessary.

Connections

1 x TME - Technical, Mechanic Estimated hours 2,5 Total 2,5

History (latest 5)

22.09.2024	2024-81667	MAIN GENERATOR ENGINE NO.3 - 250 HOURS ROUTINE	651.003	<Not Set>
03.09.2024	2024-81558	MAIN GENERATOR ENGINE NO.3 - 250 HOURS ROUTINE	651.003	<Not Set>
03.08.2024	2024-81378	MAIN GENERATOR ENGINE NO.3 - 250 HOURS ROUTINE	651.003	<Not Set>
14.07.2024	2024-81252	MAIN GENERATOR ENGINE NO.3 - 250 HOURS ROUTINE	651.003	<Not Set>
14.06.2024	2024-81058	MAIN GENERATOR ENGINE NO.3 - 250 HOURS ROUTINE	651.003	<Not Set>

Change log (latest 2) No data to be shown

Comments (latest 2) No data to be shown

Scheduling

Operational mode	Type	Interval type	Length	Scheduling	Float	Alt. interval type	Alt. interval
Regular	PRODUCTION	Counter	250,0	Dynamic	25,0		0,0

Scheduled job: 65.DG-CAT-3516B.MEC.3000 H

MAIN GENERATOR ENGINE NO.3 - 3000 HOURS ROUTINE

Details			
Vessel: Aurora Producer 1			
Current value	: 2,910.00	Next value	: 10/5/2024 2:35:45PM
Tech acc	: 651.003 ENGINE DIESEL, MAIN GENERATOR NO.3	Next due	: 10/5/2024
Equipment	:	Criticality	: Critical to Asset and Operation
Class ref.	:	Serial no.	: S2200367
Original instruction	: 65.DG-CAT-3516B.MEC.3000	Location	: Engine Room
Cost allocation	:		
Job class	: Preventative Maintenance	Priority	: Medium
Job type	: Replacement / Renewal	Duration	: 6.00
Job grade	: Planned preventative work		
Dept.	: Mechanical		
Add'l description	No data to be shown		
Base description			
EQUIPMENT: CAT 3516B Diesel Generator Set Engine TAG NUMBER: 651.001; 651.002; 651.003 FREQUENCY: 3000 Hours TITLE: WI-3000 Hourly Inspection of CAT 3516B Diesel Generator Set Engine CRAFT: MEC			
CAUTION: - ENSURE ALL NECESSARY SAFETY PRECAUTIONS ARE TAKEN WHILE WORK IS PERFORMED - REFER TO THE OEM MANUALS, INSTRUCTIONS AND DRAWINGS AS REQUIRED - OBSERVE ALL PERMIT TO WORK, ISOLATION PROCEDURES AND ANY APPLICABLE JSA			
SPECIAL TOOLS/PARTS:			
DESCRIPTION			
Preliminary			
1. Obtain permit to work form prior to performing task.			
2. De-energize power source to equipment in accordance with lockout/tagout procedures.			
3. Test with a voltage tester to ensure that circuit is de-energised.			
A. Cooling system coolant change.			
1. Drain Cooling System.			
a) Stop engine and allow to cool. Close water inlet for separate circuit after cooler (if equipped). Ensure engine will not start when cooling system is drained.			
b) Loosen radiator filler cap slowly in order to relieve any pressure. Remove radiator filler cap.			
NOTE: If engine has a jacket water heater, drain coolant from the heater.			
c) Open coolant drain. Remove cooling system drain plugs (see Fig 1. below). Allow coolant to drain.			
2. Clean Cooling System			
NOTE: Use of commercially available cooling system cleaners may cause damage to cooling system components. Use only cooling system cleaners that are approved for Caterpillar engines.			

- a) After cooling system has been drained, flush cooling system with clean water in order to remove any debris.
b) Close cooling system drain. Clean cooling system drain plugs and install cooling system drain plugs.
c) Fill cooling system with:
A mixture of clean water and Caterpillar Fast Acting Cooling System Cleaner. Add .5 L (1 pint) of cleaner per 15 L (4 US gal) of the cooling system capacity.
OR
Extended life coolant (ELC).
d) If using Extended life coolant skip to 3b.
e) Install radiator filler cap.

NOTE: Fill cooling system no faster than 19 L (5 US gal) per minute to avoid air locks.

- f) Open water inlet for separate circuit after cooler (if equipped). Start engine. Operate engine for a minimum of 30 minutes with a coolant temperature of at least 82 deg C (180 deg F).
g) Stop engine and allow to cool. Close water inlet for separate circuit after cooler (if equipped).
h) Loosen radiator filler cap slowly in order to relieve any pressure.
i) Remove radiator filler cap.
j) Open coolant drain. Remove cooling system drain plugs (see Fig 1.). Allow water to drain.
k) Flush cooling system with clean water until water that drains is clean.
l) Close coolant drain.
m) Clean cooling system drain plugs then install cooling system drain plugs.
n) Open water inlet for separate circuit after cooler (if equipped).

3. Fill Cooling System.

NOTE: Fill cooling system no faster than 19 L (5 US gal) per minute to avoid air locks.

- a) Fill cooling system with coolant/antifreeze. After filling cooling system, do not install radiator filler cap.
b) Open water inlet for separate circuit after cooler (if equipped).
c) Start engine.
d) Operate engine in order to purge air from cavities of engine block. Allow coolant to warm and coolant level to stabilise.
e) Stop engine.
f) Inspect coolant level.
g) Maintain coolant to correct level on sight gauge (if equipped).
h) If a sight gauge is not equipped, maintain coolant within 13 mm (.5 inch) below bottom of filler pipe.
i) Clean radiator filler cap.
I. Inspect gaskets of radiator filler cap.
II. If gaskets of radiator filler cap are damaged, discard old radiator filler cap and install new.
III. Use a 9S-8140 Pressurising Pump, pressure test radiator filler cap. The correct pressure is stamped on the face of radiator filler cap. If radiator filler cap does not maintain correct pressure, install new radiator filler cap.
j) Start engine.
k) Inspect cooling system for leaks and for proper operating temperature.

B. Restore to Normal Operation.

1. Remove lock, safety tags, return valves to normal operation position, re-energise, place unit in operation and inspect for leaks.
2. Record findings in CMMS, report any defects found during this task which were rectified as part of standard operations listed.
3. Complete and close out permit to work form.

Note:

All findings must be recorded in CMMS, and additional corrective Work Orders to be established as necessary.

Connections			
	2 x TME - Technical, Mechanic	Estimated hours	6,0
		Total	12,0
History (latest 5)			
No data to be shown			

Change log (latest 2)		No data to be shown					
Comments (latest 2)		No data to be shown					
Scheduling							
Operational mode	Type	Interval type	Length	Scheduling	Float	Alt. interval type	Alt. interval
Regular	PRODUCTION	Counter	3 000,0	Dynamic	100,0		0,0

Nov 2023

From/To date: 01/11/2023 - 30/11/2023

Vessel: Aurora Producer 1	Printed by: M Powlesland BM	Print date: 20/06/2024
From tech. acc: Not set	Criticality: Not set	Sort option: Not set
To tech. acc: Not set	Department: Not set	Failure cause: Not set
Tech. acc descr.: Not set	Condition: Not set	Failure mode: Not set
Reference: Not set	Job grade: Not set	Failure descrip: Not set
TA serial no.: Not set	Only Corrective: No	Only with Status comment: No
Only Corrective work: No	Job type: Not set	Completed after due: Yes
NOx: Not set	Job class: Not set	WH in Equipment only: No
WH Id: Not set	Job interval: Not set	
WH description: Not set	Job priority: Not set	

WH Id	Description	Date done	Responsible	Tech. Acc	Status
Aurora Producer 1					
2023-80076	DRILL WATER PUMPS - WEEKLY MAINTENAN	24/11/2023	CMECHB	327.010	Completed
Tech. acc: * 327.010 DRILL WATER PUMPS Equipment: Criticality: Corrective: No Job class: Preventative Maintenance Job type: Check Job grade: Planned preventative work Department: Mechanical PO: Condition: Good Fail. Descr: Status/date: Completed - 24/11/2023 Approv. by: Chief Mechanic B Closed by: Technical Marine Superintendent Compl. by: Chief Mechanic B Filed by: Technical Marine Superintendent					
Reference: Serial no.: Counter val.: 0 Priority: Medium Duration: 2.0 Interval: 1 Month Scheduling: Fixed Oper. mode: Regular Comment: WORKING CONDITION Fail. Cause: Comment: IN SERVICE App. date: 24/11/2023 Closed date: 16/12/2023 Compl. date: 24/11/2023 Filed date: 16/12/2023 Float: 10 Work Instr: 3.MISSION-SUPREME-PUMP.C001W Work Order: 2020-01529 TA NOx no.: Due date: 19/11/2023 Date done: 24/11/2023 Days off: 5 (1 Weeks) Schedule: (120 Hrs)					

* Additional Tech. accounts connected (Roundabout)

Nov 2023

Vessel: Aurora Producer 1

From/To date: 01/11/2023 - 30/11/2023

Print date: 20/06/2024

WH Id	Description	Date done	Responsible	Tech. Acc	Status
Aurora Producer 1					
2023-80076	DRILL WATER PUMPS - WEEKLY MAINTENAN	24/11/2023	CMECHB	327.010	Completed

Instruction: EQUIPMENT: MISSION PUMP FREQUENCY: Daily/Weekly TITLE: WI- MISSION Pump Daily/Weekly Checks CRAFT: MEC					
CAUTION: - ENSURE ALL NECESSARY SAFETY PRECAUTIONS ARE TAKEN WHILE WORK IS PERFORMED - REFER TO THE OEM MANUALS, INSTRUCTIONS AND DRAWINGS AS REQUIRED - OBSERVE ALL PERMIT TO WORK, ISOLATION PROCEDURES AND ANY APPLICABLE JSA					
SPECIAL TOOLS/EQUIPMENT: 1. Manufacturer's technical manual					
DESCRIPTION					
Preliminary 1. Obtain permit to work form prior to performing task. 2. De-energize power source to equipment in accordance with lockout/tagout procedures.					
REPORT EACH MONTH THAT DAILY/WEEKLY ROUTINES HAVE BEEN CARRIED OUT AS FOLLOWS:					
PUMP, MISSION MAGNUM/SUPREME, DAILY/WEEKLY MAINTENANCE ROUTINE:					
1. DAILY MAINTENANCE ROUTINE: - Observe pump unit and motor for proper operation, unusual noise, vibrations, overheating, etc. - Ensure pump bracket drain hole is clear. - Check temperature of motor bearings when pump is running. - Check pump packing glands for excessive leakage. - Check pump assembly and piping system for obvious leak.					
2. WEEKLY MAINTENANCE ROUTINE: - Start Pumps or turn pump shaft 1- 1/2 revolutions by hand. - Lubricate bearing and stuffing box as necessary.					
Note: If confirmed and not acceptable defect indications are found, a corrective work order must be raised.					

* Additional Tech. accounts connected (Roundabout)

Nov 2023

Vessel: Aurora Producer 1

From/To date: 01/11/2023 - 30/11/2023

Print date: 20/06/2024

WH Id	Description	Date done	Responsible	Tech. Acc	Status	
Aurora Producer 1						
2023-80106	HELICOPTER BEACON - QUARTERLY FUNCTI		26/11/2023	CELECTB	412.001	Completed
Tech. acc:	412.001 BEACON, HELICOPTER HOMING			Reference:		
Equipment:				Serial no.:		
Criticality:	Corrective: No			Counter val.:	0	
Job class:	Preventative Maintenance	Priority:	Medium	Float:	10	
Job type:	Function Test	Duration:	1.0	Work Instr:	412.HEL1-BEACON.C003	
Job grade:	Planned preventative work	Interval:	3 Month	Work Order:	2020-01351	
Department:	Electrical	Scheduling:	Fixed	TA NOx no.:		
PO:	Oper. mode: Regular					
Condition:	Good	Comment:	good			
Fail. Descr:	Fail. Cause:		Fail. Mode:			
Status/date:	Completed - 26/11/2023	Comment:	working			
Approv. by:	Chief Electrician B	App. date:	26/11/2023	Due date:	23/11/2023	
Closed by:	Technical Marine Superintendent	Closed date:	16/12/2023	Date done:	26/11/2023	
Compl. by:	Chief Electrician B	Compl. date:	26/11/2023	Days off:	3 (0 Weeks)	
Filed by:	Technical Marine Superintendent	Filed date:	16/12/2023	Schedule:	(72 Hrs)	
Instruction:	EQUIPMENT: HELI BEACON FREQUENCY: Quarterly TITLE: WI- Quarterly Function Test of Helicopter Beacon CRAFT: EIT CAUTION: - ENSURE ALL NECESSARY SAFETY PRECAUTIONS ARE TAKEN WHILE WORK IS PERFORMED - REFER TO THE OEM MANUALS, INSTRUCTIONS AND DRAWINGS AS REQUIRED - OBSERVE ALL PERMIT TO WORK, ISOLATION PROCEDURES AND ANY APPLICABLE JSA SPECIAL TOOLS/EQUIPMENT: 1. Manufacturer's technical manual DESCRIPTION Preliminary 1. Obtain permit to work form prior to performing task. HELI BEACON, 3 MONTHLY INSPECTIONS/MAINTENANCE PROGRAM: General. See instructions in manual 1. Carry out function test. 2. Carry out inspection of antenna, cables and plugs for mechanical defects, salt deposits, corrosion, and any foreign hazards. NOTE: If components have been replaced or repaired, this is also to be reported under Work Report.					

* Additional Tech. accounts connected (Roundabout)

Star IPS

STAR Information Systems

Page 3 of 79

Nov 2023

Vessel: Aurora Producer 1

From/To date: 01/11/2023 - 30/11/2023

Print date: 20/06/2024

WH Id	Description	Date done	Responsible	Tech. Acc	Status
Aurora Producer 1					
2023-80049	GPS - MONTHLY CHECKS	05/11/2023	CELECTB	412.011	Completed
Tech. acc:	412.011 GPS NAVIGATOR			Reference:	
Equipment:				Serial no.:	
Criticality:	Corrective: No			Counter val.:	0
Job class:	Preventative Maintenance	Priority:	Medium	Float:	10
Job type:	Check	Duration:	1.0	Work Instr:	412.GPS.C001
Job grade:	Planned preventative work	Interval:	1 Month	Work Order:	2020-01579
Department:	Electrical	Scheduling:	Fixed	TA NOx no.:	
PO:	Oper. mode: Regular				
Condition:	Comment: good				
Fail. Descr:	Fail. Cause:			Fail. Mode:	
Status/date:	Completed - 05/11/2023	Comment: tested			
Approv. by:	Chief Electrician B	App. date:	05/11/2023	Due date:	25/12/2020
Closed by:	Star Admin User	Closed date:	10/11/2023	Date done:	05/11/2023
Compl. by:	Chief Electrician B	Compl. date:	05/11/2023	Days off:	1 045 (149 Weeks)
Filed by:	Star Admin User	Filed date:	10/11/2023	Schedule:	(25080 Hrs)
Instruction:	EQUIPMENT: GPS FREQUENCY: Monthly TITLE: WI- Monthly Inspection of GPS CRAFT: EIT CAUTION: - ENSURE ALL NECESSARY SAFETY PRECAUTIONS ARE TAKEN WHILE WORK IS PERFORMED - REFER TO THE OEM MANUALS, INSTRUCTIONS AND DRAWINGS AS REQUIRED - OBSERVE ALL PERMIT TO WORK, ISOLATION PROCEDURES AND ANY APPLICABLE JSA SPECIAL TOOLS/EQUIPMENT: 1. Manufacturer's technical manual DESCRIPTION Preliminary 1. Obtain permit to work form prior to performing task. 2. De-energize power source to equipment in accordance with lockout/tagout procedures. MONTHLY CHECK: Reference is made to object list. A. Perform a function test. B. Check batteries. Replace if less than 3 months from expiry date. Note: All findings must be recorded in CMMS and if any issues are found a corrective work order must be raised.				

* Additional Tech. accounts connected (Roundabout)

Star IPS

STAR Information Systems

Page 4 of 79

Nov 2023

Vessel: Aurora Producer 1

From/To date: 01/11/2023 - 30/11/2023

Print date: 20/06/2024

WH Id	Description	Date done	Responsible	Tech. Acc	Status
Aurora Producer 1					
2023-80103	GPS - MONTHLY CHECKS	26/11/2023	CELECTB	412.011	Completed
Tech. acc:	412.011 GPS NAVIGATOR			Reference:	
Equipment:				Serial no.:	
Criticality:		Corrective: No		Counter val.: 0	
Job class:	Preventative Maintenance	Priority: Low		Float: 10	
Job type:	Check	Duration: 1.0		Work Instr: 412.GPS.C001	
Job grade:	Planned preventative work	Interval: 1 Month		Work Order: 2023-80049	
Department:	Electrical	Scheduling: Fixed		TA NOx no.:	
PO:		Oper. mode: Regular			
Condition:	Good	Comment: good			
Fail. Descr:		Fail. Cause:		Fail. Mode:	
Status/date:	Completed - 26/11/2023	Comment: working			
Approv. by:	Chief Electrician B	App. date: 26/11/2023		Due date: 21/11/2023	
Closed by:	Technical Marine Superintendent	Closed date: 16/12/2023		Date done: 26/11/2023	
Compl. by:	Chief Electrician B	Compl. date: 26/11/2023		Days off: 5	(1 Weeks)
Filed by:	Technical Marine Superintendent	Filed date: 16/12/2023		Schedule:	(120 Hrs)
Instruction:	EQUIPMENT: GPS FREQUENCY: Monthly TITLE: WI- Monthly Inspection of GPS CRAFT: EIT				
CAUTION:					
- ENSURE ALL NECESSARY SAFETY PRECAUTIONS ARE TAKEN WHILE WORK IS PERFORMED					
- REFER TO THE OEM MANUALS, INSTRUCTIONS AND DRAWINGS AS REQUIRED					
- OBSERVE ALL PERMIT TO WORK, ISOLATION PROCEDURES AND ANY APPLICABLE JSA					
SPECIAL TOOLS/EQUIPMENT:					
1. Manufacturer's technical manual					
DESCRIPTION					
Preliminary					
1. Obtain permit to work form prior to performing task.					
2. De-energize power source to equipment in accordance with lockout/tagout procedures.					
MONTHLY CHECK:					
Reference is made to object list.					
A. Perform a function test.					
B. Check batteries. Replace if less than 3 months from expiry date.					
Note:					
All findings must be recorded in CMMS and if any issues are found a corrective work order must be raised.					
Check Antenna unit fixing bolts for tightness.					
Check power cable connection, ground terminal for tightness and corrosion.					
Carry out automatic testing as per below instructions.					
1.Press MENU ESC,8 and 4. Self tests are conducted continuously in order- memory, I/O test, keyboard test and test pattern.					
2.To stop testing. Press the MENU ESC key.					
3. Press MENU ESC key to return to normal operation.					

* Additional Tech. accounts connected (Roundabout)

Star IPS

STAR Information Systems

Page 5 of 79

Nov 2023

Vessel: Aurora Producer 1

From/To date: 01/11/2023 - 30/11/2023

Print date: 20/06/2024

WH Id	Description	Date done	Responsible	Tech. Acc	Status
Aurora Producer 1					
2023-80104	RADIO EQUIPMENT - MONTHLY FUNCTION T	26/11/2023	CELECTB	421.000	Completed
Tech. acc:	421.000 RADIO PLANT GENERAL			Reference:	
Equipment:				Serial no.:	
Criticality:	Corrective: No			Counter val.:	0
Job class:	Preventative Maintenance	Priority: High	Float:	10	
Job type:	Function Test	Duration: 1.0	Work Instr:	42.RADIO-EQ.C001	
Job grade:	Planned preventative work	Interval: 1 Month	Work Order:	2020-01634	
Department:	Electrical	Scheduling: Fixed	TA NOx no.:		
PO:	Oper. mode: Regular				
Condition:	Good	Comment: good			
Fail. Descr:		Fail. Cause:		Fail. Mode:	
Status/date:	Completed - 26/11/2023	Comment: working			
Approv. by:	Chief Electrician B	App. date: 26/11/2023	Due date:	21/11/2023	
Closed by:	Technical Marine Superintendent	Closed date: 16/12/2023	Date done:	26/11/2023	
Compl. by:	Chief Electrician B	Compl. date: 26/11/2023	Days off:	5 (1 Weeks)	
Filed by:	Technical Marine Superintendent	Filed date: 16/12/2023	Schedule:	(120 Hrs)	

* Additional Tech. accounts connected (Roundabout)

Star IPS

STAR Information Systems

Page 6 of 79

WH Id	Description	Date done	Responsible	Tech. Acc	Status
Aurora Producer 1					
2023-80104	RADIO EQUIPMENT - MONTHLY FUNCTION T	26/11/2023	CELECTB	421.000	Completed
<p>Instruction:</p> <p>EQUIPMENT: Radio Equipment FREQUENCY: Monthly TITLE: Radio Equipment - Monthly Function Test CRAFT: ELE</p> <p>CAUTION:</p> <ul style="list-style-type: none"> - ENSURE ALL NECESSARY SAFETY PRECAUTIONS ARE TAKEN WHILE WORK IS PERFORMED, - CONSIDERATION SHOULD BE MADE THAT SAFE AREA ELECTRICAL TESTING MAY IMPINGE UPON A HAZARDOUS AREA. - REFER TO THE INSTALLATION ELECTRICAL PROCEDURES, VENDOR MANUALS AND DRAWINGS AS REQUIRED. - OBSERVE ALL PERMIT TO WORK, ISOLATION PROCEDURES AND ANY APPLICABLE JSA. - RECORD ALL MEASUREMENTS TAKEN, ON THE COMPLETED WORK ORDER IN STAR CMMS. <p>SPECIAL TOOLS/EQUIPMENT:</p> <ol style="list-style-type: none"> 1. Manufacturer's technical manual <p>DESCRIPTION</p> <p>Preliminary</p> <ol style="list-style-type: none"> 1. Obtain permit to work form prior to performing task. <p>WARNING: Make attention for Radio Silence</p> <p>NOTE: Perform the following tests in accordance with the Manufacturer's Technical Manual.</p> <p>A. Function Test</p> <ol style="list-style-type: none"> 1. Perform a self test on the following equipment: <ol style="list-style-type: none"> A) MF/HF DSC B) L-Band (Caprock) C) International VHF radios D) EGC Receiver 2. Verify received signal at the EGC receiver. 3. Test helicopter beacon for proper transmit signal. 4. Conduct a transmit and receive test with the helicopter VHF radio and HLO radio. Verify proper transmitted and received watts. 5. Test the following equipment while transmitting and receiving. Verify wattage where applicable. <ol style="list-style-type: none"> A) MF/HF DSC B) International VHF radios C) Two way VHF radio telephone 6. Complete and close out permit to work form. <p>NOTE: If components have been repaired or replaced, this is to be reported in details under Work Report.</p>					

ภาคผนวกแทนผลิตภัณฑ์เคลื่อนย้ายได้-4.1.2

ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง
ปล่องเผาก๊าซ

Scheduled job: 941.FLARE IGNITION SYSTEM.C003

FLARE IGNITION SYSTEM PORT & STBD - QUARTERLY MAINTENANCE ROUTINE

Details

Vessel: Aurora Producer 1

Tech acc: 941.902 FLARE IGNITION SYSTEM

Equipment:

Class ref:

Original instruction: 941.FLARE IGNITION SYSTE

Cost allocation:

Next due: 11/27/2024

Criticality:

Serial no.:

Active

☒

Job class: Preventative Maintenance

Priority: Medium

Job type: Check

Duration: 4.00

Job grade: Planned preventative work

Dept.: Production

Where

Ref Id

Status

Comments

941.902.001

IGNITER, PILOT, LEFT BURNER

941.902.002

IGNITER, PILOT, RIGHT BURNER

941.902.011

SENSOR, BURNER IGNITION LEFT

941.902.012

SENSOR, BURNER IGNITION RIGHT

941.902.021

ELEMENT, TEMPERATURE, Flame Monitoring, Right Burner

941.902.022

ELEMENT, TEMPERATURE, Flame Monitoring, Left Burner

Add'l description

No data to be shown

Base description

EQUIPMENT: FLARE IGNATION SYSTEM

FREQUENCY: MONTHLY

TITLE: FIS - MONTHLY MAINTENANCE INSPECTION

CRAFT: PROD / ELECT

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed

-Refer to the OEM manuals, instructions and drawings as required

-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:

Manufacturer's technical manual

DESCRIPTION

Preliminary

1.Obtain permit to work form prior to performing task.

2.De-energize power source to equipment in accordance with lockout/tagout procedures.

QUARTERLY MAINTENANCE ROUTINE:

1. Check control switches to verify each operates freely without binding

2. Inspect enclosure and verify that it is properly closed.

3. Confirm that all customer contact are in working order.

4. Check that all electrical connections are tight.

5. Inspect system wiring for deterioration,discoloration,corrosion fraying.

6. Inspect control system for proper grounding connection.

7. Function Test

8. Auto mode operation.

9. Manual mode operation.

FLARE IGNITION PANEL:

- Complete cleaning of the unit

- Check and verify proper functioning of instruments and signalling lamps

- Inspect propane bottles for general conditions and expiry date

- Check that bottle is full (that it has the appropriate weight)

- Check condition of hoses (no cracks, dryings, corrosions etc)

IGNITION AND CONTINUOUS FLAME FRONT PILOTS THERMOCOUPLE

- Check the general state, clean or replace

- Check electric connections, clean thoroughly or replace

- Check the interconnection cables

HIGH ENERGY SYSTEM:

- Check the general state and clean or substitute

- Check the electric contacts and clean accurately

- Check state of interconnection cables

WARNING: HIGH VOLTAGE:

The high voltage system has to undergo maintenance not fueled, and to make absolutely sure and verify that the condenser isn't keeping some residual charges.

Note:

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

History (latest 5)

Ref Id

Status

24.08.2024

2024-81506

FLARE IGNITION SYSTEM PORT & STBD - QUARTERLY MAINTENANCE ROUTINE

941.902

<Not Set>

21.02.2024

2024-80291

FLARE IGNITION SYSTEM PORT & STBD - QUARTERLY MAINTENANCE ROUTINE

941.902

<Not Set>

16.02.2024

2024-80184

FLARE IGNITION SYSTEM PORT & STBD - QUARTERLY MAINTENANCE ROUTINE

941.902

<Not Set>

Change log (latest 2)

No data to be shown

Comments (latest 2)

No data to be shown

Scheduling

Operational mode

Type

Interval type

Length

Scheduling

Float

Alt. interval type

Alt. interval

Regular

PRODUCTION

Month

3,0

Fixed

15,0

0,0

Scheduled job: 941.FLARE BOOM.C001

FLARE BOOM, STBD SIDE - MONTHLY MAINTENANCE ROUTINE

Details

Vessel: Aurora Producer 1

Tech acc: 941.010.112 FLARE BOOM, STEEL STRUCTURE STBD SIDE

Equipment:

Class ref:

Original instruction: 941.FLARE BOOM.C001

Cost allocation:

Next due: 10/27/2024

Criticality:

Serial no.:

Active

☒

Job class: Preventative Maintenance

Priority: Medium

Job type: Check

Duration: 1.50

Job grade: Planned preventative work

Dept.: Production

Add'l description: no data to be shown

Base description:

EQUIPMENT: FLARE BOOM

FREQUENCY: MONTHLY

TITLE: FB - MONTHLY MAINTENANCE INSPECTION

CRAFT: MAR / MEC

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed

-Refer to the OEM manuals, instructions and drawings as required

-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:

Manufacturer's technical manual

DESCRIPTION

Preliminary

1.Obtain permit to work form prior to performing task.

2.De-energize power source to equipment in accordance with lockout/tagout procedures.

MONTHLY MAINTENANCE INSPECTION

1. Check bolts and nuts at flange condition

2. Check all foundation bolts condition

3. Check 8" hose condition

4. Check slings condition

5. Check for leakage

6. Check turn-table swivel

7. Apply grease at grease points/connections.

8. MPI to be carried out every 6 months.

Note:

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

History (latest 5)

Star IPS

STAR Information Systems

Page 1 of 2

24.09.2024	2024-81681	FLARE BOOM, STBD SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.112	<Not Set>			
29.08.2024	2024-81537	FLARE BOOM, STBD SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.112	<Not Set>			
28.07.2024	2024-81350	FLARE BOOM, STBD SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.112	<Not Set>			
19.06.2024	2024-81089	FLARE BOOM, STBD SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.112	<Not Set>			
25.05.2024	2024-80931	FLARE BOOM, STBD SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.112	<Not Set>			
Change log (latest 2) no data to be shown							
Comments (latest 2) no data to be shown							
Scheduling							
Operational mode	Type	Interval type	Length	Scheduling	Float	Alt. interval type	Alt. interval
Regular	PRODUCTION	Month	1,0	Fixed	10,0		0,0

Star IPS

STAR Information Systems

Page 2 of 2

Scheduled job: 941.FLARE BOOM.C001

FLARE BOOM, PORT SIDE - MONTHLY MAINTENANCE ROUTINE

Details

Vessel: Aurora Producer 1

Tech acc: 941.010.111

FLARE BOOM, STEEL STRUCTURE PORT SIDE

Equipment:

Class ref:

Original instruction: 941.FLARE BOOM.C001

Cost allocation:

Job class: Preventative Maintenance

Priority: Medium

Job type: Check

Duration: 1.50

Job grade: Planned preventative work

Dept.: Production

Next due: 10/27/2024

Active

☒

Criticality:

Serial no.:

Location:

Add'l description

No data to be shown

Base description

EQUIPMENT: FLARE BOOM

FREQUENCY: MONTHLY

TITLE: FB - MONTHLY MAINTENANCE INSPECTION

CRAFT: MAR / MEC

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed

-Refer to the OEM manuals, instructions and drawings as required

-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:

Manufacturer's technical manual

DESCRIPTION

Preliminary

1.Obtain permit to work form prior to performing task.

2.De-energize power source to equipment in accordance with lockout/tagout procedures.

MONTHLY MAINTENANCE INSPECTION

1. Check bolts and nuts at flange condition

2. Check all foundation bolts condition

3. Check 8" hose condition

4. Check slings condition

5. Check for leakage

6. Check turn-table swivel

7. Apply grease at grease points/connections.

8. MPI to be carried out every 6 months.

Note:

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

History (latest 5)

Rel ID

Status

GET /eSCL/ScannerStatus HTTP/1.1
Host: localhost

20.09.2024	2024-81660	FLARE BOOM, PORT SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.111	<Not Set>			
24.08.2024	2024-81505	FLARE BOOM, PORT SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.111	<Not Set>			
23.07.2024	2024-81315	FLARE BOOM, PORT SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.111	<Not Set>			
19.06.2024	2024-81088	FLARE BOOM, PORT SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.111	<Not Set>			
02.06.2024	2024-80929	FLARE BOOM, PORT SIDE - MONTHLY MAINTENANCE ROUTINE	941.010.111	<Not Set>			
Change log (latest 2) No data to be shown							
Comments (latest 2) No data to be shown							
Scheduling							
Operational mode	Type	Interval type	Length	Scheduling	Float	Alt. interval type	Alt. interval
Regular	PRODUCTION	Month	1,0	Fixed	10,0		0,0

Star IPS

STAR Information Systems

Page 1 of 2

ภาคผนวกแทนผลิตภัณฑ์เคลื่อนย้ายได้-4.1.3

ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง

Emergency Shutdown Value

Scheduled job: 9.SDW/BDW-ROUTINE.C012

SHUT-DOWN / BLOWDOWN VALVES - ANNUAL ROUTINE

Details			
Vessel: Aurora Producer 1			
Tech acc	: 911.202 ACTUATED VALVES & RELATED EQUIPMENT, SEPARATION SYSTEM	Next due	: 5/20/2025 Active <input checked="" type="checkbox"/>
Equipment	:	Criticality	:
Class ref.	:	Serial no.	:
Original instruction	: 9.SDW/BDW-ROUTINE.C012		
Cost allocation	:		
Job class	: Preventative Maintenance	Priority	: High
Job type	: Clean/Inspect/Maintain as Required	Duration	: 4.00
Job grade	: Planned preventative work		
Dept.	: Production		
Add'l description	No data to be shown		
Base description			
EQUIPMENT: SHUT-DOWN & BLOWDOWN VALVES			
FREQUENCY: ANNUAL			
TITLE: ANNUAL MAINTENANCE ROUTINE			
CRAFT: INST / PROD			
CAUTION:			
-Ensure all necessary safety precautions are taken while work is performed			
-Refer to the OEM manuals, instructions and drawings as required			
-Observe all permit to work, isolation procedures and any applicable JSA			
SPECIAL TOOLS/EQUIPMENT:			
Manufacturer's technical manual			
DESCRIPTION			
Preliminary			
1.Obtain permit to work form prior to performing task.			
2.De-energize power source to equipment in accordance with lockout/tagout procedures.			
SHUT-DOWN / BLOWDOWN VALVES, ANNUAL MAINTENANCE ROUTINE:			
<ul style="list-style-type: none">• Complete cleaning of the unit• Check connections for leakage• Check regular operation of the valve• Check all associated components (actuator, solenoid valve(s), 3-way valve, DCS output, position switch/alarm, etc)			
for proper function.			
<ul style="list-style-type: none">• Lubrication as required• Check local/remote valve opening/closing signal• Check travel indicator operation			
NOTE:			
If components have been replaced or repaired, this is also to be reported under Work Report.			
Connections			
History (latest 5)			

23.05.2024	2024-80916	SHUT-DOWN / BLOWDOWN VALVES - ANNUAL ROUTINE	911.202	<Not Set>			
Change log (latest 2) No data to be shown							
Comments (latest 2) No data to be shown							
Scheduling							
Operational mode	Type	Interval type	Length	Scheduling	Float	Alt. interval type	Alt. interval
Regular	PRODUCTION	Month	12,0	Fixed	30,0		0,0

Scheduled job: 911.SHUT-DWN-VV.SDV-101/102.C001

SHUT DOWN VALVE SKID SDV-101/102 - MONTHLY CHECKS

Details

Vessel: Aurora Producer 1

Tech acc

: 911.202

ACTUATED VALVES & RELATED EQUIPMENT, SEPARATION SYSTEM

Equipment

:

Class ref

:

Location

:

Original instruction

:

911.SHUT-DWN-VV.SDV-101

Cost allocation

:

Job class

:

Preventative Maintenance

Priority

:

Medium

Job type

:

Check

Duration

:

3.00

Job grade

:

Planned preventative work

Dept

:

Production

Next due

:

11/20/2024

Active

☒

Criticality

:

Serial no

:

Where	Ref Id	Status	Comments
911.202.010	SKID, SHUT DOWN VALVE, 8" 3450 PSI	SDV-101	
911.202.020	SKID, SHUT-DOWN VALVE, 4" 3450 PSI	SDV-102	

Add 'I' description

No data to be shown

Base description

EQUIPMENT: SHUT DOWN VALVE-SDV-101

FREQUENCY: MONTHLY

TITLE: SDV-101 - MONTHLY PREVENTIVE MAINTENANCE CHECKS

CRAFT: INST / PROD

CAUTION:

-Ensure all necessary safety precautions are taken while work is performed

-Refer to the OEM manuals, instructions and drawings as required

-Observe all permit to work, isolation procedures and any applicable JSA

SPECIAL TOOLS/EQUIPMENT:

Manufacturer's technical manual

DESCRIPTION

Preliminary

1.Obtain permit to work form prior to performing task.

2.De-energize power source to equipment in accordance with lockout/tagout procedures.

MONTHLY PREVENTIVE MAINTENANCE CHECKS

1.SDV-101 Shut Down Valve

2 - Leak check entire skid

3 - Check inst.air supply

4 - Check air regulator

5 - Check Tubing Connection for leak s

6 - Check Pneumatic Pilot Relay

-Functional test for SDV during annual shutdown only

Note:

If confirmed and not acceptable defect indications are found, a corrective work order must be raised.

Connections

History (latest 5)

No data to be shown

Change log (latest 2)

No data to be shown

Comments (latest 2)

No data to be shown

Scheduling

Operational mode	Type	Interval type	Length	Scheduling	Float	Alt. interval type	Alt. interval
Regular	PRODUCTION	Month	1,0	Fixed	10,0		0,0

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.2

รายการเวชภัณฑ์สำหรับการปฐมพยาบาล
และการรักษาพยาบาลเบื้องต้น

MONTHLY MEDICAL INVENTORY

RIG/SITE : MOPI Aurora Producer 1

Status	Medical Items	Strength	Form	Minimum requirement	Expiry date	Previous amount	Receive this month	2nd lot Expired Date	Current in stock
	Pharmaceutical								
	ACLS Emergency Drug								
Order	Adenosine 6 mg (Cannot provide by vendor)	6 mg/2 ml	Vial or ampule	3	1 Jan 00	0		N/A	0
	Adrenaline	1 mg/ml	Vial or ampule	5	31 Mar 25	3		N/A	3
	Atropine	0.6 mg/ml	Vial or ampule	2	31 Dec 25	3		N/A	3
	Calcium Gluconate	500 mg/10 ml	Vial or ampule	1	28 Jun 25	10		N/A	10
Order	Cardipine (Cannot provide by vendor)	10 mg/10 ml	Vial or ampule	1	1 Jan 00	0		N/A	0
	Chlorpheniramine inj (CPM)	10 mg	Vial or ampule	3	25 Apr 25	3		N/A	3
	Dextrozone	150 mg	Vial or ampule	3	30 Apr 25	4		N/A	4
	DEXTROSE 50% INJ	20ML	Vial or ampule	2	28 Mar 26	4		N/A	4
	Dopamine	200 mg	Vial or ampule	1	27-Nov-26	0	4	N/A	4
	Furosemide (Lasix)	20 mg/2 ml	Vial or ampule	1	17 Oct 27	1		N/A	1
	MgSO4 2 ml	1 g	Vial or ampule	1	28 Feb 27	48		N/A	48
	Nitroglycerine Spray	400 Microgram	Bottle	1	1 Mar 25	4		N/A	4
	SODIUM BICARBONATE 8.4% /amp,	20ML	Vial or ampule	1	31 Aug 25	4		N/A	4
	Injection								
	Gefazolin 1 g	1 g	Vial/ampule	2	10 Jul 25	2		N/A	2
	Gefiraxone 1 g	1 g	Vial/ampule	2	10 Aug 27	2		N/A	2
	HYOSCINE INJ (BUSCOPAN)	20mg/ml	Vial or ampule	2	31 Jul 25	5		N/A	5
	Hydrocortisol	100 mg	Vial or ampule	2	30 Jun 25	10		N/A	10
	METEOCHLORPROMIDE INJ (Plasil)	10mg	Vial or ampule	2	31 Oct 25	5		N/A	5
Order	Naloxone 4 mg/10 ml (Cannot provide by vendor)	400 mg	Vial/ampule	2	1 Jan 00	0		N/A	0
	PROCHLORPERAZINE INJ (Plasil)	12.5mg	Vial or ampule	2	31 Aug 25	10		N/A	10
	Sterile water for injection 10 ml	10ml	Vial or ampule	5	31 Jan 26	7		N/A	7
	Tramadol	100 mg / 2 ml	Vial or ampule	2	10-Jul-27	10		N/A	10
	TETANUS TOXOID, VACCINE 0.5ML - 3'S	100 mg	Vial or ampule	2	31 May 25	3		N/A	3
	XYLOCAINE INJ 2% , 10ML		Vial or ampule	1	31 Oct 25	3		N/A	3
	DDA								
	Diazepam injection	10 mg/ 2 ml	Vial or ampule	2	31 Oct 25	5		N/A	5
	Haloperidol injection	5mg/ml	Vial or ampule	2	28 Feb 25	10		30/11/27(5)	10
	Analgesics								
	ASPIRIN 300mg, 50'S / BOX	300 mg	Tablet/Capsule	20	30 Sep 25	49		N/A	49
	CELECOXIB 200mg CAP (CELEBREX)	200 mg	Tablet/Capsule	20	31 Oct 25	50		N/A	50
	Counter pain balm	30g	Tube	5	30 Nov 26	11		N/A	8
	Counter pain cool balm(remove from list when exp	30g	Tube	0	30 Aug 25	12		N/A	12
Order	ETEROCOXIB 120mg TAB (ARCOXIA), 10'S / (Remove from list when expired)	120 mg	Tablet/Capsule	20	13 Oct 24	55		N/A	40
	ETHYL CHLORIDE SPRAY 100ml		Tablet/Capsule	2	4 Apr 26	2		N/A	1
	IBUPROFEN 400mg TAB (BRUFEN), 100'S / BOX	400 mg	Tablet/Capsule	30	6 Jan 27	80		N/A	72
	MEFENAMIC ACID 250mg TAB, 20'S / BOX	250 mg	Tablet/Capsule	20	30 Sep 25	27		N/A	27
	Myonal 50 mg(remove from list when expired)	50 mg	Tablet/Capsule	0	10 Apr 26	14		N/A	8
	ORPHENADRINE CITRATE 35mg		Tablet/Capsule	20	31 Oct 26	40		N/A	40
	PARACETAMOL 500mg TAB, 100'S / BOX	500 mg	Tablet/Capsule	400	17 Aug 28	1148		15/12/28(300)	1136
	TOLCHICINE	0.6 mg/ml	Tablet/Capsule	20	1 Mar 27	60		N/A	50
	TRAMADOL 50mg TAB (TRAMAL),	50 mg	Tablet/Capsule	20	31 May 27	80		30/7/29(30)	80
	Antibiotic								
	Amoxycillin	500 mg	Tablet/Capsule	100	15 Feb 26	220		13/9/26(200)	220
	Augmentin	625 mg	Tablet/Capsule	20	15 Dec 26	88		N/A	88
	Ciprofloxacin 500 mg	500 mg	Tablet/Capsule	20	25 Oct 26	100		N/A	100
	Dicloxacillin 500 mg / Cloxa 500 mg	500 mg	Tablet/Capsule	30	4 Aug 25	80		N/A	80
	Doxycycline 100 mg	100 mg	Tablet/Capsule	20	20 Feb 26	100		N/A	100
	Erythromycin 250 mg	250 mg	Tablet/Capsule	20	30 Nov 25	96		N/A	96
	Metronidazole 500 mg	400 mg	Tablet/Capsule	20	25 Jul 25	100		N/A	100
	Norfloxacine 400 mg	400 mg	Tablet/Capsule	20	15 Jun 26	100		N/A	100
	Sulfa-trimethoprim 150 mg(remove from list when expir	400 mg	Tablet/Capsule	0	14 Oct 27	100		N/A	100
	Zinnat (Cefuroxime) 500 mg	500 mg	Tablet/Capsule	20	10 Jan 25	15		N/A	15
	Antihistamines & Allergy								
	Cetrizine	10 mg	Tablet/Capsule	30	30 May 26	255		13/12/26(200)	250
	Chlorpheniramine	4 mg	Tablet/Capsule	20	29 Aug 27	389		1/2/28(200)	373
	Loratadine	10 mg	Tablet/Capsule	100	3 Nov 28	284		14/12/28(200)	284
	PREDNISOLONE 5mg	5 mg	Tablet/Capsule	50	26 Apr 27	130		28/11/27(20)	130
	Anti-viral								
	Acyclovir (200) -->400 mg	400 mg	Tablet	35	27 Apr 26	70		N/A	70
	Acyclovir (CICAH) 5 GM	5 g	Sachet/ Tube	5	7 Feb 26	7		26/10/26(5)	7
	Cardiovascular & Endocrine								
	Amlodipine (10)	10 mg	Tablet	10	17 Aug 26	10		N/A	10
	CAPTOPRIL 25mg TAB, (remove from list when expired)	25 mg	Tablet	0	25 Feb 27	50		13/9/27(10)	50
	HCITZ (50)(remove from list when expired)	50 mg	Tablet	0	8 Nov 24	10		N/A	10
	Isosorbide dinitrate (5-S)	5 mg	Tablet	10	17 Apr 26	10		N/A	10
	METFORMIN 500mg TAB(remove from list when expired)	500 mg	Tablet	0	31 May 25	100		N/A	100
	Dento - Oral Medicine								
	BONJELA GEL - 15GM (replace of clove oil, remove from list when expired)		Tube	0	1 Feb 25	5		N/A	4
	TRIAMCINOLONE ACETONIDE (KENALONE)		Tube	10	25 Mar 26	6		N/A	6
	Dermato Medicine								
	BETNOVATE 0.1% CREAM, 20GR / TUB		Tube	5	30 Apr 25	16		16/6/25(12)	15
	CALAMINE LOTION, 100ML / BTL		Bottle	5	1 Jun 25	10		31/5/27(3)	10
	Canesten cream	10g	Tube	5	31 Jan 26	13		11/10/26(14)	13
	Silverdrem cream	25g	Tube	2	1 Jun 26	2		N/A	2
	Eye, Ear-Nose-Throat								
	Chloramphenicol eye ointment		Tube	5	31 Aug 26	9		N/A	9
	Gentamicin eye/ear drop 0.3%		Bottle	5	30 Sep 25	6		N/A	6
Order	Tetracaine eye drop 0.5%		Vial/Ampule	2	1 Jan 00	0		N/A	0








	Mouth wash 250 ml		Bottle	2	27 Mar 27	8		N/A	8
	Oxymetazolin nasal spray		Bottle	5	31 Mar 25	3		N/A	3
	Sterile Eye-wash 250 ml		Bottle	5	22 Oct 26	12		N/A	12
	Throat Lozenges (Mybacin)		Tablet	200	10 Feb 25	110		N/A	110
Order	Throat Lozenges (Strepsil)		Tablet	240	22 May 26	72		N/A	12
	Electrolyte & Mineral								
	ORAL REHYDRATION SALT 50'S /BOX		Sachet	300	21 Jun 26	265		28/9/26(30), 5/2/27(200)	265
	Fluids								
	0.9% NSS 100 ml (piggy bag)		Bottle	5	1 Nov 28	6		N/A	6
	0.9% NSS 1000 ml		Bottle	1	12 Sep 28	1		N/A	1
	5%N/2 1000 ml		Bottle	2	1 Jan 27	2		N/A	2
	5% Dextrose water 1000 ml		Bottle	2	13 Sep 26	2		N/A	2
	D5S 1000 ml		Bottle	2	13 Feb 25	2		N/A	2
	Lactate Ringer Solution 1000 ml		Bottle	1	30 Mar 27	1		N/A	1
	SDW 1000 ml		Bottle	2	13 Sep 26	2		N/A	2
	Sterile water for injection 10 ml		Vial/Ampule	2	31 Jan 26	7		N/A	7
	Gastro-intestinal								
	Activate Charcoal (200 caps/box)		Tablet/Capsule	20	24 Jun 28	160		24/10/28(60)	160
	Alu, Magn, Hydrox (not in standard but recommend,order in Oct)		Tablet	50	30 Nov 24	190		22/7/27(100)	190
	Aluminum gel (not in standard but recommend)		Bottle	3	28 Feb 25	5		4/1/27(2)	4
	Buscodol		Tablet	10	31 Mar 25	26		N/A	26
	Buscopan		Tablet/Capsule	30	31 Jul 25	40		N/A	40
	Imodium (100 caps/box)		Tablet/Capsule	30	8 May 26	76		17/7/26(36)	68
	M. Carminative 180 ml		Bottle	3	6 Aug 26	5		N/A	5
	Metoclopramide 10 mg		Tablet	30	12 Nov 27	100		N/A	100
	Motilium (10 tabs/sachet)		Tablet/Capsule	30	18 Jan 26	20		N/A	20
	Omeprazole 20 mg		Tablet/Capsule	30	15 Mar 26	68		19/6/26(28)	68
	Proctoderyl Rectal Suppository		Tablet	10	30 Oct 25	10		N/A	10
	Neuro & Sea Sickness Medicine								
	DIMENHYDRINATE 50mg TAB			30	20 Oct 26	72	700	13/3/28(46), 17/5/28(700)	762
	Respiratory								
Order	Acetylcysteine (NAC long)		Sachet/Tab	50	30 Sep 28	10		N/A	10
	Acetylcysteine (NAC long)		Sachet/Tab		31 Mar 29	30		N/A	30
	Bischofen (for productive cough)		Tablet	100	21 Mar 25	120		N/A	120
	Combivent Nebulizer 2.5 ml (Replace of Ventolin per standard)		Vial/Ampule	4	1 Nov 24	20		N/A	20
	Dextrometorphan	15 mg	Tablet	100	10 May 27	130		N/A	110
	Bernadryl syrup (remove from list when expired)		Bottle	0	23 Feb 25	3		N/A	3
Order	Salbutamol (Ventolin) (remove from list when expired)	4 mg	Tablet/Capsule	0	1 Oct 24	20		N/A	20
Order	Salbutamol (Ventolin) Inhaler	100 mcg/dose	Inhaler form	4	1 Jan 00	0		N/A	0
	Terbutaline sulfate (Bricanyl)(remove from list when exp	2.5 mg	Tablet	0	1 Mar 25	20		N/A	20
	Miscellaneous								
	ACRIFLAVINE SOLUTION 0.1%		Bottle	0	31 Jul 26	1		N/A	1
	70% Alcohol hand gel, 450 ml		Bottle	5	29 May 26	4		3-b.u.-27	4
	Providence Iodine	10% 30ml	Bottle	1	16 Feb 28	2			2
Order	Zinc Oxide	20% 25g	Tubes	4	1 Jan 00	0			0
	HEBISCRUB SOLUTION 500ML		Bottle	1	31 Aug 25	2		N/A	2
	Poy San inhalation		Piece	60	30 Dec 26	46		N/A	46
	Equipment & Supplies								
	Resuscitation								
	PVC RESUSCITATOR BAG & 3'S MASK			1	N/A	1		N/A	1
	ALUMINIUM O2 CYLINDER 2.09L			1	N/A	1		N/A	1
	Airways (Geudel), Disposable, #2 (80mm), Green			1	N/A	1		N/A	1
	Airways (Geudel), Disposable, #3 (90mm), Green			1	N/A	1		N/A	1
	Airways (Geudel), Disposable, #4 (100mm), Red			1	N/A	1		N/A	1
	MOUTH GAGS, ADULT			1	N/A	1		N/A	1
	Endotracheal tube size 7 (Keep in Responder bag)			1	30 Nov 26	2		N/A	2
	Endotracheal tube size 8 (Keep in Responder bag)			1	30 Nov 26	2		N/A	2
	Face Mask, inflatable pattern- size 3			1	N/A	1		N/A	1
	Face Mask, inflatable pattern- size 4			1	N/A	1		N/A	1
	Face Mask, inflatable pattern- size 5			1	N/A	1		N/A	1
	Guide wire for intubation (Keep in Responder bag)			1	31 Jan 28	1		N/A	1
	MANUAL SUCTION PUMP + 2'S CATHETER			1	31 May 25	1		N/A	1
	14/16 (Keep in Responder bag)								
	SUCTION CATHETER, VACUTIP 60CM CH/FG 12			2	31 May 27	2		N/A	2
	SUCTION CATHETER, VACUTIP 60CM CH/FG 14			2	31 Mar 27	2		N/A	2
	LARYNGOSCOPE WITH 4 BLADES (MCINTOSH)(Keep in Responder bag)			1	N/A	1		N/A	1
	Laryngeal Mask Airway Size 3 x 1s			1	14 Sep 25	1		N/A	1
	Laryngeal Mask Airway Size 4 x 1s			1	2 Sep 25	1		N/A	1
	YANKAUER SUCTION TIP CH20/16CM			3	1 Feb 27	3		N/A	3
	OMRON COMPRESSOR NEBULISER "NE-C900"			1	N/A	1		N/A	1
	Defibrillator (Zoll AED Plus) c/w 3pcs			1	22 Jul 28	1		N/A	1
	Defibrillator Pad (Zoll CPR-D-Pad2) Adult								
	Medical oxygen gas and cylinder hydro test			1	N/A	1		N/A	1
	680 L cylinder with key, pressure gauge, flow meter, angel piece, tubing, mount								
	Medical O2 - Spare cylinders			1	N/A	1		N/A	1
	Examination								
	Accu-Check Active strip		Strip	25	16 Dec 24	25		N/A	25
	Blood lancet		Piece	50	30 Apr 28	100		N/A	100
	DIABECHECK GLUCOMETER "DC-302MS" (Keep in Responder bag)			1	14 Mar 25	1		N/A	1
	TEST STRIPS FOR DIABECHECK "DC-302TS" (Keep in Responder bag)		Strip	25	14 Mar 25	23		N/A	23
	ALPHACHEK PRO SAFETY LANCETS 28G - 80'S/SET(Keep in Responder bag)		Piece	50	N/A	38		N/A	38
	DELUXE ANEROID SPHYGMOMANOMETER			1	N/A	1		N/A	1
	DIGITAL THERMOMETER "XY-86"			1	N/A	1		N/A	1
	DIGITAL THERMOMETER ACT2030+			1	N/A	2		N/A	2

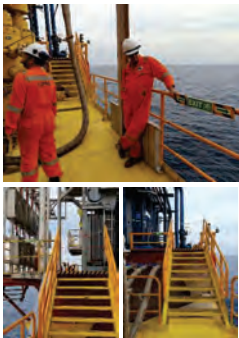


	ECG Machine (Seca CT8000i-2) Compact 12 Lead Interpretive (with electrode patch)			1	N/A	1		N/A	1
	EXAMINATION COUCH EC4000			1	N/A	1		N/A	1
	Examination gloves size M	Box		1	1 Jul 26	1		N/A	1
	Eye magnet w/Loop			1	N/A	1		N/A	1
	Flash light Nextorch K3s			1	N/A	1		N/A	1
	FOREHEAD INFRARED THERMOMETER			1	N/A	1		N/A	1
Order	Fluorescein 1%	Strip		1	1 Jan 00	0		N/A	0
	HEINE DIAGNOSTIC SET "MINI 3000" c/w 1pce bulb and 4's batteries			1	N/A	1		N/A	1
	HEINE EL3 EXAMINATION LIGHT			1	N/A	1		N/A	1
	LITTMANN STETHOSCOPE CLASSIC III "5620"			1	N/A	1		N/A	1
	PENLIGHT & BLUE FILTER + 2'S AAA BATTERY			1	N/A	1		N/A	1
	Pulse Oximeter, portable (Keep in Responder bag)			1	N/A	1		N/A	1
	Rapid test for Dengue	Set		10	27 Aug 25	25		N/A	25
	Rapid test for Influenza A/B	Set		10	31 Jan 25	21		N/A	21
	Rapid test for Malaria	Set		10	18 Jul 25	25		N/A	25
	Rapid test for SARS CoV-2 (Covid-19)	Set		10	20 Jun 25	7		N/A	7
	SUNTEC CT40 BP MONITOR C/W SPO2/SET			1	N/A	1		N/A	1
Order	Surgical mask 3ply	Piece		100	27 Mar 27	28		N/A	27
	Urine test strip, Cybow 11 (100s/box)	Strip		100	12 Sep 25	95		N/A	95
	Weight scales			1	N/A	1		N/A	1
	Automatic Blood Pressure (Omron HEM-7121)	Set		1	N/A	1		N/A	1
	Wooden tongue depressors (100s/box)	Piece		100	1 Jan 40	70		N/A	70
Wound & Dressing									
	Alcohol 70% 60ml	Bottle		3	7 Oct 26	2		N/A	2
	Alcohol 70% 450ml	Bottle		1	22 Aug 25	3		N/A	3
	Alcohol pad, 100s/box	Piece		50	30 Jul 28	90		N/A	90
	10% Betadine solution	Bottle	500 ml	1	8 Jul 27	1		N/A	1
	Cotton stick size L, 100's/pack	Stick		100	3 Jul 26	100		N/A	100
	Disposable dressing set	Set		10	19 Apr 26	12		01/11/26(5), 05/01/27(5)	12
	Disposable Razor	Piece		3	1 Jan 30	4		N/A	4
	Elastic bandage 4"	Roll		5	3 Oct 26	3		N/A	3
	Elastic bandage 6"	Roll		5	1 Jan 29	3		N/A	3
	Eye pad sterile	Piece		10	9 Oct 28	26		N/A	26
	Gauze 3"x3" 100s/box	Piece		200	16 Apr 26	148		N/A	148
	Gauze 4"x4" 100s/box	Piece		200	26 Jun 27	150		N/A	150
	Petrolatum gauze sterile 10 cm x 10 cm	Piece		5	19 Jul 28	5		N/A	5
	Gauze tube w/o applicator	Set		1	1 Jan 30	2		N/A	2
	Microport 1"	Piece		1	1 Jan 30	1		N/A	1
	NSS for Irrigation 100 ml	bottle		5	30 May 28	4		N/A	4
	NSS for Irrigation 500 ml	Bottle		5	30 Apr 28	5		N/A	5
	NSS for Irrigation 1000 ml	Bottle		5	30 Apr 28	5		N/A	5
	Sterile water for irrigation	Bottle		1	31 May 26	1		N/A	1
	Tiger plaster band-aid	Piece		200	13 Jun 28	112		N/A	112
	Transpore 1"	Piece		1	1 Jan 30	1		N/A	1
Suturing									
	Chromic catgut 2/0 with cutting needle	Piece		1	30 Dec 27	1		N/A	1
	Chromic catgut 3/0 with cutting needle	Piece		1	30 Sep 27	1		N/A	1
	Chromic catgut 4/0 with cutting needle	Piece		1	30 May 28	1		N/A	1
	Nylon 2/0 with cutting needle	Piece		1	30 Sep 27	1		N/A	1
	Nylon 3/0 with cutting needle	Piece		1	30 Dec 27	1		N/A	1
	Nylon 4/0 with cutting needle	Piece		1	30 May 27	1		N/A	1
	Nylon 5/0 with cutting needle	Piece		1	30 Jul 27	1		N/A	1
	Silk 3/0 with cutting needle	Piece		1	30 Sep 27	1		N/A	1
	Nylon 5/0 with cutting needle	Piece		1	30 Apr 26	1		N/A	1
	Sterile strip 1/2 cm.	Piece		5	1 Nov 25	60		N/A	60
	Sterile surgical glove size 8	Pairs		5	31 Dec 24	6		N/A	6
Surgical Instrument									
	Artery forceps, SPENCER WELLS FORCEPS 12.5CM, STD			2	N/A	4		N/A	4
	CHEATLE FORCEPS 27CM			1	N/A	1		N/A	1
	FEILCHENEELD SPLINTER FORCEPS 11.5CM			1	N/A	1		N/A	1
	KIDNEY DISH STAINLESS STEEL 6			1	N/A	1		N/A	1
	KIDNEY DISH SS 8" (20CM)			1	N/A	1		N/A	1
	LOTION BOWL SS 20CM			1	N/A	1		N/A	1
	LOTION BOWL, PLASTIC 6" (15CM)			1	N/A	1		N/A	1
	Needle Holder Mayo-Hegar 18cm x 1s			1	N/A	1		N/A	1
	Scalpel & Blade Size 15 Sterile Disposable	set		1	28 Feb 26	1		N/A	1
	Scalpel & Blade Sterile Disposable Size 10 x 10s			5	30 Apr 28	10		N/A	10
	SCALPEL #11 & HANDLE #3 "HEINZ"			5	30 Sep 26	5		N/A	5
	Scissors, Sharp/blunt, stainless steel 15cm			2	N/A	2		N/A	2
	Scissors, Sharp/blunt, stainless steel 13 cm			1	N/A	4		N/A	4
Syringe, Needle & IV Set									
	Injection needle size 18 G			5	30 Apr 28	3		N/A	3
	Injection needle size 20 G			5	30 Sep 27	3		N/A	3
	Injection needle size 22 G			5	31 Jul 27	3		N/A	3
	Injection needle size 25 G			5	31 Oct 26	3		31/1/27(2)	3
	IV Catheter size 18 G			1	31 Oct 28	2		N/A	2
	IV Catheter size 22 G			1	30 Apr 27	2		N/A	2
	IV Catheter size 24 G (Remove from list when expired)			1	30 Nov 24	2		N/A	2
	IV set			3	30 Sep 27	3		N/A	3
	IV extension set			1	31 Jan 26	1		N/A	1
	Syringe disposable sterile size 3 ml			5	31 Mar 28	3		30/4/28(1)	3
	Syringe disposable sterile size 5 ml			5	31 Mar 28	2		N/A	2
	Syringe disposable sterile size 10 ml			5	30 Sep 26	3		31/5/28(2)	3
	Syringe disposable sterile size 20 ml			5	31 Jul 26	3		30/11/26(1)	3
	Syringe disposable sterile size 50 ml			1	31 Aug 27	2		N/A	2
	T- way (for injection via IV set)			1	30 Mar 26	3		N/A	3
	Tourniquet, rubber tube			1	1 Jan 40	1		N/A	1

	Splint & Immobilize								
	ADJUSTABLE CERVICAL COLLAR "CC-01"			1	N/A	2		N/A	2
	Splint (SAM) (Keep in Responder bag)			1	N/A	1		N/A	1
	Air Splint Kit Set of 6 x 1s			1	N/A	1		N/A	1
Stretcher									
	BASKET STRETCHER (Orange)			1	N/A	2		N/A	2
	BASKET STRETCHER (Yellow)			1	N/A	1		N/A	1
	SCOOP STRETCHER & STRAPS "YDC4A"			1	N/A	1		N/A	1
	SPINE BOARD WITH SAFETY BELTS "YDC-7B1"			1	N/A	2		N/A	2
Miscellaneous									
	Sterilizer Electric 220-240V			1	N/A	1		N/A	1
	Biological hazard bag, red bag	Piece		50	N/A	90		N/A	90
	Medicine zip bag size 8x12 cm	Piece		100	N/A	80		N/A	80
	INT'L MEDICAL GUIDE 3ED & QTF ADDENDUM			1	N/A	1		N/A	1
	Isothermal/rescue blanket	Piece		1	N/A	1		N/A	1
	SHARP CONTAINERS			1	N/A	1		N/A	1
	BEDPAN WITH COVER SS 350X280X97MM			1	N/A	3		N/A	3
	MALE URINAL WITH COVER, PLASTIC 1LTR			1	N/A	3		N/A	3
	Triage Card (SMART Tag) x 100s			50	N/A	100		N/A	100
	MORTUARY TRANSFER BAG (BODY BAG)			2	N/A	2		N/A	2
	FIRST AID BOX (ORANGE)			1	N/A	1		N/A	1
	Multi Drug Test Kit (25 Pcs/ box)			25	31 May 26	0	25	N/A	25
Order	Multi Drug Test Kit (Drip Card)			25	14 Sep 26	3		N/A	1
	Bio-hazard trash bin			1	N/A	1		N/A	1
	Responder bag			1	N/A	3		N/A	3
	Hot/Cold Pack			2	N/A	2		N/A	2
	CPR Half-Body Medical for Training			1	N/A	1		N/A	1
Order	Urine specimen container (red cover)			20	1 Jan 30	3			1

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.3

ตัวอย่างรายงานการตรวจประเมินความปลอดภัยและสุขลักษณะ
ของสถานที่ทำงานและที่พักอาศัย

Safety Inspection on AP1 MOPU			Inspection By:	1. Khoo Jet Seng (NGP) 2. Chalermpong K. (NGP) 3. Mike Powlesland (AMPL)	Inspection Date:	26 July 2024
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
1.	Waste Skip		<ul style="list-style-type: none"> The color code of waste skip is purple color, during this period is yellow color. 	<ul style="list-style-type: none"> Need to reinspection and color coding 	AMPL	Closed  Backloaded supplier notified
2.	Safety shower & eye wash station		<ul style="list-style-type: none"> Monthly Inspection is perform and functional 	<ul style="list-style-type: none"> Good Practice 	AMPL	Closed
3.	Crude Oil Pump Skid		<ul style="list-style-type: none"> Improper contain crude oil from crude pump A-B-C 	<ul style="list-style-type: none"> To provide correcting tray / drip tray 	AMPL	Closed 
4.	Waste Bin		<ul style="list-style-type: none"> Incorrectly waste bin color / Type in the process area. 	<ul style="list-style-type: none"> Remove or repair the color of waste bin to comply with waste management plan 	AMPL	Closed  Removed

Safety Inspection on AP1 MOPU			Inspection By:	1. Khoo Jet Seng (NGP) 2. Chalermpong K. (NGP) 3. Mike Powlesland (AMPL)	Inspection Date:	26 July 2024
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
5.	Well Head Deck		<ul style="list-style-type: none"> Identify clearly Exit / Emergency Exit Sign 	<ul style="list-style-type: none"> Good Practice 	AMPL	Closed
6.	Galley		<ul style="list-style-type: none"> No insulation protection heat hazard from thermo pot. 	<ul style="list-style-type: none"> To provide heat protection on termo pot to prevent incident from heat hazard. 	AMPL	Closed Thermal insulation jacket for a hot water boiler fitted. 



CATERING SERVICES HYGIENE INSPECTION SERVICES

Facility Name: MOPU Aurora Producer 1		Inspection Date / Time: 13 September 2024: 10:00 Hrs.			
Area Inspected: Accommodation, Mess Room, Galley, Provision Store, Laundry, Public toilet.		Name of Area Representative: [REDACTED]			
<p>Note:</p> <p>1. * <input checked="" type="checkbox"/> Tick which one that is applicable. If inspection item is not covered or not relevant, please indicate as N/A.</p> <p>2. If additional items are covered, please indicate in the checklist.</p> <p>3. Non-conformance item shall be recorded in the 'Accommodation & Hygiene Inspection (Comment & Remarks)' form for monitoring/follow-up purposes.</p>					
FOOD AND HYGIENE INSPECTION CHECKLIST					
	ITEMS	Yes	No	N/A	COMMENTS
A	DUTIES OF FOOD HANDLER				
1.	All food handlers observe appropriate personal hygiene	x			
2.	Report to Medic any potential infectious disease or contact with such disease	x			
3.	Wear appropriate clean protective clothing	x			
4.	All food handlers have annual medical fitness certificates	x			
5.	All food handlers have annual stool FEME and immunization.	x			
B	FOOD HANDLERS' ACCOMMODATION AND SANITARY FACILITIES				
6.	A suitable sanitary facility for the sole use of food handlers is located adjacent to the galley but not connected directly to it	x			
7.	A suitable hand washing facility is adjacent to food preparation area	x			
8.	Food handlers' accommodation and associated sanitary facilities are separate from the rest of the crew	x			
9.	No overcrowded in the accommodation.	x			
10.	Good housekeeping is maintained in the rooms	x			
11.	Rooms and sanitary facilities are generally clean.	x			
12.	Hygiene and Safety notices are located in the food preparation areas and sanitary facilities	x			
13.	Outdoor clothing is not stored exposed in the food preparation area	x			
C	CLEANING				
14.	Appropriate chemicals and techniques are used to maintain hygiene of catering and accommodation areas	x			
15.	Is CHRA complied with on the chemicals used?	x			
D	GALLEY				
16.	The ceiling, walls and floor are covered and easily washable and floor is constructed from anti-slip material		x		The galley floor should be deep clean.



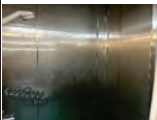
17.	Drainage, ventilation, and lighting are adequate	x			
18.	Refuse containers are not overfilled and regularly emptied	x			
19.	Raw food does not make contact with cooked food	x			
20.	Dirty dishes do not contaminate clean dishes	x			
21.	The galley and its equipment are clean	x			
22.	Cleaning chemicals are not stored with food	x			
23.	Sample of food and drink taken are kept refrigerated properly for 7 days (Note: Only if required by the client)	x			
24.	Pest free		x		Found flies in the galley
E	MESS HALL				
25.	Has sufficient seating for crew	x			
26.	Work clothes are not worn inside the mess hall (Note : Clean coveralls are allowed)	x			
27.	Floor is clean and is not littered with food particles / napkins	x			
28.	Chairs and tables are clean	x			
29.	Floor mopped at least twice a day	x			
30.	Utensils used (plates, food containers, spoons) are clean	x			
31.	Condiment, sugar, cream, etc. containers are clean and covered	x			
32.	Ice making machine is working and clean	x			
33.	Drinking water dispensers are clean	x			
34.	Refrigerators in the mess hall are in good working condition			x	No refrigerator in mess room
F	TEMPERATURE CONTROL				
35.	All refrigerators and freezers have a thermometer with external gauge	x			
36.	A calibrated portable thermometer is used to confirm the following:	x			
	• the refrigerator and freezer temperature daily	x			
	• the temperature of frozen food on arrival on board	x			
	• the core temperature of hot food	x			
37.	A written record is kept of the temperature results for 3 months	x			
38.	Faulty units causing unacceptable temperatures are repaired immediately	x			
39.	The following temperatures are maintained				
	Cold buffet display unit < +5°C			x	No service
	Deep frozen foods < -18°C	x			
	Chilled foods 0°C to 3°C	x			
	Refrigerated foods +1°C to +4°C	x			
	Ice Cream conservator < - 2.2°C	x			

	Defrost Unit +1°C to + 5°C	x			
	Dry goods store +10°C to 15°C	x			
	Hot food > 63°C	x			
	Core temperature of cooked food > 75°C	x			
G REFRIGERATORS AND COLD STORES (Temperature: +1°C to +4°C)					
40.	There is stock rotation (Note : First In First Out, FIFO)	x			
41.	Raw food is not stored above cooked food	x			
42.	Food is covered	x			
43.	There is no open can of food	x			
44.	Hot food is not placed directly in the refrigerator / cold store	x			
45.	Walk-in units have means of opening the door from the inside and trap alarm.	x			
46.	The air is circulated	x			
47.	The door seals are intact	x			
48.	The units are clean and free from mould	x			
H FREEZERS (Temperature: < -18°C)					
49.	There is stock rotation. (Note : First In First Out, FIFO)	x			
50.	Hot food is not placed directly in the freezer	x			
51.	The door seals are intact	x			
52.	The units are clean and free from mould	x			
I DEFROSTING (Temperature: +1°C to +5°C)					
53.	There is no potential for cross contamination	x			
54.	Frozen food is not placed in water to defrost	x			
55.	Only controlled heat is applied to hasten thawing			x	
56.	The defrost unit is clean and free from mould		x		Defrosting room need to organized properly.
J DRY GOODS STORE (Temperature: + 10°C to 15°C)					
57.	There is stock rotation. (Note : First In First Out, FIFO)	x			
58.	All food has 'HALAL' certificate or 'HALAL' remark on the label.			x	
59.	Foods is stored appropriately (off the floor and away from the walls) on tubular racking	x			
60.	There is good ventilation, lighting and drainage	x			
61.	There are no cleaning equipment or chemicals stored	x			
62.	There are no infestations	x			
63.	The store is clean and dry	x			
64.	Vegetables & fruits are kept in a basket and not placed directly on a metal rack.	x			
K ACCOMMODATION					
	Rooms are clean with good housekeeping	x			
65.	No dangerous chemical is kept in rooms	x			
66.	No flammable substance is kept in the room	x			

67.	No smoking in the rooms	x			
68.	The rooms have adequate lighting	x			
69.	Bed sheets, pillowcase and blankets are replaced regularly	x			Replace every 4 weeks when off shift
70.	Refuse bin emptied regularly	x			
71.	Dirty work clothes are put inside container outside the room for cleaning	x			
72.	Suitable room temperature	x			
73.	Pest free	x			
L TOILETS AND WASHING FACILITIES					
74.	Toilets are clean with no leaks and blockages		x		Shower walls should be deep clean.
75.	Floors are constructed / covered with anti-slip material	x			
76.	Adequate showers with hot water	x			
77.	Adequate lighting	x			
78.	Adequate wash basin facilities	x			
79.	Refuse bin emptied regularly	x			
80.	Pest free	x			
M CORRIDORS AND STAIRWELL					
81.	Floors and walls are clean	x			
82.	Adequate lighting is provided	x			
83.	Stairwell is free from obstructions	x			
84.	Floors and landings are constructed / covered with anti-slip material	x			
N LAUNDRY ROOM					
85.	Drainage, ventilation and lighting are adequate	x			
86.	Electrical connection and equipment are not over heated	x			
87.	Lint is regularly cleaned off the dryer	x			
88.	Refuse bin is regularly emptied	x			
89.	Washing detergents are properly kept	x			
90.	Floors are constructed / covered with anti-slip material	x			
91.	Fire extinguisher suitable for electrical fire to be provided	x			
92.	Washer and dryer in good working condition	x			1 Dryer machine not working and under repairing process
93.	Pest free	x			

Additional note (if any) : Hygiene Inspection pictures

Inspected by:			
Position:	Medic	Campboss	Safety Officer
Signature:			
Acknowledge by:	Rodrigo Gomes		
Position	Barge Master		
Signature			

Item	Discussion/Action	Area	Action By	Finding Date	Closed out date
1	Defrosting room need to organized properly.	Defrosting room	Catering	13/09/2024	
					
	Before				
2	The galley floor should be deep clean.	kitchen	Catering	13/09/2024	
					
	Before				
3	Shower walls should be deep clean.	Shower room	Catering	13/09/2024	
					
	Before				

CATERING SERVICES HYGIENE INSPECTION SERVICES



Facility Name: MOPU Aurora Producer 1		Inspection Date / Time: 03/04/2024: 14.00 Hrs			
Area Inspected: Accommodation, Mess Room, Galley, Provision Store, Laundry, Public toilet		Name of Area Representative: [REDACTED] (Camp boss)			
Note: 1. * <input checked="" type="checkbox"/> Tick which one that is applicable. If inspection item is not covered or not relevant, please indicate as N/A. 2. If additional items are covered, please indicate in the checklist. 3. Non-conformance item shall be recorded in the 'Accommodation & Hygiene Inspection (Comment & Remarks)' form for monitoring/follow-up purposes.					
FOOD AND HYGIENE INSPECTION CHECKLIST					
	ITEMS	Yes	No	N/A	COMMENTS
A	DUTIES OF FOOD HANDLER				
1.	All food handlers observe appropriate personal hygiene	x			
2.	Report to Medic any potential infectious disease or contact with such disease	x			
3.	Wear appropriate clean protective clothing	x			
4.	All food handlers have annual medical fitness certificates	x			
5.	All food handlers have annual stool FEME and immunization.	x			
B	FOOD HANDLERS ACCOMMODATION AND SANITARY FACILITIES				
6.	A suitable sanitary facility for the sole use of food handlers is located adjacent to the galley but not connected directly to it	x			
7.	A suitable hand washing facility is adjacent to food preparation area	x			
8.	Food handlers' accommodation and associated sanitary facilities are separate from the rest of the crew	x			
9.	Overcrowded in the accommodation.		x		
10.	Good housekeeping is maintained in the rooms	x			
11.	Rooms and sanitary facilities are generally clean.	x			
12.	Hygiene and Safety notices are located in the food preparation areas and sanitary facilities	x			
13.	Outdoor clothing is not stored exposed in the food preparation area	x			
C	CLEANING				
14.	Appropriate chemicals and techniques are used to maintain hygiene of catering and accommodation areas	x			
15.	Is Chemical Health Risk Assessment (CHRA) complied with on the chemicals used?	x			
D	GALLEY				
16.	The ceiling, walls and floor are covered and easily washable and floor is constructed from anti-slip material	x			

17.	Drainage, ventilation, and lighting are adequate	x			
18.	Refuse containers are not overfilled and regularly emptied	x			
19.	Raw food does not make contact with cooked food	x			
20.	Dirty dishes do not contaminate clean dishes	x			
21.	The galley and its equipment are clean		x		Found a brown stain on the dishwasher tray.
22.	Cleaning chemicals are not stored with food	x			
23.	Sample of food and drink taken are kept refrigerated properly for 7 days (Note : Only if required by the client)	x			
24.	Pest free		x		x in the galley, need to put more fly traps.
E	MESS HALL				
25.	Has sufficient seating for crew	x			
26.	Work clothes are not worn inside the mess hall (Note : Clean coveralls are allowed)	x			
27.	Floor is clean and is not littered with food particles / napkins	x			
28.	Chairs and tables are clean	x			
29.	Floor mopped at least twice a day	x			
30.	Utensils used (plates, food containers, spoons) are clean	x			
31.	Condiment, sugar, cream, etc. containers are clean and covered	x			
32.	Ice making machine is working and clean			x	Ice machine is out of service
33.	Drinking water dispensers are clean	x			
34.	Refrigerators in the mess hall are in good working condition			x	No refrigerator in mess room
F	TEMPERATURE CONTROL				
35.	All refrigerators and freezers have a thermometer with external gauge	x			
36.	A calibrated portable thermometer is used to confirm the following:	x			
	• the refrigerator and freezer temperature daily	x			
	• the temperature of frozen food on arrival on board	x			
	• the core temperature of hot food	x			
37.	A written record is kept of the temperature results for 3 months	x			Daily record was posted
38.	Faulty units causing unacceptable temperatures are repaired immediately	x			
39.	The following temperatures are maintained				
	Cold buffet display unit < +5°C			x	No service
	Deep frozen foods < -18°C	x			
	Chilled foods 0°C to 3°C	x			
	Refrigerated foods +1°C to +4°C	x			
	Ice Cream conservator < -2.2°C	x			









Guidelines on Catering Services

	Defrost Unit +1°C to +5°C	x			
	Dry goods store +10°C to 15°C	x			
	Hot food > 63°C	x			
	Core temperature of cooked food > 75°C	x			
G	REFRIGERATORS AND COLD STORES (Temperature: +1°C to +4°C)				
40.	There is stock rotation (Note : First In First Out, FIFO)	x			
41.	Raw food is not stored above cooked food	x			
42.	Food is covered	x			
43.	There is no open cans of food	x			
44.	Hot food is not placed directly in the refrigerator / cold store	x			
45.	Walk-in units have means of opening the door from the inside and trap alarm.	x			
46.	The air is circulated	x			
47.	The door seals are intact	x			
48.	The units are clean and free from mould	x			
H	FREEZERS (Temperature: < -18°C)				
49.	There is stock rotation (Note : First In First Out, FIFO)	x			
50.	Hot food is not placed directly in the freezer	x			
51.	The door seals are intact	x			
52.	The units are clean and free from mould	x			
I	DEFROSTING (Temperature: +1°C to +5°C)				
53.	There is no potential for cross contamination	x			
54.	Frozen food is not placed in water to defrost	x			
55.	Only controlled heat is applied to hasten thawing			x	Does not use this method for thawing
56.	The defrost unit is clean and free from mould	x			
J	DRY GOODS STORE (Temperature: +10°C to 15°C)				
57.	There is stock rotation (Note : First In First Out, FIFO)	x			
58.	All food has 'HALAL' certificate or 'HALAL' remark on the label.			x	
59.	Foods is stored appropriately (off the floor and away from the walls) on tubular racking	x			Some new coming foods still put on the floor due to not enough space on rack
60.	There is good ventilation, lighting and drainage	x			
61.	There are no cleaning equipment or chemicals stored	x			
62.	There are no infestations	x			
63.	The store is clean and dry	x			
64.	Vegetables & fruits are kept in a basket and not placed directly on a metal rack.	x			
K	ACCOMMODATION				
	Rooms are clean with good housekeeping	x			
65.	No dangerous chemical is kept in rooms	x			
66.	No flammable substance is kept in the room	x			
67.	No smoking in the rooms	x			

Guidelines on Catering Services

68.	The rooms have adequate lighting	x			
69.	Bed sheets, pillowcase and blankets are replaced regularly	x			Replace when off shift
70.	Refuse bin emptied regularly	x			
71.	Dirty work clothes are put inside container outside the room for cleaning	x			
72.	Suitable room temperature	x			
73.	Pest free	x			
L	TOILETS AND WASHING FACILITIES				
74.	Toilets are clean with no leaks and blockages	x			Public toilet cleaning 1 time / shift (2 times/day)
75.	Floors are constructed / covered with anti-slip material	x			
76.	Adequate showers with hot water	x			
77.	Adequate lighting	x			
78.	Adequate wash basin facilities	x			
79.	Refuse bin emptied regularly	x			
80.	Pest free			x	Found flies and cockroach
M	CORRIDORS AND STAIRWELL				
81.	Floors and walls are clean	x			
82.	Adequate lighting is provided	x			
83.	Stairwell is free from obstructions	x			
84.	Floors and landings are constructed / covered with anti-slip material	x			
N	LAUNDRY ROOM				
85.	Drainage, ventilation and lighting are adequate	x			
86.	Electrical connection and equipment are not over heated	x			
87.	Lint are regularly cleaned off the dryer	x			
88.	Refuse bin is regularly emptied	x			
89.	Washing detergents are properly kept	x			
90.	Floors are constructed / covered with anti-slip material	x			
91.	Fire extinguisher suitable for electrical fire to be provided	x			
92.	Washer and dryer in good working condition	x			
93.	Pest free			x	Found flies and cockroach in the laundry room, need to put more fly traps
Additional note (if any) :					
Inspected by:					
Position:	Medic	Campboss			
Signature:					
Acknowledge by:	Vikas Bapu				
Position	Barge Master				
Signature					

Guidelines on Catering Services

Item	Discussion/Action	Area	Action By	Finding Date	Closed out date/Status
1	Found a brown stain on the dishwasher tray.  	kitchen	Catering	03/04/2024	04/04/2024
	Before After				
2	A basket of vegetables was found lying on the floor in the chiller room.  	Chiller	Catering	03/04/2024	04/04/2024
	Before After				
3	Observed water was left on chiller room floor.  	Chiller	Catering	03/04/2024	03/04/2024
	Before After				
4	Garbage bags and empty bins were found lying near the trash bin and fire extinguisher.  	kitchen	Catering	03/04/2024	03/04/2024
	Before After				

HEALTH & HYGIENE INSPECTION
ATTENDANCE RECORDS

Date:	3 April 2024	Time:	14.00
Main Agenda:	HEALTH & HYGIENE INSPECTION	Chairman:	Prasert P. AP 1 Safety Officer/ Medic
Locations:			

#	Name	Company	Position	Signature
1		Aurosa	Bar	W. H.
2		Spice	clay bar	S
3		NGP-OM	am	R
4		Diamond	HSE/Medic	Dr. P.
5		NGP	OM	ThP
6				
7				
8				
9				
10				
11				
12				

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.4

ตัวอย่างบันทึกปริมาณและรายการน้ำมัน และสารเคมี

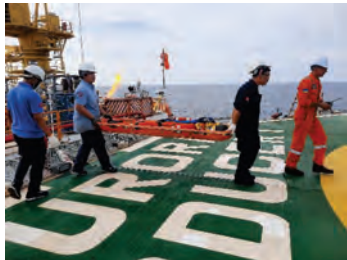
AURORA PRODUCER 1							
CHEMICAL INVENTORY							
SR. NO.	CHEMICAL NAME	UNIT SIZE	NO. OF CONTAINERS	PREVIOUS ROB	USED	RECEIVED	ROB
1	CAT DEO 15W-40 3E-9840	208 ltrs	4 drums	832 ltrs			
2	SHELL RIMULA 15W-40	209 ltrs	2 drums	325 ltrs			
3	MOBIL RARUS 425 ISO 46 (compressor)	208 ltrs	1 drums	171 ltrs			
4	Total Rubia 15w40	10 ltrs	1 pail	4 ltrs			
5	SHELL OMALA S2 G 150	20 ltrs	2 pails	25 ltrs			
6	SHELL CORENA S3 R 32	20 ltrs	4 pails	80 ltrs			
7	QUINSYN (compressor)	18.93 ltrs	10 pails	189.3 ltrs			
8	BRI LUBE 70	12.5 kg	4 pails	37,5 kg			
9	ALKALINE MEMBRANE CLEANER	18 kg	1 pails	9 kg			
10	ACIDIC MEMBRANE CLEANER	10 kg	4 pails	40 kg			
11	ALU GUARD	25 ltrs	19 pails	450 ltrs			
12	MOBIL GREASE MOBILUX EP2	16 kg	3 pails	30 kg			
13	SHELL GADUS S2 V220	18 kg	2 pails	36 kg			
14	UTECH GREASE	30 lbs	1 pail	30 lbs			
15	DESICCANT	10 kg	8 pails	80 kg			
16	RO SCAL CONTROL	25 ltrs	3 pails	70 ltrs			
17	MEMBRANE PRESERVATIVE	2 kg	4 bags	8 kg			
18	SHELL OMALA S2 GX 150	209 ltrs	1 drum	209 ltrs			
19	SHELL DIALA S4 ZX-I	209 ltrs	2 drums	418 ltrs			
20	SHELL OMALA S2 GX 220	209 ltrs	2 drums	246 ltrs			
21	SHELL TELLUS S2 MX 68	209 ltrs	4 drums	716 ltrs			
22	COPASLIP	500 g	3 cans	1500 g			
23	NEVER-SEEZ	454 g	9 cans	4000 g			
24	CRC CONTACT CLEANER	350 g	10 cans	3500 g			
25	CRC LECTRA CLEAN	539 g	10 cans	5390 g			
26	wd-40	300 ml	3 cans	900 ml			
27	wd-40	1 gallon	3 pails	3 gallon			
28	JUMP START	312 g	5 cans	1560 g			
29	SHELL GADUS S2 V220		31 Cartridges				
30	CAT ball bearing grease		4 Cartridges				
31	Bearing Grease	2.5 kg	1 pail	2.5kg			
32	Falk 934511		2 Cartridges				

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.5

ตัวอย่างรายงานการฝึกซ้อมตอบสนองต่อเหตุฉุกเฉิน



EMERGENCY DRILL & DEBRIEF



Debrief completed by: [REDACTED] (Safety Officer)	Date: 22/09/2024
Approved by: [REDACTED] (Barge Master)	Date: 22/09/2024
Recommendations Actioned & Completed by: [REDACTED] (Safety Officer)	Date: 22/09/2024



EMERGENCY DRILL & DEBRIEF

Vessel Name:	Aurora Producer 1 MOPU	
Location:	Rossukon Field G6/48, Thailand	Drill Date: 01/09/2024
Drill Type:	Fire/Source and rescue and Medivac	

[illegible]

BRIEF DESCRIPTION OF WEEKLY FIRE / MUSTER AND MEDIVAC DRILL

SCENARIO: Simulation of an Engine No.02 fire / Muster at Electrical Switch Engine Room.

07.26 There was a fire an Engine No.02 at Electrical Switch Engine Room.

07.27 OIM called IC for information.

07.28 Head count by Muster checker completed. (wrong account)

07.30 The fire teams standby and ready receive command.

07.35 BM make PA update situation.

07.35 BM inform possible of missing person.

07:35 – Fire team authorized to proceed to ER for source and rescue.

07.36 Medic called OSC that the teams standby and ready receive command.

07:38: Fire team reported a small electrical fire on the electrical switchboard and used Fire extinguisher to fight the fire.

07:38 Fire team leader located one IP and informed BM

07.39 BM inform OSC to ensure area safe to be able to send the stretcher team.

07.40 OSC called medic and requested for team to proceed to ER

07.41 OSC make PA update situation.

07.42 Medic arrange onsite for physical examination.

07.43 MEDIC teams and rescued/transfer IP safe zone and requested for MEDIVAC.

07.44 BM inform OIM to arrange the MEDIVAC.

07:45 OIM requested the MEDIVAC - ETA of 2 hours.

07.45 Training declared satisfactory and Drill completed.

OUTCOMES:

With weekly drills going on I am very confident the teams have established a teamwork attitude;



EMERGENCY DRILL & DEBRIEF

FINDINGS:

1. Crews are very willing to engage in learning in respect to the importance of emergency drills.

LESSON LEARNED:

- 1- Communication, keep radio comms. to a minimum to give space for decisions to be taken.
- 2- Muster checker must make sure correct Headcount, not based only on T card.
- 3- improve the donning time for fire team to be exercised.



Debrief completed by: [REDACTED] (Safety Officer)	Date: 01-09-2024
Approved by: [REDACTED] (Barg Master)	Date: 01-09-2024
Recommendations Actioned & Completed by: [REDACTED] (Safety Officer)	Date: 01-09-2024



EMERGENCY DRILL & DEBRIEF

Vessel Name: Aurora Producer 1 MOPU
Location: Rossukon Field_G6_48, Thailand
Drill Date: 25/02/2024
Drill Type: Electrical Motor Fire

ATTENDEES:		
[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	



OUTCOMES:

The scenario, smoke alarm was raised in the machinery space, on investigation by the C/M & Mechanic it was found that the electrical motor on the water maker unit was smoking, the C/E isolated the water maker so the smoking electrical motor, as soon the C/E said the unit was isolated the C/M & Mechanic approached the electrical motor with CO2 fire extinguishers.

And began to extinguish the smoking electrical motor.

Until the smoking had stopped.

FINDINGS:

The training was awareness of using the correct fire appliance on a electrical fire, and to ensure the electrical fire that was being tackled could be isolated.

LESSON LEARNED:

Check you use the correct fire extinguisher on the correct fire you must tackle.

Isolate the equipment if possible.



EMERGENCY DRILL & DEBRIEF

At 14:51hrs Aurora/NGP management and emergency response team at shore base was contacted, and informed them of the present situation, by the production OIM.

At 14:51hrs the deluge system was at full pressure and had started to engulf the production/welldeck areas, which was effective in taking control of the fire.

At 14:55hrs the deluge system had suppressed the fire.

At 15:00hrs the deluge system was still active and SCBA team 1 was sent to the production area to assess and to report to command if the fire was out.

At 15:02 SCBA team 2 was in position on the main deck standing by with the Stbd side foam system charged ready if required.

At 15:03hrs SCBA team 3 was standing by on the lifeboat deck if required.

At 15:05hrs SCBA team 1 reported to command that the fire was out.

At 15:05hrs the deluge system was left activated until the BM instructed the CE to shut the system down.

At 15:30hrs the BM was satisfied the fire was out and shut down the deluge system and stood down all SCBA teams.

At 15:30hrs the production OIM informed Aurora/NGP management and emergency response team of the present situation.

At 15:45hrs the standby vessel was stood down but to stay within the 500mtr mark of the MOPU.

FINDINGS:

Ensure system was fully operational if required.

LESSON LEARNED:

Repeat all instructions/commands 2 times and ensure all commands/instructions are repeated back and understood.



EMERGENCY DRILL & DEBRIEF



Debrief completed by: [REDACTED] (BM)	Date: 28/07/2024
Approved by: [REDACTED] (BM)	Date: 28/07/2024
Recommendations Actioned & Completed by: [REDACTED] (BM)	Date: 28/07/2024



EMERGENCY DRILL & DEBRIEF

Vessel Name: Aurora Producer 1 MOPU
Location: Rossukon Field G6/48, Thailand
Drill Type: Fire Drill/Training, Helideck

Drill Date: 03/03/2024

ATTENDEES:		

With the firefighting training drill with the crew the first thing for was to ascertain their knowledge with a helicopter fire, so first was an open discussion with question-and-answer session in relation to the helicopter fire scenario.

I found that their knowledge with this was very limited regarding helicopter fire/hose handling so the approach for me was to engage the crew in participation in the drill, so they fully understand with a more hands on approach with the drill, bearing in mind these men are not marine trained.

So, the steps were as follows with the crew actively engaging in joining in the drill with participating.

The scenarios for today's drill's/training were helideck use of fire monitors safe effective use of & when to engage AFFF foam into a helicopter fire training under pressure with wall-to-wall spray and direct, how, and why we have and when to use.

OUTCOMES:

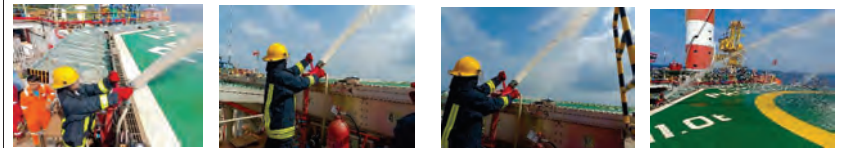
All the crew members who were involved in the drill/training session took an active part in all, and understood why, how, when and what you achieve with different ways in handling a fire.

FINDINGS:

With on-going training and maybe certified shore base training the crew will enhance their skills within firefighting and the different methods and situations.

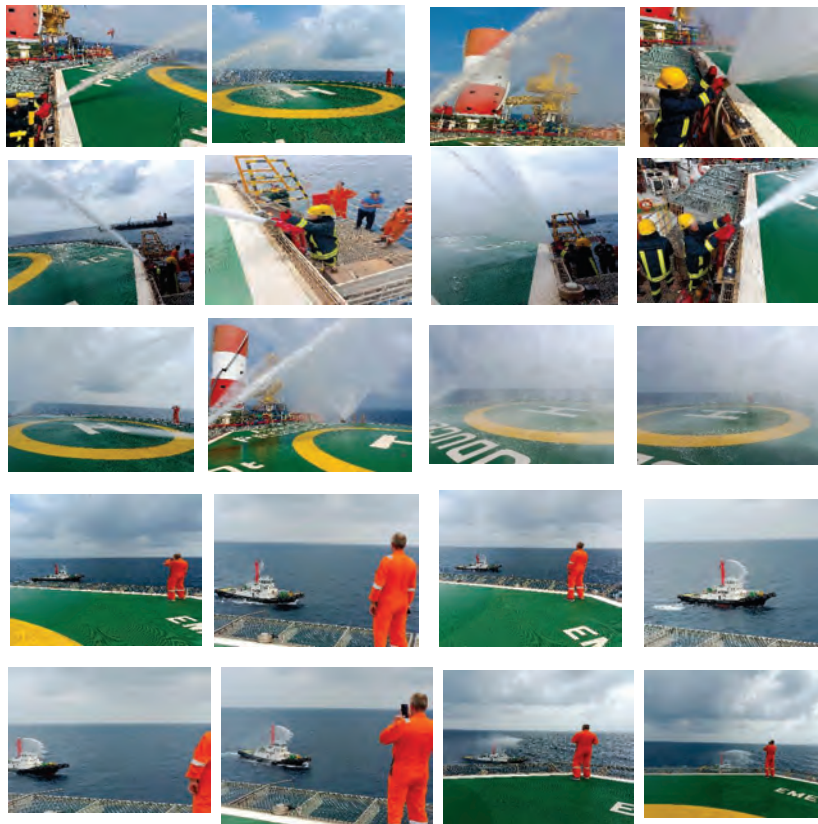
LESSON LEARNED:

Communication, correct use of firefighting equipment, correct equipment for the fire you attend.





EMERGENCY DRILL & DEBRIEF



Debrief completed by: [REDACTED]	Date: 03/03/2024
Approved by: [REDACTED]	Date: 03/03/2024
Recommendations Actioned & Completed by: [REDACTED]	Date: 03/03/2024

ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-4.6

สถิติพนักงานที่พักอาศัยบนแทนผลิตแบบเคลื่อนย้ายได้

Maximum POB 50	Date		26/10/2023	Current Operation		Rossukon Field_G6_48, Thailand			
	AP1 POB Report Dissemination List								
	Name		Position		Email		NGP		
	From	[Redacted]		AP1 Barge Master		[Redacted]		NGP Project Director	
								NGP Operation Chief	
NGP HSE Advisors									
[Redacted]									
Total POB Onboard <small>As per today's report</small>	To		Technical Marine Superintendent		[Redacted]		[Redacted]		
	[Redacted]		[Redacted]		[Redacted]		[Redacted]		
35	[Redacted]		[Redacted]		[Redacted]		[Redacted]		

POB #	Name	Company	Position	Employment #	Nationality	Passport Validity	Date Arrive On AP1	Cabin #	Days Onboard	Medical Expiry Date	BOSIET/FOET Expiry Date
01		Aurora	Barge Master		GBR	28th June 2033	6/Oct/23	OIMA	21 Day		
02		Aurora	Chief Elect		UKR	22nd October 2028	6/Oct/23	206 A	21 Day		
03		Aurora	Chief Mech		UKR	23rd July 2033	6/Oct/23	206 B	21 Day		
04		Duta Marine	Mech		MYS	8th December 2025	6/Oct/23	210A	21 Day		
05		Diamond	Mech		THAI	29th May 2027	6/Oct/23	104A	21 Day		
06		Diamond	E&I Engineer		THAI	01 st August 2027	19/Oct/23	103B	8 Day		
07		Diamond	Electrician		THAI	16 th march 2027	19/Oct/23	104A	8 Day		
08		Diamond	Crane OP		IDN	15th May 2024	6/Oct/23	103A	21 Day		

Company Registration No: 202101335E. Registered Office: 152 Beach Road, #10-07 Gateway East, Singapore 189721

09		Duta Marine	Leading deckhand /Bosun		MYS	8th February 2027	6/Oct/23	210B	21 Day		
10		Diamond	Welder		THAI	25th October 2026	6/Oct/23	103B	21 Day		
11		Diamond	Safety/Medic		THAI	28th August 2033	6/Oct/23	Medic A	21 Day		
12		Diamond	Radio OP		THAI	23rd September 2024	6/Oct/23	Medic B	21 Day		
13		Diamond	Roustabout		THAI	31st March 2026	6/Oct/23	105A	21 Day		
14		Diamond	Roustabout		THAI	23rd February 2025	6/Oct/23	105B	21 Day		
15		Diamond	Motor Man		THAI	31st January 2027	23/Oct/23	106A	4 Day		
16		Diamond	Motor Man		THAI	12 th December 2024	23/Oct/23	106B	4 Day		
17		Sodexo	Camp boss		THAI	16th February 2025	6/Oct/23	108A	21 Day		
18		Sodexo	Cook		THAI	11th May 2027	6/Oct/23	108B	21 Day		
19		Sodexo	Cook		THAI	19th September 2028	6/Oct/23	108C	21 Day		
20		Sodexo	LAUNDRY		THAI	25th May 2028	6/Oct/23	108D	21 Day		
21		Sodexo	MESSBOY		THAI	2nd August 2033	6/Oct/23	108E	21 Day		
22		NGP	Safety		THAI	23 Jul 2024	16/Oct/23	205C	11 Day		

Company Registration No: 202101335E. Registered Office: 152 Beach Road, #10-07 Gateway East, Singapore 189721

	<h2 style="text-align: center;">Aurora Producer 1</h2> <h3 style="text-align: center;">Daily Personnel Onboard Report</h3>								Document #	
									AP1POBDWT	
									Revision Date	
									04 October 2023	
									Report #	
		26								

23		NGP	Engineer		MYANMAR	25 th August 2028	23/Oct/23	CompanyA	4 Day		
24		Production Solutions	Platform Supervisor		THAI	25th October 2026	16/Oct/23	205A	11 Day		
25		Production Solutions	Mechanic		THAI	31st January 2027	16/Oct/23	107F	11 Day		
26		Production Solutions	Platform Supervisor		THAI	11th May 2027	16/Oct/23	107E	11 Day		
27		Production Solutions	Operations		THAI	16th February 2025	16/Oct/23	107A	11 Day		
28		Production Solutions	Operations		THAI	19th September 2028	16/Oct/23	107B	11 Day		
29		Production Solutions	Operations		THAI	01 st August 2027	16/Oct/23	107C	11 Day		
30		Production Solutions	Operations		THAI	28th August 2033	16/Oct/23	107D	11 Day		
31		Production Solutions	E&I Engineer		THAI	16 th March 2027	16/Oct/23	101B	11 Day		
32		Production Solutions	Platform Supervisor		IDN	11 th January 2027	16/Oct/23	101C	11 Day		
33		Production Solutions	Operations		IDN	11 th August 2027	16/Oct/23	102A	11 Day		
34		Production Solutions	Operations		IDN	11 th August 2027	16/Oct/23	102B	11 Day		
35		Production Solutions	Operations		IDN	4 th October 2033	16/Oct/23	102C	11 Day		

Report Compiled By	Name		Position	Barge Master	Date	26/10/2023
--------------------	------	--	----------	--------------	------	------------



Document #
AP1POBDWT
Revision Date
04 October 2023
Report #
352

Max POB 50 Total POB Onboard As per today's report 30	Date	26/09/2024		Current Operation		Production								
		AP1 POB Report Dissemination List												
			Name	Position	Email			Name	Position	Email			NGP	
		From		AP1 Barge Master/OIM				Managing Director					Production Operations OIM	

POB	Name	Company	Position	Nationality	Passport Validity	Date Arrive On AP1	Cabin	Days Onboard
01		Aurora	Barge Master/OIM	British	28th June 2033	14/Sep/24	207A	13 Day
02		Aurora	Chief Mech	Ukrainian	23 rd July 2033	21/Sep/24	205A	6 Day
03		Aurora	Chief Elect	Ukrainian	22 nd October 2028	21/Sep/24	206A	6 Day
04		Diamond	Mechanic	Thai	26 th December 2028	31/Aug/24	104A	27 Day
05		Diamond	E&I Engineer	Thai	28 th August 2032	21/Sep/24	103C	6 Day
06		Diamond	Electrician	Thai	20 th March 2027	31/Aug/24	104C	27 Day
07		Aurora	Crane OP	Indonesian	20 th December 2025	31/Aug/24	209A	27 Day
08		Diamond	Radio	Thai	27 th June 2034	31/Aug/24	209C	27 Day
09		Diamond	Safety	Thai	07 th November 2032	31/Aug/24	201A	27 Day
10		Diamond	Medic	Thai	22 nd February 2026	21/Sep/24	201B	6 Day

Company Registration No: 202101335E. Registered Office: 152 Beach Road, #10-07 Gateway East, Singapore 189721



Document #
AP1POBDWT
Revision Date
04 October 2023
Report #
352

11	[REDACTED]		Diamond	Welder	Thai	05 th August 2027	31/Aug/24	103A	27 Day
12			Diamond	Motor Man	Thai	31 st January 2027	31/Aug/24	106A	27 Day
13			Diamond	Motor Man	Thai	28 th November 2032	21/Sep/24	106C	6 Day
14			Diamond	Roustabout	Thai	31 st March 2026	31/Aug/24	105C	27 Day
15			Diamond	Roustabout	Thai	06 th January 2027	31/Aug/24	105A	27 Day
16			Sodexo	Camp boss	Thai	9 th March 2026	7/Sep/24	107A	20 Day
17			Sodexo	Cook	Thai	27 th May 2029	7/Sep/24	107B	20 Day
18			Sodexo	Steward	Thai	25 th May 2028	21/Sep/24	107C	6 Day
19			Sodexo	Steward	Thai	16 th May 2029	7/Sep/24	107D	20 Day
20			NGP	OIM	Thai	3 rd April 2028	21/Sep/24	204A	6 Day
21			NGP	HSE	Thai	20 th March 2027	21/Sep/24	204B	6 Day
22			Production Solutions	Production Supervisor	Thai	15 th March 2032	21/Sep/24	210A	6 Day
23			Production Solutions	Operator	Thai	27 th March 2032	21/Sep/24	101C	6 Day
24			Production Solutions	Operator	Thai	14 th June 2027	7/Sep/24	101B	20 Day
25			Production Solutions	Operator	Thai	11 th April 2032	31/Aug/24	102B	27 Day
26			Production Solutions	Operator	Thai	22 nd February 2034	7/Sep/24	102C	20 Day
27			Production Solutions	Senior Operator	Thai	07 th July 2025	14/Sep/24	210C	13 Day
28			Production Solutions	Operator	Thai	29 th January 2025	21/Sep/24	101A	6 Day
29			Production Solutions	GC Operator	Thai	16 th June 2025	7/Sep/24	102A	20 Day
30			Production Solutions	GC Operator	Thai	30 th October 2033	21/Sep/24	102D	6 Day

Company Registration No: 202101335E. Registered Office: 152 Beach Road, #10-07 Gateway East, Singapore 189721

ภาคผนวก

เรือกักเก็บปิโตรเลียม (FSO)

ภาคผนวกเรือกักเก็บปิโตรเลียม-1

เรือกักเก็บปิโตรเลียม Pride 1

- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-1.1 แผนผังของเรือกักเก็บปิโตรเลียม Pride 1
- ภาคผนวกแทนผลิตแบบเคลื่อนย้ายได้-1.2 ตัวอย่างบันทึกการตรวจสอบอุปกรณ์
ความปลอดภัยของเรือ

ภาคผนวกเรือกักเก็บปิโตรเลียม-1.1

แผนผังของเรือกักเก็บปิโตรเลียม Pride 1

20

ON

DRAWING HISTORY

FEB. 13, 1999, DRAWN AT OUR OFFICE

OCT 27, 1999 1ST REVISION
CHEMICAL'S ITEMS ARE ADDED.

FOR FINISHED PLAN

NOTES:

- THIS PLAN IS DRAWN UP IN ACCORDANCE WITH THE FOLLOWING DRAWINGS WHICH HAVE BEEN APPROVED BY NK AND BY THE OWNER.
 - 'F-1-032' LIFE SAVING EQUIPMENT ARRANGEMENT
 - 'F-1-105' VENTILATION, STEEL DOOR & STEEL LADDER ARR.
 - 'F-1-180' VENTILATION, STEEL DOOR & STEEL LADDER ARR. (ACCOMMODATION QUARTERS)
 - 'F-1-330' FIRE AND WASH DECK PIPING DIAGRAM (HULL PART)
 - 'F-1-640' SCHEDULE OF FIRE PROTECTION
 - 'E-1-201' ARRANGEMENT OF ELECTRIC EQUIPMENT
 - 'M-1-205' ARRANGEMENT OF FIRE EXTINGUISHERS IN ENGINE ROOM
- ONE (1) SET OF 'FIRE CONTROL & LIFE SAVING APPLIANCE PLAN' WITH WOODEN FRAME TO BE EXHIBITED ON BOARD AS FOLLOWS. ('B' DECK : 1 SET)
- TWO (2) SETS OF 'FIRE CONTROL & LIFE SAVING APPLIANCE PLAN' FOLDED INTO 'A-4' SIZE TO BE STOWED IN WEATHERTIGHT BOX AND TO BE FITTED OUTSIDE THE DECK HOUSE ON UPPER DECK AS SHOWN ON THIS PLAN.

CONFERRED

船一船

2

船一管

2

機一電

2

船一計

2

機一器

(計) (機)

2

2 SHEETS WITH COVER



FINISHED PLAN

NAMURA SHIPBUILDING CO., LTD.
DESIGN DEPARTMENT

OUTFIT DESIGN SECTION

APPROVED CHECKED CHECKED DRAWN

Signature: K. H. Hada
Signature: S. H. Hada

TEL (320) TEL (330) TEL (332) TEL (332)

SNo. 980

MILLENNIUM EXPLORER

FIRE CONTROL
& LIFE SAVING
APPLIANCE PLANDATE DRAWN
FEB. 13, 1999SCALE
—DWG. NO.
F-1-641

配布先

海運局

組合(NK) 3

船主

監督

長

生計画

組 1

組 2

組 3

組 4

組 5

組 6

組 7

組 8

組 9

組 10

組 11

組 12

組 13

組 14

組 15

組 16

組 17

組 18

組 19

組 20

組 21

組 22

組 23

組 24

組 25

組 26

組 27

組 28

組 29

組 30

組 31

組 32

組 33

組 34

組 35

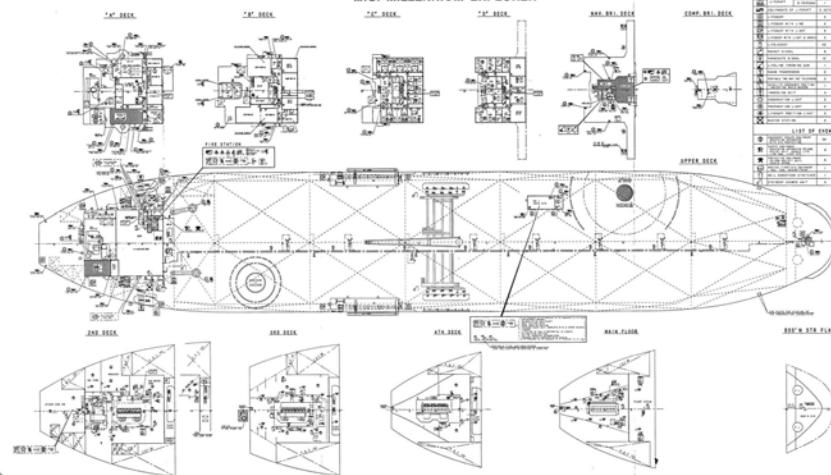
組 36

組 37

組 38

組 39

組 40

FIRE CONTROL & LIFE SAVING APPLIANCE PLAN
M.S. MILLENNIUM EXPLORER

LIST OF LIFE SAVING EQUIPMENTS	
NO.	DESCRIPTION
1	Life Buoy
2	Life Raft
3	Life Jacket
4	Life Line
5	Life Ring
6	Life Buoy
7	Life Raft
8	Life Jacket
9	Life Line
10	Life Ring
11	Life Buoy
12	Life Raft
13	Life Jacket
14	Life Line
15	Life Ring
16	Life Buoy
17	Life Raft
18	Life Jacket
19	Life Line
20	Life Ring
21	Life Buoy
22	Life Raft
23	Life Jacket
24	Life Line
25	Life Ring
26	Life Buoy
27	Life Raft
28	Life Jacket
29	Life Line
30	Life Ring
31	Life Buoy
32	Life Raft
33	Life Jacket
34	Life Line
35	Life Ring
36	Life Buoy
37	Life Raft
38	Life Jacket
39	Life Line
40	Life Ring

LIST OF FIRE CONTROL EQUIPMENTS	
NO.	DESCRIPTION
1	Fire Alarm
2	Fire Extinguisher
3	Fire Hose
4	Fire Pump
5	Fire Door
6	Fire Ladder
7	Fire Alarm
8	Fire Extinguisher
9	Fire Hose
10	Fire Pump
11	Fire Door
12	Fire Ladder
13	Fire Alarm
14	Fire Extinguisher
15	Fire Hose
16	Fire Pump
17	Fire Door
18	Fire Ladder
19	Fire Alarm
20	Fire Extinguisher
21	Fire Hose
22	Fire Pump
23	Fire Door
24	Fire Ladder
25	Fire Alarm
26	Fire Extinguisher
27	Fire Hose
28	Fire Pump
29	Fire Door
30	Fire Ladder
31	Fire Alarm
32	Fire Extinguisher
33	Fire Hose
34	Fire Pump
35	Fire Door
36	Fire Ladder
37	Fire Alarm
38	Fire Extinguisher
39	Fire Hose
40	Fire Pump
41	Fire Door
42	Fire Ladder
43	Fire Alarm
44	Fire Extinguisher
45	Fire Hose
46	Fire Pump
47	Fire Door
48	Fire Ladder
49	Fire Alarm
50	Fire Extinguisher

DESCRIPTION	
1	Life Buoy
2	Life Raft
3	Life Jacket
4	Life Line
5	Life Ring
6	Life Buoy
7	Life Raft
8	Life Jacket
9	Life Line
10	Life Ring
11	Life Buoy
12	Life Raft
13	Life Jacket
14	Life Line
15	Life Ring
16	Life Buoy
17	Life Raft
18	Life Jacket
19	Life Line
20	Life Ring
21	Life Buoy
22	Life Raft
23	Life Jacket
24	Life Line
25	Life Ring
26	Life Buoy
27	Life Raft
28	Life Jacket
29	Life Line
30	Life Ring
31	Life Buoy
32	Life Raft
33	Life Jacket
34	Life Line
35	Life Ring
36	Life Buoy
37	Life Raft
38	Life Jacket
39	Life Line
40	Life Ring
41	Life Buoy
42	Life Raft
43	Life Jacket
44	Life Line
45	Life Ring
46	Life Buoy
47	Life Raft
48	Life Jacket
49	Life Line
50	Life Ring

ภาคผนวกเรือกักเก็บปิโตรเลียม-1.2

ตัวอย่างบันทึกการตรวจสอบอุปกรณ์ความปลอดภัยของเรือ

RNM		MONTHLY INSPECTION OF LIFERAFTS			
MT PRIDE 1			MONTH - DEC 2024		
LIFE RAFT					
1	Life Raft PORT (20 pers)	MAKE	SHANGHAI STAR RUBBER CO LTD	DATE	REMARKS
		MODEL:	SMLR-A-20		
		S/N:	23A20097		
		DATE OF MFR:	Aug-23		
		PAINTER:	46 m		
		NEXT SERVICE:	Aug-25		
HRU EXPIRY	Mar-26				
2	Life Raft STBD (16 pers)	MAKE	SHANGHAI STAR RUBBER CO LTD	DATE	REMARKS
		MODEL:	SMLR-A-16		
		S/N:	23A16210		
		DATE OF MFR:	Aug-23		
		PAINTER:	46 m		
		NEXT SERVICE:	Aug-25		
HRU EXPIRY	Mar-26				
3	Life Raft STBD (20 pers)	MAKE	SHANGHAI STAR RUBBER CO LTD	DATE	REMARKS
		MODEL:	SMLR-A-20		
		S/N:	23A20098		
		DATE OF MFR:	Aug-23		
		PAINTER:	46 m		
		NEXT SERVICE:	Aug-25		
HRU EXPIRY	Mar-26				
4	Life Raft PORT (16 pers)	MAKE	SHANGHAI STAR RUBBER CO LTD	DATE	REMARKS
		MODEL:	SMLR-A-16		
		S/N:	23A16209		
		DATE OF MFR:	Aug-23		
		PAINTER:	46 m		
		NEXT SERVICE:	Aug-25		
HRU EXPIRY	Mar-26				
5	Life Raft FWD (6 pers)	MAKE	SHANGHAI STAR RUBBER CO LTD	DATE	REMARKS
		MODEL:	SMLR-A-6		
		S/N:	23A06301		
		DATE OF MFR:	Aug-23		
		PAINTER:	46 m		
		NEXT SERVICE:	Aug-25		
HRU EXPIRY	NA				

THIRD OFFICER

CHIEF OFFICER

RNM		MONTHLY INSPECTIONS OF FOAM, FIRE HYDRANTS AND FOAM MONITORS					
		NOV-2024					
MT PRIDE 1		LIBERIA					
FOAM HYDRANTS							
No	LOCATION	TYPE	Side	Diameter	INSPECTION DATE	REMARKS	
1	Foam Hydrant	Upp Deck, COT1	Deck Foam System	MID	065mm	25 - NOV - 24	OK
2	Foam Hydrant	Upp Deck, COT2	Deck Foam System	MID	065mm	25 - NOV - 24	OK
3	Foam Hydrant	Upp Deck, COT2	Deck Foam System	MID	065mm	25 - NOV - 24	OK
4	Foam Hydrant	Upp Deck, COT3	Deck Foam System	MID	065mm	25 - NOV - 24	OK
5	Foam Hydrant	Upp Deck, COT4	Deck Foam System	MID	065mm	25 - NOV - 24	OK
6	Foam Hydrant	Upp Deck, COT4	Deck Foam System	MID	065mm	25 - NOV - 24	OK
7	Foam Hydrant	Upp Deck, COT5	Deck Foam System	MID	065mm	25 - NOV - 24	OK
8	Foam Hydrant	Upp Deck, COT6	Deck Foam System	MID	065mm	25 - NOV - 24	OK
9	Foam Hydrant	Upp Deck, Acc.	Deck Foam System	PORT	065mm	25 - NOV - 24	OK
10	Foam Hydrant	Upp Deck, Acc.	Deck Foam System	STBD	065mm	25 - NOV - 24	OK
FIRE HYDRANTS							
No	LOCATION	TYPE	Side	Diameter	INSPECTION DATE	REMARKS	
1	Fire Hydrant	Bridge Deck	For Sea Water System	STBD	040mm	25 - NOV - 24	OK
2	Fire Hydrant	Acc. 10" Deck	For Sea Water System	STBD	040mm	25 - NOV - 24	OK
3	Fire Hydrant	Acc. 10" Deck	For Sea Water System	STBD	040mm	25 - NOV - 24	OK
4	Fire Hydrant	Acc. 10" Deck	For Sea Water System	STBD	040mm	25 - NOV - 24	OK
5	Fire Hydrant	Acc. 10" Deck	For Sea Water System	STBD	040mm	25 - NOV - 24	OK
6	Fire Hydrant	Upp Deck, Accom.	For Sea Water System	PORT	065mm	25 - NOV - 24	OK
7	Fire Hydrant	Upp Deck, Accom.	For Sea Water System	STBD	065mm	25 - NOV - 24	OK
8	Fire Hydrant	Upp Deck	For Sea Water System	AFT	065mm	25 - NOV - 24	OK
9	Fire Hydrant	10" Deck, Accom. Outside	For Sea Water System	AFT	065mm	25 - NOV - 24	OK
10	Fire Hydrant	10" Deck, Accom. Outside	For Sea Water System	AFT	065mm	25 - NOV - 24	OK
11	Fire Hydrant	Upp Deck, FWD	For Sea Water System	MID	065mm	25 - NOV - 24	OK
12	Fire Hydrant	Upp Deck, COT1	For Sea Water System	MID	065mm	25 - NOV - 24	OK
13	Fire Hydrant	Upp Deck, COT2	For Sea Water System	MID	065mm	25 - NOV - 24	OK
14	Fire Hydrant	Upp Deck, COT3	For Sea Water System	MID	065mm	25 - NOV - 24	OK
15	Fire Hydrant	Upp Deck, COT4	For Sea Water System	MID	065mm	25 - NOV - 24	OK
16	Fire Hydrant	Upp Deck, COT5	For Sea Water System	MID	065mm	25 - NOV - 24	OK
17	Fire Hydrant	Upp Deck, SL STBD	For Sea Water System	MID	065mm	25 - NOV - 24	OK
18	Fire Hydrant	Eng. Room, 2nd Deck	For Sea Water System	PORT	065mm	25 - NOV - 24	OK
19	Fire Hydrant	Eng. Room, 2nd Deck	For Sea Water System	STBD	065mm	25 - NOV - 24	OK
20	Fire Hydrant	Eng. Room, 3rd Deck	For Sea Water System	PORT	065mm	25 - NOV - 24	OK
21	Fire Hydrant	Eng. Room, 3rd Deck	For Sea Water System	STBD	065mm	25 - NOV - 24	OK
22	Fire Hydrant	Eng. Room, Main Floor	For Sea Water System	PORT	065mm	25 - NOV - 24	OK
23	Fire Hydrant	Eng. Room, Main Floor	For Sea Water System	STBD	065mm	25 - NOV - 24	OK
24	Fire Hydrant	Pump Room, Main Floor	For Deck Foam System	PORT	065mm	25 - NOV - 24	OK
25	Fire Hydrant	Pump Room, Main Floor	For Deck Foam System	STBD	065mm	25 - NOV - 24	OK

DECK FOAM MONITORS					
1	Foam Monitor	Upp Deck, COT1	For Deck Foam System	FWD	25 - NOV - 24
2	Foam Monitor	Upp Deck, COT2	For Deck Foam System	MID	25 - NOV - 24
3	Foam Monitor	Upp Deck, COT2	For Deck Foam System	MID	25 - NOV - 24
4	Foam Monitor	Upp Deck, COT3	For Deck Foam System	MID	25 - NOV - 24
5	Foam Monitor	Upp Deck, COT4	For Deck Foam System	MID	25 - NOV - 24
6	Foam Monitor	Upp Deck, COT4	For Deck Foam System	MID	25 - NOV - 24
7	Foam Monitor	Upp Deck, COT5	For Deck Foam System	MID	25 - NOV - 24
8	Foam Monitor	Upp Deck, COT6	For Deck Foam System	MID	25 - NOV - 24
9	Foam Monitor	Upp Deck, Acc.	For Deck Foam System	STBD	25 - NOV - 24
10	Foam Monitor	Upp Deck, Acc.	For Deck Foam System	PORT	25 - NOV - 24
SECTION VALVE FOR SEA WATER SPRINKLER SYSTEM					
1	Section Valve	Upp Deck, Sample Locker	For Sprinkler System	PORT	25 - NOV - 24
2	Section Valve	Upp Deck, Accommodation	For Sprinkler System	PORT	25 - NOV - 24
UPPER DECK FIRE AND FOAM ISOLATION VALVES					
1	Isolation Valve	Upp Deck, COT1	For Sea Water System	MID	25 - NOV - 24
2	Isolation Valve	Upp Deck, COT2	For Sea Water System	MID	25 - NOV - 24
3	Isolation Valve	Upp Deck, COT2	For Sea Water System	MID	25 - NOV - 24
4	Isolation Valve	Upp Deck, COT2	For Sea Water System	MID	25 - NOV - 24
5	Isolation Valve	Upp Deck, COT3	For Sea Water System	MID	25 - NOV - 24
6	Isolation Valve	Upp Deck, COT3	For Sea Water System	MID	25 - NOV - 24
7	Isolation Valve	Upp Deck, COT4	For Sea Water System	MID	25 - NOV - 24
8	Isolation Valve	Upp Deck, COT4	For Sea Water System	MID	25 - NOV - 24
9	Isolation Valve	Upp Deck, COT5	For Sea Water System	MID	25 - NOV - 24
10	Isolation Valve	Upp Deck, COT4	For Sea Water System	MID	25 - NOV - 24
11	Isolation Valve	Upp Deck, SL STBD	For Sea Water System	MID	25 - NOV - 24
12	Isolation Valve	Upp Deck, COT5	For Sea Water System	MID	25 - NOV - 24
13	Isolation Valve	Upp Deck, COT6	For Sea Water System	MID	25 - NOV - 24

THIRD OFFICER

CHIEF OFFICER

RNM		FSO PRIDE 1			
		FIRE DETECTORS TESTING LIST - OCT TO DEC 2024			
SR. NO.	LOCATION	TYPE	REMARKS	GROUP	
ZONE 1					
1	BRIDGE	SMOKE	TESTED, OK (05.10.24)	1	
ZONE 2 -- D Deck					
2	Stairs from D Deck to Bridge	SMOKE	TESTED, OK (05.10.24)	2	
3	D Deck Port	SMOKE	TESTED, OK (05.10.24)	3	
4	D Deck SIB	SMOKE	TESTED, OK (05.10.24)	4	
5	D Deck Center	SMOKE	TESTED, OK (05.10.24)	5	
6	D Deck Port Entrance	MP	TESTED, OK (12.10.24)	6	
7	D Deck SIB Entrance	MP	TESTED, OK (12.10.24)	7	
8	Forward Busin store	SMOKE	TESTED, OK (12.10.24)	8	
9	Forward Busin store Entrance	MP	TESTED, OK (12.10.24)	9	
ZONE 3 -- C Deck					
7	Stairs from C to D Deck	SMOKE	TESTED, OK (02.11.24)	10	
8	C Deck Port forward	SMOKE	TESTED, OK (02.11.24)	11	
9	C Deck Port Aft	SMOKE	TESTED, OK (02.11.24)	12	
10	C Deck SIB Forward	SMOKE	TESTED, OK (02.11.24)	13	
11	C Deck SIB Aft	SMOKE	TESTED, OK (02.11.24)	11	
4	C Deck Port Entrance	MP	TESTED, OK (02.11.24)	9	
5	C Deck SIB Entrance	MP	TESTED, OK (02.11.24)	13	
ZONE 4 -- B Deck					
12	Stairs from B to C Deck	SMOKE	TESTED, OK (09.11.24)	7	
13	B Deck Port	SMOKE	TESTED, OK (09.11.24)	6	
14	B Deck SIB	SMOKE	TESTED, OK (09.11.24)	1	
6	B Deck Port Entrance	MP	TESTED, OK (09.11.24)	12	
7	B Deck SIB Entrance	MP	TESTED, OK (09.11.24)	11	
ZONE 5 -- A Deck					
15	Stairs from A to B Deck	SMOKE	TESTED, OK (07.12.24)	2	
16	Emergency Generator Room	SMOKE	TESTED, OK (07.12.24)	3	
17	Stairs to Provision Space	SMOKE	TESTED, OK (07.12.24)	4	
18	Galley	HEAT	TESTED, OK (07.12.24)	5	
8	Provision Handling Space	MP	TESTED, OK (07.12.24)	10	
19	A Deck Port	SMOKE	TESTED, OK (07.12.24)	8	
20	A Deck SIB	SMOKE	TESTED, OK (07.12.24)	10	
21	A Deck Center	SMOKE	TESTED, OK (07.12.24)	11	
9	A Deck Port Entrance	MP	TESTED, OK (07.12.24)	3	
10	A Deck SIB Entrance	MP	TESTED, OK (07.12.24)	2	
ZONE 6 -- Upper Deck					
22	Stairs Upper Deck to A Deck	SMOKE	TESTED, OK (14.12.24)	12	
23	Hydraulic Room	SMOKE	TESTED, OK (14.12.24)	13	
24	Paint Store	SMOKE	TESTED, OK (14.12.24)	9	
25	Upper Deck	SMOKE	TESTED, OK (14.12.24)	7	
11	Upper Deck Port Entrance	MP	TESTED, OK (14.12.24)	4	
26	Nitrogen Room Port	SMOKE	TESTED, OK (14.12.24)	6	
27	Nitrogen Room SIB	SMOKE	TESTED, OK (14.12.24)	1	
ZONE 7 -- Steering Flat					
28	Above Hydraulic Pump Port	SMOKE	TESTED, OK (19.10.24)	2	
29	Above Emergency Fire Pump	SMOKE	TESTED, OK (19.10.24)	3	
30	Above Steering Motors	SMOKE	TESTED, OK (19.10.24)	4	

ZONE 8 -- Engine Case				
31	Above Expansion Tank	SMOKE	TESTED, OK (12.10.24)	5
32	Above BR Port Fan	SMOKE	TESTED, OK (12.10.24)	8
ZONE 9 -- Workshop Level				
33	Workshop Above Work Table	HEAT	TESTED, OK (27.11.24)	10
34	Workshop Above ME Test Bench	HEAT	TESTED, OK (27.11.24)	11
35	Above Space Heater	SMOKE	TESTED, OK (27.11.24)	12
36	DG LO Storage Tank	SMOKE	TESTED, OK (27.11.24)	13
37	Above ECR	SMOKE	TESTED, OK (27.11.24)	9
38	Above ECR Window	SMOKE	TESTED, OK (27.11.24)	7
39	Above LO Settling Tank	SMOKE	TESTED, OK (27.11.24)	6
40	Above ME Aft	SMOKE	TESTED, OK (27.11.24)	1
41	Above DO Settling Tank	SMOKE	TESTED, OK (27.11.24)	2
42	Above Soot Collecting Tank	SMOKE	TESTED, OK (27.11.24)	3
43	Above Boiler Port	SMOKE	TESTED, OK (27.11.24)	4
44	Above BR Store	SMOKE	TESTED, OK (27.11.24)	5
ZONE 10 -- ECR				
45	Above Alarm Monitor	SMOKE	TESTED, OK (07.12.24)	8
46	Above Table	SMOKE	TESTED, OK (07.12.24)	10
ZONE 11 -- Pump Room				
47	P/R 1ST Deck	SMOKE	TESTED, OK (23.11.24)	11
48	P/R 2ND Deck	SMOKE	TESTED, OK (23.11.24)	12
49	P/R Lower Deck Port	SMOKE	TESTED, OK (23.11.24)	13
50	P/R Lower Deck SIB	SMOKE	TESTED, OK (23.11.24)	9
51	P/R Lower Deck Center	SMOKE	TESTED, OK (23.11.24)	7
12	P/R Entrance Stab Side	MOP	TESTED, OK (23.11.24)	8
ZONE 12 -- 3rd Deck				
52	Above DG #1 Fore	SMOKE	TESTED, OK (16.11.24)	6
53	Above DG #3 Fore	SMOKE	TESTED, OK (16.11.24)	1
54	Above DG #4 Aft	SMOKE	TESTED, OK (16.11.24)	2
55	Above P/VG	SMOKE	TESTED, OK (16.11.24)	3
56	Above Pilot Burner Pump	SMOKE	TESTED, OK (16.11.24)	4
ZONE 13 -- Purifier Level				
57	Above FO Booster Pump	SMOKE	TESTED, OK (14.12.24)	5
58	Above FO Booster	SMOKE	TESTED, OK (14.12.24)	8
ZONE 14 -- 4th Deck				
59	Above Main Compressor S/bal	SMOKE	TESTED, OK (07.12.24)	10
60	Above COP Turbines	SMOKE	TESTED, OK (07.12.24)	11
61	Above Sludge Collector	SMOKE	TESTED, OK (07.12.24)	12
62	Above LO Cooler	SMOKE	TESTED, OK (07.12.24)	13
63	Above Main Shaft	SMOKE	TESTED, OK (07.12.24)	9
64	Above LO Transfer Pump	SMOKE	TESTED, OK (07.12.24)	7
65	Above S/W Service Pump	SMOKE	TESTED, OK (07.12.24)	6
ZONE 15				
13	ECR Entrance	MOP	TESTED, OK (19.10.24)	4
14	Engine Room Entrance	MOP	TESTED, OK (19.10.24)	1
15	Emergency Escape Trunking	MOP	TESTED, OK (19.10.24)	5

ETO
ABDULQAIYOOM/NOPPADOL

ภาคผนวกเรือกักเก็บปิโตรเลียม-2

ข้อกำหนดและนโยบายต่าง ๆ ของเรือกักเก็บปิโตรเลียม Pride 1

- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.1 ตัวอย่างเอกสารการขออนุญาตปฏิบัติงาน
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.2 ตัวอย่างเอกสารข้อมูลความปลอดภัยของสารเคมี
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.3 Terminal Regulation และ Cargo Transfer Checklist
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.4 Fender and Mooring Plan
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.5 STS Hose Certificate
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.6 Ship to Ship Transfer Checklist
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.7 Corrosion Prevention
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.8 Load test cert และ inspection
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.9 ตัวอย่างเอกสารการวิเคราะห์งานเพื่อความปลอดภัยของอุปกรณ์การยก
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.10 การออกแบบและวิเคราะห์ระบบยึดโยงเรือ (Mooring Analysis)
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-2.11 Oil Companies International Marine Forum (OCIMF)

ภาคผนวกเรื่องกักเก็บปิโตรเลียม-2.1
ตัวอย่างเอกสารการขออนุญาตปฏิบัติงาน

COLD WORK PERMIT
(FOR MAINTENANCE ON PRESSURIZED SYSTEM ALSO)

Ref No: 024/12/10 Date: 13/03/2024
 Ship Code/Permit Code: BSM 134
 SMC/PT: ROSSKON WILL FIELD
 Location: LUBD
 Type of work: CRUISE
 Location of work: M1031P
 Reason for work: CRUISE VIBRATION / PRESSURE TRANSFER
 Description of work:
 This permit is valid from 07:00 hrs Date 13 FEB 24 to 19:00 hrs Date 13 FEB 24
 (Validity of this permit should not exceed 12 hours)

Have any other permits been issued? YES / NO / N/A
 If YES, type of permit:
 Does the work require entry inside machinery? YES / NO / N/A
 If YES, has the permit to work BSM 134 completed with?
 Personnel carrying out work: RAKESH S. (C/OFF)
 Officer in charge of the cold work: RAKESH S. (C/OFF)

SECTION 1
 Preparation and checks to be carried out by Officer in Charge of cold work to be performed.

1. Is BA prepared? Reviewed? YES / NO / N/A
 2. The equipment/pipeline has been prepared as follows:
 Drained: YES / NO / N/A
 Washed: YES / NO / N/A
 Coated: YES / NO / N/A
 Purged: YES / NO / N/A
 3. List the equipment/lines to be isolated and residual energy to be addressed (forms of energy to be addressed: Electrical, Pneumatic, Mechanical, Hydraulic, Chemical, Pressure (including toxic vapour release), Thermal Energy, Potential Energy and Others)
 Equipment Isolated: Location: Energy addressed: Control Method (eg: Lock out, Tag out, Blanking etc):
 4. Are Procedures in place for shut down and start up of equipment/lines listed above (attach procedures where applicable)?
 5. Are primary isolating valves tagged with 'do not operate' notices?
 6. State the minimum level of isolation between work site and source of hazard (Single Block, Double Block, physical isolation etc)
 Isolation type:
 7. Is equipment free from:
 Gas (Specify Toxic Gases): YES / NO / N/A
 Steam: YES / NO / N/A
 Pressure: YES / NO / N/A
 8. Is surrounding area free from hazards? 7. Is control measures adopted to mitigate the hazards?
 9. Are the equipment/pipeline which carry flammable gases tested for hydrocarbon gas and a reading of less than 1% obtained?
 10. Is the illumination at the site adequate?
 11. Are tools and equipment to be used, of approved type?
 12. Is the access to work site safe?
 13. Is on-site first aid meeting conducted?

COLD WORK PERMIT
(FOR MAINTENANCE ON PRESSURIZED SYSTEM ALSO)

SECTION 2

- Information and instructions to person carrying out work on pressurized system:
- The following personal protection must be worn: SAFETY SHIMS, SAFETY HEADSET, SAFETY GLOVES, SAFETY SHOES
 - Equipment/pipeline contained following material in service: N/A
 - Equipment expected to contain the following hazardous material when opened: N/A
 - Special conditions / precautions: YES / NO / N/A

In the circumstances noted it is considered safe to proceed with this cold work.

Signed: Master / Chief Engineer

Officer in charge of the work

Personnel carrying out work

Date / Time: 13/03/2024 @ 07:00 hrs

Date / Time: 13/03/2024 @ 07:00 hrs

Date / Time: 13/03/2024 @ 07:00 hrs

COLD WORK PERMIT
(FOR MAINTENANCE ON PRESSURIZED SYSTEM ALSO)

Ref No: 024/12/10 Date: 02/01/2024
 Ship Code/Permit Code: BSM 134
 SMC/PT: ROSSKON WILL FIELD
 Location: LUBD
 Type of work: CRUISE
 Location of work: M1031P
 Reason for work: ROUTINE MAINTENANCE
 Description of work: A/E R-4 LD Cooler SW side cleaning
 This permit is valid from 07:00 hrs Date 02 JAN 24 to 17:00 hrs Date 02 JAN 24
 (Validity of this permit should not exceed 12 hours)

Have any other permits been issued? YES / NO / N/A
 If YES, type of permit:
 Does the work require entry inside machinery? YES / NO / N/A
 If YES, has the permit to work BSM 134 completed with?
 Personnel carrying out work: FITTER, OILER 1
 Officer in charge of the cold work: SELVA 3/E

SECTION 1
 Preparation and checks to be carried out by Officer in Charge of cold work to be performed.

1. Is BA prepared? Reviewed? YES / NO / N/A
 2. The equipment/pipeline has been prepared as follows:
 Drained: YES / NO / N/A
 Washed: YES / NO / N/A
 Coated: YES / NO / N/A
 Purged: YES / NO / N/A
 3. List the equipment/lines to be isolated and residual energy to be addressed (forms of energy to be addressed: Electrical, Pneumatic, Mechanical, Hydraulic, Chemical, Pressure (including toxic vapour release), Thermal Energy, Potential Energy and Others)
 Equipment Isolated: Location: Energy addressed: Control Method (eg: Lock out, Tag out, Blanking etc):
 4. Are Procedures in place for shut down and start up of equipment/lines listed above (attach procedures where applicable)?
 5. Are primary isolating valves tagged with 'do not operate' notices?
 6. State the minimum level of isolation between work site and source of hazard (Single Block, Double Block, physical isolation etc)
 Isolation type:
 7. Is equipment free from:
 Gas (Specify Toxic Gases): YES / NO / N/A
 Steam: YES / NO / N/A
 Pressure: YES / NO / N/A
 8. Is surrounding area free from hazards? 7. Is control measures adopted to mitigate the hazards?
 9. Are the equipment/pipeline which carry flammable gases tested for hydrocarbon gas and a reading of less than 1% obtained?
 10. Is the illumination at the site adequate?
 11. Are tools and equipment to be used, of approved type?
 12. Is the access to work site safe?
 13. Is on-site first aid meeting conducted?

COLD WORK PERMIT
(FOR MAINTENANCE ON PRESSURIZED SYSTEM ALSO)

SECTION 2

- Information and instructions to person carrying out work on pressurized system:
- The following personal protection must be worn: SAFETY SHIMS, SAFETY HEADSET, SAFETY GLOVES, SAFETY SHOES
 - Equipment/pipeline contained following material in service: LUB OIL, Sea Water
 - Equipment expected to contain the following hazardous material when opened: LUB OIL, Sea Water
 - Special conditions / precautions: RELATED VALVES LOCKED AND SIGN POSTED

In the circumstances noted it is considered safe to proceed with this cold work.

Signed: Master / Chief Engineer

Officer in charge of the work

Personnel carrying out work

Date / Time: 02/01/2024 @ 07:55

Date / Time: 02/01/2024 @ 07:55

Date / Time: 02/01/2024 @ 07:40 HRS

ภาคผนวกเรือกักเก็บปิโตรเลียม-2.2
ตัวอย่างเอกสารข้อมูลความปลอดภัยของสารเคมี

SECTION 1 Identification of the substance or preparation and of the company/undertaking

1.1 Product identifier

- Product Name: AUTOTREAT
- Product Part Number: 698720 (25 liter)

1.2 Relevant identified uses of the substance or mixture and uses advised against

- Use of the substance/preparation: Water treatment

1.3 Details of the supplier of the safety data sheet

Name of Supplier:
Head Office:
Wilhelmsen Ships Service AS
Strandveien 20, N1324 Lysaker,
Norway Tel: (47) 6349 440 35

Supplier:
Wilhelmsen Ships Service AS
Willems Barentsstraat 50
3165AB Rotterdam
Telephone: +31 4877 777
Fax: +31 4877 888
The Netherlands

Other suppliers SEE SECTION 16!!!
For quotations contact your local Customer Services

- Responsible Person: Product HSE Manager
- Telephone: +31 10 4877775
- Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com

1.4 Emergency telephone number

Emergency Telephone: -ONLY TO BE USED IN CASE OF AN INCIDENTNCEC+
44-1865 407333, CHEMTREC (800) 424 9300
American Chemistry Council +1 703 527 3887
Greece +30 210 7793777/Australia +61 3 9630 0998
Gifinformasjonsentralen in Norway Tel: +47 22591300
Wilhelmsen Ships Service, Melbourne, AUSTRALIA Emergency 24hrs: +61 3 9630 0998
***FOR QUOTATIONS PLEASE CONTACT YOUR LOCAL CUSTOMER SERVICES**

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

- Council Directive 1999/45/EEC Classification, packing and labeling of dangerous preparations.
- Refer to current The Dangerous Substances Directive (67/548/EEC)
- Symbols: C
- Causes severe burns (R35)
- Harmful if swallowed (R22)
- Regulations 1272/2008/EEC, Classification, labeling and packing of dangerous substances and preparations
- Symbols: GHS07, GHS05
- Signal Word: Danger

Datasheet Number 698720-r - v4.0.0

1

AUTOTREAT

Revision: 17 Oct 2013

SECTION 3 Composition/information on ingredients (...)

- 2-Aminoethanol
- Concentration: 1-5%
- CAS Number: 141-43-5
- EC Number: 205-483-3
- Symbols: C, GHS07, GHS05
- R/H Phrases: R34, R20/21/22 - H302, H312, H314, H335
- Categories: Acute Tox. 4, Skin Corr. 1B, STOT SE 3

SECTION 4 First aid measures

4.1 Description of first aid measures

- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower (P303+P361+P353).
- Seek medical attention if irritation persists
- Wash contaminated clothing before reuse (P363).
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338).
- Irrigate eyes thoroughly whilst lifting eyelids
- Obtain immediate medical attention
- Continue flushing with water until medical help arrives
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician (P301+P310).
- Rinse mouth (P330)
- Give plenty of water to drink
- Never make an unconscious person vomit or drink fluids
- Obtain immediate medical attention
- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P341)
- Inhalation is unlikely to occur

4.2 Most important symptoms and effects, both acute and delayed

- Can cause damage to the eyes, skin and mucous membranes
- Prolonged skin or eye contact may cause chemical burns
- Causes redness and irritation

4.3 Indication of any immediate medical attention and special treatment needed

- No information available

SECTION 5 Fire-fighting measures

5.1 Extinguishing media

- Not flammable. In case of fire use extinguishing media appropriate to surrounding conditions

5.2 Special hazards arising from the substance or mixture

- Reaction products may include nitrogen and carbon oxides

5.3 Advice for firefighters

- Smoke from fires is toxic. Take precautions to protect personnel from exposure
- Wear chemical protection suit and positive-pressure breathing apparatus

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Wear protective clothing as per section 8

Datasheet Number 698720-r - v4.0.0

3

AUTOTREAT

Revision: 17 Oct 2013

SECTION 2 Hazards identification (...)

- Acute Tox. 4
- Skin Corr. 1B
- Met. Corr. 1
- Harmful if swallowed (H302)
- Causes severe skin burns and eye damage (H314)
- May be corrosive to metals (H290)

2.2 Label elements



- Signal Word: Danger
- Acute Tox. 4
- Skin Corr. 1B
- Met. Corr. 1
- Contains:
- potassium hydroxide
- 2-aminoethanol
- 2-diethylaminoethanol
- Hazard phrases
- Harmful if swallowed (H302)
- Causes severe skin burns and eye damage (H314)
- May be corrosive to metals (H290)
- Precautionary Phrases
- Wear protective gloves/protective clothing/eye protection/face protection (P280)
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338)
- IF SWALLOWED: rinse mouth. Do NOT induce vomiting (P301+P330+P331)
- Immediately call a POISON CENTER or doctor/physician (P310)
- IF ON SKIN: (P302)
- IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes (P305+P360)

2.3 Other hazards

- Odour: Odourless
- Appearance: Liquid, pale yellow, soluble in water

SECTION 3 Composition/information on ingredients

3.1 Mixtures

- Potassium hydroxide
- Concentration: 5-10%
- CAS Number: 1310-58-3
- EC Number: 215-181-3
- Symbols: C, GHS07, GHS05
- R/H Phrases: R22, R35 - H302, H314, H335
- Categories: Acute Tox. 4, Met. Corr. 1, Skin Corr. 1A
- 2-Diethylaminoethanol
- Concentration: 1-5%
- CAS Number: 100-57-8
- EC Number: 202-845-2
- Symbols: C, GHS02, GHS07, GHS05
- R/H Phrases: R10, R20/21/22, R34 - H226, H302, H312, H332, H314
- Categories: Flam. Liq. 3, Acute Tox. 4, Skin Corr. 1B

Datasheet Number 698720-r - v4.0.0

2

AUTOTREAT

Revision: 17 Oct 2013

SECTION 6 Accidental release measures (...)

6.2 Environmental Precautions

- Do not allow to enter public sewers and watercourses

6.3 Methods and material for containment and cleaning up

- Absorb spillage in inert material and shovel up
- Ventilate the area and wash spill site after material pick-up is complete

6.4 Reference to other sections

- See Section 13

SECTION 7 Handling and storage

7.1 Precautions for safe handling

- See Section 8
- The usual precautions for handling chemicals should be observed
- Eyewash bottles should be available

7.2 Conditions for safe storage, including any incompatibilities

- Store in a dry place. Store in a closed container (P402+P404)
- Store in a well-ventilated place (P403)
- Protect from frost

7.3 Specific end use(s)

- Contact supplier for further information

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

- TLV (TWA) 1 ppm, 2.5 mg/m3 (2-Aminoethanol)
- TLV (TWA) 50 mg/m3 (2-diethylaminoethanol)
- TLV (TWA) 2 mg/m3 (Potassium hydroxide)

8.2 Exposure controls

- No special precautions are required for this product

8.3 Occupational exposure controls



- Wear suitable protective clothing, including eye/face protection and gloves (plastic or rubber are recommended)
- Penetration time of glove material:
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Respiratory protection may be required under exceptional circumstances when excessive air contamination exists
- Wear suitable respiratory protection: Gas cartridge (organic substances)

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Odour: Odourless
- Appearance: Liquid, pale yellow, soluble in water
- pH 13-14 at 100 % concentration
- Boiling point >100 °C to 750 °C
- Vapour pressure - not known
- Completely soluble in water

Datasheet Number 698720-r - v4.0.0

4

SECTION 9 Physical and chemical properties (....)

- Density: Density 1.105 - 1.125 g/cm³ at 20 deg C
- Flash point: > 82 deg C (CC)
- Non combustible

9.2 Other information

- No information available

SECTION 10 Stability and reactivity**10.1 Reactivity**

- This article is considered stable under normal conditions

10.2 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose

10.3 Incompatible materials

- Incompatible with acid
- Incompatible with amines
- Incompatible with strong oxidizing substances

10.4 Conditions to avoid

- Avoid overheating
- Keep away from frost

10.5 Hazardous Decomposition Products

- Decomposition products may include nitrogen and carbon oxides

SECTION 11 Toxicological information**11.1 Information on toxicological effects**

- LD50 (oral, rat) (2-aminoethanol) 1515 mg/kg
- LD50 (skin, rat) (2-aminoethanol) 4hrs 1025 mg/kg
- LD50 (oral, rat) (2-diethylaminoethanol) 1320 mg/kg
- LD50 (skin, rabbit) (2-diethylaminoethanol) 1100 mg/kg

11.2 Contact with eyes

- Corrosive to eyes

11.3 Contact with skin

- Causes redness and irritation
- In cases of severe exposure, blistering of the skin may develop

11.4 Ingestion

- Can cause damage to the digestive system

11.5 Inhalation

- Inhalation is unlikely to occur
- May cause severe irritation

SECTION 12 Ecological information**12.1 Toxicity**

- LC50 (fish) (2-diethylaminoethanol) 147 mg/l (96 hr)
- Biodegradability, OECD-test 28 days >60 % (2-diethylaminoethanol)
- LC50 (fish) (2-aminoethanol) 329 mg/l (96 hr)
- Biodegradability, OECD-test 28 days >60 % (2-aminoethanol)
- This product contains an acidic component which may cause a low pH-value. Effect depends on water quality and the organisms' tolerance due to pH-value

SECTION 12 Ecological information (....)**12.2 Persistence and degradability**

- The components in this product are readily biodegradable
- Degraded by hydrolysis

12.3 Bioaccumulation Potential

- Bioaccumulation of the components in this product is insignificant

12.4 Mobility in soil

- Completely soluble in water

12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII

12.6 Other Adverse Effects

- No information available

SECTION 13 Disposal considerations**13.1 Waste treatment methods**

- Do not discharge into drains or the environment, dispose to an authorised waste collection point
- Disposal should be in accordance with local, state or national legislation

13.2 Classification

- This material and/or its container must be disposed of as hazardous waste
- EU Waste class: 05-02-04

SECTION 14 Transport information**14.1 UN**

- UN No.: UN1814
- Proper Shipping Name: Potassiumhydroxide, solution
- Hazard Class: 8
- Packing Group: II

14.2 Environmental hazards

- On available data, substance is not harmful to the environment

14.3 Special precautions for user

- No special precautions are required for this product

14.4 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

- Not applicable

14.5 Road/Rail (ADR/RID)

- ADR UN No.: UN1814
- Proper Shipping Name: Potassiumhydroxide, solution
- ADR Hazard Class: 8
- ADR subrisk: -
- ADR Packing Group: II
- ADR Flashpoint: -

14.6 Sea (IMDG)

- IMDG UN No.: UN1814
- Proper Shipping Name: Potassiumhydroxide, solution
- IMDG Hazard Class: 8
- IMDG subrisk: -

SECTION 14 Transport information (....)

- IMDG Pack Group: II
- IMDG EmS: F-A, S-B
- IMDG Flashpoint: -

14.7 Air (ICAO/IATA)

- ICAO UN No.: UN1814
- Proper Shipping Name: Potassiumhydroxide, solution
- ICAO Packing Group: II
- ICAO Hazard Class: 8
- ICAO subrisk: -
- ICAO Flashpoint: -

14.8 DOT / CFR (US Department of Transportation)

- Identification Number: UN1814
- DOT Proper Shipping Name: Potassiumhydroxide, solution
- DOT Labels: 8
- Product RO (RQ): -
- Hazardous Material: Potassiumhydroxide
- Hazard Class: 8
- DOT subrisk: -
- DOT Flashpoint: -

SECTION 15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

- This Safety Data Sheet has been prepared in accordance with article 31 and annex II in REACH and Directive 453/2010/EU
- Refer to current The Dangerous Substances Directive (67/548/EEC)
- Council Directive 1999/45/EEC Classification, packing and labelling of dangerous preparations
- Regulations 1272/2008/EEC: Classification, labeling and packing of dangerous substances and preparations
- Norwegian Productregistration no: 52699
- This product is approved by the Norwegian Health Authorities and listed in Approved/evaluated chemicals for use in potable water supply onshore and offshore

15.2 Chemical Safety Assessment

- None

SECTION 16 Other information

Text not given with phrase codes where they are used elsewhere in this safety data sheet: - H226: Flammable liquid and vapour. H302: Harmful if swallowed. H312: Harmful in contact with skin. H314: Causes severe skin burns and eye damage. H332: Harmful if inhaled. H335: May cause respiratory irritation. R10: Flammable. R20/21/22: Harmful by inhalation, in contact with skin and if swallowed. R22: Harmful if swallowed. R34: Causes burns. R35: Causes severe burns.

The data given here is based on current knowledge and experience. This Safety Data Sheet describes the product in terms of safety requirements and does not signify any warranty with regard to the product's properties.

The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications - usage in such may cause risks not mentioned in this sheet. Do not use for other application(s) without seeking advice from manufacturer.

The information provided about the product on this Safety Data Sheet has been compiled from knowledge of the individual constituents.

SECTION 16 Other information (....)

The most up-to-date version of this MSDS can be found on www.wilhelmsen.com/shipservice

OTHER CONTACT INFORMATION MAJOR CHEMICAL OFFICES

Wilhelmsen Ships Service Level 17, 536 St Kilda Road Melbourne Vic 3004 AUSTRALIA
Tel: +61 3 9630 0900 Emergency 24hrs: +61 3 9630 0998

Wilhelmsen Ships Service INC 210 Edgewater Street US-10305 Staten Island New York United States
Telephone daytime: (+1) 718 815 1310 Fax: (+1) 718 233 3268

Wilhelmsen Ships Service INC 2200 W. Pacific Coast Highway US-90810 Long Beach California, United States Tel: (+1) 562 624 8888 Fax: (+1) 562 624 1011

Wilhelmsen Ships Service INC 701 Ashland Ave. Ashland Center Two, Bay 12 US- 19032 Folcroft Pennsylvania United States Tel: (+1) 610 586 7801 Fax: (+1) 215 701 0846

Wilhelmsen Ships Service INC, 9400 New Century Drive US-77507 Pasadena Texas United States
Telephone daytime: (+1) 281 867 2000 Fax: (+1) 281 867 2800

Wilhelmsen Ships Service Ltd. Unit 3A Newtons Court Crossways DA2 6QL Dartford, Kent United Kingdom Tel: (+44) 1322 282 412 Fax: (+44) 1322 284 774

Wilhelmsen Ships Service Ltda Rua Bapo Lacerda nos.61/67 Del Catilho BR 21051120 Rio de Janeiro Brazil Tel: (+55) 21 25 82 8000 Fax: (+55) 21 25 82 8001

Wilhelmsen Ships Service (S) Pte Ltd 186 Pandan Loop Singapore 128376 Tel: (+65) 6395 4545

Wilhelmsen Ships Service Co., Ltd 12-31 Torihama-cho Kanazawa-shi JP-236 0002 Japan Tel: (+81) 45 775 0012 Fax: (+81) 45 775 0070

Wilhelmsen Ships Service Hellas SA 100, D. Moutsopoulos & Serifou str GR-185 41 Piraeus Greece Tel: (+30) 210 4239100 Fax: (+30) 210 4212480

Wilhelmsen Ships Service AS U.A.E. Fl 24 Executive Heights, Tecom C Sheikh Zayed Road (East) Dubai United Arab Emirates Tel: (+971) 4 382 3889

Wilhelmsen Ships Service AS, Willem Barantsstraat 50 3165 AB Rotterdam-Abbronswaard, the Netherlands. Tel: (+31) 10 4877 777

DESCALE-IT (USA)

Chemwatch GHS Safety Data Sheet
Jul-15-2010
K016145C

CHEMWATCH 24-0170
Version No 2.0
CD 2010/3 Page 1 of 9

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
DESCALE-IT (USA)

PROPER SHIPPING NAME
HYDROCHLORIC ACID

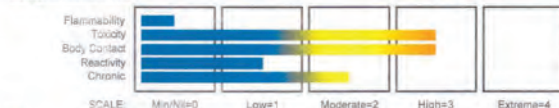
PRODUCT USE
Use according to manufacturer's directions

SUPPLIER

Company: Drew Marine
Address:
100 South Jefferson Road
Woburn, NJ 07093
Tel: 908-261-0700
Fax: 908-261-0701
Emergency: 877-715-8355 From within the US and
Canada: 877-715-8355 From outside the US and
Canada: 800-243-2255 (1-800-CHEMCALL) or call
610-957-3112

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS



Classification
Severe Toxicity (Category 2)
Irritant (Category 2)
Serious Eye Damage (Category 1)
Skin Corrosion (Category 1B)



EMERGENCY OVERVIEW

HAZARD
DANGER

Determined by Chemwatch using GHS criteria

H030
H314
H332
H334

Causes severe skin burns and eye damage.
Causes serious eye irritation.
Causes respiratory irritation.

PRECAUTIONARY STATEMENTS

Prevention
Prevent contact with skin and eyes.
Avoid breathing dusts and vapours.

continued...

DESCALE-IT (USA)

Chemwatch GHS Safety Data Sheet
Jul-15-2010
K016145C

CHEMWATCH 24-0170
Version No 2.0
CD 2010/3 Page 2 of 9
Section 2 - HAZARDS IDENTIFICATION

Wear thoroughly after rinsing.
Use only outdoors or in a well-ventilated area.
Wear appropriate gloves to avoid skin contact with concentrated product.
Wear respiratory protection.

Response

IF INHALED: Remove person to a well-ventilated area. Do NOT induce vomiting.
IF ON SKIN or hair: Flush with plenty of water immediately at least 15 minutes. Remove contaminated clothing. Rinse skin with water.
IF SWALLOWED: Rinse mouth with water. Do NOT induce vomiting. Remove contaminated clothing. Rinse mouth with water.
IF IN EYES: Flush with plenty of water immediately at least 15 minutes. Remove contaminated contact lenses. Rinse eyes with water.
Specific treatment is urgent (see MSDS).
Wash contaminated clothing before reuse.
Rinse clothing to prevent residual damage.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Store in separate room from other materials.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
Hydrochloric acid	7647-01-0	20-25
Water		

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice contact a Poisons Information Center or a doctor at once.
Largest hospital treatment is likely to be needed.

EYE

IF this product comes in contact with the eye:
Immediately flush with water and keep the eye open. Flush with water for 15 minutes.
Remove contact lenses if present and easy to do. Continue flushing.

SKIN

IF skin or hair comes in contact:
Immediately flush skin and hair with water. Use plenty of water. Flush for 15 minutes.
Remove contaminated clothing. Rinse clothing.

INHALED

IF fumes or vapours are inhaled:
Remove person to a well-ventilated area.
If person is not breathing, provide artificial respiration. If person is breathing, provide artificial respiration. If person is breathing, provide artificial respiration.

NOTES TO PHYSICIAN

For advice contact a Poisons Information Center or a doctor at once.
Largest hospital treatment is likely to be needed.
Remove contact lenses if present and easy to do. Continue flushing.
If person is not breathing, provide artificial respiration. If person is breathing, provide artificial respiration. If person is breathing, provide artificial respiration.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

There is no specific fire fighting media for this product.
Use any extinguishing media suitable for the fire.

FIRE FIGHTING

Alert Emergency Response and tell them location and nature of hazard.
Wear appropriate protective clothing and equipment.
Wear any appropriate respiratory protection and eye protection.
Wear any appropriate protective clothing and equipment.

continued...

DESCALE-IT (USA)

Chemwatch GHS Safety Data Sheet
Jul-15-2010
K016145C

CHEMWATCH 24-0170
Version No 2.0
CD 2010/3 Page 3 of 9
Section 6 - FIRE FIGHTING MEASURES

FIRE/EXPLOSION HAZARD

Non-combustible.
Not a significant fire or explosion hazard.
Decomposes to produce toxic fumes of hydrogen chloride.
Confirms the following hazard: Corrosive to metals. Corrosive to the environment.

FIRE INCOMPATIBILITY

Personal Protective Equipment
Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

Do not touch or use any release until it has been identified as safe for use.
Check regularly for signs of release.
Clean up any spill immediately.
Avoid breathing dusts and vapours.

MAJOR SPILLS

Clear area of personnel and equipment.
Alert Emergency Response and tell them location and nature of hazard.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.

SUITABLE CONTAINERS

DO NOT use containers or packaging materials that are not suitable for the product.
Check regularly for signs of release.
Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.

STORAGE INCOMPATIBILITY

Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.

STORAGE REQUIREMENTS

Wear appropriate protective clothing and equipment.
Wear appropriate protective clothing and equipment.

continued...

DESCALE-IT (USA)

Chemwatch GHS Safety Data Sheet
Jul-15-2010
K016145C

CHEMWATCH 24-0170
Version No 2.0
CD 2010/3 Page 4 of 9

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS	Notes	70°F (21°C)	70°F (21°C)	STEL (ppm)	STEL (ppm)	Peak (ppm)	Peak (ppm)	Notes
Canada: British Columbia	Hydrochloric acid (hydrochloric acid)					7		
Occupational Exposure Limits	Hydrochloric acid (hydrochloric acid)							
Canada: Ontario	Hydrochloric acid (hydrochloric acid)					7		
Occupational Exposure Limits	Hydrochloric acid (hydrochloric acid)							
US: Minnesota	Hydrochloric acid (hydrochloric acid)					7	7	
Permissible Exposure Limits	Hydrochloric acid (hydrochloric acid)							
PERMITS	Hydrochloric acid (hydrochloric acid)							
US: California	Hydrochloric acid (hydrochloric acid)					7		70°F Base upper respiratory tract irritation
Permissible Exposure Limits	Hydrochloric acid (hydrochloric acid)							
US: Washington	Hydrochloric acid (hydrochloric acid)					7	7	
Occupational Exposure Limits	Hydrochloric acid (hydrochloric acid)							
US: Florida	Hydrochloric acid (hydrochloric acid)					7		
Permissible Exposure Limits	Hydrochloric acid (hydrochloric acid)							
US: Vermont	Hydrochloric acid (hydrochloric acid)	100	100					
Permissible Exposure Limits	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							
Table 2-11.6	Hydrochloric acid (hydrochloric acid)							

1910 106 - Occupational exposure limits
1910 108 - Hazard Pictogram
Eye and face protection - ANSI Z87.1
Foot protection - ANSI S1.1
Respiratory protection - NIOSH approved

This document is copyright ©, and is for use only for the distribution of products sold by ChemWatch. No part of this document may be reproduced by any process without written permission from ChemWatch Inc. TOLL FREE 1-877-3-REACT-4750

Issue Date: Jul-16-2010
Print Date: Oct-16-2011

ส่วนที่ 1: ข้อมูลเกี่ยวกับสารเคมีและชื่อผู้ผลิตและผู้แทนจำหน่าย (Identification of the substance/mixture and of the company/undertaking)

1.1 การประจักษ์ผลิตภัณฑ์	ELECTROCLEAN
ชื่อผลิตภัณฑ์	อีเล็คโตรโซลฟ 212 (ELECTROSOLV 212)
หมายเลข CAS	-
รหัสผลิตภัณฑ์	QV1039
1.2 ขอบเขตการใช้งานหรือคุณสมบัติและข้อจำกัดการใช้งาน	สารเคมีสำหรับงานทำความสะอาดและงานการขัด
การระบุการใช้งาน	
1.3 รายละเอียดของผู้จัดจำหน่าย	
บริษัท	อีเล็คโตรโซลฟ จำกัด
24 ถนนพหลโยธิน แขวงจตุจักร กรุงเทพมหานคร 10330 ประเทศไทย	
โทรศัพท์	(662) 613-7911-4
โทรสาร	(662) 613-7915
1.4 โทรศัพท์กรณีฉุกเฉิน	
เบอร์โทรศัพท์ฉุกเฉิน	(662) 613-7911-4

ส่วนที่ 2: ข้อมูลป่งชี้ความเป็นอันตราย (Hazards identification)

2.1 การจำแนกสารเคมีหรือส่วนผสม	
การจำแนกประเภทตามข้อกำหนด (EC) เลขที่ 1272/2008	
ของเหลวไวไฟ (ประเภทย่อย 3), H226	
พลาสมาพิษเฉียบพลันต่อสิ่งแวดล้อม (ประเภทย่อย 4), H332	
ความเป็นพิษเฉียบพลันต่อสัตว์น้ำ (ประเภทย่อย 4), H312	
การกัดกร่อนผิวหนัง (ประเภทย่อย 1A), H314	
การระคายเคืองต่อดวงตา (ประเภทย่อย 2), H319	
ความเป็นพิษต่อสัตว์น้ำมีความเสี่ยงสูงเนื่องจากสารเคมีที่มีฤทธิ์กัดกร่อน (ประเภทย่อย 3), ความปลอดภัยทางชีวภาพ, H335	
ความเป็นพิษต่อสัตว์น้ำมีความเสี่ยงสูงเนื่องจากสารเคมีที่มีฤทธิ์กัดกร่อน (ประเภทย่อย 2), H373	
ความเป็นพิษต่อสัตว์น้ำมีความเสี่ยงสูงเนื่องจากสารเคมีที่มีฤทธิ์กัดกร่อน (ประเภทย่อย 1), H304	
สำหรับข้อมูลเพิ่มเติมของข้อมูลความปลอดภัยดูในส่วนที่ 16	

บริษัท อีเล็คโตรโซลฟ จำกัด

หน้า 1 จาก 12

SDS-EI-004 / Rev 00 / E.R. Issue 05-01-22

อีเล็คโตรโซลฟ 212

อีเล็คโตรโซลฟ 212

2.2 องค์ประกอบของสารเคมี

การติดฉลากตามข้อกำหนด (EC) No 1272/2008

ระบุสัญลักษณ์แสดงความเป็นอันตราย



คำสัญญาณ

อันตราย

ข้อความแสดงอันตราย

H226

ของเหลวติดไฟ

H314

อาจเป็นอันตรายถึงตายได้เมื่อสัมผัสกับผิวหนังและผ่านเข้าสู่นาสิกโพรง

H312 + H332

เป็นอันตรายเมื่อสูดดมหรือกลืน หรือเมื่อหายใจเข้าไป

H314

ทำให้ผิวหนังไหม้โดยที่อาจรุนแรงขึ้นตามระยะเวลาการสัมผัส

H319

ระคายเคืองต่อดวงตาอย่างรุนแรง

H335

อาจระคายเคืองต่อทางเดินหายใจ

H373

อาจทำให้เกิดอันตรายต่อสัตว์น้ำเมื่อสัมผัสกับสิ่งแวดล้อม หรือเมื่อกลืนเข้าไป

ข้อความแสดงข้อควรระวัง

P210

อย่าให้ห่างจากความร้อน, พื้นผิวที่ร้อน,ประกายไฟ, เปลวไฟ และ แหล่งกำเนิดประกายไฟ

P233

ป้องกันการกระเด็น

P240

ใช้เพื่อลดความเสี่ยงต่อการบาดเจ็บและอุปการะอันตราย

P242

ใช้เพื่อหลีกเลี่ยงไม่ให้สัมผัสกับผิวหนัง

P243

หลีกเลี่ยงการปล่อยแก๊สหรือไอ

P260

ห้ามสูดดมสารเคมีหรือไอระเหยของสารเคมี

P264

ล้างมือให้สะอาดหลังจากใช้งาน

P271

ใช้เฉพาะภายในอาคารหรือในที่ที่มีการระบายอากาศที่ดี

P280

สวมถุงมือป้องกันขณะปฏิบัติงานและสวมหน้ากากป้องกันเมื่อจำเป็น

P301 + P330 + P331

หากกลืนกิน: ให้ดื่มน้ำมากๆ ห้ามอาเจียน

P303 + P361 + P353

ถ้าสัมผัสกับผิวหนัง (หรือเสื้อผ้า): ให้ถอดเสื้อผ้าที่สัมผัสกับสารเคมีและล้างผิวหนังที่สัมผัส

P304 + P340

ถ้าหายใจเข้าไป: ให้ย้ายคนป่วยไปยังที่ที่มีอากาศบริสุทธิ์และทำให้หายใจได้สะดวก

P305 + P351 + P338

ถ้าเข้าตา: ล้างตาด้วยน้ำสะอาดหลายๆครั้งอย่างระมัดระวัง หากใส่คอนแทคเลนส์: ถูไว้ก่อนถอดคอนแทคเลนส์ออก และล้างตาด้วยความสะอาดต่อไป

P319

หากสัมผัสกับผิวหนัง: ล้างผิวหนัง

P331

ห้ามสูดดม

P337 + P317

หากการระคายเคืองต่อตาเกิดขึ้น: ล้างตาด้วยน้ำสะอาด

P362 + P364

ถอดเสื้อผ้าที่สัมผัสกับสารเคมีและใช้เสื้อผ้าทำความสะอาดก่อนนำมาใช้

P403 + P235

จัดเก็บในภาชนะที่ปิดอย่างแน่นหนาในสถานที่ที่มีการระบายอากาศที่ดี

P405

จัดเก็บให้ปลอดภัย

2.3 ข้อมูลอื่นๆ

ไม่มีข้อมูล

ส่วนที่ 3: องค์ประกอบ / ข้อมูลเกี่ยวกับส่วนผสม (Composition/information on ingredients)

3.1 สารเคมี

ไม่มีเป็นส่วนประกอบ

3.2 สารผสม

องค์ประกอบ	หมายเลข CAS	สูตรโมเลกุล	ความเข้มข้น (ปริมาณร้อยละ)	การจำแนกประเภท
โซเดียมไฮดรอกไซด์	1330-20-7	$\text{C}_2\text{H}_5\text{OCH}_2\text{CH}_3$	60-70	ของเหลวไวไฟ (ประเภทย่อย 3), H226 ความเป็นพิษเฉียบพลันต่อสิ่งแวดล้อม (ประเภทย่อย 4), H332 ความเป็นพิษเฉียบพลันต่อสัตว์น้ำ (ประเภทย่อย 4), H312 การระคายเคืองต่อผิวหนัง (ประเภทย่อย 1A), H314 การระคายเคืองต่อดวงตา (ประเภทย่อย 2), H319 ความเป็นพิษต่อสัตว์น้ำมีความเสี่ยงสูงเนื่องจากสารเคมีที่มีฤทธิ์กัดกร่อน (ประเภทย่อย 3), ความปลอดภัยทางชีวภาพ, H335 ความเป็นพิษต่อสัตว์น้ำมีความเสี่ยงสูงเนื่องจากสารเคมีที่มีฤทธิ์กัดกร่อน (ประเภทย่อย 2), H373 ความเป็นพิษต่อสัตว์น้ำมีความเสี่ยงสูงเนื่องจากสารเคมีที่มีฤทธิ์กัดกร่อน (ประเภทย่อย 1), H304
กรดอะซิติก	64-19-7	CH_3COOH	30-40	ของเหลวไวไฟ (ประเภทย่อย 2), H226 การกัดกร่อนผิวหนัง (ประเภทย่อย 1A), H314 การระคายเคืองต่อดวงตา (ประเภทย่อย 1), H304

สำหรับข้อมูลเพิ่มเติมของข้อมูลความปลอดภัยดูในส่วนที่ 16

บริษัท อีเล็คโตรโซลฟ จำกัด

หน้า 2 จาก 12

SDS-EI-004 / Rev 00 / E.R. Issue 05-01-22

บริษัท อีเล็คโตรโซลฟ จำกัด

หน้า 3 จาก 12

SDS-EI-004 / Rev 00 / E.R. Issue 05-01-22

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.
Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations, Twelfth revised edition, United Nations.
Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany.
Source: IFA for Databases on hazardous substances (GESTIS).

ข้อมูลเบื้องต้น

สินค้า: ปูนซีเมนต์ขาว 50 กิโลกรัม

วันที่ปรับปรุง

05/01/2022

เอกสารนี้เป็นเอกสารของบริษัทฯ และถือเป็นทรัพย์สินของบริษัทฯ ห้ามมิให้คัดลอกหรือเผยแพร่โดยไม่ได้รับอนุญาตจากบริษัทฯ
หากมีการเปลี่ยนแปลงข้อมูลใดๆ กรุณาแจ้งให้บริษัทฯ ทราบทราบโดยด่วน
เอกสารนี้เป็นเอกสารของบริษัทฯ และถือเป็นทรัพย์สินของบริษัทฯ ห้ามมิให้คัดลอกหรือเผยแพร่โดยไม่ได้รับอนุญาตจากบริษัทฯ

สินค้า: ปูนซีเมนต์ขาว 50 กิโลกรัม

วันที่: 12/11/21

SDS-ET-004 / EN 01 / EN 02 / EN 03 / EN 04 / EN 05 / EN 06 / EN 07 / EN 08 / EN 09 / EN 10 / EN 11 / EN 12 / EN 13 / EN 14 / EN 15 / EN 16 / EN 17 / EN 18 / EN 19 / EN 20 / EN 21 / EN 22 / EN 23 / EN 24 / EN 25 / EN 26 / EN 27 / EN 28 / EN 29 / EN 30 / EN 31 / EN 32 / EN 33 / EN 34 / EN 35 / EN 36 / EN 37 / EN 38 / EN 39 / EN 40 / EN 41 / EN 42 / EN 43 / EN 44 / EN 45 / EN 46 / EN 47 / EN 48 / EN 49 / EN 50 / EN 51 / EN 52 / EN 53 / EN 54 / EN 55 / EN 56 / EN 57 / EN 58 / EN 59 / EN 60 / EN 61 / EN 62 / EN 63 / EN 64 / EN 65 / EN 66 / EN 67 / EN 68 / EN 69 / EN 70 / EN 71 / EN 72 / EN 73 / EN 74 / EN 75 / EN 76 / EN 77 / EN 78 / EN 79 / EN 80 / EN 81 / EN 82 / EN 83 / EN 84 / EN 85 / EN 86 / EN 87 / EN 88 / EN 89 / EN 90 / EN 91 / EN 92 / EN 93 / EN 94 / EN 95 / EN 96 / EN 97 / EN 98 / EN 99 / EN 100

MARICHEM
WORLDWIDE



MARIGASES
SERVICES

SAFETY DATA SHEET

In compliance with EC Regulations No.: 1907/2006 and 453/2010.

Date last modified: 23 December 2014 - version 5.0

1. IDENTIFICATION OF THE SUBSTANCE/Preparation AND OF THE COMPANY

1.1 Product Identifier

Product Name: **MARICHEM CCI**

Product Code #: 673006 (30 lt)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Intended Use: Industrial applications; Boiler Water Treatment.

Uses advised against: This product is not recommended for any industrial, professional or consumer use other than the Intended Uses above.

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

Supplier/Manufacturer:

Marichem Marigases Hellas SA
Stakiras 64,
185 45 Piraeus,
Greece
Tel. No.: ++30 210 4148800
Fax No.: ++30 210 4133985
<http://www.marichem-marigases.com>

e-mail: mail@marichem-marigases.com

1.4 Emergency telephone number

Tel. No.: ++30 210 4148800 (including working hours)

Emergency Information:

Inside U.S. and Canada: (800)-424-9300 (CHEMTREC)
Outside U.S. and Canada: 1-703-527-3887 (CHEMTREC)
National Emergency Centre (Greece): ++30 210 7793777

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture

Classification under EC 1272/2008 regulation - GHS classification.

Acute Toxicity - Oral: Acute Tox. 4
Acute Toxicity - Dermal: Acute Tox. 4
Acute Toxicity - Inhalation: Acute Tox. 4
Skin Corrosion / Irritation: Skin Corr. 1B

SIGNAL WORD: DANGER



Hazard Statement(s):

H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H332: Harmful if inhaled.

2.2 Label Elements

Labelling according to Regulation (EC) No. 1272/2008.
The substance is classified and labelled according to the CLP Regulation.

Hazard Pictograms



GHS05 GHS07

Signal Word: DANGER

Hazard Statements

H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H332: Harmful if inhaled.

Precautionary Statements

Prevention:

P280: Wear protective gloves/protective clothing/eye protection/face protection.
P271: Use only outdoors or in a well-ventilated area.
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260: Do not breathe dust or mist.
P243: Take precautionary measures against static discharge.

P264: Wash with plenty of water and soap thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P233: Keep container tightly closed.
P242: Use only non-sparking tools.
P240: Ground/bond container and receiving equipment.

Response:

P310: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303 + P361 + P353: IF ON SKIN (on hair): Wash with plenty of soap and water.
P361: Remove/Take off immediately all contaminated clothing.
P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P363: Wash contaminated clothing before reuse.
P370 + P378.1: In case of fire: Use extinguishing powder, foam or CO₂ for extinction.

Storage:

P405: Store locked up.
P403 + P235: Store in a well-ventilated place. Keep cool.

Disposal:

P501: Dispose of contents/container to hazardous or special waste collection point.

2.3 Other hazards

PBT Substances: None
vPvB Substances: None

Other Hazards
No other hazards.

Product classification and labelling according to Directive 67/548/EEC, European Dangerous Preparations Directive (1999/45/EC), European Regulation 648/2004 and their amendments.

Symbol: C, Corrosive



C, Corrosive

Risk (R) -phrases: 20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
34: Causes burns.

Safety (S) -phrases: 2: Keep out of the reach of children
23: Do not breathe vapors.
36: Wear suitable protective clothing.

45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Composition:

Ingredients	CAS Number	Proportion	Hazard Code(s) ¹
Morpholine	110-91-8	40% - 60%	H226; H302; H312; H314; H332
Other ingredients that do not contribute to the classification of the product	-	40% - 60%	-

¹See section 16 for the full text of the Hazard Code(s) declared above.

Occupational Exposure Limits, if available, are listed in section 8.

4. FIRST AID MEASURES

4.1. Description of first aid measures

Immediately remove contaminated clothing. If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary. First aid personnel should pay attention to their own safety.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Immediately wash thoroughly with plenty of water, apply sterile dressings, and consult a skin specialist.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Rinse mouth immediately and then drink plenty of water, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see Chapter 2) and/or in Chapter 11.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote. Pulmonary oedema prophylaxis. Medical monitoring for at least 24 hours.

Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

Storage stability:

From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Components with occupational exposure limits
110-91-8: Morpholine

TWA value 36 mg/m³ ; 10 ppm (OEL (EU))
indicative
STEL value 72 mg/m³ ; 20 ppm (OEL (EU))
indicative

PNEL

freshwater: 0.1 mg/l
marine water: 0.01 mg/l
intermittent release: 0.28 mg/l
sediment (freshwater): 1.49 mg/kg
sediment (marine water): 0.149 mg/kg
soil: 0.239 mg/kg
STP: 10 mg/l

DNEL

worker:

Long-term exposure - local effects, Inhalation: 36 mg/m³
worker:

Long-term exposure-systemic effects, dermal: 1.04 mg/kg

worker:

Long-term exposure-systemic effects, Inhalation: 91 mg/m³
consumer:

Long-term exposure-systemic effects, oral: 6.3 mg/kg

consumer:

Long-term exposure - local effects, Inhalation: 3.2 mg/m³
consumer:

Long-term exposure-systemic effects, dermal: 0.52 mg/kg

consumer:

Long-term exposure-systemic effects, Inhalation: 45 mg/m³
consumer:

Short-term exposure - local effects, inhalation: 18 mg/m³

8.2. Exposure controls

Personal protective equipment

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide.

5.2. Special hazards arising from the substance or mixture

toxic gases/vapours.
The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters

Special protective equipment:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions

Do not empty into drains.

6.3. Methods and material for containment and cleaning up

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Collect waste in suitable containers, which can be labeled and sealed. Incinerate or take to a special waste disposal site in accordance with local authority regulations.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:

Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from acids and acid forming substances.

Suitable materials for containers: carbon steel (iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4301 (V2), Stainless steel 1.4401, glass.

Respiratory protection

Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e.g. EN 14387 Type A)

Suitable respiratory protection for higher concentrations or long-term effect: Self-contained breathing apparatus.

Consider the risk management measures as outlined in the exposure scenario.

Hand protection

Chemical resistant protective gloves (EN 374).

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6,

corresponding > 480 minutes of permeation time according to EN 374):

butyl rubber (butyl) - 0.7 mm coating thickness

fluoroelastomer (FKM) - 0.7 mm coating thickness

Polyethylene-Laminate (PE laminate) - ca. 0.1 mm coating thickness

Suitable materials short-term contact and/or splashes (recommended: At least protective index 2,

corresponding > 30 minutes of permeation time according to EN 374)

nitrile rubber (NBR) - 0.4 mm coating thickness

polyvinylchloride (PVC) - 0.7 mm coating thickness

chloroprene rubber (CR) - 0.5 mm coating thickness

Supplementary note

The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection

Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Take off immediately all contaminated clothing. Store work clothing separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

9.1.1. Appearance

Physical State:

Liquid

Color:

Clear, Colorless

Odor: Characteristic ammonia-like odor

9.1.2. Basic data

Boiling Point Range: <129°C
Melting Point Range: Not available
Solubility in water: Appreciable
Flash Point: >100°C
Autoignition Temperature: Not Available
Lower Explosion Limit (vol %): Not Available
Upper Explosion Limit (vol %): Not Available
Vapour Pressure: <1.06 kPa
Relative vapor density (air=1): Not Available
Specific Gravity: 1.03 - 1.04 g/cm³ (at 15°C)
Viscosity: Not Available
pH Value: 11

9.2 Other Information: No further relevant information available.

10. STABILITY AND REACTIVITY

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.
Formation of flammable gases:
Remarks: Forms no flammable gases in the presence of water.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

Strong exothermic reaction with acids.

10.4. Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame.

10.5. Incompatible materials

Substances to avoid:
acids, nitrosating agents.

10.6. Hazardous decomposition products

Hazardous decomposition products:
Carbon Monoxide, Carbon Dioxide toxic gases/vapours.

No indications of a developmental toxic/teratogenic effect were seen in animal studies. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
After repeated exposure the prominent effect is local irritation.

Aspiration hazard

No aspiration hazard expected.

12. ECOLOGICAL INFORMATION

Name of substance: Morpholine

12.1. Toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:

LC50 (96 h) 180 mg/l, *Salmo gairdneri*, syn. *O. mykiss* (Fish test acute, static)
The details of the toxic effect relate to the nominal concentration. The study was carried out in soft water. Literature data.
LC50 (96 h) 380 mg/l, *Salmo gairdneri*, syn. *O. mykiss* (Fish test acute, static)
The details of the toxic effect relate to the nominal concentration. The study was carried out in hard water. Literature data.

Aquatic invertebrates:

LC50 (48 h) 45 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static)
Literature data.

Aquatic plants:

EC50 (96 h) 28 mg/l, *Pseudokirchneriella subcapitata* (Growth Inhibition Test)
The statement of the toxic effect relates to the analytically determined concentration. Literature data.

EC20 (96 h) 10 mg/l, *Pseudokirchneriella subcapitata* (Growth Inhibition Test)
The statement of the toxic effect relates to the analytically determined concentration. Literature data.

Microorganisms/Effect on activated sludge:

EC20 (30 min) > 1,000 mg/l, activated sludge, domestic (OECD Guideline 209)
The details of the toxic effect relate to the nominal concentration. Literature data.

EC20 (0.5 h) > 1,000 mg/l, activated sludge, industrial (OECD Guideline 209)
The details of the toxic effect relate to the nominal concentration.

EC20 (30 h) < 1,000 mg/l, activated sludge, industrial (DIN EN ISO 8192)

Chronic toxicity to fish:

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 5 mg/l, *Daphnia magna* (OECD Guideline 211, semi-static)

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Name of substance: Morpholine

Acute toxicity

Assessment of acute toxicity:

Of moderate toxicity after short-term inhalation.
Of moderate toxicity after single ingestion.
Of pronounced toxicity after short-term skin contact.

Experimental/calculated data:

LD50 rat (oral): approx. 1,910 mg/kg (BASF-Test).
LC50 rat (by inhalation): 8 mg/l conservative approach.
LD50 rabbit (dermal): approx. 500 mg/kg.
Literature data.

Irritation

Assessment of irritating effects:

Highly corrosive! Damages skin and eyes.

Experimental/calculated data:

Skin corrosion/irritation: Corrosive (OECD Guideline 404).
Serious eye damage/irritation rabbit: irreversible damage (BASF-Test).
Serious eye damage/irritation rabbit: Risk of serious damage to eyes. (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:

Study scientifically not justified.

Germ cell mutagenicity

Assessment of mutagenicity:

In the majority of tests performed (bacteria/microorganisms/cell cultures) a mutagenic effect was not found. A mutagenic effect was also not observed in in-vivo assays.

Carcinogenicity

Assessment of carcinogenicity:

Results from a number of long-term carcinogenicity studies and short-term tests are available. Taking into account all of the information, there is no indication that the substance itself is carcinogenic. IARC Group 3 (not classifiable as to human carcinogenicity).
Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies.

Reproductive toxicity

Assessment of reproduction toxicity:

Study does not need to be conducted.

Developmental toxicity

Assessment of teratogenicity:

Assessment of terrestrial toxicity:

No toxic effects have been observed in studies with terrestrial plants.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H₂O):

Readily biodegradable (according to OECD criteria).

Elimination information:

90 - 100 % DOC reduction (25 d) (OECD 301 E/92/69-EEC, C.4-B) (aerobic, municipal sewage treatment plant effluent)

Assessment of stability in water:

According to structural properties, hydrolysis is not expected/probable.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

Accumulation in organisms is not to be expected.

Bioaccumulation potential:

Bioconcentration factor: < 2.8 (42 d), *Cyprinus carpio* (OECD Guideline 305 C)

12.4. Mobility in soil (and other compartments if available)

Assessment transport between environmental compartments:

The substance will not evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is not expected.

The data refers to the undissociated form of the substance.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

Self classification.

12.6. Additional information

The product contains:

The heavy-metal content in the product is below the limit values laid down in normative EN 71 Part III.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Incinerate in suitable incineration plant, observing local authority regulations.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: Corrosive Liquid NOS (Morpholine)

LAND TRANSPORT

UN number: 1760
ADR class: 8 RID: 8
Packing Group: III

SEA TRANSPORT

UN number: 1760 EmS: F-A, S-B
IMDG class: 8
IMDG packing group: III

AIR TRANSPORT

UN number: 1760
IATA/ICAO class: 8 Packing group: III

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2 Chemical Safety Assessment

A CSA has been carried out for the raw materials in this product, from the raw materials manufacturers (when needed to be carried out).

16. OTHER INFORMATION

16.1 Full text of Hazard Code(s) referred in Section 3

H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H332: Harmful if inhaled.

16.2 Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail).
IMDG: International Maritime Code for Dangerous Goods.
IATA: International Air Transport Association.
ICAO: International Civil Aviation Organization.

bw: Body weight.
Car.: Carcinogenicity.
CAS number: Chemical Abstracts Service number.
CLP: Classification Labelling Packaging Regulation.
CSA: Chemical Safety Assessment.
CSR: Chemical Safety Report.
DNEL: Derived No Effect Level.
dw: Dry weight.
EC number: EINECS and ELINCS number.
EC: European Commission.
EC50: Half maximal effective concentration.
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances.
EmS: Emergency Schedule.
ERC: Environmental Release Category.
ES: Exposure scenario.
fowl: oral feed.
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.
Irrit.: Irritation.
LC50: Lethal concentration, 50 %.
LD50: Median Lethal dose.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
MK value: Maximum Concentration value.
NCO: An international corporation that provides customer service contracting.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
OECD: Organisation for Economic Cooperation and Development.
PBT: Persistent, Bioaccumulative and Toxic.
PNEC: Predicted No Effect Concentration.
PROC: Process category.
REACH: The Registration, Evaluation, Authorisation and Restriction of Chemicals.
Resp.: Respiratory.
Sens.: Sensitization.
STEL value: Short Term Exposure Limit value.
STOT RE: Specific target organ toxicity — repeated exposure.
STOT SE: Specific target organ toxicity — single exposure.
STP: Sewage Treatment Plant.
SU: Sector of use.
Tox.: Toxicity.
TWA value: Time Weighted Average value.
vPvB: Very Persistent and Very Bioaccumulative.

16.3 Notice to reader

All information, instructions and statements contained in this Material Safety Data Sheet are compiled in accordance with European Directives, corresponding national legislation and on the basis of information given by our suppliers.
The information disclosed in this Material Safety Data Sheet (which supersedes all previous versions) is believed to be correct, at the date of issue, to the best of our current knowledge and experience. It only relates to the specific product designated herein and it may not be valid when said product is used in combination with any other products or in any processed form, unless specified in

the text. This document aims to provide the necessary health and safety information of the product and is not to be considered a warranty or quality specification. It is the responsibility of the recipient of this Material Safety Data Sheet to ensure that information given here is read and understood by all who use, handle, dispose of or in any way come in contact with the product.
Also, it is the responsibility of the user to comply with local legislation relating to safety, health, environment and waste management. Data and information provided concerning the product are informative, exclusively presented to the customer.



SAFETY DATA SHEET

In compliance with EC Regulations No.: 1907/2006 and 453/2010.

Date last modified: 22 December 2014 - Version 5.0

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY

1.1 Product Identifier

Product Name: **MARZINE - PLUS**
Product Code #: 673013 (30 lt)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Intended Use: FOR PROFESSIONAL USERS ONLY
Industrial applications; Boiler Water Treatment.

Uses advised against: This product is not recommended for any industrial, professional or consumer use other than the Intended Uses above.

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

Supplier/Manufacturer:

Marichem Marigases Hellas SA
Stafaktiras 64,
185 45 Piraeus,
Greece
Tel. No.: +30 210 4148800
Fax No.: +30 210 4133985
<http://www.marichem-marigases.com>

e-mail: mail@marichem-marigases.com

1.4 Emergency telephone number

Tel. No.: +30 210 4148800 (including working hours)

Emergency Information:
Inside U.S. and Canada: (800)-424-9300 (CHEMTREC)
Outside U.S. and Canada: 1-703-527-3887 (CHEMTREC)
National Emergency Centre (Greece): +30 210-7793777

2. HAZARDS IDENTIFICATION

2.1. Classification of the mixture

Classification (Regulation (EC) No 1272/2008)

Carcinogenicity, 1B, H350
Inhalation: Acute toxicity, 3, H331
Dermal: Acute toxicity, 3, H331
Oral: Acute toxicity, 4, H302
Skin corrosion, 1B, H314
Eye irritation, 1, H318
Skin sensitization, 1A, H317
Acute aquatic toxicity, 1, H400
Chronic aquatic toxicity, 1, H410

SIGNAL WORD: DANGER



Hazard Statements:

H311: Toxic in contact with skin.
H331: Toxic if inhaled.
H350: May cause cancer.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H410: Very toxic to aquatic life with long lasting effects.

2.2 Label Elements

Labelling according to Regulation (EC) No. 1272/2008.

The substance is classified and labelled according to the CLP Regulation.

Hazardous components which must be listed on the label:
Hydrazine

Hazard Pictograms



Hazard Statements:

H311: Toxic in contact with skin.
H331: Toxic if inhaled.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases

S2: Keep out of the reach of children.
S53: Avoid exposure – obtain special instructions before use.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60: This material and its container must be disposed of as hazardous waste.
S61: Avoid release to the environment. Refer to special instructions/Safety Data Sheets.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Composition:

Ingredients	CAS Number	Proportion	Classification
Hydrazine	302-01-2	10% - 35%	H311; H331; H350; H302; H314; H317; H410.
Ingredients that do not contribute to the classification of the product		65% - 90%	

*See section 16 for the full text of the Hazard Codes declared above.

Occupational Exposure Limits, if available, are listed in section 8.

4. FIRST AID MEASURES

4.1. & 4.2. Description of necessary first-aid measures & Most important symptoms/effects, acute and delayed

General advice

Under the shower: Take off immediately all contaminated clothing, including shoes.

Inhalation

Inhalation of vapours/mists:
Move to fresh air.
Oxygen or artificial respiration if needed.
Hospitalize immediately.

Skin contact

Wash immediately, abundantly and thoroughly with water. Consult a doctor quickly. In case of extensive burns: Hospitalize immediately.

Eye contact

Wash open eyes immediately, abundantly and thoroughly for at least 15 minutes. Consult an ophthalmologist immediately.

H350: May cause cancer.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:

P201: Obtain special instructions before use.
P260: Do not breathe gas-mist/vapours/spray.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P533: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/ physician.

Storage:

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
Additional information: Restricted for use only to professional users.

Special labelling:

2.3. Other hazards

Potential health effects:

Causes burns. May cause sensitization by skin contact.
Inhalation: At high concentrations headache, Drowsiness, confusion, Neurological disorders, risk of irritation of respiratory system.
Chronic exposure: May cause cancer.

Environmental Effects:

Very toxic to aquatic organisms. Readily biodegradable. Not bioaccumulable.

Product classification and labelling according to Directive 67/548/EEC, European Dangerous Preparations Directive (1999/45/EC), European Regulation 648/2004 and their amendments.

Symbol: T, N



Toxic (T)



Dangerous for the Environment (N)

Risk Phrases

R45: May cause cancer.
R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
R34: Causes burns.
R43: May cause sensitization by skin contact.

Ingestion

Do not induce vomiting, rinse mouth and lips with plenty of water if the subject is conscious, then hospitalize.

Protection of first-aiders:

For any intervention, wear appropriate breathing apparatus and protective suit.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

No data available.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

Water spray, foam, powder.

5.2. Special hazards arising from the substance or mixture

Contact with incompatible products can create flammable or explosive atmospheres (formation of Hydrogen).

5.3. Advice for firefighters

Specific methods:

Evacuate non-essential staff and those not equipped with individual protection apparatus. Cool containers/tanks with water spray. Ensure a system for the rapid emptying of containers. In case of fire, remove exposed containers.

Special protective actions for fire-fighters:

Wear self-contained breathing apparatus and proper protective suit.

Hazardous Combustion Products

These products are Nitrogen Oxides (NO, NO₂,...).

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Evacuate non-essential staff and those not equipped with individual protection apparatus. Prohibit contact with skin and eyes and inhalation of vapours. Remove all sources of ignition. In case of insufficient ventilation, wear suitable respiratory equipment.

6.2. Environmental precautions:

Do not release into the environment. Do not let product enter drains. Dam up with sand or inert earth (do not use combustible materials).

6.3. Methods and materials for containment and cleaning up

Recovery:

Pump into a labelled inert emergency tank. Dilute with water. Do not mop up (risk of decomposition) (do not use sawdust, prohibit the use of cloths or rags)

Elimination:
Destroy product by oxidation with dilute solutions of: Hypochlorites (sodium - calcium)

6.4. Reference to other sections:
None.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Technical measures/Precautions:

Storage and handling precautions applicable to products: Liquid. Toxic. Corrosive. Sensitizing. Dangerous for the environment. Provide appropriate exhaust ventilation at machinery. Provide showers, eye-baths. Provide water supplies near the point of use. Provide self-contained breathing apparatus nearby. Well ventilate empty vats and tanks before entering.

Safe handling advice:

Avoid splashing when handling. Use only explosion-proof equipment. Strictly limit the quantities of product in the work area to those which are absolutely necessary for the work in hand.

Hygiene measures:

Prohibit contact with skin and eyes and inhalation of vapours. When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Wash hands after handling. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a cool, well-ventilated place. Provide facilities to capture any vapours. Store away from heat and ignition sources. Provide impermeable floor. Provide a catch-tank in a bunded area. Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres.

Incompatible products:

Oxidizing agents, Nitrites, Metallic oxides, Finely divided substances (decomposition catalysts).

Packaging material:

Recommended: Stainless steel, Epoxy resin coated steel, Polyethylene (specific for hydrazine)

To be avoided: Ordinary steel, Ordinary metals

7.3. Specific end uses

Used as boiler water treatment; Industrial use only.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Name of Substance: Hydrazine

8.1. Control parameters:

Exposure Limit Values

9.1.2. Basic data

Boiling Point (1 Atm):	104°C
Freezing Point:	-24°C
Solubility in water:	Totally miscible with water.
Flash Point:	Not Applicable
Autoignition Temperature:	Not Available
Lower Explosive Limit (vol %):	4.7 % (Hydrazine)
Upper Explosive Limit (vol %):	100% (Hydrazine)
Vapour Pressure:	17 mmHg at 20°C
Viscosity:	1.08 cP at 25°C
Specific Gravity (gr/cm ³):	1.011 at 25°C
pH	10

9.2. Other Information

Solubility in other solvents:	Soluble in Ethanol
Henry constant:	960E+00 Pa.m ³ /mol (calculated)

10. STABILITY AND REACTIVITY

10.1. & 10.2. Reactivity & Chemical stability

The product is stable under normal handling and storage conditions.
Powerful reducer.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Keep away from heat and sources of ignition.

10.5. Incompatible materials to avoid:

Oxidizing agents, Nitrites, Metallic oxides, Finely divided substances (decomposition catalysts)
• Corrosion with: Ordinary metals.

10.6. Hazardous decomposition products:

Thermal decomposition:
Decomposition temperature: > 250 °C
Nitrogenous derivatives, Hydrogen.

Source	Date	Value type	Value (ppm)	Value (mg/m ³)	Remarks
ACGIH (US)	2007	TWA	0.01	-	-
ACGIH (US)	2007	SKIN	-	-	Can be absorbed through the skin

Derived No Effect Level (DNEL):

End Use	Inhalation	Ingestion	Skin contact
Workers	0.1332 mg/m ³ (ST, LE, SE) 0.01 ppm (LT, SE)	-	0.4 µg/kg bw/day (LT, SE)

LE: Local effects, SE: Systemic effects, LT: Long term, ST: Short term

Predicted No Effect Concentration (PNEC):

Compartment:	Value:
Water	0.0006 mg/l
Marine Water	0.0006 mg/l
Effects on waste water treatment plants	0.055 mg/l

8.2. Exposure controls

General protective measures

Ensure sufficient air exchange and/or exhaust in work areas, frequently monitor and control the working atmosphere. Use material of high integrity for loading and unloading. Investigate engineering techniques to reduce exposures. Routine monitoring and inspections for leaks to reduce fugitive emissions.

Personal protective equipment

Respiratory protection: In case of leak, wear a self-contained breathing apparatus.

In case of insufficient ventilation wear suitable respiratory equipment.

Hand protection: PVC gloves

Protective gloves complying with EN 374.

Eye/face protection: Safety glasses with side-shields, face-shield.

Skin and body protection: Protective suit, Boots

Environmental exposure controls

See Chapter 6

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

9.1.1. Appearance

Physical State:	Liquid
Color:	Colorless to light yellow.
Odor:	Ammonia-like

11. TOXICOLOGICAL INFORMATION

Name of Substance: Hydrazine

11.1. Information on toxicological effects

ACUTE TOXICITY

Inhalation: According to its composition: Toxic by inhalation.

In man: Effects of breathing high concentrations of vapour may include; Neurological disorders, headache, drowsiness, confusion, coma, difficulty in breathing, risk of pulmonary oedema, metabolic problems, acidosis, hypoglycemia and liver disorders

In animals: LC50/4 h/rat: 0.75 mg/l
LC50/4 h/mouse: 0.33 mg/l

Ingestion: According to its composition: Harmful if swallowed.

In animals: LD50/rat: 108 mg/kg

Dermal: According to its composition: Toxic if contact with skin.

In animals: LD50/rabbit: 91 mg/kg.

Local effects (Corrosion/Irritation/Serious eye damage):

Skin contact: According to its composition: Causes burns.

Corrosive to skin.

Eye contact: According to its composition: Causes serious eye damage.

Vapour at high concentrations and direct contact with liquid: Risk of serious damage to eyes.
In animals: Severely irritating, or even corrosive. In eyes.

Respiratory or skin sensitization:

Inhalation: No data available.

Skin contact: According to its composition: Skin sensitizer

• In man: Proven human sensitizer

• In man: Eczema-like dermatitis possible

• In man: Possible cross sensitization with hydrazine derivatives

CMR effects

Mutagenicity

In vivo

Several in vivo and in vitro tests indicate potential genotoxicity.

Carcinogenicity: According to its composition: May cause cancer.

Exposure in vapours

Nasal tumours only observed at high concentrations in association with permanent irritating lesions of the epithelium in the upper respiratory tract induced by the exposure.

Absence of causal relationship between incidence of cancer and exposure to product in epidemiological studies.

Slight carcinogenic effects in animals.

No Observed Adverse Effect Level (NOAEL) (rdent, 1 year) (1.3 mg/m³) 0.3 mg/m³.

Lowest Observed Adverse Effect Level (LOAEL) Neoplastic lesion (0.3 mg/m³) 1.3 mg/m³.

Reproductive toxicity Fertility

According to available experimental data: Absence of toxic effects on fertility.

Foetal development:

Absence of congenital malformations and embryotoxic effects in rodents at non-toxic doses for the mothers.

Specific target organ toxicity

Single exposure

Inhalation

Risk of severe irritation of respiratory system.

Repeated exposure

Target organs: Target organs at high doses: Liver, Kidney, Nervous system.

By inhalation: Target organs: nasal tissues, site of contact, LOAEL: 0.066 mg/m³ (rat) (various animal species - Chronic)

By oral route: NOAEL = 1.92 mg/kg (rat, Subacute)

Aspiration hazard: No data available.

12. ECOLOGICAL INFORMATION

Name of Substance: Hydrazine

12.1. Toxicity

GENERAL OVERVIEW

No environmental problems are expected when the product is used/handled correctly. In its intended use, the product will not be released into the environment.

Fish: According to its composition: Very toxic to fish.
LC50, 96 h (Lebistes reticulatus): 0.61 mg/l (Test substance: Active ingredient).

Aquatic invertebrates: According to its composition: Very toxic to daphnia.
EC10, 48 h (Daphnia pulex (Water flea)): 0.16 mg/l (Immobilization, Test substance: Active ingredient)

Aquatic plants: According to its composition: Very toxic to algae.
IC50, 72 h (Pseudokirchneriella subcapitata): ~ 0.017 mg/l (Method: OECD Test Guideline 201, growth rate, Test substance: Active ingredient)
NOEC: ~ 0.006 mg/l

Microorganisms

Very toxic to bacteria.

EC 5, 16 h (Pseudomonas putida): 0.019 mg/l

Aquatic toxicity / Long term toxicity:

Aquatic invertebrates

NOEC, 21 d (Daphnia magna (Water flea)): ~ 0.01 mg/l (Method: OECD Test Guideline 211, Reproduction inhibition, Test substance: Active ingredient)
NOEC: ~ 0.123 mg/l (Immobilization)

10

12.2. Persistence and degradability

Biodegradation (In water): According to its composition: Readily biodegradable
Zahn-Wellens Test: 100 % after 1 d (Method: OECD Test Guideline 302 B)

Photodegradation (In air)

Overall half-life time: 6.3 h

12.3. Bioaccumulative potential

Bioaccumulation: According to its composition: Not bioaccumulable

Partition coefficient: n-octanol/water: log Kow: -0.16 (Method: OECD Test Guideline 107)

12.4. Mobility in soil - Distribution among environmental compartments:

Henry constant

960E-00 Pa.m³/mol, (Method: calculated)

12.5. Results of PBT and vPvB assessment

According to REACH regulation, annex XIII: this mixture contains no substance meeting PBT and vPvB criteria.

12.6. Other adverse effects

None known.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment

Disposal of product

Destroy product by oxidation with dilute solutions of: Hypochlorites (sodium + calcium).

Disposal of packaging

Clean container with water. Recover waste water for processing later.

14. TRANSPORT INFORMATION

Proper Shipping Name: Hydrazine, aqueous solution

LAND TRANSPORT

UN number: 3293 RID-class: 6.1
ADR class: 6.1 Packing group: III

SEA TRANSPORT

UN number: 3293 EmS: F-A, S-A
IMDG class: 6.1 IMDG packing group: III

AIR TRANSPORT

UN number: 3293
IATA/ICAO class: 6.1 Packing group: III

11

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2 Chemical Safety Assessment

A CSA has been carried out for the raw materials in this product, from the raw materials manufacturers (when needed to be carried out).

16. OTHER INFORMATION

16.1 Full text of Hazard Codes referred in Section 3.

H311: Toxic in contact with skin.
H331: Toxic if inhaled.
H350: May cause cancer.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H410: Very toxic to aquatic life with long lasting effects.

16.2 Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods.
IATA: International Air Transport Association.
ICAO: International Civil Aviation Organization.
bw: Body weight.
Car.: Carcinogenicity.
CAS number: Chemical Abstracts Service number.
CLP: Classification Labelling Packaging Regulation.
CSA: Chemical Safety Assessment.
CSR: Chemical Safety Report.
DNEL: Derived No Effect Level.
dw: Dry weight.
EC number: EINECS and ELINCS number.
EC: European Commission.
EC50: Half maximal effective concentration.
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances.
EmS: Emergency Schedule.
ERC: Environmental Release Category.
ES: Exposure scenario.
food: oral feed.
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.
Irrit.: Irritation.

12

LC50: Lethal concentration, 50 %.
LD50: Median Lethal dose.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
MK value: Maximum Concentration value.
NCO: An international corporation that provides customer service contracting.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
OECD: Organisation for Economic Cooperation and Development.
PBT: Persistent, Bioaccumulative and Toxic.
PNEC: Predicted No Effect Concentration.
PROC: Process category.
REACH: The Registration, Evaluation, Authorisation and Restriction of Chemicals.
Resp.: Respiratory.
Sens.: Sensitization.
STEL value: Short Term Exposure Limit value.
STOT RE: Specific target organ toxicity — repeated exposure.
STOT SE: Specific target organ toxicity — single exposure.
STOT: Specific Target Organ Toxicity.
STP: Sewage Treatment Plant.
SU: Sector of use.
Tox.: Toxicity.
TWA value: Time Weighted Average value.
vPvB: Very Persistent and Very Bioaccumulative.

16.3 Notice to reader

All information, instructions and statements contained in this Material Safety Data Sheet are compiled in accordance with European Directives, corresponding national legislation and on the basis of information given by our suppliers.

The information disclosed in this Material Safety Data Sheet (which supersedes all previous versions) is believed to be correct, at the date of issue, to the best of our current knowledge and experience. It only relates to the specific product designated herein and it may not be valid when said product is used in combination with any other products or in any processed form, unless specified in the text. This document aims to provide the necessary health and safety information of the product and is not to be considered a warranty or quality specification. It is the responsibility of the recipient of this Material Safety Data Sheet to ensure that information given here is read and understood by all who use, handle, dispose of or in any way come in contact with the product.

Also, it is the responsibility of the user to comply with local legislation relating to safety, health, environment and waste management. Data and information provided concerning the product are informative, exclusively presented to the customer.

13

ภาคผนวกเรือกักเก็บปิโตรเลียม-2.3

Terminal Regulation และ Cargo Transfer Checklist



ROSSUKON TERMINAL REGULATION

Version 1.00



ROSSUKON Field G6/48

TERMINAL REGULATION

TERMINAL REGULATION

Contents

SECTION 1	INTRODUCTION	5
SECTION 2	DEFINITIONS	7
SECTION 3	CONDITIONS FOR THE USE OF ROSSUKON OIL TERMINAL, THAILAND	9
SECTION 4	SAFETY & ENVIRONMENTAL PROTECTION PROCEDURES	13
4.1	General	13
4.2	Vessel Inspection, Vetting, and Acceptance	13
4.3	Terminal Drugs and Alcohol Policy	16
4.4	Securing Anchors and Cables	16
4.5	Safety Requirements Form Letter (See Appendix A)	16
4.6	Safety Check Lists (See Appendix C & D)	16
4.7	Deadweight & Trim Requirements	16
4.8	Inert Gas Systems	17
4.9	Tank Inspections, Gauging, Taking Water Dips and Temperatures	17
4.10	Communications	17
4.11	Fire Precautions	17
4.12	Avoidance of Pollution	18
4.13	Contingency Plans	18
4.14	Loading and Deballasting Procedures	19
4.15	Conditions to be observed in the Vessel during Loading / Deballasting Operations	19
4.16	Smoking	20
4.17	Matches and Lighters	20
4.18	Galley Cooking Equipment	20
4.19	Portable VHF/UHF Radios, Lamps and Flashlights	20
4.20	Movement of Tugs, Workboats and other Craft	21
4.21	Repair Work	21
4.22	Prevention of Sparks from Funnels/Stacks and Excessive Smoke	21
4.23	Transmitting Aerials	21
4.24	Impressed Hull Cathodic Protection Systems	21
4.25	Sea valves and Overboard Discharge Valves	21
4.26	Tank Openings	22

Prepared by:		Revision issued: 20 October 23	Version: 2023
Approved by:		Next review date: 20 October 25	Page 1 of 78



ROSSUKON Field G6/48

TERMINAL REGULATION

4.27	Manifold Connections	22
4.28	Crane or Derrick	22
4.29	Materials Safety Data Sheet	22
4.30	Emergency Escape	22
4.31	Suspension of Loading and Unberthing in Emergencies	23
SECTION 5	WEATHER, ENVIRONMENTAL INFORMATION & WEATHER REPORTS	23
5.1	General	23
5.2	Currents	24
5.3	Winds	24
5.4	Typhoon Contingency Plan	24
5.5	Waves	25
5.6	Climate	25
5.7	Sea Water Temperature and Salinity	25
5.8	Weather Reports	25
SECTION 6	COMMUNICATIONS (See 16.12 for Terminal Contact Details)	25
6.1	Time Zone	25
6.2	Prior to Arrival	26
SECTION 7	ARRIVAL PROCEDURES	28
7.1	Vessel Notice of Readiness	28
7.2	Vessels Awaiting Berth	28
7.3	Port Formalities & Services	28
SECTION 8	PILOTAGE	30
8.1	Compulsory Pilotage	30
8.2	Mooring Master Boarding	30
8.3	Mooring Master Transfer Arrangements	30
8.4	Mooring Master & Terminal Personnel - Food and Accommodation	31
	REQUIRED BOARDING ARRANGEMENTS	32
	ACCOMMODATION LADDER	32
SECTION 9	MOORING	33
9.1	Mooring Arrangements	33
9.2	Preparations for Berthing and Mooring	33
9.3	Berthing	35
SECTION 10	HOSE CONNECTION	37
SECTION 11	LOADING OPERATIONS	38
11.1	Pre-loading Conference	38
11.2	Communications and Coordination of Loading	38

Prepared by:		Revision issued: 20 October 23	Version: 2023
Approved by:		Next review date: 20 October 25	Page 2 of 78



ROSSUKON Field G6/48

TERMINAL REGULATION

11.3	Tank Inspection and Dry Certificates	38
11.4	Lining up and Readiness to Load	38
11.5	Commencing Loading	39
11.6	During Loading	39
11.7	Emergency Stops during Loading	39
11.8	Radio Checks during Loading	40
SECTION 12	BALLAST OPERATIONS	40
12.1	Requirements	40
12.2	Ocean Exchange of Ballast Water	40
12.3	De-Ballasting Procedures	40
12.4	Precautions to be taken Whilst De-ballasting	41
SECTION 13	CARGO COMPLETION – CARGO MEASUREMENT & COMMERCIAL DOCUMENTATION	41
13.1	Completion of Loading	41
13.2	Cargo Measurement & Sampling	42
13.3	Cargo Documentation	42
SECTION 14	HOSE DISCONNECTION	43
SECTION 15	UNMOORING & DEPARTURE	43
15.1	Preparation for Unmooring	43
15.2	Release from the Mooring System	44
15.3	Mooring Master Disembarkation	44
SECTION 16	ROSSUKON OIL TERMINAL SPECIFIC INFORMATION	44
16.1	Location	44
16.2	Charts for Area	44
16.3	Sailing Directions	44
16.4	Safety Zone	44
16.5	Terminal Lay-Out	45
16.6	Permissible Vessel Size	45
16.7	Navigation and Approach to the Terminal	45
16.8	Designated Anchoring Position	46
16.9	Mooring Master Boarding Position	47
16.10	Terminal Facilities	47
16.11	Rossukon Crude Oil Properties	47
16.12	Terminal Contact Details	47
	Appendix A: Safety Requirements Letter	49
	Appendix B: Offtake Vessel Pre-Arrival Questionnaire (All Measurements in Metres Please)	50

Prepared by:		Revision issued: 20 October 23	Version: 2023
Approved by:		Next review date: 20 October 25	Page 3 of 78



ROSSUKON Field G6/48

TERMINAL REGULATION

Appendix C: NORTHERN GULF PETROLEUM ROSSUKON TERMINAL PRE-BERTHING SHIP/ShORE CHECK LIST	55
Appendix D: NORTHERN GULF PETROLEUM ROSSUKON TERMINAL SHIP/ShORE SAFETY CHECK LIST	57
Appendix E: Chart for ROSSUKON Field	60
Appendix F: Safe Anchorage Area for ROSSUKON Field	61
Appendix G: Mooring Arrangement of ROSSUKON Oil Terminal	63
Appendix H: Side by side mooring arrangement MT PRIDE 1 and Offtake Vessel	64
Appendix I: Crude Oil Transfer Hose data	65
Appendix J: Hose support chain and pick-up arrangement –	66
Appendix K: Material Safety Data Sheet for Crude Oil	68
Appendix L: Recommends Changes to Document	78

Prepared by: [REDACTED]	Revision issued: 20 October 23	Version: 2023
Approved by: [REDACTED]	Next review date: 20 October 25	Page 4 of 78

FLEET OPERATIONS MANUAL

Chapter 7 : CARGO / BALLAST OPERATIONS (OIL/CHEMICAL TANKER)

Title : Table Of Contents

Version No. : 01

Date: 15 MAY 2024

Revision No:00

Prepared By: VR
Approved By: VHS

- g) Complying with instructions from a terminal, shipper, receiver or local agents which are to the charterer's voyage orders or operator's instructions.
- h) Loading ballast in cargo tanks.

7.1.4 Simultaneous Cargo and Ballast Operations

With double hull vessels and segregated ballast system onboard, the terminals require that vessels carry out simultaneous cargo and ballast operations to improve the turnaround time at the berth. Please ensure that in doing so the plimsol marks are not immersed because of poor deballasting rate. Ballast tank water surfaces must be checked before deballasting operations.

7.1.5 Ship to Ship Transfer Operations

Ship to ship operations are carried out in accordance with guidelines contained in OCIMF/ICS booklet "Ship to Ship Transfer Guide".

7.1.6 Responsibilities of Chief Officer

Chief Officer is responsible for cargo and ballast operations, including:

- a) Cargo/ballast calculations.
- b) Stress and Stability calculations.
- c) To test operational accuracy of the loading computer every Quarter and on change of a Chief Officer using class approved test condition data. Where no computer is fitted checks against the conditions given in the stability booklet should demonstrate fairly accurate comparison with similar conditions as recorded in the trim stability book.
- d) Chief Officer should actively encourage and involve junior officers and relevant staff engaged in cargo operations planning, line setting, execution of cargo and ballast operations and fulfilling the requirements of the ship shore or STS safety checklists.
- e) Establish and implement manning levels for different stages of cargo operations and include same in the cargo plan. Critical stages like starting of cargo operations, topping off, crude oil washing, may require increased manning level which should be foreseen while planning the cargo operation.

Enforcement of:

- a) Safety precautions and regulations.
- b) Pollution prevention precautions and regulations.
- c) Issue of written instructions concerning cargo and ballast operations.
- d) Operation of inert gas and crude oil washing systems, if applicable.
- e) Planning and supervision of all cargo, ballast, tank cleaning, gas freeing and purging operations.
- f) Preparation and maintenance of all Cargo Records and Oil Record Book.
- g) Sampling and gauging.

FLEET OPERATIONS MANUAL

Chapter 7 : CARGO / BALLAST OPERATIONS (OIL/CHEMICAL TANKER)
 Section 5 : Loading / Discharge And Transfer Operation
 Version No. 01 Date: 15 MAY 2024 Revision No:00

Prepared By: VR
 Approved By: VHS

7.5.50 Duties During Cargo Operations

OOW is responsible for cargo handling operations during his watch, except when properly relieved by another licensed Deck Officer. He must:

- Be aware of anticipated tidal conditions, in order for mooring lines to be tended.
- Advise watch duty personnel as required.

Particular emphasis must be placed on careful inspections during cargo loading/discharge in order to timely detect if any tank or valve is leaking. In case of leakage detection Chief Officer must be properly informed in order that he may take appropriate corrective action to eliminate leakage and prevent:

- Pollution of harbor/inland waters.
- Cargo contamination.
- Loss of cargo.

Additionally cargo hoses or transfer lines are inspected for leaks, chafing, improper support and sharp bends or kinks. Cargo transfer operations are suspended in case of leakage detection or hose bulge.

OOW is responsible for taking necessary safety precautions to avoid bursting of cargo hose, leaking transfer lines, overflows and cargo contamination. These includes:

- observation of operating pressure on vessel's lines, hoses and transfer lines during cargo loading/transfer;
- being alert for early detection of leaks
- making sure adequate assistance is available to watch tanks and operate valves.

Due to the critical activities undertaken by the OOW, distractions in CCR must be kept to a minimum.

- The use of mobile and satellite phones for personal calls by the OOW is prohibited
- The use of music earphones by the OOW is prohibited
- The use of personal computers (laptops) on the bridge by the OOW is prohibited
- The use of radios (entertainment), MP3 players or CD players is prohibited

CARGO TRANSFER CHECKLIST

Date: 15 MAY 2024
 Version: 01
 Revision: 00
 Form #: D 30

- ☐ Loading ☒ Discharging
☐ Internal Transfer ☐ Other

Vessel: PRIDE 1 Date: 02/06/24
 Port: ROSSUKON OIL FIELD, THAILAND Voyage No. 888
 Cargo: ROSSUKON CRUDE OIL Terminal: ROSSUKON OIL FIELD

SECTION I - Pre-Arrival Checks (To be carried out prior berthing)

A) General	Yes	No	N/A
1) Has 'Cargo Operation Plan' been prepared and copy sent to the head office as a record.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Has the 'Pre-Cargo Operation Safety Conference' been carried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Has office been informed and permission obtained in case of STS Operation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Mooring Equipment tried out, winch brakes visually checked and in order.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pre-arrival terminal / berth information exchange gathered to prepare cargo manifolds, reducers, use of flexible hoses, Use of Vapor recovery system (VRL), inerting, nitrogen padding / purging	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) On Chemical tankers, for PPE level 3 cargoes, the IBC suits are readily available at the manifold	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Checks in this section were carried out by:

(Name and Rank): [Signature] C/O

Initials: [Signature]

B) Manifold and Pumproom Area	Yes	No	N/A
1) Are manifold drip trays empty and manifold drain pipes blanked/ capped?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Have pressure gauges been fitted on the manifolds to be used (Shore side/ Offshore side) and in working order?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Has pumproom ventilation fan been started on exhaust mode and upper suction dampers closed to so as to allow lowest suction mode where applicable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Has pumproom communication been tested?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) Are pumproom high level alarm and gas detection system operational?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Spill Collection - Air driven portable pumps are properly rigged and operational. Location: <i>Right side tank accommodation</i> Discharge fitted to: <i>Shore 'S'</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Condition of dump valves to residue tanks have been checked and residue tanks pressure lowered (as required).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8) In case of carrying toxic/ flammable cargoes, Has duty officer been briefed to check for toxic and flammable vapours in locations where excessive concentrations are probable such as pumproom?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are cargo pumps, ballast pumps and stripping arrangements including associated monitoring instrumentation and controls fully operational?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Are Emergency shower tested and eye wash validity checked and seal intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Checks in this section were carried out by:

(Name and Rank): [Signature] C/O

Initials: [Signature]

C) Cargo Gear	Yes	No	N/A
1) Has 'Cargo Hose Handling Equipment' (Crane/Derricks) 'Safety Cut Out' been tested and found satisfactory working?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Cargo lines/ valves, flexible hoses have been pressure tested within 12 months.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Emergency Stops for cargo pumps are operational. Date when 'Emergency Stops' were last tried out: 02/06/2024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) For vessel equipped with portable framo pump, Is it ready for use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Checks in this section were carried out by:

(Name and Rank): [Signature] C/O

Initials: [Signature]

D) Cargo Tanks	Yes	No	N/A
1) Are cargo tanks cleaned and ready for inspection as per Charterer's requirement?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CARGO TRANSFER CHECKLIST

Date: 15 MAY 2024
Version: 01
Revision: 00
Form #: D.30

SECTION I - Pre-Arrival Checks (To be carried out prior berthing)

If yes, are they gas free and suitable for man entry?

- 2) Cargo Tank Integrity is in order. ☒ ☐ ☐
- Date of Last 'Vapour Tightness Certificate': 03/10/2023 ☐ ☐ ☒
- 3) Heating coils of empty cargo tanks to be loaded have been pressure tested? ☐ ☐ ☒
- Date of Last Pressure Test: ☐ ☐ ☒
- 4) Heating coils not in use have been blown through and blanked. ☐ ☐ ☒
- State Tanks with Blanked Heating Coils: ☐ ☐ ☒

Checks in this section were carried out by:
(Name and Rank): [Redacted] C/O

Initials: [Signature]

Chief Officer: [Redacted] Date/Time: [Redacted]

E) Gauging, Sampling Equipment and Alarms

- 1) Fixed gauging system of vessel is operational. ☒ ☐ ☐
- List any tanks with in operational gauges below:
- Level Gauges: ☐ ☐ ☒
- Temperature Gauges: ☐ ☐ ☒
- Tank Pressure Gauges: ☐ ☐ ☒
- Vapour Line Pressure Sensors: ☐ ☐ ☒
- Has marking been done in CCR in this regard and duty officers notified? ☐ ☐ ☒
- 2) Are Cargo tank High level and Overfill Alarms tried out and operational? ☒ ☐ ☐
- Tanks Tested: ☐ ☐ ☒
- 3) Does vessel have sufficient portable closed gauging equipment available and operational? ☒ ☐ ☐
- 4) Closed sampling device is available, cleaned and ready for use. ☒ ☐ ☐
- 5) Has the remote system for cargo/ballast valves been checked for operation including hydraulic hand pumps operation and oil level checked. ☒ ☐ ☐

Checks in this section were carried out by:
(Name and Rank): [Redacted] C/O

Initials: [Signature]

F) Venting Arrangement

- 1) Has 'Vapour Recovery System' been properly set up for the required operation? ☐ ☐ ☒
- Tanks connected to 'Common Vapour Line': ☐ ☐ ☒
- 2) Have PV valve operation (manual lifting of pressure/vacuum side) test been carried out and found satisfactory. ☒ ☐ ☐
- 3) For vessels fitted with independent cargo tank pressure sensors, Have alarm settings been correctly set for the operation? ☒ ☐ ☒
- Alarm Setting: ☒ ☐ ☒
- High: ☒ mmWG
- Low: ☒ mmWG
- 4) VECs Alarms are operational. ☐ ☐ ☒
- Alarm Setting: ☐ ☐ ☒
- High: ☒ mmWG
- Low: ☒ mmWG

Checks in this section were carried out by:
(Name and Rank): [Redacted] C/O

Initials: [Signature]

G) IG System / Nitrogen Generator System

- 1) Has fixed Oxygen Analyser been calibrated not more than 24 hours prior to starting of the IG system? ☒ ☐ ☐
- 2) Has water filled 'PV breaker' been filled to the appropriate level with anti-freeze liquid? ☐ ☐ ☒

CARGO TRANSFER CHECKLIST

Date: 15 MAY 2024
Version: 01
Revision: 00
Form #: D.30

SECTION I - Pre-Arrival Checks (To be carried out prior berthing)

- 3) Have IG system and alarms been tested and are operational. ☒ ☐ ☐
- Date when 'IG Alarms' were last tried out: 02/08/24
- 4) Readings on the Local, Bridge and CCR 'Oxygen/Pressure Monitors have been compared and same are in order. ☒ ☐ ☐
- 5) Have cargo tank pressure and Oxygen content been checked and observed Oxygen content in the cargo tank is less than 5%. ☒ ☐ ☐
- 6) N2 branch lines have been blanked. ☐ ☐ ☒

Checks in this section were carried out by:
(Name and Rank): [Redacted] C/O

Initials: [Signature]

Chief Officer: [Redacted] Date/Time: 02/08/24, 1600 hrs

H) Gas Measuring Equipment

- 1) Are Gas Detection Equipment operational? ☒ ☐ ☐
- | Gas Meters | Number | Date of last calibration |
|------------------------|--------|--------------------------|
| a) Oxygen Analyser | 1 | 02/08/24 |
| b) Explosimeter | 1 | |
| c) Tank Scope | 1 | |
| d) Multigas Meter | 3 | |
| e) Fixed Gas Detection | 1 | |

Checks in this section were carried out by:
(Name and Rank): [Redacted] C/O

Initials: [Signature]

I) Specific checks for vessels carrying 'SOLIDIFYING CARGOES'

- 1) Has 'Heating Coil' Pressure test been carried out prior loading and found satisfactory. ☐ ☐ ☒
- 2) Are cargo temperatures in line with 'Discharge Temperature' mentioned in 'Heating Instructions'? ☐ ☐ ☒
- Discharge temperature as per Heating Instructions:
- Tank Temperature: ☐ ☐ ☒
- 3) Operate cargo valves by fully opening/closing to ensure correct operation. ☐ ☐ ☒

Checks in this section were carried out by:
(Name and Rank): [Redacted] C/O

Initials: [Signature]

J) Specific Checks for vessels carrying 'TOXIC CARGOES'

- 1) Does vessel have sufficient stock of gas detector tubes, antidotes and protective equipment as required? ☒ ☐ ☐
- 2) Has required PPE, as identified in 'Cargo Operation Plan' been checked and found in satisfactory condition? ☒ ☐ ☐

Checks in this section were carried out by:
(Name and Rank): [Redacted] C/O

Initials: [Signature]

K) Specific Checks for vessels carrying 'Static Accumulating Cargoes' under 'UNDEFINED' atmosphere

- 1) Has 'Relaxation Time' been taken into consideration and agreed in Ship/Shore Safety Meeting? ☒ ☐ ☐
- 2) Have bonding clamps on all flanges been checked and found intact? ☒ ☐ ☐
- 3) Has continuity of Portable gauge tape been checked? ☒ ☐ ☐

Checks in this section were carried out by:
(Name and Rank): [Redacted] C/O

Initials: [Signature]

Chief Officer: [Redacted] Date/Time: 02/08/24 1600 hrs

1000hrs-1200hrs 03/08/2024 - Confirmed NO PW in bottom line, Bottom line emptied. No. 1 CO2 Separator emptied.

CARGO TRANSFER CHECKLIST

Date: 15 MAY 2024
Version : 01
Revision: 00
Form #: D 30

SECTION II - Preparation for Transfer (To be carried out prior Transfer)

(Blending of MARPOL cargoes 'AT SEA' is prohibited)

A) General	Yes	No	N/A
1) Is each crew member on duty equipped with 'Personal Gas Detector'?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) AIS switched off and CCR VHF switched over to low power output?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Has means of communication between CCR/ Pumproom been tried out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Appropriate warning signals / flags are hoisted.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) MSDS Sheets for the relevant cargoes are displayed at appropriate locations.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Minimum Location: CCR/Bridge/Messrooms/ECR/Gangway Fire Safety Plan)			
6) Has accommodation air conditioning unit been set to partial re-circulation mode and ensure that all access doors to accommodation will remain shut during transfer operation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Has ship-shore access been properly rigged and lifebuoy along with intrinsically safe SI light/ line is available at gangway?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8) All valves/lines are correctly lined up in accordance with Cargo Operation Plan for the intended operation and connections not in use are properly blanked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Has cargo line up been cross checked by the Chief Officer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) In case of handling multiple parcel / simultaneous transfer operation, two valve segregation and or positive isolation at all times during the operation is maintained.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Checks in this section were carried out by:

(Name and Rank): [Redacted] c/o Initials: [Signature]

B) Manifold Connection	Yes	No	N/A
1) All valves are correctly lined up in accordance with Cargo Operation Plan for the intended operation and connections not in use are properly blanked and fully bolted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Has cargo line up been cross checked by the Chief Officer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Has 'STOP Ullages' been calculated considering 'Gross Observed Volume'?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Shore loading arm / hose connection to the ship's manifold leak test carried out.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Checks in this section were carried out by:

(Name and Rank): [Redacted] c/o Initials: [Signature]

C) Venting Arrangement	Yes	No	N/A
1) Manifold/PV stack drain plugs checked for tightness and PV valves are operating freely?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Have 'IG Branch valves' been checked and status board in CCR updated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Checks in this section were carried out by:

(Name and Rank): [Redacted] c/o Initials: [Signature]

D) Cargo Line Clearing/Draining:	Yes	No	N/A
1) Has the procedure of line draining (To Ship/ Shore tank) been agreed? Reception Tank :- Ship/ Shore Tank (Reception Tank - 6 S. COT)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Does the reception tank(s) have adequate ullage space to contain line contents? Reception Tank : NA Ullage :	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Chief Officer :

Date/Time: 06/08/24, 1012

SECTION III - Repeated Checks during Cargo Transfer

(To be verified every hour and logged by the OOW in the port log/cargo operation log)

1) Hourly Calculation Sheet has been updated on hourly basis.	<input checked="" type="checkbox"/>
2) IG pressure/ O ₂ recorded on hourly basis.	<input checked="" type="checkbox"/>
3) Soundings / Ullage of tanks not being loaded/discharged are unchanged.	<input checked="" type="checkbox"/>
4) No leaks on deck or overside.	<input checked="" type="checkbox"/>

CARGO TRANSFER CHECKLIST

Date: 15 MAY 2024
Version : 01
Revision: 00
Form #: D 30

SECTION III - Repeated Checks during Cargo Transfer

(To be verified every hour and logged by the OOW in the port log/cargo operation log)

5) Has pumproom inspection been carried at least once every hour to ensure no leaks and bilges are dry	<input checked="" type="checkbox"/>
6) The relevant crew members are using required PPE for the operation.	<input checked="" type="checkbox"/>
7) PV Valves been closely monitored for their correct operation.	<input checked="" type="checkbox"/>

Note: If cargo operation takes longer than 12 hours, use additional sheets of this page.

SECTION IV - After Completion of Transfer

A) Cargo Gauging / Sampling:	Yes	No	N/A
1) Time has been allowed for cargo to settle prior portable gauging/sampling?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Have cargo tanks been checked for presence of free water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Chief Officer and Terminal Rep/Surveyor have signed the seal tags.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) All sample bottles have been properly sealed and seal numbers on record.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) Samples stowed in safe custody in sample locker.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Checks in this section were carried out by:

(Name and Rank): [Redacted] c/o Initials: [Signature]

B) Cargo Equipment Securing:	Yes	No	N/A
1) Have all cargo lines including top lines thoroughly drained.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) All line and manifold valves, VECS valves Shut and PV valves set for the voyage?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Have all manifolds been blanked using full set of nut/bolts and adequately tightened?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Have all cargo tank openings been checked/secured for sea and confirm tank pressures are steady?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) Are all save-alls emptied?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is hose handling equipment secured for sea?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Are all heating coils attended for the voyage?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8) Decks squared up, vessel secured for sea and appropriate log entry has been made	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Checks in this section were carried out by:

(Name and Rank): [Redacted] c/o Initials: [Signature]

C) Documentation:	Yes	No	N/A
1) Has 'Empty Tank Certificate' been obtained from Cargo Surveyor?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Has 'Letter of Protest' been issued for ship/shore quantity difference and concerned parties informed (charterers/ owners/ Office) as per their guidance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Have 'Oil Record Books' been updated for the operation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Has MSDS and shipping document received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

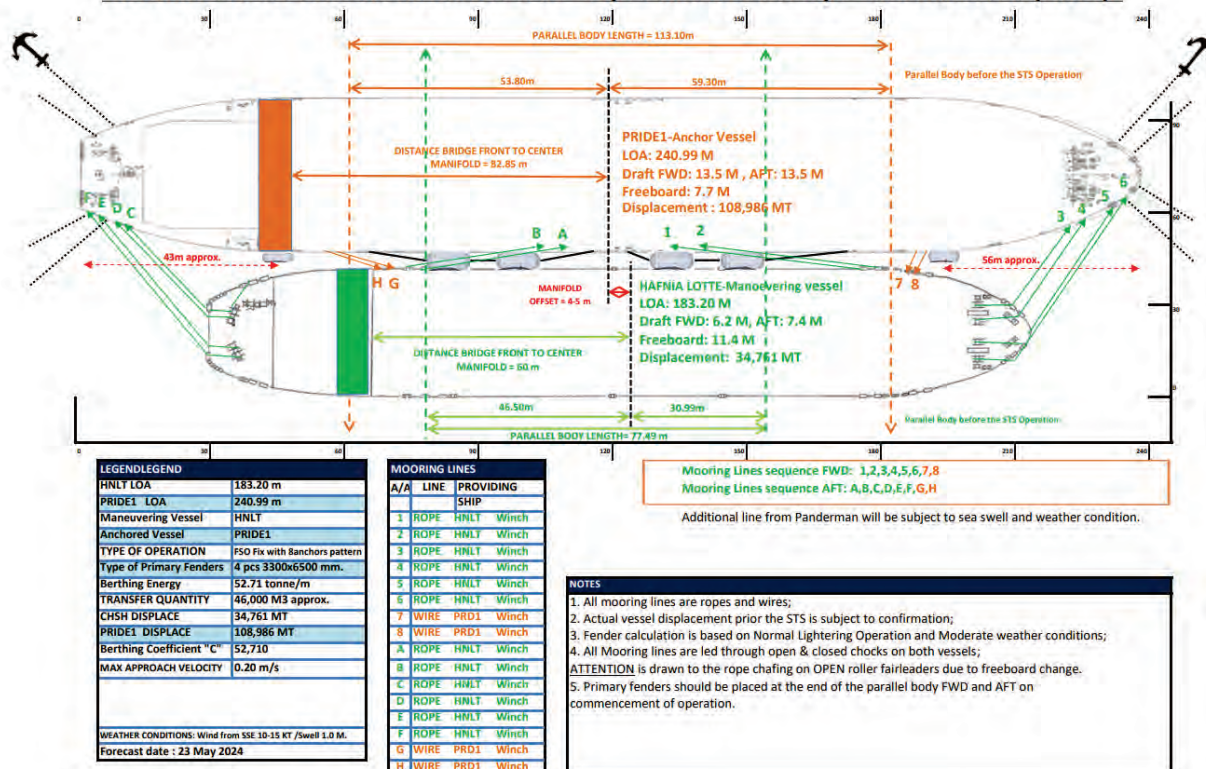
Chief Officer :

Date/Time: 07/08/2024 2200hrs

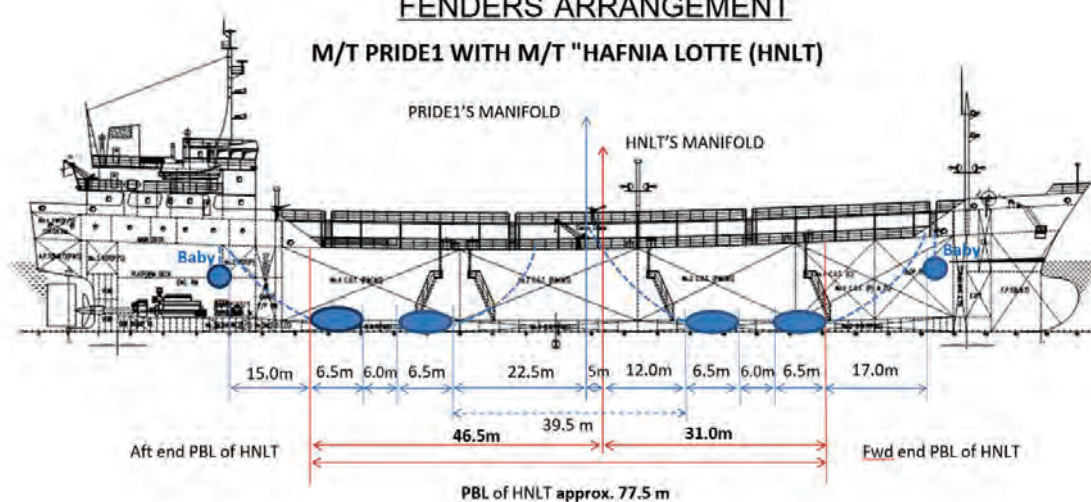
ภาคผนวกเรือกักเก็บปิโตรเลียม-2.4

Fender and Mooring Plan

MOORING AND FENDERS RIGGING PLAN – M/T PRIDE1 WITH M/T "HAFNIA LOTTE(HNLT)"



FENDERS ARRANGEMENT M/T PRIDE1 WITH M/T "HAFNIA LOTTE (HNLT)"



Notes:

- Fender calculation is based on the ballast condition of shuttle vessel.
- Actual vessel's displacement and PBL prior the STS is subject to master confirmation.

ภาคผนวกเรื่องกักเก็บปิโตรเลียม-2.5

STS Hose Certificate

青岛亨尔船舶用品有限公司

Qingdao Henger Shipping Supplies Co.,Ltd

2023060202Z (2023)(亨尔)质监验字085 号 No . HER231023

检 验 报 告

Test Report

产 品 名 称: 船对船吸排油胶管

Product Description: STS oil suction and discharge hose

型 号 规 格: 内径 250 MM

Model, Type: ID250MM

受 检 委 托 单 位: 青岛亨尔船舶用品有限公司

Supervised Enterprise/Client:

Qingdao Henger Shipping Supplies Co. LTD

检 验 类 别: 成品检验

Test Kind: Product inspectio

青岛亨尔船舶用品有限公司

Qingdao Henger Shipping Supplies Co.,Ltd

检 验 报 告

Test Report

共 3 页第 2 页

No . HER231023

Page 3of2

产品名称 Product Description	STS oil suction and discharge hose	检验类别 Test Kind	成品检验
受检单位 Supervised nterprise	Qingdao Henger Shipping Supplies Co. LTD	型号规格 Model, Type	内径 250MM ID250MM
受检单位地址 Address of Supervised nterprise	青岛市即墨区金口镇工业园	样品等级 Grade	合格品
生产单位 Manufacturer	Qingdao Henger Shipping Supplies Co. LTD	商标 Brand	/
抽样地点 Sampling Location	成品库 Warehouse	抽样人员	徐文秀、宗光辉
抽样基数 Sample Bath	3根 3 pieces	抽样日期 Sample Date	2024 年 1 月 2 日 2-1-2024
样品数量 Sample Quantity	3根 3 pieces	生产日期 Producing Date	2024 年 1 月 1 日 1-1-2024
样品特性和状态 Sample Description	外观符合检验要求 Appearance meets inspection requirements	样品批号 Batch No.	DYWH128
检验环境 Envionmentalfor Test	室内温度: 10℃ Indoor temperature: 10℃	检验日期 Test Date	2024 年 1 月 3 日 3-1-2024
标准 Standard	OCIMF		
检验项目 Test items	外观尺寸, 耐压性, 抗拉强度, 内胶耐油性能 Appearance dimensions, pressure resistance, tensile strength, inner rubber oil resistance		
检验结论 Test Conclusion	This product is inspected according to OCIMF Standards and all items qualified (检验报告专用章) (Special stamp of report) 签发日期: 2024 年 1 月 3 日		
备注 Note			

批准: 朱桌奇

审核: 刘丽萍

主检: 王云

检 验 报 告
Test Report

共 3 页第 3 页

No . HER231023

Page 3 of 3

序号 Serial Number	质量项目名称 Quality Project Name	标准要求 the Require of Standard	检验结果 Inspection Result	单项判定 The Judge of Individual Event
1	Physical Dimension	Inner diameter 250MM Outer diameter 320MM Length 11.8 meters	Inner diameter 250MM Outer diameter 320MM Length 11.8 meters	Qualified
2	Pressure resistance	≥ 225PSI	464PSI	Qualified
3	Tensile Strength	Tensile strength of flange and bod 1.5 tons	3 tons	Qualified
4	Inner Rubber Oil Resistance	Oil containing 50% aromatic hydrogen, soaked for 24 hours, volume expansion rate ≤ 5%	2%	Qualified
5	Bending Test	Bend 90° with no collapse or abnormality at the top	No collapse, no abnormality	Qualified
6	Anti-leak test	Pressure 340PSI for two hours without leakage, no abnormality at the flange end	No leakage or abnormality for two hours	Qualified

复核 Approved by:朱桌奇 审核 Verified by:刘丽萍 检测 Tested by:王云

ภาคผนวกเรือกักเก็บปิโตรเลียม-2.6
Ship to Ship Transfer Checklist

Ship to Ship Transfer Checklist

Form No: D-19

Discharging Ship's Name:	PRIDE 1
Receiving Ship's Name:	GRAND ACE 10
Name of Designated POAC:	WORABIS 7 P.
Name of STS Superintendent if Different from POAC:	N/A
Date and Location of Transfer:	4 AUG 2024, ROSSUKON OIL FIELD

CHECKLIST 5: BEFORE UNMOORING

SN	Description	Checked	Remarks
1	Cargo hoses are properly drained prior to hose disconnection.	✓	
2	Cargo hoses or manifolds are securely blanked.	✓	
3	The transfer side of the ship is clear of obstruction (including hose lifting equipment).	✓	
4	The method of letting go moorings and separation of ships has been agreed and crew have been briefed on procedures.	✓	
5	The fenders, including fender rigging, are in good order.	✓	
6	Secondary fenders re correctly positioned and secured for departure.	✓	
7	Power is available for mooring winches.	✓	
8	Rope messenger and rope stoppers are available at all mooring stations.	✓	
9	Crew standing by at their mooring stations.	✓	
10	Communications are established with mooring personnel and with other ship.	✓	
11	Shipping traffic in the area is being monitored and a very high frequency alert has been transmitted.	✓	
12	Maneuvering, mooring and navigational equipment has been tested and is ready for departure.	✓	
13	Mooring personnel have been instructed to let go only as directed by Master.	✓	
14	Agreement has been reached that navigational warnings will be cancelled and AIS status updated when clear of the other ship.	✓	
15	The other ship has been advised that checklist 5 is satisfactory completed.	✓	

For Discharging Ship / Receiving Ship (Delete as appropriate)

Name:		Rank / Position:	Master of Lee Heeank
Signature:		Date:	07/08/2024, 2048 hrs

Note this form should not be substituted for other required check-lists. If form is used, it should be used in its entirety.

Ship to Ship Transfer Checklist

Form No: D-19

Ships Operator:	RNM	STS Organiser:	NGP & TRIPLE SEA MARINE
Ship Charterer:	NGP	Company:	RNM
Ship's Name:	PRIDE 1	IMO No.:	9205873
Call Sign / INMARSAT No.:	5LNI7 / +1505533775	Proposed Date of Transfer:	04/08/2024
		Proposed Location:	ROSSUKON OIL FIELD

CHECKLIST 1: PRE-FIXTURE INFORMATION (FOR EACH SHIP)

(Between Ship Operator / Charterer and Organiser)

SN	Discharging / Receiving Ship (Delete as appropriate)	Ship Operator's Conformation	Remarks
1	Current vessel particulars questionnaire (VPQ) data has been exchanged.	yes	
2	State the anticipated maximum berthing displacement of the ship.	yes	
3	State the anticipated arrival draughts and freeboard.	yes	120393 MT
4	If the berthing operation is to be conducted underway, confirm that the ship can maintain about five knots for a maximum of two hours.	NA	FSO fixed with 8 anchors
5	The ship is able to conduct operations in accordance with the latest edition of the Ship to Ship Transfer Guide.	yes	
6	Sufficient manpower will be provided to ensure the safe conduct of operations while minimising the potential for fatigue.	yes	
7	Key vessel personnel can communicate in English. If not, state working language used.	yes	English
8	The ship's manifold arrangement and lifting gear is in accordance with OCIMF or ISGOTT recommendations for the ship type/size.	yes	
9	State the maximum and minimum expected height of the cargo manifold from the waterline during the transfer.	yes	Min - 8.5m Max - 12.9m
10	The SWL and outreach of the ship's lifting equipment is sufficient for the intended operations.	yes	1x15T at Main deck
11	Where applicable, a copy of the STS operations plans has been exchanged	yes	
12	If not included within the STS operations plan, a general arrangement plan or other similar mooring diagram has been exchanged.	yes	
13	The location and number of enclosed fairleads and mooring bitts fitted on the ship is in accordance with Mooring Equipment Guidelines (Ref 6).	yes	
14	The ship is able to deploy all lines on winch drums.	yes	
15	Messenger lines of suitable strength will be available at each mooring location.	yes	
16	MSDS information has been exchanged for the cargo being transferred and, where applicable, the previous cargo of the receiving ship.	yes	
17	Both sides of the ship are clear of any overhanging projections, including bridge wings.	yes	
18	Sufficient accommodation is available on board for STS personnel.	yes	

For Discharging Ship / Receiving Ship (Delete as appropriate)

Name:		Rank / Position:	MASTER
Signature:		Date:	02/08/2024



Ship to Ship Transfer Checklist

Form No: D-19

Discharging Ship's Name:	PRIDE 1
Receiving Ship's Name:	GRAND ACE 10
Name of Designated POAC:	WORSLEY P.
Name of STS Superintendent if Different from POAC:	N/A
Date and Location of Transfer:	6 AUG 24, PSK OIL FIELD

CHECKLIST 2: BEFORE OPERATIONS COMMENCE

SN	Description	Checked	Remarks
1	A copy of the completed checklist 1 has been received.	✓	
2	A copy of the JPO that encompasses the entire transfer operation has been received.	✓	
3	Personnel will comply with the hours of work and rest requirements of IMO and national regulations, as appropriate.	✓	
4	Radio communications, including back-up systems, have been agreed and tested and clocks have been synchronised between the ships.	✓	MAIN VHF CH. 17 BACK UP VHF CH. 71
5	The language of operations has been agreed.	✓	ENGLISH
6	The rendezvous position of the transfer area has been agreed.	✓	
7	Information of ship handling characteristics has been exchanged, including details of any critical main engine revolutions and corresponding speed.	✓	
8	Approach, maneuvering and mooring plans are understood and confirmed.	✓	
9	Mooring procedures have been agreed, including fender positions and number / type of ropes to be provided by each ship.	✓	
10	The system and method of electrical isolation between the ships has been agreed.	✓	
11	The ship is upright and at a suitable trim, without any overhanging projections.	✓	
12	Maneuvering, mooring and navigation equipment has been tested and found in good order.	✓	
13	Cargo transfer system safety devices, including IG and emergency shutdown (ESD) systems, where applicable, have been proven operational not more than 48-hours prior to the operation.	✓	
14	The ship's boilers and tubes have been cleared of soot and it is understood that during STS operations, tube must not be blown.	✓	
15	Engineers have been briefed on engine speed (and speed adjustment) requirements.	N/A	VSL MOTORS & ANCHOR
16	Weather forecasts have been reviewed for the transfer area and arrangements have been made for their continued receipt throughout the operation.	✓	
17	The hose lifting equipment is suitable and ready for use.	✓	
18	The cargo transfer hoses / arms have been tested and certified and they are in apparent good condition.	✓	
19	The fenders and associated equipment are visually in good order.	✓	
20	The crew has been briefed on the mooring procedure.	✓	
21	The contingency plan is agreed and an appropriate emergency drill has been conducted.	✓	
22	Local authorities have been advised of the STS operation.	✓	
23	A navigational warning has been broadcast.	✓	

Ship to Ship Transfer Checklist

Form No: D-19

SN	Description	Checked	Remarks
24	Monitoring is in place for accommodation, void spaces, pump room, compressor and motor rooms, as applicable, to detect possible flammable atmosphere.	✓	
25	The other ship has been advised that checklist 2 is satisfactory completed.	✓	

For Discharging Ship / Receiving Ship (Delete as appropriate)

Name:		Rank / Position :	M/T GRAND ACE 10 MSTN 010 LCC-MS 500
Signature:		Date:	06 Aug 2024, 0636hrs

Note that items 17, 18 and 19 can be checked by the vessel that has been onboard.

Note this form should not be substituted for other required check-lists. If form is used, it should be used in its entirety.

Ship to Ship Transfer Checklist

Form No: D-19

Discharging Ship's Name:	PRIDE 1
Receiving Ship's Name:	GRAND ACE 10
Name of Designated POAC:	WORSBET P
Name of STS Superintendent if Different from POAC:	N/A
Date and Location of Transfer:	6 AUG 2024, BOSSUKOON OIL FIELD

CHECKLIST 3: BEFORE RUN – IN & MOORING

SN	Description	Checked	Remarks
1	Checklist 2 has been satisfactory completed.	✓	
2	Primary fenders are correctly positioned and fender rigging is in order.	✓	
3	If required, secondary fenders are correctly positioned and secured.	✓	
4	There are no overhanging projections on the side of berthing.	✓	
5	A proficient helmsman is at the wheel.	N/A	VSL MOORING 8 J 070
6	Cargo manifold connections information has been exchanged and agreed.	✓	
7	Course speed information has been exchanged and agreed.	✓	
8	The method for controlling the ship's speed adjustment e.g. by changes to revolutions, propeller pitch or by telegraph, has been agreed.	N/A	Specify method N/A VSL MOORING
9	Navigational signals are displayed.	✓	
10	Adequate lighting is available.	✓	
11	Power is available for winches and they are in good order.	✓	
12	Rope messenger, rope stoppers and heaving lines are ready for use.	✓	
13	All mooring lines are ready.	✓	
14	Fire axes, or suitable cutting equipment, are in position at the fore and aft mooring stations.	✓	
15	Crew are standing by their mooring stations.	✓	
16	Communications are established with mooring personnel and with the other ship.	✓	
17	Fire-fighting and anti-pollution equipments ready for use.	✓	
18	Shipping traffic in the area is being monitored.	✓	
19	The vessel status has been appropriately set on Automatic Identification System (AIS).	✓	
20	The other ship has been advised that checklist 3 is satisfactory completed.	✓	

For Discharging Ship / Receiving Ship (Delete as appropriate)

Name:	[REDACTED]	Rank / Position:	M/T GRAND ACE 10
Signature:	[REDACTED]	Date:	06 AUG 2024 / 0642

Note this form should not be substituted for other required check-lists. If form is used, it should be used in its entirety. *tw*

Ship to Ship Transfer Checklist

Form No: D-19

Discharging Ship's Name:	PRIDE 1
Receiving Ship's Name:	GRAND ACE 10
Name of Designated POAC:	WORSBET P
Name of STS Superintendent if Different from POAC:	N/A
Date and Location of Transfer:	6 AUG 2024, BOSSUKOON OIL FIELD

CHECKLIST 4: BEFORE CARGO TRANSFER

SN	Description	Checked	Remarks
1	Checklist 3 has been satisfactory completed.	✓	
2	A standard pre-transfer checklist, such as the ISGOTT ship/shore safety checklist for equivalent, has been satisfactory completed and arrangements have been made for repetitive checks during the transfer.	✓	
3	required regional checklists have been completed.	✓	
4	Procedures for the transfer of personnel have been agreed.	✓	
5	if used, the gangway is correctly positioned and well secured.	✓	
6	Inter-ship communication systems, including back-up, are agreed and tested.	✓	Vnf ch 67/71
7	Emergency signals and shutdown procedures are agreed.	✓	Stop x 3
8	The engine room will be manned as required throughout the transfer and the main engine maintained on standby or on short notice of readiness.	✓	
9	A bridge watch and / or an anchor watch is establish.	N/A	
10	Officers in charge of the cargo transfer on both ships are identified and details have been exchanged and posted.	✓	
11	A deck watch has been establish to pay particular attention to moorings, fenders, hoses, manifold areas and overside.	✓	
12	The initial cargo transfer rate has been agreed with the other ship.	✓	500 m³/hr
13	The maximum cargo transfer rate is agreed and recorded, taking into account the maximum flow rates of the transfer system, including hoses.	✓	8000 bbl/hr (later increased to 15000 bbl/hr)
14	Arrangements have been made for the regular exchange of information on quantities of cargo transferred.	✓	Hourly 1248 bbl 06/08/24
15	The topping – off rate has been agreed and recorded.	✓	500 m³/hr
16	The procedure for stopping transfer is agreed.	✓	
17	Ballasting and deballasting arrangements are agreed.	✓	
18	Cargo hoses are well supported and protected from chafing and the hose release area is clear of obstructions.	✓	
19	Tools required for rapid disconnections are located at the cargo manifold.	✓	
20	Messengers are prepared and positioned ready for unmooring in accordance with the unmooring plan.	✓	
21	Details of the previous cargo of the receiving ship, including any hazardous or toxic properties, have been given to the discharging ship.	✓	
22	Security information has been exchanged and, if required, a Declaration of Security has been completed.	✓	
23	The other ship has been advised that checklist 4 is satisfactory completed.	✓	

For Discharging Ship / Receiving Ship (Delete as appropriate)

Name:	[REDACTED]	Rank / Position:	M/T GRAND ACE 10
Signature:	[REDACTED]	Date:	06 AUG 2024, 1012

Note this form should not be substituted for other required check-lists. If form is used, it should be used in its entirety. *tw*

ภาคผนวกเรื่องกักเก็บปิโตรเลียม-2.7

Corrosion Prevention

TO BE RETURNED

JUL. 8, 1999 : DRAWN AT OUR OFFICE

NIPPON KAIJI KYOKAI
SASEBO

CONFERRER

• FLAG . PANAMANIAN

53 SHEETS WITH COVER

NAMURA SHIPBUILDING CO.,LTD.
DESIGN DEPARTMENT

OUTFIT DESIGN SECTION

APPROVED CHECKED CHECKED DRAWN

CORROSION PREVENTION SCHEME FOR WATER BALLAST TANKS

DATE DRAWN
JUN 25, 1999

SCALE

DWG. NO.
F-1-708

先布配

海運局	(NK)
貨倉	支那

三 主 體

5	1	

總	分	分
		分

船殼 運長	
-------	--

第	一	章
---	---	---

2	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

第一类	
-----	--

用 获	
-----	--

廣	德	
德	德	大

德	德	德
道	道	道

電	裝	
---	---	--

工作		
----	--	--

8	8
ACC	

ASE			
	1		

21	22	23
----	----	----

世	I	是
世		

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

第一卷

一生一	
-----	--

	E-2	

生	一	一
---	---	---

值一營	
-----	--

第一	
第二	

2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

黃一	中
----	---

22	廿
----	---

△ ○ ●

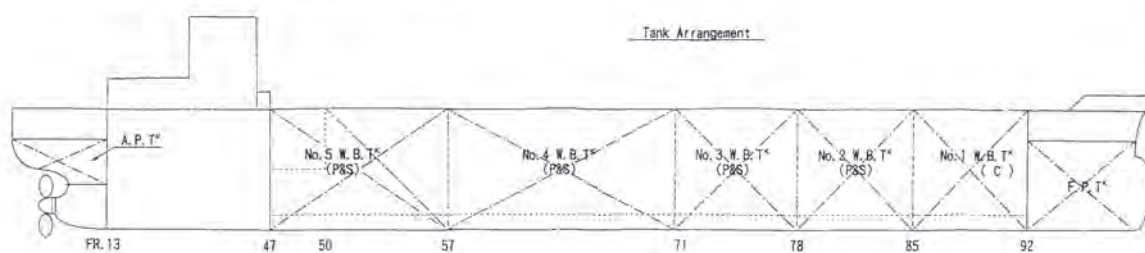
(CORROSION PREVENTION SCHEME FOR WATER BALLAST TANKS)

1. OWNER'S COATING MANUFACTURER'S & SHIPYARD'S EXPLICIT ARRANGEMENT TO THE SCHEME FOR COATING SELECTION, APPLICATION & MAINTENANCE
2. LIST OF SEA WATER BALLAST TANKS IDENTIFYING THE COATING SYSTEM FOR EACH TANK, INCLUDING COATING COLOR & WHETHER COATING SYSTEM IS A HARD COATING
3. DETAIL OF ANODES, IF USED
4. MANUFACTURER'S TECHNICAL PRODUCT DATA SHEETS FOR EACH PRODUCT
5. MANUFACTURER'S EVIDENCE OF PRODUCT QUALITY & ABILITY TO MEET OWNER'S REQUIREMENTS
6. EVIDENCE OF SHIPYARD'S & /OR ITS SUBCONTRACTOR'S EXPERIENCE IN COATING APPLICATION
7. SURFACE PREPARATION PROCEDURES & STANDARDS, INCLUDING INSPECTION POINTS & METHODS
8. APPLICATION PROCEDURES & STANDARDS, INCLUDING INSPECTION POINTS & METHOD
9. FORMAT FOR INSPECTION REPORTS ON SURFACE PREPARATION & COATING APPLICATION
10. MANUFACTURER'S PRODUCT SAFETY DATA SHEETS FOR EACH PRODUCT & OWNER'S, COATING MANUFACTURER'S & SHIPYARD'S EXPLICIT AGREEMENT TO TAKE ALL PRECAUTIONS TO REDUCE HEALTH & OTHER SAFETY RISKS WHICH ARE REQUIRED BY THE AUTHORITIES
11. MAINTENANCE REQUIREMENTS FOR THE COATING SYSTEM

A TABLE OF CONTENTS

ITEM	REQUIRED DOCUMENTATION 防食要領書に記載すべき事項	PAGE 頁
1	OWNER'S COATING MANUFACTURER'S AND SHIPYARD'S EXPLICIT AGREEMENT TO THE SCHEME FOR COATING SELECTION, APPLICATION AND MAINTENANCE 塗装の種類、施工、保守に関する船主、塗装メーカー、造船所間の合意内容	2/52
2	LIST OF SEA WATER BALLAST TANKS IDENTIFYING THE COATING SYSTEM FOR EACH TANK, INCLUDING COATING COLOR AND WHETHER COATING SYSTEM IS A HARD COATING 海水バラストタンクの各タンクに適用する塗装の内容 (塗装の色、ハードコーティングか否かを含む)を示す一覧表	3/52 5 4/52
3	DETAIL OF ANODES, IF USED 電気防食を用いる場合にはその詳細	5/52 8/52
4	MANUFACTURER'S TECHNICAL PRODUCT DATA SHEETS FOR EACH PRODUCT 塗装の各製品についての技術的資料	9/52 5 10/52
5	MANUFACTURER'S EVIDENCE OF PRODUCT QUALITY AND ABILITY TO MEET OWNER'S REQUIREMENTS 塗装の品質が船主の要求を満たす事を示す実績	11/52
6	EVIDENCE OF SHIPYARD'S AND/OR ITS SUBCONTRACTOR'S EXPERIENCE IN COATING APPLICATION 塗装の施工を行う造船所又は施工業者の施工実績	12/52 5 15/52
7	SURFACE PREPARATION PROCEDURES AND STANDARDS, INCLUDING INSPECTION POINTS AND METHODS 検査方法、検査点数を含む下地処理の要領及び基準	16/52 5 30/52
8	APPLICATION PROCEDURES AND STANDARDS, INCLUDING INSPECTION POINTS AND METHODS 検査方法、検査点数を含む施工要領及び基準	16/52 5 30/52
9	FORMAT FOR INSPECTION REPORTS ON SURFACE PREPARATION AND COATING APPLICATION 下地処理と塗装施工についての検査報告書の様式	31/52 5 32/52
10	MANUFACTURER'S PRODUCT SAFETY DATA SHEETS FOR EACH PRODUCT AND OWNER'S, COATING MANUFACTURER'S AND SHIPYARD'S EXPLICIT AGREEMENT TO TAKE ALL PRECAUTIONS TO REDUCE HEALTH AND OTHER SAFETY RISKS WHICH ARE REQUIRED BY THE AUTHORITIES 塗装の各製品についての安全管理と注意事項	33/52 5 50/52
11	MAINTENANCE REQUIREMENTS FOR THE COATING SYSTEM 保守に関する要求事項	51/52 52/52

Tanks where Cathodic Protection System are installed :



Protection planning :

+ mark, as your specify

Name of Tank	Object of protection +	Area to be protectd (m ²) +	Protective current (mA/m ²) +	Ballasting ratio (%) +	Anode life (Yr) +	Number of anode installed(pcs.) & weight(Kg)		
						LDZ- 65P-0.25	Net weight (Kg)	Gross weight (Kg)
F.P.T ⁺	Protective area	2800	5	50	2	32	166.4	157.3
No. 1 W.B.T ⁺ (C)	includes the whole	15200	5	50	2	166	863.2	853.6
No. 2 W.B.T ⁺ (P & S)	inner surface of	8000 x 2	5	50	2	87 x 2	452.4 x 2	449.3 x 2
No. 3 W.B.T ⁺ (P & S)	the tanks.	8000 x 2	5	50	2	87 x 2	452.4 x 2	449.3 x 2
No. 4 W.B.T ⁺ (P & S)	(Whole inner surface	16000 x 2	5	50	2	174 x 2	904.8 x 2	898.5 x 2
No. 5 W.B.T ⁺ (P)	are painted with	10000	5	50	2	109	566.8	561.6
No. 5 W.B.T ⁺ (S)	Tar Epoxy)	11300	5	50	2	123	639.6	634.6
A. P. T ⁺		2700	5	50	2	30	156.0	151.7
Total		106000 m ²	—	—	—	1156 pcs.	6011.2 Kg	5953.0 Kg

ภาคผนวกเรือกักเก็บปิโตรเลียม-2.8

Load test cert และ inspection.

	THUDER OILFIELD SERVICE (THAILAND) LIMITED
	119/104 Moo 4 Tambol Plutalunag, Amphur Sattahip Chonburi 20180 thailand
	Tel. +66(0)33 005 918,Fax(0)33 048 342

Report NO. : TOS-L/T-241105
 SO-Number:12410018
 DATE : 05-11-2024

PROFF LOAD TEST CERTIFICATE

TO
 RADIANCE NAUTICAL MARINE SERVICES (OPC) PVT LTD

NAME OF VESSEL : M.T.PRDIE 1
 IMO NO : 9205873

THIS IS TO CERTIFY THAT WE HAVE CARRIED OUT LOAD TESTING OF PERSONNEL TRANSFER BASKET
 FOR FOUR PERSON HAS BEEN CARRIED OUT ON DT. 19-04-2024 DETAILS AS FOLLOW'S


1. PERSONNEL TRANSFER BASKET FOR FOUR PERSON (PIDG TYPE)


MAKE. : SEA HOOK ENGINEERING WORKS
 MODEL NO. : ZAINAB "O" / Z-601-4
 SL NO. : SH - 57
 SWL. : 500 KGS
 PROOF LOAD. : 1240 KGS
 DATE OF TEST. : 05-11-2024

RESULT : TEST FOUND SATIAFACTORY AND NO DEFORMATION HAS BEEN OBSERVED AFTER LOAD TEST.

.....05 November 2024..
 (MR.TEERASAK NIMKAEW)
 Inspector Signature / Date

.....
 Representative Signature / Date



	THUDER OILFIELD SERVICE (THAILAND) LIMITED
	119/104 Moo 4 Tambol Plutalunag, Amphur Sattahip Chonburi 20180 thailand
	Tel. +66(0)33 005 918,Fax(0)33 048 342

Report NO. : TOS-L/T-241105


CHECK LIST BASKET PERSONAL BASKET

DATE 05.11.2024

SR. NO.	MATERIAL	NOS	READY / OK
1	TOP LIFTING SLING WITH FOUR LEGGED 3 TON BOW SHACKLED, NUT/BOLT (4 Nos)	1 SET	<input checked="" type="checkbox"/>
2	SAFETY SLING - CENTER FOUR LEGGED WITH NUT / BOLT SHACKLES 2 TON (2 Nos)	1 SET	<input checked="" type="checkbox"/>
3	SHOCK ABSORBER RUBBER SLING WITH SHACKLES, NUT/BOLT SHACKLES 2 TON (2 Nos)	1	<input checked="" type="checkbox"/>
4	TOP DISK CENTER EYE BOLT 22 MM	1	<input checked="" type="checkbox"/>
5	TOP DISK CLOTH WITH FOAM	1	<input checked="" type="checkbox"/>
6	SAFETY SLING WITH QUICK RELEASE HOOK	3	<input checked="" type="checkbox"/>
7	VERTICAL NYLON ROPE, SS WIRE WITH COVER NYLON ROPE	16	<input checked="" type="checkbox"/>
8A	CENTER PIPE 1/2" SS BOLT WITH STICKER	1	<input checked="" type="checkbox"/>
8B	CENTER PIPE COVER WITH FOAM & CANVASE WITH BU	1	<input checked="" type="checkbox"/>
9	CENTER BOTTOM PIPE WITH STICKER	1	<input checked="" type="checkbox"/>
10	CENTER PIPE BOTH JOINT HANDLE WITH STICKER	1	<input checked="" type="checkbox"/>
11	BOTH PIPE MIDDLE 16 MM NYLON WASHER	1	<input checked="" type="checkbox"/>
12A	BOTH PIPE STICKER (TOP & BOTTOM)	2	<input checked="" type="checkbox"/>
12B	TOP & BOTTOM STICKER A & B CENTER PIPE FITTING SYSTEM BOTH PIPE	2	<input checked="" type="checkbox"/>
13	CENTER PIPE HANDLE BOLT 2/8" WASHER, S.S. BOLT WITH WING NUT	1	<input checked="" type="checkbox"/>
14	BOTTOM DICK FOAM & NYLON CLOTH FITTING & EYE L	1	<input checked="" type="checkbox"/>
15	BOTTOM TAIL ROPE WITH SHACKLES N/B	1	<input checked="" type="checkbox"/>
16	BOTTOM STAND SIDE RUBBER WITH SS NUT	6	<input checked="" type="checkbox"/>
17	BOTTOM DICK CENTRAL BUSH FITTING WITH N/B	1	<input checked="" type="checkbox"/>
FOR	BROCHURE	1	<input checked="" type="checkbox"/>
19	PED DIVE	1	<input checked="" type="checkbox"/>
20	OWNER MANUAL	1	<input checked="" type="checkbox"/>
21	STICKER OF FOOT PRINT	4	<input checked="" type="checkbox"/>
22	SOLAS REFLECTIVE TAPE	1	<input checked="" type="checkbox"/>

.....05 November 2024..
 (MR.TEERASAK NIMKAEW)
 Inspector Signature / Date

.....
 Representative Signature / Date



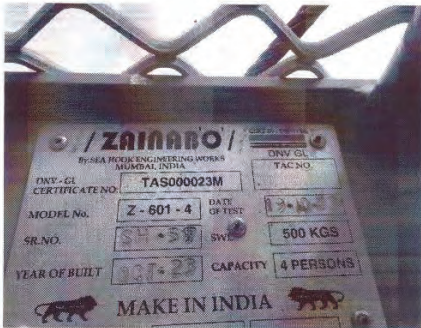
THUDER OILFIELD SERVICE (THAILAND) LIMITED

119/104 Moo 4 Tambol Plutalunag, Amphur Sattahip Chonburi 20180 thailand

Tel. +66(0)33 005 918,Fax(0)33 048 342

Report NO. : TOS-L/T-241105

PICTHURE INSPECTION PROOF LOAD TEST

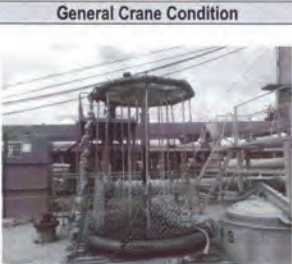


05 November 2024..
(MR. TEERASAK NIMKAEW)
Inspector Signature / Date

Representative Signature / Date

Crane Deficiency Report

Sales Order No.	Job Type	Date	Location Code	Field:	Rossukon field
12410018	Load test	05 November 24	FSO	Customer:	MT.Pride1
Manufacturer:	Sea hook Engineering Works			Location:	Thailand
Model Number:	ZAINAB O'/Z-601-4			Tag Number:	n/a
Serial No:	SH-57			Customer W/O No:	n/a
Created By:	Teerasak Nimkaew			Requested By:	-



Risk Assessment Matrix							FREQUENCY OF OCCURRENCE (Probability)				
CONSEQUENCES							Rare (1)	Unlikely (2)	Credible (3)	Likely (4)	Almost Certain (5)
Severity	Safety/ Health	Assets/ Production Loss	Environment	Reputation	Quality	Delivery	Rarely or never heard of in this industry	Occurred several times in this industry	Incident has occurred in this industry	Happens several times per year in this industry	Happen s several times per year in this region
Critical (5)	Fatality	Production loss > 1 week and/or Damage > 500K THB.	Outside of secondary containment but into environment > 200 lts.	International	Reject with consequence	No Delivery	20	24	27	29	30
Major (4)	Lost Time Injury	Production loss 1day-1wk and/or Damage between 100-500kTHB.	Outside of secondary containment but into environment < 200 lts.	National	Reject without consequence	Delay > 1 week, with LDs.	15	19	23	26	28
Moderate (3)	Restricted Workday Case	Production loss 1day-1wk and/or Damage < 100KTHB.	Outside of secondary containment but not into environment	Community	Replace	Delay > 1 Weeks, without liquidated damage (LDs)	10	14	18	22	25
Minor (2)	Medical Treatment	Production loss <1 day and/or Damage < 100KTHB	Spill Into secondary containment	Client	Rework	Delay < 1 Week, with LDs.	6	9	13	17	21
Insignificant (1)	First Aid	Slight damage or loss	Loss of primary containment	Internal	Hold	Delay < 1 week, without liquidated damage (LDs)	3	5	8	12	16
Non (0)	No Injury/ No Health effect	No loss or damage	No effect	No impact	Accept	On time	1	2	4	7	11

Teerasak nimkaew / 05 Nov 24
Inspector's Signature Date Customer Rep. Signature Date
Doc No: FR-SER-62 Rev: 08 Rev Status: Re-issued for implementation S-Mastering Date:
Engineer's Signature (Optional) Date
Approved by: MW Created by: WA Page 1 of 2

Crane Deficiency Report

Contact Email: info@tos-global.com
Visit Website: www.tos-global.com



Minor deficiency that is recommended to be promptly addressed, but poses no safety and/or environmental risk.
The crane can still be operate at full duty.
Should be reported during normal document submittal to Operations Manager and Client Maintenance personnel.


Medium deficiency, that is recommended to be promptly addressed, identified that has potential impact on the environment, crane operations and/or safety system that may limit, de-rated or damage the crane, it's surroundings and/or environment. The crane can still be operated at full duty.
Should be reported during normal document submittal to Operations Manager and Client Maintenance personnel.

Major deficiency found and it is recommended that the crane remove from duty and locked/tagged out until the deficiency is rectified.

For Risk Level "In Accordance with:" box, select from the following: API RP2D, API 2C, Inspector's Assessment, OEM/ Customer Spec, Engineer's Assessment.

For Risk Level "Recommended urgency timeframe to complete the corrective action:" box, select from the following: Prior to Use, Promptly, During Next Scheduled PM, N/A.

Item	Component	Missing
1	Location	Top disk center
Risk Level	In accordance with:	Inspector's Assessment
	Description:	Found Safety sling with release hook
5	Recommended Action	Need to installation
Recommended urgency timeframe to complete the corrective action:		As soon as
Responsible By:	MT.Pride 1	Part Required:
Completed Date:		Completed by:



Teerasak nimkaew

05 Nov 24

Inspector's Signature
Doc. No.
FR-SER-02

Rev.
08

Rev. Status
Re-issued for implementation

Customer Rep. Signature



Date
Approving Desk
Date

Engineer's Signature (Optional)

Approved by:
MW

Created by:
WA

Date

Page
Page 2 of 2

ภาคผนวกเรื่องกักเก็บปิโตรเลียม-2.9
ตัวอย่างเอกสารการวิเคราะห์งานเพื่อความปลอดภัย
ของอุปกรณ์การยก

FLEET OPERATIONS MANUAL

Chapter 14 : SAFETY PROCEDURES AND STANDARDS

Section 3 : Launch And Pilot Ladder Safety

Version No.: 01

Date: 15 MAY 2024

Revision No.: 00

Prepared By : VR

Approved By : VHS

14.3.5 Personnel Transfer Procedure by Crane

14.3.5.1 Introduction

Transfer of personnel from one vessel to another is usually performed during STS operations by means of a Personnel Transfer Basket (PTB) connected to the ships crane when no other means of personnel transfer such as a workboat or gangway is available and the transfer of personnel is essential. If the transfer of personnel by the PTB is considered unsafe or if the weather conditions make the transfer unsafe, it must not be undertaken under any circumstances.

Cranes on the tanker fleet are fitted with limit switches and a braking system, which prevents free fall of the block if the winch motor fails. The cargo handling cranes are primarily designed for heavy loads, hence difficult for precise control, hence only used for personnel transfer when essential. It must be ensured that the crane jib reach is enough to safely land the basket on the deck of the other vessel without having to pull it inboard excessively.

Use of the Company checklist prior use of the PTB must be used and limitations on weather conditions must not exceed:

- Wind speed >20 knots
- Wave heights caused by sea/swell not to exceed 2.5 mtrs
- Difference between rise and fall between the vessels must not exceed 2 mtrs
- Visibility at least 500 mtrs

Personnel transfer between two ships using PTB must only take place during day light. However, in exceptional circumstances, a transfer may be considered at night provided:

- If all personnel involved, including the STS Mooring Master, the ship Masters and the persons to be transferred agree that the transfer can take place.
- There is adequate lighting in the transfer area and the eater area between the ships is lighted.

In transferring personnel by crane, following should be considered:

- .1 Risk assessment RA-230 Personnel Transfer by Crane using Personal basket should be conducted before each transfer or group of transfers.
- .2 An assessment of weather conditions, taking into account visibility, wind, seas, swell and vessel movement plus agreed limitations to stop the transfer.
- .3 Complete the SMS checklist D-51 Personnel Transfer by Crane permit to satisfaction.
- .4 Confirmation that equipment to be used has been inspected and tested by a responsible person.
- .5 Chief Officer inspects all equipment and confirms readiness for the transfer of personnel.
- .6 During transfer, at least two persons be available to steady the basket when it is lifted or landed.
- .7 Confirmation that personnel being transferred have been given instruction, are familiar with and agree to the transfer operation.
- .8 Follow guidance as per SP11 for appropriate Personal Protective Equipment (PPE) for the conditions to be worn by the personnel being transferred.
- .9 The test certificate of the PTB should be valid.
- .10 A responsible person will be assigned for communication purposes and to avoid multiple mixed signals from people to the crane operator. They will be recognizable and in highly visible clothing.

RISK ASSESSMENT FORM							Code:	RA-115eaa	Version: 00																																																																			
Vessel:		Task Category: ALL / DECK		Work Activity: Lifting Equipment		Issue Date: 02-Jan-24																																																																						
Risk Assessment Conditions Work Authorization Work has been authorized (Shipboard) <input type="checkbox"/> Y <input type="checkbox"/> N Work has been authorized (Office, if needed) <input type="checkbox"/> Y <input type="checkbox"/> N No Fatigue Staff is adequately rested <input type="checkbox"/> Y <input type="checkbox"/> N Use of proper PPE Staff is using proper PPE <input type="checkbox"/> Y <input type="checkbox"/> N Experienced staff Staff has task experience <input type="checkbox"/> Y <input type="checkbox"/> N Relevant Permit to Work filled: <input type="checkbox"/> Y <input type="checkbox"/> N (Indicate the name of Company Forms)		Important Instructions Work Activity is High Risk: <input type="checkbox"/> Yes <input type="checkbox"/> No Indicate Relevant SMS Sections : FOM Chapter 8 Section 8 Unplanned Occurrence: <input type="checkbox"/> Y <input type="checkbox"/> N (Identify scenarios that unforeseen events present new hazards)		Analysis of expressions used to calculate Risk <table border="1"> <thead> <tr> <th>(S)</th> <th>Severity</th> <th>(L)</th> <th>Likelihood</th> <th>Risk Rating</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Negligible</td> <td>1</td> <td>Improbable</td> <td>SxL= RF</td> </tr> <tr> <td>2</td> <td>Minor</td> <td>2</td> <td>Remote</td> <td>RF Risk</td> </tr> <tr> <td>3</td> <td>Significant</td> <td>3</td> <td>Possible</td> <td>L Low</td> </tr> <tr> <td>4</td> <td>Critical</td> <td>4</td> <td>Likely</td> <td>M Medium</td> </tr> <tr> <td>5</td> <td>Catastrophic</td> <td>5</td> <td>Certain</td> <td>H High</td> </tr> </tbody> </table>			(S)	Severity	(L)	Likelihood	Risk Rating	1	Negligible	1	Improbable	SxL= RF	2	Minor	2	Remote	RF Risk	3	Significant	3	Possible	L Low	4	Critical	4	Likely	M Medium	5	Catastrophic	5	Certain	H High	Risk Rating SEVERITY (S)	LIKELIHOOD (L) <table border="1"> <thead> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <th>1</th> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <th>2</th> <td>2</td> <td>4</td> <td>6</td> <td>8</td> <td>10</td> </tr> <tr> <th>3</th> <td>3</td> <td>6</td> <td>9</td> <td>12</td> <td>15</td> </tr> <tr> <th>4</th> <td>4</td> <td>8</td> <td>12</td> <td>16</td> <td>20</td> </tr> <tr> <th>5</th> <td>5</td> <td>10</td> <td>15</td> <td>20</td> <td>25</td> </tr> </tbody> </table>				1	2	3	4	5	1	1	2	3	4	5	2	2	4	6	8	10	3	3	6	9	12	15	4	4	8	12	16	20	5	5	10	15	20	25
(S)	Severity	(L)	Likelihood	Risk Rating																																																																								
1	Negligible	1	Improbable	SxL= RF																																																																								
2	Minor	2	Remote	RF Risk																																																																								
3	Significant	3	Possible	L Low																																																																								
4	Critical	4	Likely	M Medium																																																																								
5	Catastrophic	5	Certain	H High																																																																								
	1	2	3	4	5																																																																							
1	1	2	3	4	5																																																																							
2	2	4	6	8	10																																																																							
3	3	6	9	12	15																																																																							
4	4	8	12	16	20																																																																							
5	5	10	15	20	25																																																																							
How to assess Risk : ● Select Severity expression that applies to hazard WITH NO Controls ● Select appropriate likelihood with NO Controls ● Apply controls and RECALCULATE risk																																																																												

No	HAZARD DESCRIPTION (Assume NO CONTROLS to initially assess risks)	HAZARD EFFECTS (What may happen)	Initial Risk Rating (SxL = RR)			Risk L/M/H	CONTROL MEASURES TO BE TAKEN (To Reduce the Risk and calculate the Residual Risk Rating)	Residual Risk Rating (SxL = RR)			Risk L/M/H
			S	L	RR			S	L	RR	
1.	Failure of safety devices as a result of not checking equipment prior use	Equipment failure, cargo damage, accident, injury	3	3	9	M	The operator should check safety devices fitted to lifting appliances before work starts and at regular intervals thereafter to ensure that they are working properly. No lifting device should be used with any locking pawl, safety attachment or device rendered inoperative. Proper maintenance, preventive maintenance plan, operational tests prior use.	3	2	6	M
2.	Improper handling of equipment, Improper use of Controls	Equipment failure, cargo damage, accident, injury	3	3	9	M	Safety meetings, proper training, initial and on job training, define crew role on the use of mooring equipment., Officer in charge of any lifting operation. Controls of lifting appliances should be permanently and legibly marked with their function and their operating directions shown by arrows or other simple means, indicating the position or direction of movement for hoisting or lowering, slewing or luffing, etc. Foot-operated controls should have slip resistant surfaces. The person operating any lifting appliance should have no other duties which might interfere with their primary task should be in a proper and protected position, facing controls and, so far as is practicable, with a clear view of the whole operation. Loads should, if possible, not be lifted over a person or any access way and personnel should avoid passing under a load which is being lifted.	3	2	6	M
3.	Incorrect or Insufficient Spare Parts onboard	Equipment failure, cargo damage, accident, injury	3	2	6	M	Procedures/instructions, spare parts monitoring, Internal Audits, Class inspections.	3	1	3	L
4.	Incorrect or	Equipment failure, cargo	2	2	4	L	Procedures/instructions, Superintendent inspection reports,	2	1	2	L

Page 1 of 3

No	HAZARD DESCRIPTION (Assume NO CONTROLS to initially assess risks)	HAZARD EFFECTS (What may happen)	Initial Risk Rating (SxL = RR)			Risk L/M/H	CONTROL MEASURES TO BE TAKEN (To Reduce the Risk and calculate the Residual Risk Rating)	Residual Risk Rating (SxL = RR)			Risk L/M/H
			S	L	RR			S	L	RR	
	Insufficient Tools and Instruments onboard	damage, accident, injury					Internal Audits, Class Inspections.				
5.	Falling load	Equipment failure, cargo damage, accident, injury	5	3	15	H	Keep clear of the area, secure the load properly wear PPE, check and remove equipment that may be damaged.	5	1	5	M
6.	Crane overload	Equipment failure, cargo damage, accident, injury	5	3	15	H	PMS, Max load to be stenciled on the crane lifting block, ensure aware about weight of items to be lifted in the limits.	5	1	5	M
7.	Swinging load	Equipment failure, cargo damage, accident, injury	4	3	12	M	Keep clear of the area, use tag lines to guide the load, trained operator.	4	1	4	L
8.	Lack of communication	Equipment failure, cargo damage, accident, injury	4	3	12	M	Where the operator of the lifting appliance does not have a clear view of the whole of the path of travel of any load carried by that appliance, appropriate precautions should be taken to prevent danger. A competent and properly trained signaler should be designated to give instructions to the operator. All signalers should be instructed in and should follow a clear code of signals, agreed in advance and understood by all concerned in the operation. (Refer COSWP Annex 21.1 Code of hand signals)	4	1	4	L
9.	Unfavourable weather conditions	Equipment failure, cargo damage, accident, injury	5	3	15	H	Lifting operations should be stopped if wind conditions or vessel movement make it unsafe to continue them	5	1	5	M
10.	Insufficient lifting or anchoring points	Equipment failure, cargo damage, accident, injury	4	3	12	M	When machinery and, in particular pistons are to be lifted by means of screw-in eye bolts, the eye-bolts should be checked to ensure that they have collars, that the threads are in good condition and that the bolts are screwed hard down on to their collars. Screw holds for lifting bolts in piston heads should be cleaned and the threads checked to see that they are not wasted before the bolts are inserted.	4	1	4	L
11.											

Item	Additional actions to reduce Residual Risk	Action Due Date	Completion Date	Risk Assessment Review & Approval		
1.				Shipboard Approval	Prepared by:	Reviewed by:
2.					Date:	Date:
3.						
4.						

Page 2 of 3

5.				Office Approval	Approved By (Name & Rank): Date:
6.					
Have any alternate methods with lesser risks identified to accomplish this task			<input type="checkbox"/> Yes <input type="checkbox"/> No		

Consequence Category	Health & Safety	Damage to Vessel / Property	Environmental Impact	Other Impact
1	Simple First Aid or NLTl	Not affecting sea worthiness repairable by ship staff	Accidental Discharge within containment tray	Operational delay
2	Injury Requiring Medical treatment ashore (MTC)	Not affecting sea worthiness, repairs requiring external assistance	Spill on deck < 1 cu.m	Minor off- hire
3	Serious Injury or Multiple Minor Injuries requiring Hospitalization (sig off) (LTI)	Affecting sea worthiness, repaired with or without shore assistance. Leading to COC to be cleared by next DD	Spill on deck > 1 cu.m	Major off-hire, blacklisting of vessel by one oil major
4	Permanent Disability, limited Impact on Public	Requiring layup repairs, 3 rd party claims	Spill / discharge in water < 100 Ltr	Extensive off-hire, Loss of charter, blacklisting of vessel by more than one oil major
5	Fatality, Serious Impact on Public	Total Loss, immediate layup / dry docking for major repairs. Major claims from 3rd party	Spill / discharge in water > 100 Ltr	Major Industry Reaction. Fleet-wide blacklist by one or more oil major

LIKELIHOOD

HIGH: Work should not start unless approval obtained from Management ashore

MODERATE: Efforts should be made to reduce the risk, with heightened monitoring of the additional controls implemented

LOW: No additional controls required, monitoring required to ensure controls maintained

	1	2	3	4	5
1	L	L	L	L	M
2	L	L	M	M	M
3	L	M	M	M	H
4	L	M	M	H	H
5	M	M	H	H	H

ภาคผนวกเรือกักเก็บปิโตรเลียม-2.10

การออกแบบและวิเคราะห์ระบบยึดโยงเรือ (Mooring Analysis)



PRIDE 1 MOORING ANALYSIS



Submitted to: ARORA MARITIME

Submitted by: Subhra Sanyal - Cybermarine

Date: OCTOBER 24, 2023
Document #: CM23-III-219-2302

This document contains 28 pages including the cover page

Cybermarine Technologies Pte. Ltd
10 Bukit batok Crescent, #12-01, THE SPIRE Building, Singapore - 658 079.
Tel: +65 6316 6513 | Fax: +65 6316 6514. | singapore@cybermarine.net |
www.cybermarine.net

Northern Gulf Petroleum Ltd

Mooring Analysis for MT Pride 1
Dynamic Mooring Analysis Report for MT PRIDE 1

Contents

Contents

1	Introduction.....	4
1.1	Background.....	4
1.2	Objective.....	4
1.3	Abbreviations.....	5
2	Site Condition.....	6
2.1	Water depth.....	6
2.2	Environmental data.....	6
3	System Particulars.....	8
3.2	Mooring System Description.....	9
3.3	Mooring Chain Properties.....	13
3.4	Wind and Current Loads.....	14
4	Methodology.....	15
4.1	Mooring Analysis Methodology.....	15
4.2	Load Case Combinations.....	17
4.3	Limiting Criteria.....	18
5	Mooring Analysis Results.....	19
5.1	Dynamic Analysis Results.....	19
5.2	Limiting Sea States.....	21
6	Conclusion.....	21
7	Codes Standards and Reference Documents.....	22
7.1	Project Documents.....	22
7.2	Codes and Standards.....	22
7.3	Software Manuals.....	22

DOCUMENT CONTROL SHEET

PROJECT TITLE : Mooring Analysis for MT Pride 1
DOCUMENT TITLE : Dynamic Mooring Analysis Report for MT Pride 1
PREPARED FOR : ARORA MARITIME
DOCUMENT NO : CM23-III-219-2302
REVISION NO : Rev 0
DATE : 24th October 2023
RECORD OF ISSUE

REVISION	STATUS	PREPARED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
0	FOR REVIEW / APPROVAL	YNY	24/10/2023	SSS	24/10/2023	RK	24/10/2023

Cybermarine Technologies Pte Ltd., Singapore

Northern Gulf Petroleum Ltd

Mooring Analysis for MT Pride 1
Dynamic Mooring Analysis Report for MT PRIDE 1

1 Introduction

1.1 Background

The Rossukon oil field is planned to be developed by Northern Gulf Petroleum Pte Ltd (Northern Gulf Petroleum) with MT Pride 1. The offshore field is located in the G6/48 offshore block area approximately 371 km² over the Karawake Basin along the western margin of the Pattani Basin in the Gulf of Thailand.

The existing spread mooring system (Eight mooring chains in 2x4 configuration) shall be hooked up to the MT Pride 1. MT Pride 1 is located at approximately 60m water depth. The field location is shown in **Figure 1-1**.

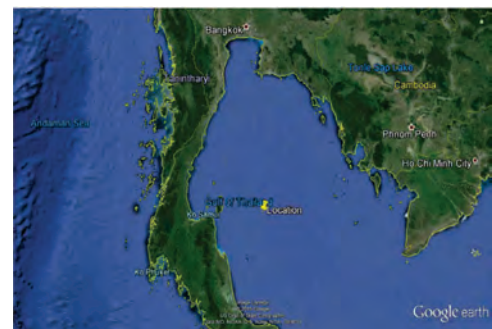


Figure 1-1: Project Location

1.2 Objective

Objective of this report is to present the methodology, input data, assumptions, and mooring analysis results for the MT Pride 1 in standalone configuration. The report also provides a recommendation on the limiting sea states giving Orange / Red alerts for whether the vessel remains in connected position to the mooring system or prepare to temporarily disconnect.

1.3 Abbreviations

Table 1-1: Abbreviations

API	American Petroleum Institute
BV	Bureau Veritas
BL	Ballast
CoG	Centre of Gravity
DNV	Diet Norske Veritas
FSO	Floating Storage Offloading
Hmax	Maximum Wave Height
Hs	Significant wave height
kN	Kilo Newton
LBP	Length Between Perpendiculars
LF	Low Frequency
LOA	Length overall
MPM	Most probable maximum
MT	Metric Tons
QTF	Quadratic Transfer Function
RAO	Response Amplitude Operator
RP	Recommended Practice
TDP	Touchdown point
Tp	Peak Period
Tz	Zero Crossing Period
WD	Water Depth
YR	Year

2 Site Condition

2.1 Water depth

The water depth at the location of the MT Pride 1 is 60m. The mooring analysis is carried out considering 60m water depth.

2.2 Environmental data

Based on the meteocean data from document Technical report Metocean report for a location Offshore Thailand by MeteoGroup, the environmental conditions presented in Table 2-1 to 2-4 were considered for performing dynamic mooring analysis MT Pride 1 in standalone configuration.

Table 2-1: Wave Scatter Data HS vs Direction From

Significant wave height (m)	DIRECTION FROM (°N)								TOTAL
	N	NE	E	SE	S	SW	W	NW	
4.5 - 5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.0 - 4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.5 - 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.0 - 3.5	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
2.5 - 3.0	0.0	0.2	0.3	0.1	0.0	0.0	0.1	0.0	0.7
2.0 - 2.5	0.1	1.1	1.9	0.4	0.0	0.0	1.6	0.1	5.2
1.5 - 2.0	2.2	8.6	11.7	4.8	0.0	0.5	15.5	1.0	46.3
1.0 - 1.5	5.5	13.7	38.1	39.3	0.3	4.4	53.9	1.9	161.3
0.5 - 1.0	9.9	13.6	53.9	112.9	10.6	23.9	104.4	27.4	356.8
0.0 - 0.5	10.6	11.3	42.9	177.1	50.3	33.7	57.1	35.2	429.5
TOTAL	28.3	48.7	150.9	344.6	61.2	62.8	232.6	71.0	1000

Table 2-2: Hs / Tz Scatter Data

Significant wave height (m)	Zero-crossing period (s)								TOTAL
	0 - 1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	6 - 7	7 - 8	
4.5 - 5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.0 - 4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.5 - 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.0 - 3.5	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
2.5 - 3.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0	0.0	0.7
2.0 - 2.5	0.0	0.0	0.0	0.0	4.4	0.8	0.0	0.0	5.2
1.5 - 2.0	0.0	0.0	0.0	2.6	43.3	0.3	0.0	0.0	46.3
1.0 - 1.5	0.0	0.0	0.0	110.4	50.7	0.1	0.0	0.0	161.3
0.5 - 1.0	0.0	0.0	94.2	241.5	20.9	0.2	0.0	0.0	356.8
0.0 - 0.5	0.0	32.1	287.7	98.0	11.3	0.3	0.0	0.0	429.5
TOTAL	0.0	32.1	381.9	452.6	130.8	2.6	0.0	0.0	1000

Table 2-3: Wind Scatter Data

Wind speed (m/s)	DIRECTION FROM (°N)																TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		
17-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16-17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
14-15	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
13-14	0.0	0.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.3	0.1	0.0	0.0	0.0	1.4	
12-13	0.0	0.1	0.6	0.3	0.3	0.1	0.0	0.0	0.0	0.1	0.7	1.7	3.2	0.0	0.0	4.7	
11-12	0.0	0.3	1.4	2.0	0.7	0.3	0.1	0.0	0.0	0.2	1.6	4.4	9.6	0.0	0.0	10.6	
10-11	0.1	0.7	2.4	4.0	1.9	0.9	0.3	0.0	0.0	0.1	0.5	3.6	7.3	1.1	0.0	22.6	
9-10	0.2	1.4	3.2	5.4	4.1	2.3	0.7	0.1	0.1	0.1	0.8	6.1	11.4	1.7	0.2	38.0	
8-9	0.5	2.7	6.8	8.7	6.0	4.3	2.4	1.4	0.3	0.4	1.9	11.6	17.9	3.0	0.5	69.1	
7-8	0.7	3.6	5.8	9.3	10.7	10.7	5.8	1.1	0.5	1.0	3.3	14.4	21.6	4.5	0.9	65.3	
6-7	1.3	4.9	6.0	13.8	16.7	17.0	12.1	4.2	2.3	3.2	7.1	23.7	26.2	6.3	1.4	166.5	
5-6	3.2	4.7	6.0	11.9	15.1	18.7	16.5	8.1	5.0	6.0	20.1	23.7	23.0	6.8	2.0	134.6	
4-5	8.1	5.3	8.8	12.2	16.6	19.4	18.2	13.1	8.9	9.5	14.1	22.5	20.9	7.9	3.1	186.8	
3-4	14	4.4	6.4	7.9	11.0	12.6	22.6	10.2	8.0	9.7	13.7	10.0	13.2	6.6	3.6	139.1	
2-3	1.0	3.5	4.1	4.5	6.7	6.4	7.3	6.7	6.7	6.6	7.8	6.6	8.6	5.4	3.7	81.9	
1-2	1.2	1.1	1.0	1.0	1.2	1.4	1.9	1.9	2.1	2.1	2.9	2.7	4.1	2.2	1.9	13.3	
TOTAL	12.6	17.6	21.7	31.3	40.0	46.6	58.9	48.0	35.2	37.9	61.9	110.8	40.4	17.4	11.8	1000.0	
Average	1.3	4.0	5.2	5.4	4.9	4.6	4.0	3.4	3.1	3.2	3.8	4.9	5.5	4.4	3.2	4.8	
Max	12.9	15.7	16.1	15.9	16.5	18.2	12.9	11.3	13.8	12.1	18.8	14.9	14.3	13.0	11.5	16.5	

Table 2-4: Annual Current Speed Data

Total surface current speed (m/s)	DIRECTION FROM (°N)																TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0.7 - 0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.6 - 0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.5 - 0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.4 - 0.5	0.1	0.1	0.0	0.0	0.0	0.1	1.6	1.7	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	11.7
0.3 - 0.4	0.1	0.1	0.2	0.1	0.1	0.1	0.9	10.7	29.1	1.9	0.2	0.0	0.0	0.2	0.1	0.1	78.9
0.2 - 0.3	1.7	1.8	3.3	1.4	2.7	10.7	16.7	98.8	73.1	12.3	2.1	1.0	1.0	1.4	3.1	3.1	347.3
0.1 - 0.2	6.1	4.9	7.1	6.1	16.1	29.3	34.6	27.6	29.6	11.7	11.1	1.2	4.7	4.8	13.1	13.1	164.9
0.0 - 0.1	13.5	11.8	12.4	13.3	16.5	22.5	27.4	31.1	27.7	23.3	17.1	14.3	13.1	13.4	16.3	16.3	290.0
TOTAL	20.4	20.7	21.0	24.2	34.9	63.8	129.8	240.0	200.3	70.1	10.3	20.6	26.9	21.7	13.4	13.4	1000.0
Average	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Max	0.7	0.5	0.6	0.4	0.6	0.7	0.7	0.6	0.5	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.7

3 System Particulars

3.1 MT Pride 1 Main Particulars

The main particulars of the MT Pride 1 and characteristics of the extreme loading conditions used in the mooring analysis (ballast draft and full load) were taken from Trim and Stability Booklet (per Ref [2]) and are presented in Table 3-1.

General Arrangement plan of the MT Pride 1 (ex-Erawan 99) is shown in **Appendix A** (per Ref.1).

Table 3-1: Pride 1 Main Particulars

Description	Unit	Value
Length Overall, LOA	m	240.99
Length Between Perpendiculars, LBP	m	232.00
Breadth (Moulded), B	m	42.00
Depth (Moulded), D	m	21.20
Loading Condition		- Full Load Ballast
Draught midship (m)	m	14.297 7.11
Displacement (Te)	MT	115799 53689
LCG (m) from AP	m	130.9 127.8
TCG (m) to port	m	0.00 0.00
VCG (m) above keel	m	11.69 12.9

3.2 Mooring System Description

The MT Pride 1 will be spread moored at the position using eight (8) numbers of existing mooring lines in a 2x4 configuration. The mooring lines consists of 76mm R4 grade studless chain. The anchoring system consists of 8 numbers of drag anchors.

The mooring pattern is shown in **Figure 3-1**.

Mooring line lengths, fairlead coordinates and anchor coordinates are shown in Table 3-2. Mooring line pretensions and hang off angles for the ballast and full loaded draft conditions are shown in Table 3-3.

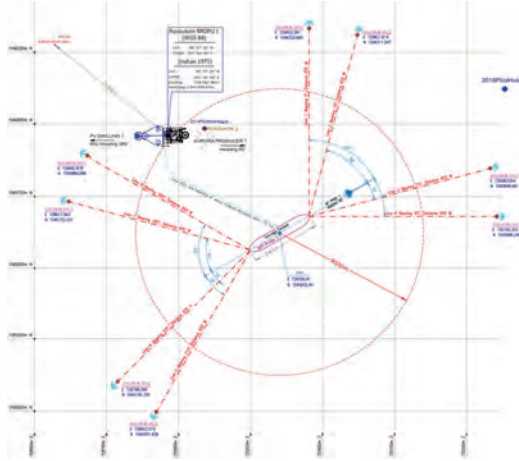


Figure 3-1: Mooring Layout for MT Pride 1

Table 3-2: Fairlead, Anchor Coordinates & Mooring Line Length

	Fairlead Coordinates		Anchor Coordinates		Mooring Line Length (m)
	Local X (m) from AP	Local Y (m) From C.L	Global X	Global Y	
Line 1	229.39	6.28	-13,076	634,14	650
Line 2	231.85	2.68	149,46	607,97	650
Line 3	231.85	-2.68	600,18	161,94	650
Line 4	229.39	-6.28	625,42	-1,90	650
Line 5	3.25	-12.40	-529,75	-662,08	650
Line 6	-5.20	-6.40	-655,79	-559,70	650
Line 7	-5.20	6.40	-817,23	42,38	650
Line 8	3.25	12.40	-759,27	193,69	650

Table 3-3: Mooring Line Pretension Tensions and Hang-off angle at Fairlead,

Mooring Line	Ballast Draft		Full Load Draft	
	Pre-Tension (kN) Vertical	Hang off Angle (deg)	Pre-Tension (kN)	Hang off Angle (deg)
Line1	346	52.4	277	49.4
Line2	310	50.2	252	47.4
Line3	431	56.4	372	55.2
Line4	460	57.3	403	56.6
Line5	477	58.1	370	55.2
Line6	364	53.4	292	50.6
Line7	407	55.2	394	56.4
Line8	200	40.0	182	39.6

Snapshots of the Orcaflex models created as part of the analysis presented herein are shown in Figure 3-2 to Figure 3-5.

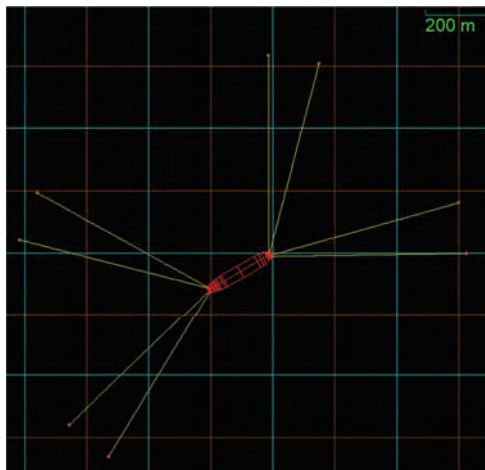


Figure 3-2: Mooring Arrangement Plan View - Orcaflex Screenshot 1

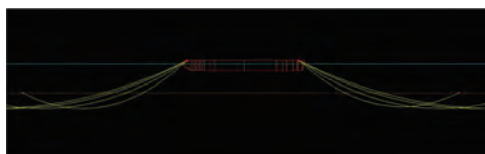


Figure 3-3: Mooring Arrangement Elevation; Full Load Draft - Orcaflex Screenshot 2

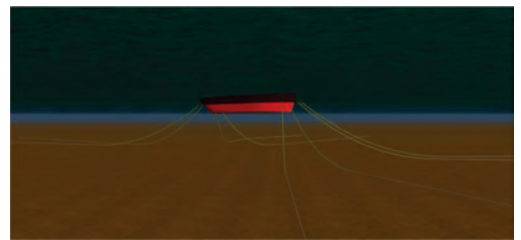


Figure 3-4: Mooring Arrangement Elevation; Full Load Draft - Orcaflex Screenshot 3



Figure 3-5: Mooring Arrangement Isometric View; Full Draft - Orcaflex Screenshot 4

3.3 Mooring Chain Properties

Mooring chain properties are shown in **Table 3-4**.

Table 3-4: Mooring Chain Properties

Mooring Chain Properties						
Segment	Diameter (mm)	Grade	MBL (kN)	Weight (kg/m)		Axial Stiffness (kN)
				In Air	In Water	
Chain	76	R4 Studless	5987	126.5	109.9	544,738

4 Methodology

4.1 Mooring Analysis Methodology

The time domain approach has been used to perform coupled simulations of mean, low, and wave frequency responses of vessel and mooring system. OrcaFlex solves the general equations of motion for the combined mean, low, and wave frequency responses of the vessel and mooring lines. All the simulations performed in this analysis were performed by fully accounting for coupling effect between vessel motions and mooring lines. The vessel motions all 6 degrees of freedom of the vessel are solved at each time step. Wave loads (1st Order), wave drift loads (2nd Order), wave drift damping, added mass, frequency dependent damping, wind loads, and current loads are accounted for while studying global system behavior.

When a vessel is exposed to waves it experiences wave loads that can be split into 1st Order and 2nd Order terms. The 1st Order terms generate motion at wave frequency and this is modelled using RAOs to specify the load/moment per unit amplitude of wave. The 2nd Order terms are much smaller, but they include loads associated with a much lower frequency. These low frequency terms are called the wave drift loads and they can cause significant slow drift motions of the vessel if their frequencies are close to a natural frequency of the vessel.

The effect of low frequency damping is very important for the mooring system behavior. There are multiple sources of low frequency damping such as,

- Hull friction and wave making resistance (in calm water or in current);
- Hydrodynamic mooring line & riser drag damping (in calm water or in current);
- Bottom friction effects on mooring lines & risers;
- 2nd Order wave drift damping on vessel;
- Damping due to mooring line dynamics in waves; and
- Wind damping.

All these effects are accurately accounted for in fully dynamic time domain analysis in Orcaflex.

The effects of viscous damping on vessel roll are separately accounted for in hydrodynamic calculations. Hydrodynamic loads acting on mooring lines and risers are modelled using Morrison's equation.

For each of the load cases, five 10,800s (3 hours) time domain simulations have been performed. For each loading condition the maximum mooring line tensions and vessel excursions have been calculated as statistical maximum based on the individual maxima from each simulation, as per the formulation below as per Ref. [13] and presented in Table 4-1:

$$X_e = M + a S$$

Where, X_e Maximum expected value

M Mean of single maxima

a Sampling coefficient dependent on confidence level

S (n-1) standard deviation of the single maxima

shows the sampling coefficient "a" value based on Ref. [13]].

3.4 Wind and Current Loads

Wind and current areas have been calculated for ballast and fully loaded draft of the vessel based on the MT Pride 1 General Arrangement Plan. Wind and current coefficients are considered based on the Oil Companies International Marine Forum (OCIMF) guidelines.

The calculated exposed windage and current areas used in the analysis are shown in **Table 3-5**. The wind and current coefficients used in the analysis are listed in **Appendix C**.

Table 3-5: Windage and Current Areas

Loading condition		Wind	Current
Ballast	Surge Area (m ²)	592,20	298,83
	Sway Area (m ²)	3268,88	1649,52
Fully Loaded	Surge Area (m ²)	293,41	597,63
	Sway Area (m ²)	1619,59	3298,80

The drag loads due to translational velocity of the current or wind past the vessel have been calculated using the standard OCIMF method (Ref [11]), which is outlined below.

$$\text{Surge Force} = \frac{1}{2} * C_{\text{surge}} * \rho * V^2 * A_{\text{surge}}$$

$$\text{Sway Force} = \frac{1}{2} * C_{\text{sway}} * \rho * V^2 * A_{\text{sway}}$$

$$\text{Yaw Moment} = \frac{1}{2} * C_{\text{yaw}} * \rho * V^2 * A_{\text{yaw}}$$

Where:

- A_{surge} , A_{sway} and A_{yaw} are the surge and sway areas, and the yaw area moment. For current, these correspond to the exposed areas below the waterline, and for wind to the exposed areas above the waterline.
- C_{surge} , C_{sway} and C_{yaw} are the surge, sway and yaw coefficients for the actual current or wind direction relative to the low-frequency vessel heading.
- ρ is the water density (for current drag) or air density (for wind drag).
- V is the magnitude of the relative velocity of the water current or air past the vessel.

Table 4-1: Sampling Factor "a"

Method of Analysis	Number of Simulations			
	5	10	20	≥30
Sampling Factor "a" for Mooring Line Tensions and vessel Offsets				
Quasi-Dynamic	1.80	0.90	0.50	0.4
Dynamic	0.60	0.30	0.10	0

The sampling coefficient "a" for line tension and vessel offsets has been taken equal to 0.6 corresponding to the dynamic analysis with 5 number of simulations.

4.2 Load Case Combinations

Based on the metocean conditions, predominant wave direction is South East direction (SE) though waves from SE, E, NE and W are also observed. Analysis was carried out considering the environmental parameters as shown in **Table 4-2**. Table includes additional significant wave heights to arrive at the limiting wave height to identify orange and red alerts for the FSO *Pride 1* to assess whether the FSO remains connected to the mooring system or be prepared to temporarily disconnect from the mooring system.

Table 4-2: Load Case Details

No.	Cases	Hs m	Tp s	Current m/s	Wind m/s
1	Pride1 Ballast NE 1	3,25	7,6	0,5	13
2	Pride1 Ballast E 1	3,25	7,6	0,5	13
3	Pride1 Ballast E 2	2,75	7,65	0,5	13
4	Pride1 Ballast E 3	2,25	7,65	0,5	13
5	Pride1 Ballast SE 1	2,75	7	0,7	10
6	Pride1 Ballast SE 2	1,75	6,05	0,7	10
7	Pride1 Ballast SE 3	2,25	6,58	0,7	10
8	Pride1 Ballast SE 4	1,25	6,19	0,7	10
9	Pride1 Ballast W 1	2,75	7	0,3	13
1	Pride1 Full NE 1	3,25	7,6	0,5	13
2	Pride1 Full E 1	3,25	7,6	0,5	13
3	Pride1 Full E 2	2,75	7,65	0,5	13
4	Pride1 Full SE 1	2,75	7	0,7	10
5	Pride1 Full SE 2	1,75	6,05	0,7	10
6	Pride1 Full SE 3	2,25	6,58	0,7	10
7	Pride1 Full W 1	2,75	7	0,3	13

Other directions such as North, NW, SW, etc. are not critical as per the metocean data, and the same have not been analyzed.

4.3 Limiting Criteria

Following criteria is considered to set the limiting sea-state for the FSO to be in connected condition to the mooring system. This is based on a rationale of allowing a buffer of about 1/3 of maximum mooring line tension of 1995 kN (200T) for orange alert and about 10% buffer for red alert:

- Alert limits considered for Line tensions and FSO Offsets

Alert	Line Tension, T (kN)	FSO Offset, X (m)
	1700 < T < 1900	9 < X < 10
	T > 1900	X > 10

- Maximum Mooring Line Tension allowed = 1995 kN
- Maximum FSO Excursion allowed = 12 m (1/5 of Water Depth)

5 Mooring Analysis Results

5.1 Dynamic Analysis Results

Fully coupled time domain mooring analysis has been carried out for the load cases presented in Section 4.2. The maximum mooring line tensions and MT Pride 1 offsets for the ballast and fully loaded conditions for each load case are presented in **Table 5-1** and **Table 5-2**, respectively.

Table 5-1: Maximum Mooring Line Tensions in Ballast Draft Condition

No.	Case	Line Tension (kN)								Max Tension (kN)
		Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	
1	Pride1 Ballast NE 1	843,80	651,11	672,12	698,15	799,54	574,02	633,63	536,41	843,80
2	Pride1 Ballast E 1	194,07	200,47	939,54	2707,70	2816,16	962,84	759,56	648,97	2816,16
3	Pride1 Ballast E 2	196,27	200,94	819,22	2150,32	1952,29	826,52	655,60	522,58	2150,32
4	Pride1 Ballast E 3	186,67	189,03	634,24	1343,12	1136,31	619,67	525,46	324,63	1343,12
5	Pride1 Ballast SE 1	122,93	132,87	1499,56	4153,47	3777,49	1935,23	1191,62	0	4153,47
6	Pride1 Ballast SE 2	115,79	123,91	755,72	2446,91	1867,65	967,83	685,12	506,46	2446,91
7	Pride1 Ballast SE 3	126,63	135,89	1031,26	2655,69	2548,61	1350,53	1083,84	985,86	2655,69
8	Pride1 Ballast SE 4	116,11	123,80	643,28	1821,58	1303,70	794,55	579,42	371,28	1821,58
9	Pride1 Ballast W 1	1189,15	5	658,57	448,51	520,67	584,55	439,23	827,74	1189,15

Table 5-2: Maximum Mooring Line Tensions in Full Load Draft Condition

No.	Case	Line Tension (kN)								Max Tension (kN)
		Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	
1	Pride1 Full NE 1	696,75	523,34	622,33	662,28	532,30	416,68	642,20	492,44	696,75
2	Pride1 Full E 1	278,74	268,05	828,00	2260,30	1993,82	700,20	444,09	204,21	2260,30
3	Pride1 Full E 2	204,83	206,81	651,45	1344,19	1147,47	534,97	392,61	172,08	1344,19
4	Pride1 Full SE 1	152,17	162,28	1192,16	3172,83	2878,66	1010,61	436,80	192,52	3172,83
5	Pride1 Full SE 2	139,30	148,30	668,29	1686,51	1538,58	628,04	364,66	143,74	1686,51
6	Pride1 Full SE 3	142,31	151,96	909,64	2472,62	2340,14	895,55	385,38	155,39	2472,62
7	Pride1 Full W 1	1000,84	573,57	363,22	460,15	471,15	403,84	866,11	998,90	1000,84

Table 5-3: Maximum Offset

No.	Case	Max. Offset (m)	No.	Case	Max. Offset (m)
1	Pride1 Ballast NE 1	4,80	1	Pride1 Full NE 1	3,02
2	Pride1 Ballast E 1	9,22	2	Pride1 Full E 1	4,01
3	Pride1 Ballast E 2	6,28	3	Pride1 Full E 2	2,14
4	Pride1 Ballast E 3	4,06	4	Pride1 Full E 3	6,30
5	Pride1 Ballast SE 1	14,31	5	Pride1 Full SE 2	1,85
6	Pride1 Ballast SE 2	5,74	6	Pride1 Full SE 3	4,86
7	Pride1 Ballast SE 3	10,97	7	Pride1 Full W 1	3,70
8	Pride1 Ballast SE 4	3,29			
9	Pride1 Ballast W 1	6,60			

5.2 Limiting Sea States

Based on the mooring line tensions and vessel offsets as presented in Section 5.1 and considering the limiting criteria for the systems alerts for range of line tensions and vessel offsets as listed in Section 4.3, the following limiting significant wave heights (Hs) are defined.

Ballast draft sea-state alerts are presented in **Table 5-3** and full load draft sea-state alerts are presented in **Table 5-4**.

Table 5-3: Sea State Alerts for Ballast Draft Condition

No.	Cases	Wave Dir. From	Hs (m)	Max. Tension (kN)	Max. Offset (m)
1	Pride1 Ballast NE 1	NE	3,25	843,80	4,80
2	Pride1 Ballast E 1	E	3,25	2816,16	9,22
3	Pride1 Ballast E 2	E	2,75	2150,32	6,28
4	Pride1 Ballast E 3	E	2,25	1343,12	4,06
5	Pride1 Ballast SE 1	SE	2,75	4153,47	14,31
6	Pride1 Ballast SE 2	SE	1,75	2446,91	5,74
7	Pride1 Ballast SE 3	SE	2,25	2655,69	10,97
8	Pride1 Ballast SE 4	SE	1,25	1821,58	3,29
9	Pride1 Ballast W 1	W	2,75	1189,15	6,60

Table 5-4: Sea State Alerts for Full Load Draft Condition

No.	Cases	Wave Dir. From	Hs (m)	Max. Tension (kN)	Max. Offset (m)
1	Pride1 Full NE 1	NE	3,25	696,75	3,02
2	Pride1 Full E 1	E	3,25	2268,30	4,01
3	Pride1 Full E 2	E	2,75	1344,19	2,14
4	Pride1 Full SE 1	SE	2,75	3172,83	6,30
5	Pride1 Full SE 2	SE	1,75	1686,51	1,85
6	Pride1 Full SE 3	SE	2,25	2472,62	4,86
7	Pride1 Full W 1	W	2,75	1000,84	3,70

Considering the mooring line tensions and vessel offsets for ballast and full loaded conditions sea state alerts for MT Pride 1, irrespective whether the vessel is in ballast condition or fully laden, are presented in **Table 5-5**.

Table 5-5: Combined Sea State Alerts

No.	Wave Dir. From	Hs (m)	Max. Tension (kN)	Max. Offset (m)
1	NE	3,25	843,80	4,80
2	E	3,25	2816,16	9,22
3	E	2,75	2150,32	6,28
4	E	2,25	1343,12	4,06
5	SE	2,75	4153,47	14,31
6	SE	1,75	2446,91	5,74
7	SE	2,25	2655,69	10,97
8	SE	1,25	1821,58	3,29
9	W	2,75	1189,15	6,60

6 Conclusion

The fully coupled time domain mooring analysis for MT Pride 1 in standalone configuration was successfully completed. From the results presented in Section 5, it can be observed that overall mooring line tensions are high in ballast draft condition than the full load condition and vessel offsets are closely the same for both loading conditions. It is observed that the line tensions and excursions for beam conditions i.e for the environmental conditions from "South East" direction are more critical and would require operational alertness even for lower environmental conditions than the environment from other directions. Orange and Red alerts are shown in the annual wave scatter data based on the sea state alerts in **Table 6-1**.

Table 6-1: Alert Mapping on Annual Scatter Diagram

Hs (m)	Direction From								Total
	N	NE	E	SE	S	SW	W	NW	
4,5 - 5,0	0	0	0	0	0	0	0	0	0
4,0 - 4,5	0	0	0	0	0	0	0	0	0
3,5 - 4,0	0	0	0	0	0	0	0	0	0
3,0 - 3,5	0	0,1	0,1	0	0	0	0	0	0,2
2,5 - 3,0	0	0,2	0,3	0,1	0	0	0,1	0	0,7
2,0 - 2,5	0,1	1,1	1,9	0,4	0	0	1,6	0,1	5,2
1,5 - 2,0	2,2	8,6	13,7	4,8	0	0,5	15,5	1	46,3
1,0 - 1,5	5,5	13,7	38,1	39,3	0,3	4,6	53,9	5,9	161,3
0,5 - 1,0	9,9	13,6	53,9	112,9	10,6	23,9	104,4	27,8	357
0,0 - 0,5	10,6	11,3	42,9	187,1	50,3	33,7	57,3	36,2	429,4
Total	28,3	48,6	150,9	344,6	61,2	62,7	232,8	71	1000

Based on the above annual scatter data, the annual probability of the MT Pride 1 in connected condition is estimated to be about 99.7%, 98.4% for environmental conditions from East and South-East direction respectively.

7 Codes Standards and Reference Documents

7.1 Project Documents

The following project documents are used for reference.

- FSO *Pride 1* General Arrangement; FG3-1G-7000-201
- Provisional Trim & Stability Booklet; FG6 – 7000-004
- Shell Expansion plan; FH3_1H-7000-203
- Metocean Conditions Near Shore Oman; RP_A12162_Final; Dt: Aug 2012
- Mooring Pattern (*Pride 1*) ME-N-2800-11-19-Rev 03
- Ship to Ship Mooring Analysis for Masirah Oil; MA-2021-0019-Rev 01
- Preliminary Mooring Analysis for Bluefin Oman Project; RPT-19686-05-19 Rev 0
- Deck Strengthening IWO Mooring Fittings (Aft & Fwd.); CM21-II-205-2301 Rev 00
- Mooring Arrangement *Pride 1*; CM21-II-205-0001 Rev 01

7.2 Codes and Standards

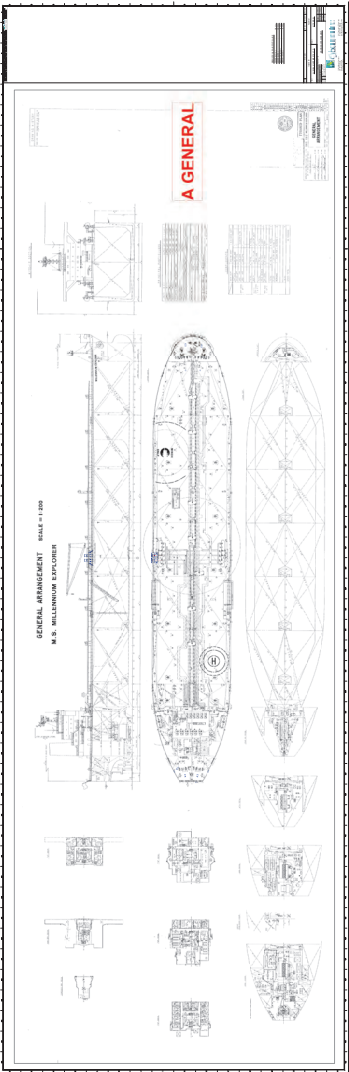
The analysis has been carried out with reference to the following codes and guidelines:

- API RP 2SK, Design and Analysis of Station keeping systems for Floating Structures.
- OCIMF Guidelines for Prediction of Wind and Current loads on VLCCs, 1994
- DNVGL-RP-C205 Environmental Conditions and Environmental Loads, Sept 2019
- BV NR 493, Classification of Mooring System for Permanent and Mobile Offshore Units

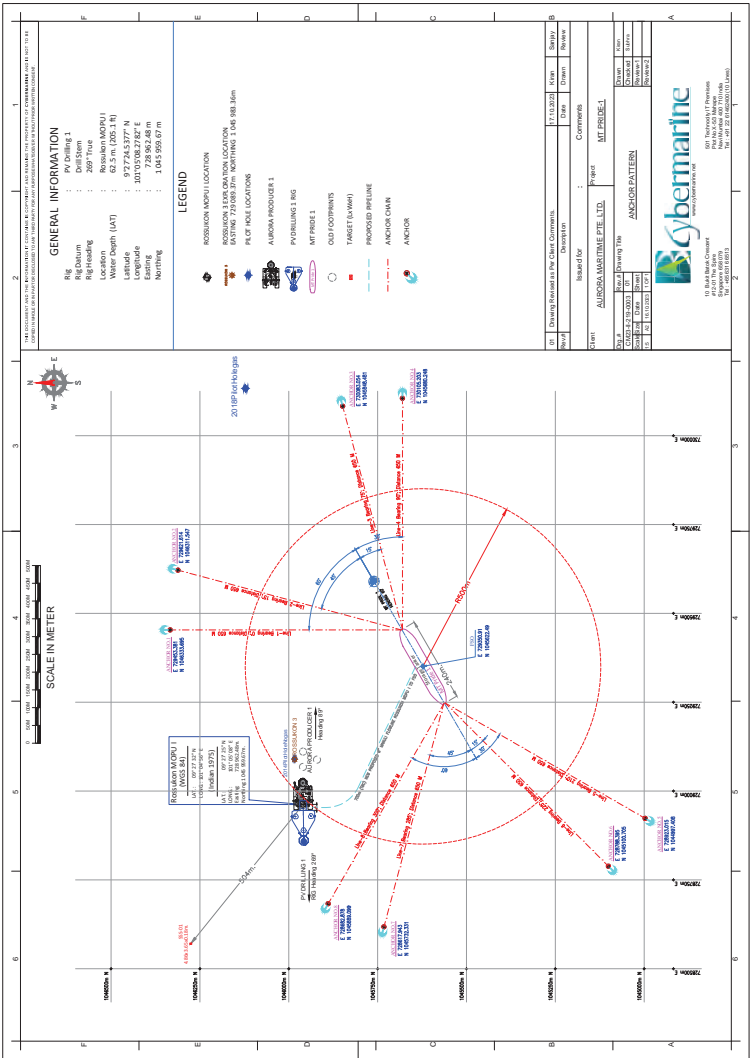
7.3 Software Manuals

- Orcaflex Manual, version 11.1C

Appendix A
General Arrangement of
FSO Pride 1



Appendix B
Mooring Pattern of FSO Pride 1



ภาคผนวกเรือกักเก็บปิโตรเลียม-2.11

Oil Companies International Marine Forum (OCIMF)

DISCLAIMER

OCIMF DOES NOT WARRANT OPERATOR IDENTITY AND IS NOT RESPONSIBLE FOR THE CHOICE OF SHIPS INSPECTED, THE INSPECTORS CHOSEN, THE PERFORMANCE OF THE INSPECTIONS OR THE CONTENT OF THE REPORTS, OPERATOR COMMENTS AND/OR VPQ RESPONSES DISTRIBUTED UNDER THE REVISED PROGRAMME. OCIMF IS INVOLVED ONLY IN THE RECEIPT, ORGANISATION AND DISTRIBUTION OF THE FOREGOING PROGRAMME OUTPUT. OCIMF DOES NOT REVIEW OR EVALUATE SUCH OUTPUT AND EXPRESSES NO OPINION CONCERNING ITS ACCURACY. WHILE OCIMF MAKES EVERY EFFORT TO ENSURE THAT REPORTS AND OPERATOR COMMENTS ARE RECEIVED, ORGANISED AND DISTRIBUTED IN ACCORDANCE WITH THE SIRE COMPOSITE GUIDELINES OCIMF ACCEPTS NO LIABILITY FOR FAILURE TO DO SO.



Section 2

Key questions marked Yes without comment.

Chapter 2: Certification and Documentation

Certification

2.1

Safety Management and the Operators Procedures Manuals

2.6

Survey and Repair History

2.7

Anti Pollution

2.10, 2.12, 2.14

Chapter 3: Crew Management

Crew Management

3.4

Crew Qualifications

3.6

Chapter 4: Navigation and Communications

Policies, Procedures and Documentation

4.1, 4.2, 4.3, 4.4, 4.6

Navigation Equipment

4.10, 4.13, 4.15, 4.16, 4.17, 4.18, 4.20

Communications

4.22, 4.23, 4.24, 4.25, 4.26

Chapter 5: Safety Management

Safety Management

5.1, 5.2, 5.4, 5.5, 5.6, 5.9, 5.10, 5.11

Drills, Training and Familiarisation

5.15

Enclosed Space and Pump Room Entry Procedures:

5.16, 5.18, 5.20

Monitoring Non-Cargo Spaces:

5.21

Hot Work Procedures

5.25, 5.26

Life Saving Equipment

5.27, 5.28, 5.29, 5.31, 5.32, 5.33

Fire Fighting Equipment

5.34, 5.37, 5.38, 5.40, 5.43, 5.44

Material Safety Data Sheets (MSDS)

5.46

Sample Arrangements

5.48

Chapter 6: Pollution Prevention

Pollution Prevention

6.1, 6.2

Cargo Operations and Deck Area Pollution Prevention

6.6, 6.7, 6.9

Pump Rooms and Oil Discharge Monitors

6.12

Engine and Steering Compartments

6.14, 6.15, 6.16, 6.18, 6.20

Ballast Water Management

6.22

Chapter 7: Maritime Security

Policies and Procedures

7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11, 7.13

Cyber Security

7.14, 7.16, 7.17

Chapter 8: Cargo and Ballast Systems - Petroleum

Policies, Procedures and Documentation

8.1, 8.2, 8.3

Stability and Cargo Loading Limitations

8.6

Cargo Operations and Related Safety Management

8.7, 8.11

Ullaging, Sampling and Closed Operations

8.16, 8.17, 8.18

Venting Arrangements

8.21

Inert Gas System

8.23, 8.24, 8.25, 8.26, 8.27, 8.28

Crude Oil Washing

8.32, 8.33, 8.35, 8.36

Manifold Arrangements

8.41, 8.42, 8.43

Pump Rooms

8.44, 8.45, 8.47, 8.48

Cargo Lifting Equipment

8.50

Ship to Ship Transfer Operations

8.51, 8.53, 8.54

Chapter 9: Mooring

Mooring Equipment Documentation and Management

9.1, 9.2, 9.3, 9.4, 9.5, 9.6

Mooring procedures

9.10, 9.13

Mooring equipment

9.14, 9.15, 9.17, 9.18, 9.19

Anchoring equipment

9.21, 9.22, 9.23, 9.24

Single Point Moorings

9.25, 9.26

Emergency Towing Arrangements

9.28, 9.29

Chapter 10: Engine and Steering Compartments

Policies, Procedures and Documentation

10.1, 10.3, 10.5, 10.6, 10.8, 10.9, 10.10

Planned Maintenance

10.13

Safety Management

10.15, 10.16

Fire Fighting Equipment

10.18, 10.20, 10.23, 10.24, 10.25, 10.26, 10.27, 10.28, 10.29, 10.31

Machinery Status

10.32, 10.35, 10.37, 10.38

Steering Compartment

10.40, 10.41, 10.42, 10.43

Chapter 11: General Appearance and Condition

Hull, superstructure and external weather decks

11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8

Electrical Equipment

11.10, 11.11

Internal Spaces

11.12

Accommodation Areas

11.13, 11.14, 11.16

Section 3

Chapter 2: Certification and Documentation

Safety Management and the Operators Procedures Manuals

2.3 Do the operator's procedures manuals comply with ISM Code requirements? Y N NS NA
Other Inspector Comments: Computerised software of Operator's SMS were available on board. Ship personnel had access to computer stations to view the manuals.

2.4 Does the Operator's representative visit the vessel at least bi-annually? Y N NS NA
Other Inspector Comments: Last visit was carried out by Marine Superintendent on 4 July 2023. 2nd last visit was carried out by Marine Superintendent and Technical Superintendent on 28 June 2023.

2.5 Is a recent operator's internal audit report available and is a close-out system in place for dealing with non-conformities? Y N NS NA
Other Inspector Comments: Internal ISM audit was required to be carried out once every 12 months, with last such audit carried out on 4 July 2023. Audit plan, check list, summary of audit report, etc. were available for review. Observations raised during the internal audit had been rectified and closed out on 19 September 2023, within the required time frame.

Survey and Repair History

2.8 Has the vessel been enrolled in a Classification Society Condition Assessment programme (CAP)? Y N NS NA
Other Inspector Comments: CAP survey was completed on 10 July 2023 and vessel was enrolled with CCS with the following ratings:
1. Hull Structure: CAP rating 2.

2.9 Are procedures in place to carry out regular inspections of cargo and ballast tanks, void spaces, trunks and cofferdams by the vessel's personnel and are records maintained? Y N NS NA
Other Inspector Comments: Cargo tanks internal inspection was required to be carried out at every 30 months intervals. Ballast tanks and void spaces internal inspections were required to be carried out at 6 months intervals. Cargo tanks were last internally inspected on 9 July 2023. Ballast tanks and void spaces had been internally inspected from 7 November 2023 and 18 December 2023. As per the inspection reports, overall condition of all tanks was stated good.

Anti Pollution

2.11 If the disposal of engine room oily water or sludge to a cargo or slop tank has taken place, has the event been recorded in both Oil Record Books, was the receiving tank free of cargo and have the transfer arrangements been approved as per IOPP Form B? Y N NS NA
Other Inspector Comments: The arrangement to transfer E/R oily water or sludge to a cargo slop tank (P) was fitted and approved by the Class (mentioned on the IOPP certificate Form 'B'). It was seen disconnected by a distance piece. Last such kind of transfer was conducted on 19 November 2023.

2.13 Is the vessel provided with an approved Ballast Water and Sediments Management Plan, are records maintained of all ballast water exchanges or treatment operations and are the officers aware of BWB requirements? Y N NS NA
Other Inspector Comments: Class approved Ballast Water Management Plan was available on board. Ballast treatment system was the means for ballast water management.

Structure

2.15 Is the vessel free of any documentary or visual evidence to indicate any structural concerns? Y N NS NA
Other Inspector Comments: Enhanced Survey was completed on 10 July 2023. Executive Hull Summary (Condition Evaluation Report) was reviewed during this inspection. Cargo, COW and ballast piping system were examined and operationally tested. Cargo tanks No.4P & 5S and all ballast tanks were close-up surveyed. All cargo tanks and all ballast tanks were coated, the coating condition was recorded as "Good". Anodes in all ballast tanks were also recorded as "Good".

2.16 If any cargo / ballast tanks, void or hold spaces were sighted from the deck, were they in good order, free from oil contamination and could the vessel easily check or sample segregated ballast prior to deballasting? Y N NS NA
Other Inspector Comments: Sighting port installed for every ballast tank can be easily opened. No.4W ballast tanks were checked from sighting points (diameter about 300 mm) and found to be free of any oil sheen or contamination. Condition of visual parts of both tanks was observed to be satisfactory.

Additional Comments

2.99 Additional Comments

Chapter 3: Crew Management

Crew Management

3.1

Does the manning level meet or exceed that required by the Minimum Safe Manning Document?
Other Inspector Comments: Safe manning document required: 4 deck officers, 4 engine officers, 3 deck ratings, 3 engine rating and 1 cook. Vessel was actually manned with: 4 deck officers, 4 engine officers, 1 ETO, 7 deck ratings, 4 engine room ratings, 1 cook and 1 mess man. Engine room was certified to be operated in UMS mode.

Y

N

NS

NA

3.2

Are the STCW and flag Administration's regulations that control hours of work to minimise fatigue being followed and are all personnel maintaining hours of rest records in compliance with MLC or STCW requirements?
Other Inspector Comments: A Computerized system was in place for monitoring and control for rest hours. A random verification of last completed monthly record against the emergency drills was carried out and found satisfactory.

Y

N

NS

NA

3.3

Are all personnel able to communicate effectively in a common language?
Other Inspector Comments: Chinese was common language on board. All crew were Chinese.

Y

N

NS

NA

Crew Qualifications

3.5

Does the officers' matrix posted for the vessel on the SIRE website accurately reflect the information relating to the officers on board at the time of the inspection?
Other Inspector Comments: Master and Chief Engineer were newly promoted on board this ship. Overlapping with off signers was about one month.

Y

N

NS

NA

3.7

If the vessel is equipped with an Electronic Chart Display and Information System (ECDIS) have the Master and deck officers undertaken both, generic training and type-specific familiarisation on the system fitted onboard?
Other Inspector Comments: Master and all deck officers had attended ECDIS generic training course (shore based formal training) and type-specific training course (shore based formal training, followed by installation-specific familiarisation onboard).

Y

N

NS

NA

Drug and Alcohol Policy

3.8

Does the operator have measures in place to prevent Drug and Alcohol abuse in accordance with OCIMF guidance?
Other Inspector Comments: The operator had a 40mg/100ml alcohol policy. Last drug and alcohol test by an independent agency was conducted on 7 August 2023. Last monthly unannounced alcohol test on board initiated by Company was conducted on 26 December 2023.

Y

N

NS

NA

Additional Comments

3.99

Additional Comments

Chapter 4: Navigation and Communications

Policies, Procedures and Documentation

4.5

Are the deck officers' familiar with the operators Under Keel Clearance policy, able to demonstrate satisfactory UKC calculations for the last voyage and is the policy comprehensive?
Other Inspector Comments: Operator's requirements on UKC was addressed in SMS manual and were briefed as follows:
1. Approaches of shallow water, channel, confined area, in port and SBM/CBM mooring - UKC was required to be not less than 10% of ship's draft;
2. Open sea - UKC was required not less than 20% of ship's draft;
3. For vessel's draft more than 15 meter whilst transiting in Malacca and Singapore straight - UKC was required not less than 3.5 m;
4. At berth- for vessel with draft more than 15 m, UKC was required not less than 1.2m; for other vessels, UKC was required to be not less than 0.5m;
5. Squat and other factors that affected UKC had been considered;
6. Once master was in doubt, should get approval from company and meet with the requirements of local authority.

Y

N

NS

NA

Navigation Equipment

4.7

Is navigation equipment appropriate for the size of the vessel and in good order?
Other Inspector Comments: Bridge navigational watch alarm system AC and DC power failure alarms were successfully tried out at the time of inspection. The daylight signalling lamp with spare battery was also successfully tried out at the time of inspection.

Y

N

NS

NA

4.8

Are navigation lights in good order, the OOW aware of the procedures for testing the lights and actions in event of failure?

Y

N

NS

NA

Other Inspector Comments: Navigation lights' failure alarms were tested satisfactorily during the course of inspection.

4.9

Are the Standard Magnetic and Gyro compasses in good order and is the OOW aware of the requirements for taking compass errors and is the compass error book maintained.
Other Inspector Comments: Off course alarm was tested and found satisfactory.

Y

N

NS

NA

4.11

Are the Deck Officers familiar with procedures to retain the VDR data in the event of an incident?
Other Inspector Comments: Operating procedure was posted locally. Procedure to retain data in emergency was randomly verified with deck junior officers and their responses were found satisfactory.

Y

N

NS

NA

4.12

Is there an effective Chart and Publication (Paper and Electronic) Management System in place and are the deck officer's familiar with the process including the effective management of T and P notices?
Other Inspector Comments: BA NTM with tracings could be down loaded from "Navaco". The vessel was also enrolled with outfit management services "Shenzhen Xiehang Sailing Technique Service Co., Ltd." for supply of new editions of Chinese Nautical charts, publications, Weekly Notices to Mariners with tracings. ECDIS can be updated weekly through email system.

Y

N

NS

NA

4.14

Are Master and deck officer's familiar with the operation of the ECDIS system fitted on board?
Other Inspector Comments: Primary means of navigation was paper charts and ECDIS was provided for backup.

Y

N

NS

NA

4.19

Is the master and deck officers aware of the requirements for the echo sounder and is there evidence that it has been in use as appropriate during the voyage?
Other Inspector Comments: Echo sounder was electronic display type with internal memory for 24 Hours, it was also fitted with a printer printing date, time, UKC, draft, heading, speed and GPS position at a specified interval. The echo sounder depth alarm was tested during this inspection and found satisfactory.

Y

N

NS

NA

Communications

4.21

Are deck officers' familiar with the preparation and transmission of distress and urgency messages on the GMDSS equipment, are instructions clearly displayed and equipment in good order?
Other Inspector Comments: A junior officer quizzed was well versed with emergency procedures and all related controls were well identified.

Y

N

NS

NA

4.27

Are survival craft portable VHF radios and Search and Rescue Locating Devices in good order and charged?
Other Inspector Comments: Three sets of survival craft portable VHF radios were successfully tried out during inspection.

Y

N

NS

NA

Additional Comments

4.99

Additional Comments

Chapter 5: Safety Management

Safety Management

5.3	Is the appointed Safety Officer suitably trained, aware of his responsibilities and is there evidence to show that the safety officer has been effectively performing duties associated with this role? Other Inspector Comments: Chief Officer was designated as Safety Officer and held shore based formal training certificate. Duties & responsibilities of Shipboard Safety Officer was identified in Operator's SMS manual. Safety officer inspection check lists were monthly completed by Chief Officer.	<div><div>Y</div></div>	N	NS	NA
5.7	Are crew members participating in safety meetings and is there evidence of effective discussions on safety related issues with shore management feedback? Other Inspector Comments: Safety meetings had been held on a monthly basis with minutes forwarded to the Operator. There was also evidence available to confirm that feedback was received from the Operator in a timely manner in respect to the issues raised in these minutes.	<div><div>Y</div></div>	N	NS	NA
5.8	Are the crew aware of the requirements for reporting of accidents, incidents, non-conformities and near misses and is there an effective system of reporting and follow up investigation in place? Other Inspector Comments: Operator's reporting procedures were addressed in their SMS manuals, which had been well followed. There was no recent incident and accident recorded. Operator's KPI was set for submission of near miss was at least twice per month. There were 24 near misses submitted during last 12 months.	<div><div>Y</div></div>	N	NS	NA

Drills, Training and Familiarisation

5.12	Are the crew familiar with the location and operation of fire and safety equipment and have familiarisations been effectively completed for all staff? Other Inspector Comments: Familiarization was carried out once before sailing and within two week of joining. Familiarization records were maintained satisfactorily.	<div><div>Y</div></div>	N	NS	NA
5.13	Are the crew familiar with their duties in the event of an emergency and are emergency drills being carried out as required? Other Inspector Comments: A deck rating at manifold was interviewed on oil spill response duties and was familiar with his duties.	<div><div>Y</div></div>	N	NS	NA
5.14	Are the crew familiar with their duties during lifeboat and fire drills and are drills being performed effectively and on a frequency meeting SOLAS and flag state requirements? Other Inspector Comments: Randomly interviewed with officers and ratings and well presented their duties of fire and boat drills.	<div><div>Y</div></div>	N	NS	NA
Enclosed Space and Pump Room Entry Procedures:					
5.17	Are the crew aware of safe entry procedures into the pump room, compressor rooms and trunk spaces as applicable and are safe entry procedures being followed? Other Inspector Comments: The communication system (fixed telephone) linking the pump room and the cargo control room tested during rounds.	<div><div>Y</div></div>	N	NS	NA
5.19	Are the officers aware of the correct settings of pump room fire and flooding dampers and are the dampers clearly marked and in good order? Other Inspector Comments: The pump room flooding damper remote operation was tested during pump room rounds.	<div><div>Y</div></div>	N	NS	NA

Monitoring Non-Cargo Spaces:

5.22	Where a fixed system to monitor flammable atmospheres in non-cargo spaces is fitted, are recorders and alarms in order? Other Inspector Comments: A fixed gas sampling system with pre setting alarm was installed for monitoring combustible gas in ballast tanks, void spaces and working fresh water tanks. Records of shipboard quarterly calibration were available for review.	<div><div>Y</div></div>	N	NS	NA
------	---	-------------------------	---	----	----

Gas Analysing Equipment

5.23	Does the vessel have appropriate duplicate portable gas detection equipment suitable for the cargoes carried, are the officers' familiar with the operation, calibration and is the equipment being maintained in accordance with manufacturers and industry recommendations? Other Inspector Comments: Vessel was provided with multi-purpose portable-gas detectors and personal multi-gas detectors which were appropriate to the cargoes being carried. All equipments were annually (12 October 2023) calibrated by shore personnel and calibrated by shipboard staff monthly with records provided and sighted. Enclosed type gas sampling device was available on board and sighted. A junior deck officer in CCR satisfactorily demonstrated the calibration operation of one gas meter (Riken-Keiki GX - 8000) and appeared to be familiar with the operation.	<div><div>Y</div></div>	N	NS	NA
------	--	-------------------------	---	----	----

Hot Work Procedures

5.24	Are officers aware of the requirements for hot work and are hot work procedures in accordance with the recommendations of ISGOTT and OCIMF guidelines? Other Inspector Comments: The operator's hot work guideline declared engine room workshop as designated hot work area and any hot work outside the engine room workshop must get written permission from the operator's office. No hot work was carried out outside of engine room workshop during last 12 months. Randomly checked with a junior engineer and found to be familiar with hot work requirements and procedures.	<div><div>Y</div></div>	N	NS	NA
------	--	-------------------------	---	----	----

Life Saving Equipment

5.30	Is the rescue boat, including its equipment and launching arrangement, in good order and officers' familiar with the launch procedures? Other Inspector Comments: Port L/B was designated as the rescue boat. Engine, steering, lights and air pressure for both boats were tested satisfactorily.	<div><div>Y</div></div>	N	NS	NA
------	---	-------------------------	---	----	----

Fire Fighting Equipment

5.35	Are the crew aware of the fixed firefighting equipment fitted, are ship specific firefighting equipment maintenance instructions available and is maintenance being carried out?	<div><div>Y</div></div>	N	NS	NA
------	--	-------------------------	---	----	----

Other Inspector Comments: Main engine, auxiliaries, incinerator, purifier room, IGG and boiler spaces in the engine room were covered by the hyper mist system, which was ready for use in auto setting and valves were open. Vessel was also installed with fixed CO2 system covering engine room, purifier room and pump room.					
5.36	Are records available to show that samples of foam compound have been tested at regular intervals? Other Inspector Comments: 3% AFFF foam compound was last annually analysed on 13 October 2023, parameters were reported within normal range.	<div><div>Y</div></div>	N	NS	NA
5.39	Are officers aware of the requirements for testing fixed fire detection and alarm systems and are the systems in good order and tested regularly? Other Inspector Comments: Fixed fire detectors (smoke/heat/flame) were loop by loop tested on a weekly basis and all of them were covered quarterly. Testing kits were sighted. A heat detector in the master's office was randomly tested in order.	<div><div>Y</div></div>	N	NS	NA
5.41	Is the emergency fire pump in full operational condition, starting instructions clearly displayed and are officers able to operate the pump? Other Inspector Comments: Emergency fire pump which was provided in recessed space in steering gear room was satisfactorily tested to 7.5 bar pressure during this inspection. Bilge high level alarm in the recessed area was tested in order.	<div><div>Y</div></div>	N	NS	NA
5.42	Are portable fire extinguishers in good order with operating instructions clearly marked and are crew members familiar with their operation? Inspector Observations: The working temperature range was marked on the portable foam fire extinguisher located outside of the accommodation near the laundry was +5 ~ +55 Degree C. However, the air temperature at the time of inspection was -6 Degree C. Other Inspector Comments: A new portable foam fire extinguisher with working temperature range -20 ~ + 55 Degree C was replaced immediately when the inspector pointed out.	Y	<div><div>N</div></div>	NS	NA

<div>Initial Operator Comments: Define the situation/Root cause: Upon our investigation, the vessel normally traded in South China areas in the past months. Prior to the vessel executed current North China voyage, sufficient portable foam fire extinguishers with working temperature range20 ~ +55 Degree C. were delivered on board. Ship staff made the replacement after the delivery, but unfortunately one portable foam fire extinguisher located outside of the accommodation near the laundry was not replaced due to being omitted. Corrective action/Preventive action: The vessel was provided with spare portable foam fire extinguishers with working temperature range20 ~ +55 Degree C. and ship staff had made the replacement after the inspector pointed out. Please kindly see the attached corrective evidence from the ship's Master. The Master has organized on board review/study of concerned requirements shown in FSS Code 4 and Res. A. 951 after the inspection. Third Officer apologizes for his oversight and has extended the inspections to ensure the temperature range over which the extinguishers will operate satisfactory in the surrounding atmosphere. Same lesson will be shared in our fleet wide and our superintendent will verify for compliance during next visiting the vessel to avoid a recurrence. Supporting evidence/documentation: 5.42 The mentioned portable foam fire extinguishers has been replaced with working temperature range20 ~ +55 Degree C 5.42 On board training minutes for study of concerned requirements shown in FSS Code 4 and Res. A. 951</div>				
<div>Attachment: 5.42 The mentioned portable foam fire extinguishers has been replaced with working temperature range20 ~ +55 Degree C.pdf Attachment: 5.42 On board training minutes for study of concerned requirements shown in FSS Code 4 and Res. A. 951.pdf</div>				
5.45	Are fire flaps clearly marked to indicate the spaces they serve and is there evidence of regular testing and maintenance? Other Inspector Comments: Fire flaps of engine room ventilation fans were randomly tested and were found satisfactory.	<div><div>Y</div></div>	N	NS NA
Access				
5.47	Is the vessel provided with a safe means of access and are all available means of access (gangway / accommodation ladder / pilot ladder / transfer basket) in good order and well maintained? Other Inspector Comments: Helicopter winching area was provided on the port side main deck and appropriately marked.	<div><div>Y</div></div>	N	NS NA

<div>Initial Operator Comments: Define the situation/Root cause: According to company procedure INM0606 Regulation for Bunkering & Transferring of Fuel & Lub Oil - Checklist for posting bunkering: bunker hoses, fixed pipelines and manifolds are drained, drain pipes are capped, and remote and manually controlled valves are closed. Upon our investigation, the vessel received bunkering in current voyage, the cover of the mentioned drain pipe was removed for drainage, but unfortunately, same was not duly recovered after the bunkering. Corrective action/Preventive action: The mentioned drain pipe for the starboard fuel bunker pipeline aft manifold near the pump room had been properly capped after the inspector pointed out. Please kindly see the attached corrective evidence from the Ship's Master. Preventive action: The Master had organized on board review/study of company procedure INM0606 Regulation for Bunkering & Transferring of Fuel & Lub Oil after the inspection. Third Engineer has noticed this oversight and assure will carefully complete the Checklist for post bunkering to ensure drain lines are properly capped after each bunkering operation in the future. Chief Engineer is required to carry out cross checks in order to avoid a similar recurrence. Same lesson will be shared in our fleet wide and our superintendent will verify for compliance during next visiting the vessel. Supporting evidences/documentations: 6.8 The mentioned drain pipe had been properly capped after the inspector pointed out 6.8 Checklist for post - bunkering -- drain pipes ends were capped 6.8 On board training minutes for review of the Observations raised during IECO SIRE inspection dated on 23 January 2024</div>				
<div>Attachment: 6.8 The mentioned drain pipe had been properly capped after the inspector pointed out.pdf Attachment: 6.8 Checklist for post - bunkering -- drain pipes ends were capped.pdf Attachment: 6.8 On board training minutes for review of the Observations raised during IECO SIRE inspection dated on 23 January 2024.pdf</div>				
6.10	Are the arrangements for the disposal of oily water in the forecask and other internal spaces adequate and are officers aware of these requirements? Other Inspector Comments: Forward bosun's store bilge high level alarm (P) was randomly tested by bosun during this inspection and found satisfactory.	<div><div>Y</div></div>	N	NS NA

Additional Comments				
5.99	Additional Comments			
Chapter 6: Pollution Prevention				
Pollution Prevention				
6.3	Are means readily available for dealing with small oil or chemical spills? Other Inspector Comments: Dump valves were not installed, however, two bilge wells were fitted at after end of cargo deck area to collect spills. Two fixed air pumps were fitted and well bonded, with fixed pipelines installed to collect spills and transfer to Slop Starboard Tank. Both pumps were tested during this inspection and found operating satisfactorily.	<div><div>Y</div></div>	N	NS NA
Cargo Operations and Deck Area Pollution Prevention				
6.4	Are Annex 1 and 2 overboard valves and cargo system sea valves suitably secured, thoroughly checked closed prior to commencement of cargo transfer and where provided, sea valve-testing arrangements in order and regularly monitored for leakage? Other Inspector Comments: Cargo system sea valves were found shut down, lashed, sealed and blanked. Spool piece as emergency connection between cargo and ballast system was noted removed. ODME overboard valves were closed and blanked, with warning notice found posted locally.	<div><div>Y</div></div>	N	NS NA
6.5	If ballast lines pass through cargo and/or Bunker tanks are they tested regularly, and the results recorded?	Y	N	NS <div><div>NA</div></div>
6.8	Are unused cargo and bunker pipeline manifolds fully bolted and are all drains, vents and unused gauge stems, suitably blanked or capped? Inspector Observations: Drain pipe for the starboard fuel bunker pipeline aft manifold near the pump room was found fitted with only one valve in close condition and not capped / plugged at the end.	Y	<div><div>N</div></div>	NS NA

Pump Rooms and Oil Discharge Monitors				
6.11	Are pump room / trunk space bilge high level alarms fitted, regularly tested and the results recorded? Other Inspector Comments: Pump room bilge high level alarm (port) was randomly tested during this inspection and found operating satisfactorily. Records of shipboard weekly testing of pump room high level bilge alarm were reviewed during this inspection.	<div><div>Y</div></div>	N	NS NA
6.13	If an ODME is fitted, is it in good order, well maintained and any operational downtime recorded in the ORB? Other Inspector Comments: There was no breakdown history of the ODME recorded in the oil record book. The equipment was tested at monthly intervals, this was also recorded in the oil record book. ODME was last calibrated and tested by shore personnel on 26 June 2023.	<div><div>Y</div></div>	N	NS NA
Engine and Steering Compartments				
6.17	Is the oily water separator in good order, free from unauthorised modifications and are the engineers well familiar with its operation and data recovery procedure where applicable? Other Inspector Comments: Vessel was fitted with a 15 ppm Oily Water Separator system with alarm and automatic stopping device. System was tested and operated by a junior engineer satisfactorily. It was calibrated and tested by shore personnel on 20 June 2023.	<div><div>Y</div></div>	N	NS NA
6.19	If the oily water separator is not fitted with an automatic stopping device, do entries in the Oil Record Book Part 1 indicate that it has not been used in a Special Area?	Y	N	NS <div><div>NA</div></div>
Ballast Water Management				
6.21	If the vessel is provided with an approved Ballast Water Treatment System, is the system in good order, used where required and are officer's familiar with the safe operation of the same? Other Inspector Comments: Class approved Ballast Water Treatment System (Filtration, Electrolytic and neutralization process technology) was fitted on board. Checked with chief officer and found familiar with the safe operation of the system.	<div><div>Y</div></div>	N	NS NA

Additional Comments

6.99 Additional Comments

Chapter 7: Maritime Security

Policies and Procedures

7.5 Has the ship's security officer been trained to undertake this role and do they understand their responsibilities?
Other Inspector Comments: The Chief Officer was designated as ship's security officer. During interview session, chief officer was found familiar with his roles and responsibilities as ship's security officer.

7.12 Is an adequate deck watch being maintained to prevent unauthorised access in port?
Other Inspector Comments: A visitor log was maintained, inspector's ID was checked. Presence of mobile phones and other portable equipment was checked. Safety and security tags were handed to the Inspector. Escort by ship's officer was arranged into accommodation. CCTV cameras were fitted.

Cyber Security

7.15 Are the crew aware of the company policy on the control of physical access to all shipboard IT/OT systems?
Other Inspector Comments: USB ports were locked and the key was controlled by Master. There was one separate computer in CCR for third party users.

Additional Comments

7.99 Additional Comments

Chapter 8: Cargo and Ballast Systems - Petroleum

Stability and Cargo Loading Limitations

8.4 If a loading computer or programme is in use, is it class approved, regularly tested and are officers aware of the test requirements including damage stability?
Other Inspector Comments: Loading computer had been tested quarterly by ship and every year by shore. Class approved damage stability booklet was in place and was available for review. Damage stability calculation was included in loading computer software. ERS was provided by class CCS.

8.5 Has a cargo plan been prepared and followed with a detailed sequence of cargo and ballast transfers documented, stress, intact and damage stability and are any limitations, where applicable understood by the cargo watch officers and clearly documented?
Other Inspector Comments: Stability information and stress were monitored at all times through the on-line loading computer during cargo operations and recorded every hour.

Cargo Operations and Related Safety Management

8.8 Are the cargo, ballast and stripping pumps, eductors and their associated instrumentation and controls including temperature monitoring, in good order and is there recorded evidence of regular testing?
Other Inspector Comments: Cargo pumps No.1 & 2 were seen in operation and found free from any operational defect. Cargo pumps bearing, casing & stuffing box high temperature trips and alarms were fitted in CCR and temperatures displays were seen in operation without any abnormality.

8.9 Are officers aware of the column/cofferdam purging routines where deep well pumps are fitted and is the pump leakage within tolerable limits?

8.10 Are the officers and ratings aware of the location of the cargo pump emergency stops, is the emergency cargo pump shutdown system in good order and is there recorded evidence of regular testing?
Other Inspector Comments: A duty AB on deck was questioned and he was found familiar with the location and operation of cargo pumps emergency stops. As per PMS, cargo pumps emergency stops were being tested prior commencement of each cargo discharging operation.

8.12 Are the cargo system ullage gauges, vapour locks and UTI tapes in good order and is there recorded evidence of regular testing?

Other Inspector Comments: Vessel was fitted with fixed tank gauging system with display read out inside cargo control room. Vessel was also provided with 3 portable UTI tapes with valid calibration. Comparison of fixed level gauges with portable UTI tapes was being performed at each cargo operation.

8.13 Are the remote and local temperature and pressure sensors and gauges in good order and is there recorded evidence of regular testing?
Other Inspector Comments: Cargo tanks fixed temperature sensors were being compared with portable UTI tapes at each cargo operation. Cargo tanks fixed pressure sensors were being compared with standard pressure/vacuum gauge at 3 months intervals. Comparison records were sighted during inspection.

8.14 Are the cargo tank high level and overfill alarms in good order and is there recorded evidence of regular testing?
Other Inspector Comments: Cargo tank high level alarm (95%, COT No.15 from CCR) and overfill alarm (98%, COT No.45 on deck) were randomly tested during this inspection. Visual and audible alarms were tested and found operating satisfactory.

8.15 Where fitted, is the condition of the cargo tank heating system satisfactory, is it regularly tested and is any observation tank free of oil?
Other Inspector Comments: The heating coils were fitted in all cargo tanks. They were pressure tested up to 12.0 kg/cm2 by shore personnel on 9 July 2023. The heating system was not in use at the time of this inspection.

Venting Arrangements

8.19 Are the officers aware of the primary and secondary cargo tank venting systems and are the systems functioning correctly?
Other Inspector Comments: Every cargo tank was fitted with high-velocity pressure and vacuum vent. Remote pressure sensor with pre set alarm was installed in each cargo tank, which can be monitored in CCR, fulfilling secondary venting requirements. Alarm settings for Cargo tank No.3P was verified during this inspection and was found correctly set. Liquid filled P/V breaker was provided on IG main line.

8.20 If stop valves are fitted which permit isolation of individual tanks from the common venting system, are they provided with positive locking arrangements and are the keys under the control of the person in overall charge of the cargo transfer?
Other Inspector Comments: Each IG isolation valve was secured by means of pad lock in open condition. Master key was in Chief Officer's custody.

Inert Gas System

8.22 Was the inert gas system in use and operating satisfactorily at the time of the inspection?
Other Inspector Comments: Inert gas was delivered to cargo tanks with 4.0% O2 content. Cargo tank No.5S was randomly checked for oxygen content which was observed to be 2.3%.

8.29 If the vessel is provided with a nitrogen generator / bottle manifold system, are the officers and crew aware of the specific hazards associated with nitrogen gas?

8.30 Are officers and ratings aware of safe entry requirements for the inert gas room(s), are these procedures being followed and where applicable, is fixed oxygen detection provided?

8.31 Are the officers' familiar with the dangers associated with over pressurisation of the cargo tanks and are procedures implemented to avoid over pressure due to purging, blowing and pigging with nitrogen?

Crude Oil Washing

8.34	If the vessel is Crude Oil Washing, has the COW system been tested for integrity, appropriate checks complete and all associated COW equipment in good operational order? Other Inspector Comments: COW operation was planned, but not commenced during the inspection period.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
------	---	-------------------------	--------------	---------------	---------------

Pump Rooms

8.46	Is the pump room gas monitoring system in good order, regularly checked and are officers aware of the alarm settings? Other Inspector Comments: A fixed gas detection system with pre-set warning and alarm was installed to continuously monitor combustible gas, oxygen and hydrogen sulphide in pump room. Records of shipboard quarterly calibration were available for review.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
------	--	-------------------------	--------------	---------------	---------------

Cargo Hoses

8.49	If the vessel uses its own cargo hoses, are they in good order, pressure tested annually and is a record of all hose tests and inspections maintained on board?	<div>Y</div>	<div>N</div>	<div>NS</div>	<div><div>NA</div></div>
------	---	--------------	--------------	---------------	--------------------------

Ship to Ship Transfer Operations

8.52	Does the POAC have the necessary qualifications and experience and are officers aware of these requirements?	<div>Y</div>	<div>N</div>	<div>NS</div>	<div><div>NA</div></div>
------	--	--------------	--------------	---------------	--------------------------

8.55	If a ship-to-ship transfer was in progress during the inspection, was it conducted in accordance with the recommendations of the OCIMF/ICS STS Transfer Guide? Other Inspector Comments: Vessel was moored at berth during the course of inspection.	<div>Y</div>	<div>N</div>	<div>NS</div>	<div><div>NA</div></div>
------	---	--------------	--------------	---------------	--------------------------

Additional Comments

8.199	Additional Comments
-------	---------------------

Chapter 9: Mooring

Mooring Equipment Documentation and Management

9.7	Is there a policy in place for the testing of winch brakes and are the results recorded? Other Inspector Comments: Mooring winch brakes were required to be tested annually, with last such test carried out on 9 July 2023. Brake testing kit was provided on board.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
-----	--	-------------------------	--------------	---------------	---------------

Mooring procedures

9.8	Are moorings satisfactorily deployed and tended? Other Inspector Comments: The vessel was fitted with the following mooring arrangements: Forecastle - 4 mooring ropes on drums; Forward main deck - 2 mooring ropes on drums; Aft main deck - 2 mooring ropes on drums; Poop deck - 6 mooring ropes on drums; All drums were split drums. The vessel was moored with a 2-2-2 arrangement at each end at time of inspection.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
-----	---	-------------------------	--------------	---------------	---------------

9.9	Are mooring lines secured to bitts and turned up correctly?	<div>Y</div>	<div>N</div>	<div>NS</div>	<div><div>NA</div></div>
-----	---	--------------	--------------	---------------	--------------------------

9.11	On split drum winches are all the lines made fast with no more than one layer on each tension side of the drum? Other Inspector Comments: Vessel fitted with split drums mooring winches and mooring ropes secured with minimum of 3 turns and did not exceed 1 layer.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
------	---	-------------------------	--------------	---------------	---------------

9.12	If mooring tails are fitted to wires or HMSF lines, do they have proper connections and are they correctly fitted? Other Inspector Comments: Only synthetic mooring ropes were provided on board.	<div>Y</div>	<div>N</div>	<div>NS</div>	<div><div>NA</div></div>
------	--	--------------	--------------	---------------	--------------------------

Mooring equipment

9.16	If mooring winches in a gas hazardous area are electrically powered, are motors Ex 'd' rated and have insulation tests been carried out and the results recorded. Other Inspector Comments: The mooring winches were driven by hydraulic motors.	<div>Y</div>	<div>N</div>	<div>NS</div>	<div><div>NA</div></div>
------	---	--------------	--------------	---------------	--------------------------

Anchoring equipment

9.20	Are windlasses, anchors, locking bars and cables in good order and operating effectively? Other Inspector Comments: A spare anchor was secured near the starboard side manifold, sighted to be well maintained.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
------	--	-------------------------	--------------	---------------	---------------

Single Point Moorings

9.27	If the vessel is fitted with a hydraulically operated bow stopper, are safeguards provided to prevent its accidental release?	<div>Y</div>	<div>N</div>	<div>NS</div>	<div><div>NA</div></div>
------	---	--------------	--------------	---------------	--------------------------

Additional Comments

9.99	Additional Comments
------	---------------------

Chapter 10: Engine and Steering Compartments

Policies, Procedures and Documentation

10.2	If the machinery space is certified for unmanned operation is it being safely operated in that mode without regular alarms occurring under normal conditions? Other Inspector Comments: The engine space was certified for UMS, it was operated at sea in UMS mode. Engine room was manned with sufficient manning for manned operation during in port and very short voyage as per the company policy.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
------	--	-------------------------	--------------	---------------	---------------

10.4	Are the engineers familiar with safe entry requirements to the machinery space when operating in the UMS mode, especially with regards to use of the dead man alarm where fitted? Other Inspector Comments: The dead man system was set to activate alarm in 12 minutes and would raise an alarm if not reset in 3 minutes. The dead man alarm system was successfully tried out during the engine room rounds.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
------	--	-------------------------	--------------	---------------	---------------

10.7	Does the operator subscribe to a fuel, lube and hydraulic oil testing programme on a frequency in accordance with the manufacturers recommendations and are there procedures to act on these results? Other Inspector Comments: Samples of lubricating oils for M/E and A/E's were required to be tested on a quarterly basis. Lubricating oils for other machineries and hydraulic oils were required to be tested at 6 months intervals. All lubricating oils and hydraulic oils were last tested on 31 October 2023. Fuel oil sample was required to be landed for analysis once after completion of bunkering operation and last such test was done on 3 January 2024. Review of these analysis reports showed that they were normal.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
------	--	-------------------------	--------------	---------------	---------------

10.11	If the vessel is fitted with a class approved Exhaust Gas Cleaning System are the officers well familiar with the system and safety requirements and are these documented?	<div>Y</div>	<div>N</div>	<div>NS</div>	<div><div>NA</div></div>
-------	--	--------------	--------------	---------------	--------------------------

Planned Maintenance

10.12	Are the officers' familiar with the planned maintenance system and is the system being followed and maintained up to date? Other Inspector Comments: Vessel was following a CCS class approved computerized Planned Maintenance System (SMIS, Chinese edition) covering all areas. This system included detailed shipboard safety management, maintenance due list, stock level of critical equipments, etc. which were up to date.	<div><div>Y</div></div>	<div>N</div>	<div>NS</div>	<div>NA</div>
-------	--	-------------------------	--------------	---------------	---------------

Safety Management

10.14 Is an engineer's call alarm fitted and is it in good order and tested regularly and the results recorded?
Other Inspector Comments: The engineer's call alarm was tested monthly and it was tried out during this inspection.

Y

N

NS

NA

10.17 Are engineers aware of the operation of the machinery space liquid fuel system remote closing valves, and are the closing devices regularly tested and in good order?
Other Inspector Comments: The quick close valves of fuel systems were tested on a quarterly basis. The quick close valve for emergency generator fuel tank was successfully tried out during the inspection.

Y

N

NS

NA

Fire Fighting Equipment

10.19 Are diesel engine fuel delivery pipes adequately jacketed or screened, exhaust lines and hot surfaces protected from spray and surrounding areas free from fuel or lube oil leakage?
Other Inspector Comments: Fuel oil leak alarms for M/E, the emergency generator unit & No.1 A/E were tested satisfactorily during this inspection. A/Es No.2 & No.3 were seen in operation and found free from any operational defect.

Y

N

NS

NA

10.21 If the vessel class notation allows UMS operation, are main engine bearing temperature monitors, or the crankcase oil mist detector, in good order?
Other Inspector Comments: Crankcase oil mist detector in the main engine was tested and was found functioning satisfactorily during this inspection.

Y

N

NS

NA

10.22 Where hydraulic aggregate pumps are located within the main engine compartment, is an oil mist detector fitted?

Y

N

NS

NA

10.30 Is the bilge high level alarm system regularly tested and are records maintained?
Other Inspector Comments: Engine room bilge high level alarms (E/R AFT and S/G (S)) were randomly tested and found operating satisfactorily during this inspection. Records of such weekly tests were provided for review.

Y

N

NS

NA

Chapter 11: General Appearance and Condition

Electrical Equipment

11.9 Are the deck lights all operational and sufficient in number and range to illuminate the deck to facilitate safe working during darkness?
Other Inspector Comments: The emergency lights and deck lights were requested to switch on at the time of inspection and found all in working condition.

Y

N

NS

NA

Accommodation Areas

11.15 If fitted, is the Ship's Hospital clean and tidy and ready for use?
Other Inspector Comments: Valid medicine certificate was posted. Patients call alarm was tested satisfactorily.

Y

N

NS

NA

11.17 Are personnel alarms in refrigerated spaces in good order and operational?
Other Inspector Comments: Reefer room personnel alarms were tested satisfactorily during this inspection.

Y

N

NS

NA

Additional Comments

11.99 Additional Comments
Hull was clean and well painted, weather deck appeared well maintained and vessel was presented in good cosmetic condition. The accommodation, stores, public spaces, galley, hospital and laundry were clean and tidy.

Operator's initial comments entered by: Capt. Wang Huiqiang [shipvetting@cmhk.com]

Operator's Initial General Comments

Many thanks for you carrying out a SIRE inspection on the subject vessel at Tianjin, China on 23 January 2024. We also appreciate that your good inspector shared with the ship's Master and his crew many valuable industrial best practices during the inspection. For the purpose of achieving a sustained flawless performance and preventing a recurrence, we collected and analyzed all observations/findings (from major oils, PSC, PSC and terminal inspections etc.) across the fleet for their basic causes and root causes according to company SMS procedures. Meanwhile, we monthly revised Fleet Safety Bulletin and sent it to our fleet wide in regular intervals for Masters conducting self-checking and self-correction in order to achieve continuous improvement. Above are our responses including the corrective actions and evidences to rectify the observations raised during the inspection. If any further information is required, please do not hesitate to contact the undersigned.

Thanks and Best Regards.

Machinery Status

10.33 Are engineers familiar with the procedure for taking over the controls for manoeuvring the vessel from the bridge in an emergency?
Other Inspector Comments: The engine side manoeuvring operation was tested quarterly as per PMS requirement, it was satisfactorily demonstrated by a senior engineer during inspection.

Y

N

NS

NA

10.34 Are officers fully familiar with all starting procedures for the emergency generator and are these procedures clearly and displayed?
Other Inspector Comments: Emergency generator was provided with battery and hydraulic starting mechanisms. They were tested and operated satisfactorily during this inspection. Records of shipboard weekly testing and on- load testing (28 November 2023) at 3 months intervals were provided for review.

Y

N

NS

NA

10.36 Where an emergency generator is not fitted, are engine room emergency batteries in good order and fully charged?

Y

N

NS

NA

Steering Compartment

10.39 Are the officers aware of the test requirements for the steering gear both pre-departure and for emergency steering drills and have these tests been conducted satisfactorily with operating instructions clearly posted?
Other Inspector Comments: Emergency steering gear was tested during inspection. Emergency steering was being tested as a part of 3 monthly PMS routines and contingency drill programme. Steering gear was being tested as a part of pre-arrival/departure checks.

Y

N

NS

NA

10.44 Are the officers and crew aware of the safe operating requirements of any watertight doors fitted?

Y

N

NS

NA

Additional Comments

10.99 Additional Comments
A spare propeller was fastened on the port side forward main deck, sighted to be well maintained.

Capt. Wang Huiqiang
Vetting Superintendent
For Nanjing Tanker Corporation
Address: Room 619 Youyun Mansion, #324 Zhongshan North Road, Nanjing, PRC
Tel: 0086-25-5858-6656
Fax: 0086-25-5858-6950
E-mail: shipvetting@cmhk.com

ภาคผนวกเรื่องกากเก็บปิโตรเลียม-3

ใบรับรองการตรวจสอบเรื่องกากเก็บปิโตรเลียม Pride 1

- o ภาคผนวกเรื่องกากเก็บปิโตรเลียม-3.1 International Sewage Pollution Prevention Certificate
- o ภาคผนวกเรื่องกากเก็บปิโตรเลียม-3.2 Certificate Record

ภาคผนวกเรื่องกากเก็บปิโตรเลียม-3.1

International Sewage Pollution Prevention Certificate

INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE

Issued under the provisions of the International Convention for the Prevention of Pollution from Ships, 1973,
as modified by the Protocol of 1978 relating thereto, as amended,
(hereinafter referred to as "the Convention")

under the authority of the **Government of Republic Of Liberia**
by **Indian Register of Shipping**

Particulars of ship

Name of ship **PRIDE 1**
Distinctive number or letters **23362/SLN17**
Port of registry **Monrovia**
Gross tonnage **56693**
Number of persons which the ship is
certified to carry **30**
IMO Number **9205873**

New / Existing ship*

Type of ship for the application of regulation 11.3:

New / Existing* passenger ship*

Ship other than a passenger ship*

Date on which keel was laid or ship was at a similar stage of construction or, where applicable, date
on which work for a conversion or an alteration or modification of a major character was commenced
10/12/1998

THIS IS TO CERTIFY

1. That the ship is equipped with a sewage treatment plant / comminuter / ~~holding tank~~ * and a
discharge pipeline in compliance with regulation 9 and 10 of Annex IV of the Convention as follows:

***1.1 Description of the sewage treatment plant:**

Type of sewage treatment plant **SBT 40**
Name of manufacturer **TAIKO KIKAI INDUSTRIES CO.,LTD. JAPAN**

The sewage treatment plant is certified by the Administration to meet the effluent standards
as provided for in resolution MEPC.2(VI)*.

~~The sewage treatment plant is certified by the Administration to meet the effluent standards
as provided for in resolution MEPC.159(55)*.~~

~~The sewage treatment plant is certified by the Administration to meet the effluent standards
as provided for in the Guidelines on implementation of effluent standards and performance
test for sewage treatment plants, adopted by resolution MEPC.227(64), as amended,
including/excluding* the standards of section 4.2 thereof*.~~

***1.2 Description of comminuter :**

Type of comminuter **MDT 090**
Name of manufacturer **WASHIO CHURI KOHGYO Co.,Ltd**
Standard of sewage after disinfection **-**

***1.3 Description of holding tank :**

~~Total capacity of the holding tank~~ **-**
~~Location~~ **-**

- 1.4 A pipeline for the discharge of sewage to a reception facility, fitted with a standard shore
connection.

2. The ship has been surveyed in accordance with regulation 4 of Annex IV of the Convention .

3. That the survey shows that the structure, equipment, systems, fittings, arrangements and materials
of the ship and the condition thereof are in all respects satisfactory and that the ship complies with
the applicable requirements of Annex IV of the Convention.

This Certificate is valid until **08/10/2028** (dd/mm/yyyy) subject to surveys in accordance with
regulation 4 of Annex IV of the Convention.

Completion date of survey on which this Certificate is based: **09/10/2023** (dd/mm/yyyy).

Issued at **Mumbai** on **04/03/2024** (dd/mm/yyyy).

Official Seal

 For Indian Register of Shipping
Digitally Signed By: Ajay Kumar Sinha
Location: Mumbai
Signing Date: 04-03-2024(dd/mm/yyyy)

[Authorized Signatory]
Indian Register of Shipping, Mumbai



**ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN 5 YEARS
WHERE REGULATION 8.3 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 8.3 of Annex IV of the Convention, be accepted as valid until
(dd/mm/yyyy)

Signed
(Signature of authorized official)

Place

Date
(dd/mm/yyyy)

Official Seal

**ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED
AND REGULATION 8.4 APPLIES**

This ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 8.4 of Annex IV of the Convention, be accepted as valid until
(dd/mm/yyyy)

Signed
(Signature of authorized official)

Place

Date
(dd/mm/yyyy)

Official Seal

**ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL
REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE WHERE
REGULATION 8.5 OR 8.6 APPLIES**

This Certificate shall, in accordance with regulation 8.5 or 8.6* of Annex IV of the convention, be accepted as valid until(dd/mm/yyyy)

Signed
(Signature of authorized official)

Place

Date
(dd/mm/yyyy)

Official Seal



ภาคผนวกเรือกักเก็บปิโตรเลียม-3.2

Certificate Record

INTERTANKO CHARTERING QUESTIONNAIRE 88 - OIL
Version 5

1.	GENERAL INFORMATION			
1.1	Date updated:	May 07, 2024		
1.2	Vessel's name (IMO number):	PRIDE 1 (9205873)		
1.3	Vessel's previous name(s) and date(s) of change:	OCEAN (07 TH SEP 2023) OCEAN PRIDE 1 (24 TH MAR 2023) ERAWAN99(27 March 2020)		
1.4	Date delivered/Builder (where built):	Dec 22, 1999 / NAMURA SHIP BUILDING -IMARI JAPAN		
1.5	Flag/Port of Registry:	Liberia/Monrovia		
1.6	Call sign/MMSI:	SLNI7		
1.7	Vessel's contact details (satcom/fax/email etc.):	Tel: +628113313174 Email: master.pride1@gtmailplus.com		
1.8	Type of vessel (as described in Form A or Form B Q1.11 of the IOPPC):	Oil Tanker		
1.9	Type of hull:	Double Hull		
Ownership and Operation				
1.10	Registered owner - Full style:	DEMETER TRADING PTE LTD Vistra Corporate Services Centre, Wickhams Cay II, Road town, Tortola, VG1110, Virgin Islands (British) Email:		
1.11	Technical operator - Full style:	RADIANCE NAUTICAL MARINE SERVICES (Opc) PRIVATE LIMITED SHOP NO 16, GROUND FLOOR, RAILWAY SHOPPING COMPLEX RAJAWADI ROAD NO 7, GHATKOPAR EAST, MUMBAI MUMBAI – 400077 Email: ops@rn-services.net		
1.12	Commercial operator - Full style:			
1.13	Disponent owner - Full style:			
Insurance				
1.14	P & I Club - Full Style:	AMERICAN CLUB American Steamship Owners Mutual Protection and Indemnity Association, Inc. Shipowners Claims Bureau, Inc., Manager One Battery Park Plaza – 31st Floor New York, NY 10004, USA		
1.15	P & I Club pollution liability coverage/expiration date:	1,000,000,000 US\$	Feb 20, 2025	
1.16	Hull & Machinery insured by - Full Style: (Specify broker or leading underwriter)	Channing Lucas & Partners Ltd International Insurance and Reinsurance Brokers 65 Leadenhall Street, London, EC3A 2AD		
1.17	Hull & Machinery insured value/expiration date:	13,000,000 US\$	Oct 16, 2024	
Classification				
1.18	Classification society:	INDIAN REGISTER OF SHIPPING		
1.19	Class notation:	SUL OIL TANKER, DOUBLE HULL, ESP, LOAD COMP (2) For Operation at ROSSUKON FIELD, Offshore Thailand IY, TCM		
1.20	Is the vessel subject to any conditions of class, class extensions, outstanding memorandums or class recommendations? If yes, give details:	NO		
1.21	If classification society changed, name of previous and date of change:	YES - EASTERN MARINE, March 27 th SEP , 2023		
1.22	Does the vessel have ice class? If yes, state what level:	No, N/A		

1.23	Date/place of last dry-dock:	SEP 18th, 2023 / Batam, Indonesia			
1.24	Date next dry dock due/next annual survey due:	SEP 17 th , 2026		SEP 17 th , 2024	
1.25	Date of last special survey/next special survey due:	SEP 18 th 2023		SEP 17 th 2028	
1.26	If ship has Condition Assessment Program (CAP), what is the latest overall rating:	Yes, 2			
Dimensions					
1.27	Length overall (LOA):	240.99 Metres			
1.28	Length between perpendiculars (LBP):	232.00 Metres			
1.29	Extreme breadth (Beam):	42.00 Metres			
1.30	Moulded depth:	21.20 Metres			
1.31	Keel to masthead (KTM)/ Keel to masthead (KTM) in collapsed condition, if applicable:	52.02 Metres	51.39 Metres		
1.32	Distance bridge front to center of manifold:	82.85 Metres			
1.33	Bow to center manifold (BCM)/Stern to center manifold (SCM):	120.50 Metres	120.47 Metres		
1.34	Parallel body distances	Lightship	Normal Ballast	Summer Dwt	
	Forward to mid-point manifold:	54.17 Metres	63.17 Metres	63.17 Metres	
	Aft to mid-point manifold:	30.37 Metres	40.74 Metres	57.54 Metres	
	Parallel body length:	84.54 Metres	107.40 Metres	120.71 Metres	
Tonnages					
1.35	Net Tonnage:	32,158.00			
1.36	Gross Tonnage/Reduced Gross Tonnage (if applicable):	56,693.00	45,139.00		
1.37	Suez Canal Tonnage - Gross (SCGT)/Net (SCNT):	58,863.61	54,654.62		
1.38	Panama Canal Net Tonnage (PCNT):				
Loadline Information					
1.39	Loadline	Freeboard	Draft	Deadweight	Displacement
	Summer:	5.317 Metres	14.923 Metres	105,715.00 Metric Tonnes	121,803.00 Metric Tonnes
	Winter:	5.627 Metres	14.613 Metres	102,913.00 Metric Tonnes	119,001.00 Metric Tonnes
	Tropical:	5.007 Metres	15.233 Metres	108,528 Metric Tonnes	124,616.00 Metric Tonnes
	Lightship:	17.990 Metres	2.250 Metres		16,088.00 Metric Tonnes
	Normal Ballast Condition:	13.107 Metres	7.110 Metres	37,591.00 Metric Tonnes	53,679.00 Metric Tonnes
	Segregated Ballast Condition:				
1.40	FWA/TPC at summer draft:	336.00 Millimetres	90.40 Metric Tonnes		
1.41	Does vessel have multiple SDWT? If yes, please provide all assigned loadlines:	NO			
1.42	Constant (excluding fresh water):	296 Metric Tonnes			
1.43	What is the company guidelines for Under Keel Clearance (UKC) for this vessel?	20% of Deepest Draft- Open Sea or 50Mtr 20% of Deepest Draft- Coastal Navigation 10% of Deepest Draft- Pilotage/Berth 0.5 m			
1.44	What is the max height of mast above waterline (air draft)	Full Mast		Collapsed Mast	
	Summer deadweight:	37.10 Metres		36.47 Metres	
	Normal ballast:	43.50 Metres		42.87 Metres	
	Lightship:	49.77 Metres		49.14 Metres	

2.	CERTIFICATES	Issued	Last Annual	Last Intermediate	Expires
2.1	Safety Equipment Certificate (SEC):	Mar 04, 2024			Oct 08, 2028
2.2	Safety Radio Certificate (SRC):	Mar 04, 2024			Oct 08, 2028
2.3	Safety Construction Certificate (SCC):	Mar 04, 2024			Oct 08, 2028
2.4	International Loadline Certificate (ILC):	Mar 04, 2024			Oct 08, 2028

2.5	International Oil Pollution Prevention Certificate (IOPPC):	Mar 04, 2024			Oct 08, 2028
2.6	International Ship Security Certificate (ISSC):	Apr 13, 2024			Jul 13, 2024
2.7	Maritime Labour Certificate (MLC):	Apr 13, 2024	N/A		Jul 13, 2024
2.8	ISM Safety Management Certificate(SMC):	Apr 13, 2024			Jul 13, 2024
2.9	Document of Compliance (DOC):	Aug 28, 2023			Aug 27, 2024
2.10	USCG Certificate of Compliance (USCGCOC):		Not Applicable	Not Applicable	
2.11	Civil Liability Convention (CLC) 1992 Certificate:	Feb 20, 2024	N/A	N/A	Feb 20, 2025
2.12	Civil Liability for Bunker Oil PollutionDamage Convention(CLBC) Certificate:	Feb 20, 2024	N/A	N/A	Feb 20, 2025
2.13	Liability for the Removal of Wrecks Certificate (WRC):	Feb 20, 2024	N/A	N/A	Feb 20, 2025
2.14	U.S. Certificate of Financial Responsibility (COFR):		N/A	N/A	
2.15	Certificate of Class (COC):	Mar 04, 2024			Oct 08, 2028
2.16	International Sewage Pollution Prevention Certificate(ISPPC):	Mar 04, 2024	N/A	N/A	Oct 08, 2028
2.17	Certificate of Fitness (COF):	Not Applicable	Not Applicable	Not Applicable	Not Applicable
2.18	International Energy Efficiency Certificate (IEEC):	Mar 04, 2024	N/A	N/A	Not Applicable
2.19	International Air Pollution Prevention Certificate (IAPPC):	Mar 04, 2024			Oct 08, 2028
Documentation					
2.20	Owner warrant that vessel is member of ITOPF and will remain so forthe entire duration of thisvoyage/contract:			Yes	
2.21	Does vessel have in place a Drug and Alcohol Policy complying withOCIMF guidelines for Control of Drugs and Alcohol Onboard Ship?			Yes	
2.22	Is the ITF Special Agreement on board (if applicable)?			N/A	
2.23	ITF Blue Card expiry date (if applicable):			N/A	

3.	CREW				
3.1	Nationality of Master:			Indian	
3.2	Number and nationality of Officers:		09	Indian, Thai	
3.3	Number and nationality of Crew:		14	Thai	
3.4	What is the common working language onboard:			English	
3.5	Do officers speak and understand English?			Yes	
3.6	If Officers/ratings employed by a manning agency - Full style:	Officers: BUENA VISTA SHIPPING LLP Powai Mumbai Tel: 91 2240226757 Email: info@buenavistashipping.com		Ratings: BUENA VISTA SHIPPING LLP Powai Mumbai. Tel: 91 2240226757 Email: info@buenavistashipping.com. Thai Officers & Ratings: Pichainavee Corporation Co., Ltd. (PCC)3/1,3/3 Moo 2, Pakad Sub-District, Singhanakorn, Songklha Thailand 90330 Mob (+66)94-953-4562 Tel (+66)74-591-168 Email: Pcc.finance@pichainavee.co.th http://www.pichainavee.co.th	

4.	FOR USA CALLS		
4.1	Has the vessel Operator submitted a Vessel Spill Response Plan to the US Coast Guard which has been approved by official USCG letter?		
4.2	Qualified individual (QI) - Full style:		

4.3	Oil Spill Response Organization (OSRO) - Full style:	
4.4	Salvage and Marine Firefighting Services (SMFF) - Full Style:	

5.	SAFETY/HELICOPTER		
5.1	Is the vessel operated under a Quality Management System? If Yes, what type of system? (ISO9001 or IMO Resolution A.741(18) as amended):	Yes	IMO Resolution A.741(18)
5.2	Can the ship comply with the ICS Helicopter Guidelines?	Yes	
5.2.1	If Yes, state whether winching or landing area provided:	Winching	
5.2.2	If Yes, what is the diameter of the circle provided:	16.50 Metres	

6.	COATING/ANODES				
6.1	Tank Coating	Coated	Type	To What Extent	Anodes
	Cargo tanks:	Yes	INORGANIC ZINC	WHOLE TANKS	No
	Ballast tanks:	Yes	EPOXY PAINT	WHOLE TANKS	Yes
	Slop tanks:	Yes	Zinc	WHOLE TANK	Yes

7.	BALLAST				
7.1	Pumps	No.	Type	Capacity	At What Head
					(sg=1.0)
	Ballast Pumps:	1	VERTICAL CENTRIFUGAL TYPE	3,000 Cu. Metres/Hour	30 Metres
	Ballast Eductors:	1	LOW PRESSURE	200 Cu. Metres/Hour	30 Metres

8.	CARGO			
Double Hull Vessels				
8.1	Is vessel fitted with centerline bulkhead in all cargo tanks? If Yes, solid or perforated:		Yes, Solid	
Cargo Tank Capacities				
8.2	Number of cargo tanks and total cubic capacity (max% per company policy: 98%, 97%, 96% or 95%) excluding slops tanks:			118,218.40 Cu. Metres
8.2.1	Capacity (max% per company policy: 98%, 97%, 96% or 95%) of each natural segregation with double valve (specify tanks):		Seg#1: 38850.6 m3 (2 P/S,6 P/S) Seg#2: 39574.5 m3 (1P/S,4P/S,SLOP P/S) Seg#3: 40108.0 m3 (3 P/S, 5 P/S)	
8.2.2	IMO class (Oil/Chemical Ship Type 1, 2 or 3):			
8.3	Number of slop tanks and total cubic capacity (max% per company policy: 98%, 97%, 96% or 95%):			
8.3.1	Specify segregations which slops tanks belong to and their capacity with double valve:		Port side - 2866.9 Cu. Metres Seg#2 Starboard - 3181.5 Cu. Metres Seg#2	
8.3.2	Residual/retention oil tank(s) capacity (98%), if applicable:		314.70 Cu. Metres	
SBT Vessels				
8.3.3	What is total SBT capacity and percentage of SDWT vessel can maintain?		37,834.7 Cu. Metres	37.84 %
8.3.4	Does vessel meet the requirements of MARPOL Annex I Reg 18.2:		Yes	
Cargo Handling and Pumping Systems				
8.4	How many grades/products can vessel load/discharge with double valve segregation:		2	
8.5	Are there any cargo tank filling restrictions? If yes, specify number of slack tanks, max s.g., ullage restrictions etc.:		N/A MAX CARGO DENSITY 1.025	
8.6	Max loading rate for homogenous cargo		With VECS	Without VECS
	Loaded per manifold connection:		3,163.10 Cu. Metres/Hour	4,700.00 Cu. Metres/Hour
	Loaded simultaneously through all manifolds:		9,489.00 Cu. Metres/Hour	
Cargo Control Room				
8.7	Is ship fitted with a Cargo Control Room (CCR)?		Yes	
8.8	Can tank innage/ullage be read from the CCR?		Yes	
Gauging and Sampling				
8.9	Is gauging system certified and calibrated? If no, specify which ones are not calibrated:		Yes	

	What type of fixed closed tank gauging system is fitted:	Floating	
	Are high level alarms fitted to the cargo tanks? If Yes, indicate whether to all tanks or partial:	Yes, All	
8.9.1	Can cargo be transferred under closed loading conditions in accordance with ISGOTT 11.1.6.6?	Yes	
8.9.2	Are cargo tanks fitted with multipoint gauging? If yes, specify type and locations:	No	
8.10	Number of portable gauging units (example- MMC) on board:	3	

Vapor Emission Control System (VECS)			
8.11	Is a vapour return system (VRS) fitted?	Yes	
8.12	Number/size of VECS manifolds (per side):	2	400 Millimetres
8.13	Number/size/type of VECS reducers:	16" x 12" = 2 pc	
Venting			
8.14	State what type of venting system is fitted:	NIMURA HI JET	

Cargo Manifolds and Reducers			
8.15	Total number/size of cargo manifold connections on each side:	3/Main Cargo line = 450 mm Fix Cargo manifold = 16 inch	
8.16	What type of valves are fitted at manifold:	Butterfly	
8.17	What is the material/rating of the manifold:	ANSI STEEL/1,2,3	
8.17.1	Does vessel comply with the latest edition of the OCIMF 'Recommendations for Oil Tanker Manifolds and Associated Equipment'?	Yes	
8.18	Distance between cargo manifold centers:	2,500.00 Millimetres	
8.19	Distance ships rail to manifold:	4,600.00 Millimetres	
8.20	Distance manifold to ships side:	4,600.00 Millimetres	
8.21	Top of rail to center of manifold:	734.00 Millimetres	
8.22	Distance main deck to center of manifold:	1,750.00 Millimetres	
8.23	Spill tank grating to center of manifold:	900.00 Millimetres	
8.24	Manifold height above the waterline in normal ballast/at SDWT condition:	15.84 Metres	8.03 Metres
8.25	Number/size/type of reducers:	3 x 406.4/304.8mm (16/12") 3 x 406.4/254mm (16/10") 3 x 406.4/203.2mm (16/8") 1 x 304.8/203.2mm (12/8") 1 x 254/203.2mm (10/8") ANSI 150	
8.26	Is the vessel fitted with a stern manifold? If yes, state size:	No	

Heating				
8.27	Cargo/slop tanks fitted with a cargo heating system?	Type	Coiled	Material
	Cargo Tanks:	Steam	Yes	SS
	Slop Tanks:	Steam Heating Coil	Yes	SS
8.28	Maximum temperature cargo can be loaded/maintained:	65 °C / 149.0 °F		65 °C / 149.0 °F
8.28.1	Minimum temperature cargo can be loaded/maintained:	57.5 °C / 135.5 °F		57.5 °C / 135.5 °F

Inert Gas and Crude Oil Washing			
8.29	Is an Inert Gas System (IGS) fitted/operational?	Yes/Yes	
8.29.1	Is a Crude Oil Washing (COW) installation fitted/operational?	Yes/Yes	
8.30	Is IGS supplied by flue gas, inert gas (IG) generator and/or nitrogen:	Nitrogen Generator	

Cargo Pumps					
8.31	How many cargo pumps can be run simultaneously at full capacity:				3
8.32	Pumps	No.	Type	Capacity	At What Head (sg=1.0)
	Cargo Pumps:	2	Centrifugal	2500 M3/HR	130 Meters
	Cargo Eductors:	1		300 Cu. Metres/Hour	25 Meters
	Stripping:				
8.33	Is at least one emergency portable cargo pump provided?				

9.	MOORING
----	----------------

9.1	Wires (on drums)	No.	Diameter	Material	Length	Breaking Strength
	Forecastle:	6	32.00 Millimetres	GSWR	220.00 Metres	66.00 Metric Tonnes
	Main deck fwd:	2	32.00 Millimetres	GSWR	220.00 Metres	66.00 Metric Tonnes
	Main deck aft:	2	32.00 Millimetres	GSWR	220.00 Metres	66.00 Metric Tonnes
	Poop deck:	6	32.00 Millimetres	GSWR	220.00 Metres	66.00 Metric Tonnes
9.2	Wire tails					
	Forecastle:	6	72.00 Millimetres	GARFIL MAXIGOLD	11.00 Metres	132.80 Metric Tonnes
	Main deck fwd:	2	72.00 Millimetres	GARFIL MAXIGOLD	11.00 Metres	132.80 Metric Tonnes
	Main deck aft:	2	72.00 Millimetres	GARFIL MAXIGOLD	11.00 Metres	132.80 Metric Tonnes
	Poop deck:	6	72.00 Millimetres	MAGNARO	11.00 Metres	109.00 Metric Tonnes
9.3	Ropes (on drums)	No.	Diameter	Material	Length	Breaking Strength
	Forecastle:					
	Main deck fwd:					
	Main deck aft:					
	Poop deck:					
9.4	Other lines	No.	Diameter	Material	Length	Breaking Strength
	Forecastle:	3	64.00 Millimetres	PP/PES	220.00 Metres	74.60 Metric Tonnes
	Main deck fwd:					
	Main deck aft:					
	Poop deck:	3	64.00 Millimetres	PP/PES	220.00 Metres	74.60 Metric Tonnes
9.5	Winches	No.	No. Drums	Motive Power	Brake Capacity	Type of Brake
	Forecastle:	2	TRIPLE	HYDRAULIC	51.50 Metric Tonnes	Ferodo band
	Main deck fwd:	1	DOUBLE	HYDRAULIC	51.50 Metric Tonnes	Ferodo band
	Main deck aft:	1	DOUBLE	HYDRAULIC	51.50 Metric Tonnes	Ferodo band
	Poop deck:	2	TRIPLE	HYDRAULIC	51.50 Metric Tonnes	Ferodo band
9.6	Bits, closed chocks/fairleads		No. Bits	SWL Bits	No. Closed Chocks	SWL Closed Chocks
	Forecastle:		5	86 Metric Tonnes	14	63 Metric Tonnes
	Main deck fwd:		4	86 Metric Tonnes	8	80 Metric Tonnes
	Main deck aft:		4	86 Metric Tonnes	8	80 Metric Tonnes
	Poop deck:		4	86 Metric Tonnes	14	63 Metric Tonnes
Anchors/Emergency Towing System						
9.7	Number of shackles on port/starboard cable:				13/13	
9.8	Type/SWL of Emergency Towing system forward:				CHAIN STOPPER & FAIRLEADER	200 Metric Tonnes
9.9	Type/SWL of Emergency Towing system aft:				FAIRLEADER & STRONG POINT	200 Metric Tonnes
9.10.1	What is size of closed chock and/or fairleads of enclosed type on stern				600 x 450	
Escort Tug						
9.10.2	What is SWL of closed chock and/or fairleads of enclosed type on stern:				200.00 Metric Tonnes	
9.11	What is SWL of bollard on poop deck suitable for escort tug:				200.00 Metric Tonnes	
Lifting Equipment/Gangway						
9.12	Derrick/Crane description (Number, SWL and location):				Cranes: 1 x 15.00 Tonnes MAIN DECK ABOVE MANIFOLDS	

9.13	Accommodation ladder direction:	FORWARD TO AFT	
	Does vessel have a portable gangway? If yes, state length:	YES	
Single Point Mooring (SPM) Equipment			
9.14	Does the vessel meet the recommendations in the latest edition of OCIMF 'Recommendations for Equipment Employed in the Bow Mooring of Conventional Tankers at Single Point Moorings (SPM)'?	YES	
9.15	If fitted, how many chain stoppers:	2	
9.16	State type/SWL of chain stopper(s):	BAR TYPE	250.00 Metric Tonnes
9.17	What is the maximum size chain diameter the bow stopper(s) can handle:	76.00 Millimetres	
9.18	Distance between the bow fairlead and chain stopper/bracket:	2,700.00 Metres	
9.19	Is bow chock and/or fairlead of enclosed type of OCIMF recommended size (600mm x 450mm)? If not, give details of size:	YES	

10.	PROPULSION			
10.1	Speed		Maximum	Economical
	Ballast speed:			10.80 Knots (WSNP)
	Laden speed:			11.40 Knots (WSNP)
10.2	What type of fuel is used for main propulsion/generating plant:		IFO 380	IFO 380, LSFO, MGO LOW SULFUR
10.3	Type/Capacity of bunker tanks:		Fuel Oil: 3,057.40 Cu. Metres Diesel Oil: 218 Cu. Metres	
10.4	Is vessel fitted with fixed or controllable pitch propeller(s):		FIXED	
10.5	Engines	No	Capacity	Make/Type
	Main engine:	1	14,013 Kilowatt	Sulzer 7RTA5B
	Aux engine:	4	1,089 Kilowatt	Nyanmar 6N206L-UN
	Power packs:			
	Boilers:	1	40.00 Metric Tonnes/Hour	MHI MAC 40B
Bow/Stern Thruster				
10.6	What is brake horse power of bow thruster (if fitted):		NA	
10.7	What is brake horse power of stern thruster (if fitted):		NA	
Emissions				
10.8	Main engine IMO NOx emission standard:		NA	
10.9	Energy Efficiency Design Index (EEDI) rating number:		NA	

11.	SHIP TO SHIP TRANSFER			
11.1	Does vessel comply with recommendations contained in OCIMF/ICS Ship To Ship Transfer Guide (Petroleum, Chemicals or Liquefied Gas, as applicable)?	YES		
11.2	What is maximum outreach of cranes/derricks outboard of the ship’s side:	5.00 Metres		
11.3	Date/place of last STS operation:	15 TH March 2024 /Rossukon Thailand		

12.	RECENT OPERATIONAL HISTORY			
12.1	Last three cargoes/charterers/voyages (Last/2nd Last/3rd Last):			1. CRUDE OIL 2. FUEL OIL 3. FUEL OIL
12.2	Has vessel been involved in a pollution, grounding, serious casualty, unscheduled repair or collision incident during the past 12 months? If yes, provide details:			Pollution: No, Grounding: No, Casualty: No, Repair: No, Not Applicable Collision: No,
12.3	Date and place of last Port State Control inspection:			24TH AUG 2020, PORT ELIZABETH. SA

12.4	Any outstanding deficiencies as reported by any Port State Control? If yes, provide details:	NO
12.5	Recent Oil company inspections/screenings (To the best of owners knowledge and without guarantee of acceptance for future business)*: * "Approvals" are not given by Oil Majors and ships are accepted for the voyage on a case by case basis.	
12.6	Date/Place of last SIRE inspection:	Jun 14, 2019 / BALONGAN
12.7	Additional information relating to features of the ship or operational characteristics:	N/A

Revised 2018 ([INTERTANKO/Q88.com](http://www.intertanko.com))

Form completed on <http://www.q88.com/integration.aspx> Please email support@q88.com an updated copy if this is not the latest version.

ภาคผนวกเรือกักเก็บปิโตรเลียม-4

บันทึกต่าง ๆ ของเรือกักเก็บปิโตรเลียม Pride 1

- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.1 ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.2 ตัวอย่างสมุดบันทึกน้ำมัน
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.3 รายการเวชภัณฑ์สำหรับการปฐมพยาบาลและ
การรักษาพยาบาลเบื้องต้น
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.4 ตัวอย่างรายงานการตรวจประเมินความปลอดภัยและ
สุขลักษณะของสถานที่ทำงานและที่พักอาศัย
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.5 ตัวอย่างบันทึกปริมาณและรายการน้ำมัน และสารเคมี
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.6 รายการอุปกรณ์ระงับเหตุการณ์หกรั่วไหล และตัวอย่าง
รายงานการบำรุงรักษาเชิงป้องกัน
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.7 ตัวอย่างรายงานการเกิดอุบัติเหตุ
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.8 ตัวอย่างรายงานการฝึกซ้อมตอบสนองต่อเหตุฉุกเฉิน
- o ภาคผนวกเรือกักเก็บปิโตรเลียม-4.9 สถิติพนักงานที่พักอาศัยบนเรือกักเก็บปิโตรเลียม

ภาคผนวกเรือกักเก็บปิโตรเลียม-4.1

ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง

							Ship Name PRIDE 1
Sr No	WP Code	Job Title	Equipment Name	Date Assigned	Date Target	Date / RH Reported	User
1	C044	CENTRIFUGAL PUMP	ME AIR COOLER CHEM CLEANING PUMP	19-Jun-24	19-Jun-24	19-Jun-24	Chief Engineer
2	C046	GEAR PUMP	ME EXH VALVE BOOSTER PUMP NO1	1-Jan-24	1-Jan-24	1-Jan-24	Chief Engineer
3	C046	GEAR PUMP	ME EXH VALVE BOOSTER PUMP NO1	1-Jul-24	1-Jul-24	1-Jul-24	Chief Engineer
4	C046	GEAR PUMP	ME EXH VALVE BOOSTER PUMP NO2	5-Aug-24	5-Aug-24	5-Aug-24	Chief Engineer
5	C046	GEAR PUMP	ME EXH VALVE BOOSTER PUMP NO2	5-Feb-24	5-Feb-24	5-Feb-24	Chief Engineer
6	C046	GEAR PUMP	ME FUEL OIL SUPPLY PUMP NO2	23-Apr-24	23-Apr-24	23-Apr-24	Chief Engineer
7	C046	GEAR PUMP	ME FUEL OIL SUPPLY PUMP NO2	23-Oct-24	23-Oct-24	23-Oct-24	Chief Engineer
8	C046	GEAR PUMP	ME FUEL OIL SUPPLY PUMP NO2	23-Jul-24	23-Jul-24	23-Jul-24	Chief Engineer
9	C264	AUXILIARY BLOWER INSPECTION	ME AUX BLOWER NO1	7-Sep-24	5-Sep-24	5-Sep-24	Chief Engineer
10	C264	AUXILIARY BLOWER INSPECTION	ME AUX BLOWER NO2	25-Jul-24	25-Jul-24	25-Jul-24	Chief Engineer
11	C320	GOVERNOR CHECK	ME GOVERNOR	4-May-24	4-May-24	4-May-24	Chief Engineer
12	C320	GOVERNOR CHECK	ME GOVERNOR	4-Nov-24	4-Nov-24	4-Nov-24	Chief Engineer
13	C320	GOVERNOR CHECK	ME GOVERNOR	4-Aug-24	4-Aug-24	4-Aug-24	Chief Engineer
14	C323	SAFETY INSTRUMENTS CHECK	ME SAFETY EQUIP INSTRUMENTS AND GAUGES	2-Oct-24	2-Oct-24	2-Oct-24	Chief Engineer
15	C323	SAFETY INSTRUMENTS CHECK	ME SAFETY EQUIP INSTRUMENTS AND GAUGES	2-Feb-24	2-Feb-24	2-Apr-24	Chief Engineer
16	C664	FILTER INSPECTION	ME LUBE OIL AUTO FILTER / MANUAL BYPASS	20-Mar-24	20-Mar-24	20-Mar-24	Chief Engineer
17	C664	FILTER INSPECTION	ME LUBE OIL AUTO FILTER / MANUAL BYPASS	20-Jun-24	20-Jun-24	20-Jun-24	Chief Engineer
18	C664	FILTER INSPECTION	ME LUBE OIL AUTO FILTER / MANUAL BYPASS	20-Sep-24	20-Sep-24	20-Sep-24	Chief Engineer
19	C664	FILTER INSPECTION	ME FUEL OIL AUTO FILTER / MANUAL BYPASS	29-Aug-24	29-Aug-24	29-Aug-24	Chief Engineer
20	C664	FILTER INSPECTION	ME FUEL OIL AUTO FILTER / MANUAL BYPASS	29-May-24	29-May-24	29-May-24	Chief Engineer
21	C664	FILTER INSPECTION	ME FUEL OIL AUTO FILTER / MANUAL BYPASS	29-Feb-24	29-Feb-24	29-Feb-24	Chief Engineer
22	C664	FILTER INSPECTION	ME FUEL OIL AUTO FILTER / MANUAL BYPASS	29-Nov-24	29-Nov-24	29-Nov-24	Chief Engineer
23	C698	FAN INSPECTION	MEAT COLD CHAMBER FAN	14-Jul-24	14-Jul-24	14-Jul-24	Chief Engineer
24	C046	GEAR PUMP	ME FUEL OIL CIRC PUMP NO2	30-Sep-24	30-Sep-24	30-Sep-24	Chief Engineer
25	C046	GEAR PUMP	ME FUEL OIL CIRC PUMP NO2	30-Jun-24	30-Jun-24	30-Jun-24	Chief Engineer
26	C046	GEAR PUMP	ME FUEL OIL SUPPLY PUMP NO1	8-Apr-24	8-Apr-24	8-Apr-24	Chief Engineer
27	C046	GEAR PUMP	ME FUEL OIL SUPPLY PUMP NO1	8-Jul-24	8-Jul-24	8-Jul-24	Chief Engineer
28	C046	GEAR PUMP	ME FUEL OIL SUPPLY PUMP NO1	8-Oct-24	8-Oct-24	8-Oct-24	Chief Engineer
29	C046	GEAR PUMP	ME CAMSHAFT LUBE OIL PUMP NO1	5-Jul-24	5-Jul-24	5-Jul-24	Chief Engineer
30	C046	GEAR PUMP	ME CAMSHAFT LUBE OIL PUMP NO2	5-Jul-24	5-Jul-24	5-Jul-24	Chief Engineer

							Ship Name PRIDE 1
31	C046	GEAR PUMP	ME CAMSHAFT LUBE OIL DRAIN PUMP	1-Feb-24	1-Feb-24	1-Feb-24	Chief Engineer
32	C046	GEAR PUMP	ME CAMSHAFT LUBE OIL DRAIN PUMP	1-Aug-24	1-Aug-24	1-Aug-24	Chief Engineer
33	C053	CENTRIFUGAL PUMP	ME JACKET FRESH WATER COOLING PUMP NO1	17-Jul-24	17-Jul-24	17-Jul-24	Chief Engineer
34	C053	CENTRIFUGAL PUMP	ME JACKET FRESH WATER COOLING PUMP NO2	26-Jun-24	26-Jun-24	26-Jun-24	Chief Engineer
35	C064	ME CHECK H8000 - FUEL PP	ME FUEL PUMP NO2	11-Sep-24	11-Sep-24	22118	Chief Engineer
36	C064	ME CHECK H8000 - FUEL PP	ME FUEL PUMP NO3	11-Sep-24	11-Sep-24	22118	Chief Engineer
37	C064	ME CHECK H8000 - FUEL PP	ME FUEL PUMP NO4	11-Sep-24	11-Sep-24	22118	Chief Engineer
38	C064	ME CHECK H8000 - FUEL PP	ME FUEL PUMP NO5	11-Sep-24	11-Sep-24	22118	Chief Engineer
39	C064	ME CHECK H8000 - FUEL PP	ME FUEL PUMP NO6	11-Sep-24	11-Sep-24	22118	Chief Engineer
40	C064	ME CHECK H8000 - FUEL PP	ME FUEL PUMP NO1	11-Sep-24	11-Sep-24	22118	Chief Engineer
41	C065	ME - FUEL SYS	ME FUEL PUMP NO1	16-Jul-24	16-Jul-24	16-Jul-24	Chief Engineer
42	C065	ME - FUEL SYS	ME FUEL PUMP NO1	16-Oct-23	16-Oct-23	16-Oct-23	Chief Engineer
43	C065	ME - FUEL SYS	ME FUEL PUMP NO6	14-Jul-24	14-Jul-24	14-Jul-24	Chief Engineer
44	C065	ME - FUEL SYS	ME FUEL PUMP NO6	14-Oct-23	14-Oct-23	14-Oct-23	Chief Engineer
45	C065	ME - FUEL SYS	ME FUEL PUMP NO5	13-Jul-24	13-Jul-24	13-Jul-24	Chief Engineer
46	C065	ME - FUEL SYS	ME FUEL PUMP NO5	13-Oct-23	13-Oct-23	13-Oct-23	Chief Engineer
47	C065	ME - FUEL SYS	ME FUEL PUMP NO4	16-Jul-24	16-Jul-24	16-Jul-24	Chief Engineer
48	C065	ME - FUEL SYS	ME FUEL PUMP NO4	16-Oct-23	16-Oct-23	16-Oct-23	Chief Engineer
49	C065	ME - FUEL SYS	ME FUEL PUMP NO3	14-Jul-24	14-Jul-24	14-Jul-24	Chief Engineer
50	C065	ME - FUEL SYS	ME FUEL PUMP NO3	14-Oct-23	14-Oct-23	14-Oct-23	Chief Engineer
51	C065	ME - FUEL SYS	ME FUEL PUMP NO2	16-Jul-24	16-Jul-24	16-Jul-24	Chief Engineer
52	C065	ME - FUEL SYS	ME FUEL PUMP NO2	16-Oct-23	16-Oct-23	16-Oct-23	Chief Engineer
53	C066	ME CHECK H8000 - DAMPER	ME AUX VIBRATION DAMPER	11-Sep-24	11-Sep-24	22118	Chief Engineer
54	C070	ME (MAIN BRG)	ME MAIN BEARING NO1	11-Sep-24	11-Sep-24	22118	Chief Engineer
55	C070	ME (MAIN BRG)	ME MAIN BEARING NO2	11-Sep-24	11-Sep-24	22118	Chief Engineer
56	C070	ME (MAIN BRG)	ME MAIN BEARING NO3	11-Sep-24	11-Sep-24	22118	Chief Engineer
57	C070	ME (MAIN BRG)	ME MAIN BEARING NO4	11-Sep-24	11-Sep-24	22118	Chief Engineer
58	C070	ME (MAIN BRG)	ME MAIN BEARING NO5	11-Sep-24	11-Sep-24	22118	Chief Engineer
59	C070	ME (MAIN BRG)	ME MAIN BEARING NO6	11-Sep-24	11-Sep-24	22118	Chief Engineer
60	C070	ME (MAIN BRG)	ME MAIN BEARING NO8	11-Sep-24	11-Sep-24	22118	Chief Engineer
61	C071	ME (CH&RP BRG)	ME CROSSHEAD CON-ROD AND GUIDES NO1	11-Sep-24	11-Sep-24	22118	Chief Engineer
62	C072	ME (CRANKPIN) S70MC-C	ME CRANKPIN BEARINGS NO1	11-Sep-24	11-Sep-24	22118	Chief Engineer
63	C073	ME (CHAINS) S70MC-C	ME CAMSHAFT DRIVE (CHAINS)	11-Sep-24	11-Sep-24	22118	Chief Engineer
64	C074	OIL MIST DETECTOR M1	ME OIL MIST DETECTOR	19-Jun-24	19-Jun-24	19-Jun-24	Chief Engineer
65	C074	OIL MIST DETECTOR M1	ME OIL MIST DETECTOR	19-Jul-24	19-Jul-24	19-Jul-24	Chief Engineer
66	C074	OIL MIST DETECTOR M1	ME OIL MIST DETECTOR	13-Oct-24	13-Oct-24	13-Oct-24	Chief Engineer
67	C074	OIL MIST DETECTOR M1	ME OIL MIST DETECTOR	13-Sep-24	13-Sep-24	13-Sep-24	Chief Engineer

				Ship Name PRIDE 1			
68	C074	OIL MIST DETECTOR M1	ME OIL MIST DETECTOR	19-Aug-24	13-Aug-24	13-Aug-24	Chief Engineer
69	C074	OIL MIST DETECTOR M1	ME OIL MIST DETECTOR	13-Nov-24	13-Nov-24	13-Nov-24	Chief Engineer
70	C074	OIL MIST DETECTOR M1	ME OIL MIST DETECTOR	19-May-24	19-May-24	19-May-24	Chief Engineer
71	C074	OIL MIST DETECTOR M1	ME OIL MIST DETECTOR	20-Apr-24	20-Apr-24	20-Apr-24	Chief Engineer
72	C154	TURNING GEAR CHECK	ME TURNING GEAR	20-Nov-24	20-Nov-24	20-Nov-24	Chief Engineer
73	C173	ME (CAMSHAFT)	ME CAMSHAFT AND CAMS	11-Sep-24	11-Sep-24	22118	Chief Engineer
74	C262	STARTING AIR SYSTEM INSPECTION	ME AIR DISTRIBUTOR	11-Sep-24	11-Sep-24	22118	Chief Engineer
75	T054	NAUTICAL EQUIPMENT FUNCTION TEST	ME RPM INDICATOR FUNCTION TEST	10-Sep-24	10-Sep-24	10-Sep-24	Chief Engineer
76	T054	NAUTICAL EQUIPMENT FUNCTION TEST	ME RPM INDICATOR FUNCTION TEST	10-Jun-24	10-Jun-24	10-Jun-24	Chief Engineer
77	T054	NAUTICAL EQUIPMENT FUNCTION TEST	ME RPM INDICATOR FUNCTION TEST	10-Dec-24	10-Dec-24	10-Dec-24	Chief Engineer
78	T054	NAUTICAL EQUIPMENT FUNCTION TEST	ME RPM INDICATOR FUNCTION TEST	7-Apr-24	7-Apr-24	7-Apr-24	Chief Engineer
79	O064	ME EXHAUST VALVE	ME EXH VALVE NO2	15-Jul-24	15-Jul-24	15-Jul-24	Chief Engineer
80	O064	ME EXHAUST VALVE	ME EXH VALVE NO3	16-Jul-24	16-Jul-24	16-Jul-24	Chief Engineer
81	O064	ME EXHAUST VALVE	ME EXH VALVE NO3	16-Oct-23	16-Oct-23	16-Oct-23	Chief Engineer
82	O064	ME EXHAUST VALVE	ME EXH VALVE NO4	16-Jul-24	16-Jul-24	16-Jul-24	Chief Engineer
83	O064	ME EXHAUST VALVE	ME EXH VALVE NO4	16-Oct-23	16-Oct-23	16-Oct-23	Chief Engineer
84	O064	ME EXHAUST VALVE	ME EXH VALVE NO5	13-Jul-24	13-Jul-24	13-Jul-24	Chief Engineer
85	O064	ME EXHAUST VALVE	ME EXH VALVE NO5	13-Oct-23	13-Oct-23	13-Oct-23	Chief Engineer
86	O064	ME EXHAUST VALVE	ME EXH VALVE NO1	1-Oct-24	1-Oct-24	1-Oct-24	Chief Engineer
87	O064	ME EXHAUST VALVE	ME EXH VALVE NO1	1-Jan-24	1-Jan-24	1-Jan-24	Chief Engineer
88	O065	ME (ACTUATOR) S70MC-C	ME HYD PUMP FOR EXH VV+GEAR NO1	11-Sep-24	11-Sep-24	22118	Chief Engineer
89	O065	ME (ACTUATOR) S70MC-C	ME HYD PUMP FOR EXH VV+GEAR NO5	11-Sep-24	11-Sep-24	22118	Chief Engineer
90	O065	ME (ACTUATOR) S70MC-C	ME HYD PUMP FOR EXH VV+GEAR NO3	11-Sep-24	11-Sep-24	22118	Chief Engineer
91	O065	ME (ACTUATOR) S70MC-C	ME HYD PUMP FOR EXH VV+GEAR NO2	11-Sep-24	11-Sep-24	22118	Chief Engineer
92	O065	ME (ACTUATOR) S70MC-C	ME HYD PUMP FOR EXH VV+GEAR NO6	11-Sep-24	11-Sep-24	22118	Chief Engineer
93	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO1	16-Jul-24	16-Jul-24	16-Jul-24	Chief Engineer
94	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO1	16-Oct-23	16-Oct-23	16-Oct-23	Chief Engineer
95	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO3	16-Oct-23	16-Oct-23	16-Oct-23	Chief Engineer
96	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO3	16-Jul-24	16-Jul-24	16-Jul-24	Chief Engineer
97	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO2	15-Aug-24	15-Aug-24	15-Aug-24	Chief Engineer
98	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO2	15-Feb-24	15-Feb-24	15-Feb-24	Chief Engineer
99	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO8	18-Oct-23	18-Oct-23	18-Oct-23	Chief Engineer
100	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO8	18-Jul-24	18-Jul-24	18-Jul-24	Chief Engineer
101	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO6	6-Jul-24	6-Jul-24	6-Jul-24	Chief Engineer
102	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO7	18-Jul-24	18-Jul-24	18-Jul-24	Chief Engineer
103	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO7	18-Oct-23	18-Oct-23	18-Oct-23	Chief Engineer
104	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO5	6-Jul-24	6-Jul-24	6-Jul-24	Chief Engineer

				Ship Name PRIDE 1			
105	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO4	17-Jul-24	17-Jul-24	17-Jul-24	Chief Engineer
106	O066	ME (MAIN BRG) S70MC-C	ME MAIN BEARING NO4	17-Oct-23	17-Oct-23	17-Oct-23	Chief Engineer
107	O067	ME (THRUST BRG) CHECK	ME THRUST BEARING	11-Sep-24	11-Sep-24	22118	Chief Engineer
108	O484	FAN INSPECTION-OVERHAULING-CLASS SURVEY	MEAT COLD CHAMBER FAN	22-Jul-23	22-Jul-23	22-Jul-23	Chief Engineer
109	O606	OVERHAULING-CLEAN STEAM HEATERS	ME FUEL OIL HEATER NO1	13-Oct-23	13-Oct-23	13-Oct-23	Chief Engineer
110	O606	OVERHAULING-CLEAN STEAM HEATERS	ME JACKET FRESH WATER PRE HEATER	18-Oct-24	18-Oct-24	18-Oct-24	Chief Engineer
111	O606	OVERHAULING-CLEAN STEAM HEATERS	ME JACKET FRESH WATER PRE HEATER	18-Oct-23	18-Oct-23	18-Oct-23	Chief Engineer
112	O608	OVERHAULING-CLEANING COOLER	ME JACKET FRESH WATER COOLER	26-Jun-24	26-Jun-24	26-Jun-24	Chief Engineer
113	T220	LUBRICANTS ANALYSIS	ME LUBE OIL SYSTEM	21-Jun-24	21-Jun-24	21-Jun-24	Chief Engineer
114	T220	LUBRICANTS ANALYSIS	ME LUBE OIL SYSTEM	21-Sep-24	21-Sep-24	21-Sep-24	Chief Engineer
115	T220	LUBRICANTS ANALYSIS	ME LUBE OIL SYSTEM	20-Mar-24	20-Mar-24	20-Mar-24	Chief Engineer
116	W041	CLEAN SCAVENGE SPACE	ME PISTON WITH CONNECTING ROD NO5	11-Sep-24	11-Sep-24	22118	Chief Engineer
117	W041	CLEAN SCAVENGE SPACE	ME PISTON WITH CONNECTING ROD NO6	11-Sep-24	11-Sep-24	22118	Chief Engineer
118	W041	CLEAN SCAVENGE SPACE	ME PISTON WITH CONNECTING ROD NO4	11-Sep-24	11-Sep-24	22118	Chief Engineer
119	W041	CLEAN SCAVENGE SPACE	ME PISTON WITH CONNECTING ROD NO3	11-Sep-24	11-Sep-24	22118	Chief Engineer
120	W041	CLEAN SCAVENGE SPACE	ME PISTON WITH CONNECTING ROD NO1	11-Sep-24	11-Sep-24	22118	Chief Engineer
121	W041	CLEAN SCAVENGE SPACE	ME PISTON WITH CONNECTING ROD NO2	11-Sep-24	11-Sep-24	22118	Chief Engineer
122	W045	OIL MIST DETECTOR	ME OIL MIST DETECTOR	12-May-24	12-May-24	12-May-24	Chief Engineer
123	W045	OIL MIST DETECTOR	ME OIL MIST DETECTOR	12-Nov-24	12-Nov-24	12-Nov-24	Chief Engineer
124	W075	JENSEN LUBRICATOR	ME CYL LUBRICATOR	1-Dec-24	1-Dec-24	1-Dec-24	Chief Engineer
125	W075	JENSEN LUBRICATOR	ME CYL LUBRICATOR	1-Mar-24	1-Mar-24	1-Mar-24	Chief Engineer
126	W075	JENSEN LUBRICATOR	ME CYL LUBRICATOR	1-Sep-24	1-Sep-24	1-Sep-24	Chief Engineer
127	W075	JENSEN LUBRICATOR	ME CYL LUBRICATOR	1-Jun-24	1-Jun-24	1-Jun-24	Chief Engineer
128	W280	M-E AIR COOLER CHEMICAL CLEANING	ME AIR COOLER NO2	17-Mar-24	17-Mar-24	17-Mar-24	Chief Engineer
129	W280	M-E AIR COOLER CHEMICAL CLEANING	ME AIR COOLER NO2	17-Sep-24	17-Sep-24	17-Sep-24	Chief Engineer
130	W280	M-E AIR COOLER CHEMICAL CLEANING	ME AIR COOLER NO2	17-Jun-24	17-Jun-24	17-Jun-24	Chief Engineer
131	W280	M-E AIR COOLER CHEMICAL CLEANING	ME AIR COOLER NO1	11-Sep-24	11-Sep-24	22118	Chief Engineer
132	T001	TEMPERATURE TEST	NO1 ME AIR COOLER CSW OUT TEMP	21-Jun-24	21-Jun-24	21-Jun-24	Chief Engineer
133	T001	TEMPERATURE TEST	NO1 ME AIR COOLER CSW OUT TEMP	21-Sep-24	21-Sep-24	21-Sep-24	Chief Engineer
134	T001	TEMPERATURE TEST	NO1 ME AIR COOLER CSW OUT TEMP	21-Mar-24	21-Mar-24	21-Mar-24	Chief Engineer
135	T001	TEMPERATURE TEST	NO2 ME AIR COOLER CSW OUT TEMP	2-Dec-24	2-Dec-24	2-Dec-24	Chief Engineer
136	T001	TEMPERATURE TEST	NO2 ME AIR COOLER CSW OUT TEMP	2-Mar-24	2-Mar-24	2-Mar-24	Chief Engineer
137	T001	TEMPERATURE TEST	NO2 ME AIR COOLER CSW OUT TEMP	2-Sep-24	2-Sep-24	2-Sep-24	Chief Engineer

		Ship Name PRIDE 1					
Sr No	WP Code	Job Title	Equipment Name	Date Assigned	Date Target	Date / RH Reported	User
1	T601	DIESEL GENERATOR REGULATING M1	CONTROL AND SAFETY SYSTEMS - DG2	7-Mar-24	7-Mar-24	7-Mar-24	Chief Engineer
2	T601	DIESEL GENERATOR REGULATING M1	CONTROL AND SAFETY SYSTEMS - DG1	10-Apr-24	10-Apr-24	10-Apr-24	Chief Engineer
3	T601	DIESEL GENERATOR REGULATING M1	CONTROL AND SAFETY SYSTEMS - DG3	17-Mar-24	17-Mar-24	17-Mar-24	Chief Engineer
4	T601	DIESEL GENERATOR REGULATING M1	CONTROL AND SAFETY SYSTEMS - DG3	11-Apr-24	11-Apr-24	11-Apr-24	Chief Engineer
5	T601	DIESEL GENERATOR REGULATING M1	CONTROL AND SAFETY SYSTEMS - DG2	30-Apr-24	30-Apr-24	30-Apr-24	Chief Engineer
6	T601	DIESEL GENERATOR REGULATING M1	CONTROL AND SAFETY SYSTEMS - DG1	7-May-24	7-May-24	7-May-24	Chief Engineer
7	T601	DIESEL GENERATOR REGULATING M1	CONTROL AND SAFETY SYSTEMS - DG3	10-May-24	10-May-24	10-May-24	Chief Engineer
8	W046	CLEAN THE COOLER	AIR COOLER - DG1	9-Sep-24	9-Sep-24	71565	Chief Engineer
9	W046	CLEAN THE COOLER	LO COOLER - DG3	18-Aug-24	18-Aug-24	68678	Chief Engineer
10	W046	CLEAN THE COOLER	AIR COOLER - DG3	12-Aug-24	12-Aug-24	68678	Chief Engineer
11	W046	CLEAN THE COOLER	LO COOLER - DG2	11-Sep-24	11-Sep-24	67624	Chief Engineer
12	W046	CLEAN THE COOLER	AIR COOLER - DG2	11-Sep-24	11-Sep-24	67624	Chief Engineer
13	W046	CLEAN THE COOLER	LO COOLER - DG1	9-Sep-24	9-Sep-24	71565	Chief Engineer
14	W049	CLEAN ROTOR ASEMBLY	OIL CLEANING CENTRIFUGE NO-1 AE DG1	24-Oct-24	24-Oct-24	24-Oct-24	Chief Engineer
15	W049	CLEAN ROTOR ASEMBLY	OIL CLEANING CENTRIFUGE NO- 2 AE DG2	5-Dec-24	5-Dec-24	5-Dec-24	Chief Engineer
16	W049	CLEAN ROTOR ASEMBLY	OIL CLEANING CENTRIFUGE NO-1 AE DG1	29-Apr-24	29-Apr-24	29-Apr-24	Chief Engineer
17	W049	CLEAN ROTOR ASEMBLY	OIL CLEANING CENTRIFUGE NO- 2 AE DG2	17-Mar-24	17-Mar-24	17-Mar-24	Chief Engineer
18	W049	CLEAN ROTOR ASEMBLY	OIL CLEANING CENTRIFUGE NO- 2 AE DG2	5-Jun-24	5-Jun-24	5-Jun-24	Chief Engineer
19	W049	CLEAN ROTOR ASEMBLY	OIL CLEANING CENTRIFUGE NO-1 AE DG1	29-Jul-24	24-Jul-24	24-Jul-24	Chief Engineer
20	W049	CLEAN ROTOR ASEMBLY	OIL CLEANING CENTRIFUGE NO-3 AE DG3	11-Jun-24	11-Jun-24	68678	Chief Engineer
21	W049	CLEAN ROTOR ASEMBLY	OIL CLEANING CENTRIFUGE NO- 2 AE DG2	5-Sep-24	5-Sep-24	5-Sep-24	Chief Engineer
22	W050	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	11-Sep-24	11-Sep-24	11-Sep-24	Chief Engineer
23	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	5-Sep-24	5-Sep-24	5-Sep-24	Chief Engineer
24	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	29-Aug-24	29-Aug-24	29-Aug-24	Chief Engineer
25	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	29-Aug-24	29-Aug-24	29-Aug-24	Chief Engineer
26	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	29-Aug-24	29-Aug-24	29-Aug-24	Chief Engineer
27	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	5-Sep-24	5-Sep-24	5-Sep-24	Chief Engineer
28	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	5-Sep-24	5-Sep-24	5-Sep-24	Chief Engineer
29	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	22-Aug-24	22-Aug-24	22-Aug-24	Chief Engineer
30	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	22-Aug-24	22-Aug-24	22-Aug-24	Chief Engineer
31	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	22-Aug-24	22-Aug-24	22-Aug-24	Chief Engineer
32	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	15-Aug-24	15-Aug-24	15-Aug-24	Chief Engineer
33	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	15-Aug-24	15-Aug-24	15-Aug-24	Chief Engineer
34	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	15-Aug-24	15-Aug-24	15-Aug-24	Chief Engineer
35	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	12-Sep-24	12-Sep-24	12-Sep-24	Chief Engineer
36	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	12-Sep-24	12-Sep-24	12-Sep-24	Chief Engineer
37	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	12-Sep-24	12-Sep-24	12-Sep-24	Chief Engineer
38	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	1-Aug-24	1-Aug-24	1-Aug-24	Chief Engineer
39	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	1-Aug-24	1-Aug-24	1-Aug-24	Chief Engineer

		Ship Name PRIDE 1					
40	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	1-Aug-24	1-Aug-24	1-Aug-24	Chief Engineer
41	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	25-Jul-24	25-Jul-24	25-Jul-24	Chief Engineer
42	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	25-Jul-24	25-Jul-24	25-Jul-24	Chief Engineer
43	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	25-Jul-24	25-Jul-24	25-Jul-24	Chief Engineer
44	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	8-Aug-24	8-Aug-24	8-Aug-24	Chief Engineer
45	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	8-Aug-24	8-Aug-24	8-Aug-24	Chief Engineer
46	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	8-Aug-24	8-Aug-24	8-Aug-24	Chief Engineer
47	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	18-Jul-24	18-Jul-24	18-Jul-24	Chief Engineer
48	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	18-Jul-24	18-Jul-24	18-Jul-24	Chief Engineer
49	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	18-Jul-24	18-Jul-24	18-Jul-24	Chief Engineer
50	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	11-Jul-24	11-Jul-24	11-Jul-24	Chief Engineer
51	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	11-Jul-24	11-Jul-24	11-Jul-24	Chief Engineer
52	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	11-Jul-24	11-Jul-24	11-Jul-24	Chief Engineer
53	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	8-Jun-24	8-Jun-24	8-Jun-24	Chief Engineer
54	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	8-Jun-24	8-Jun-24	8-Jun-24	Chief Engineer
55	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	13-Jun-24	13-Jun-24	13-Jun-24	Chief Engineer
56	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	13-Jun-24	13-Jun-24	13-Jun-24	Chief Engineer
57	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	13-Jun-24	13-Jun-24	13-Jun-24	Chief Engineer
58	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	1-Jun-24	1-Jun-24	1-Jun-24	Chief Engineer
59	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	1-Jun-24	1-Jun-24	1-Jun-24	Chief Engineer
60	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	25-May-24	25-May-24	25-May-24	Chief Engineer
61	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	25-May-24	25-May-24	25-May-24	Chief Engineer
62	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	6-Jun-24	6-Jun-24	6-Jun-24	Chief Engineer
63	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	30-May-24	30-May-24	30-May-24	Chief Engineer
64	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	4-Jul-24	4-Jul-24	4-Jul-24	Chief Engineer
65	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	4-Jul-24	4-Jul-24	4-Jul-24	Chief Engineer
66	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	4-Jul-24	4-Jul-24	4-Jul-24	Chief Engineer
67	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	20-Jun-24	20-Jun-24	20-Jun-24	Chief Engineer
68	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	20-Jun-24	20-Jun-24	20-Jun-24	Chief Engineer
69	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	20-Jun-24	20-Jun-24	20-Jun-24	Chief Engineer
70	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	27-Jun-24	27-Jun-24	27-Jun-24	Chief Engineer
71	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	27-Jun-24	27-Jun-24	27-Jun-24	Chief Engineer
72	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	27-Jun-24	27-Jun-24	27-Jun-24	Chief Engineer
73	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	5-May-24	5-May-24	5-May-24	Chief Engineer
74	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	5-May-24	5-May-24	5-May-24	Chief Engineer
75	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	10-Apr-24	10-Apr-24	10-Apr-24	Chief Engineer
76	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	13-Apr-24	13-Apr-24	13-Apr-24	Chief Engineer
77	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	14-Apr-24	14-Apr-24	14-Apr-24	Chief Engineer
78	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	30-Mar-24	30-Mar-24	30-Mar-24	Chief Engineer
79	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	4-Apr-24	4-Apr-24	4-Apr-24	Chief Engineer
80	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	28-Apr-24	28-Apr-24	28-Apr-24	Chief Engineer

				Ship Name	PRIDE 1		
81	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	28-Apr-24	28-Apr-24	28-Apr-24	Chief Engineer
82	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	2-May-24	2-May-24	2-May-24	Chief Engineer
83	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	9-May-24	9-May-24	9-May-24	Chief Engineer
84	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	21-Apr-24	21-Apr-24	21-Apr-24	Chief Engineer
85	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	17-Apr-24	17-Apr-24	17-Apr-24	Chief Engineer
86	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	25-Apr-24	25-Apr-24	25-Apr-24	Chief Engineer
87	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	21-Apr-24	21-Apr-24	21-Apr-24	Chief Engineer
88	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	5-Dec-24	5-Dec-24	5-Dec-24	Chief Engineer
89	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	5-Dec-24	5-Dec-24	5-Dec-24	Chief Engineer
90	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	5-Dec-24	5-Dec-24	5-Dec-24	Chief Engineer
91	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	12-Dec-24	12-Dec-24	12-Dec-24	Chief Engineer
92	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	12-Dec-24	12-Dec-24	12-Dec-24	Chief Engineer
93	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	12-Dec-24	12-Dec-24	12-Dec-24	Chief Engineer
94	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	7-Apr-24	7-Apr-24	7-Apr-24	Chief Engineer
95	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	6-Apr-24	6-Apr-24	6-Apr-24	Chief Engineer
96	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	30-Mar-24	30-Mar-24	30-Mar-24	Chief Engineer
97	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	24-Oct-24	24-Oct-24	24-Oct-24	Chief Engineer
98	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	24-Oct-24	24-Oct-24	24-Oct-24	Chief Engineer
99	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	24-Oct-24	24-Oct-24	24-Oct-24	Chief Engineer
100	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	31-Oct-24	31-Oct-24	31-Oct-24	Chief Engineer
101	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	31-Oct-24	31-Oct-24	31-Oct-24	Chief Engineer
102	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	31-Oct-24	31-Oct-24	31-Oct-24	Chief Engineer
103	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	7-Nov-24	7-Nov-24	7-Nov-24	Chief Engineer
104	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	7-Nov-24	7-Nov-24	7-Nov-24	Chief Engineer
105	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	7-Nov-24	7-Nov-24	7-Nov-24	Chief Engineer
106	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	14-Nov-24	14-Nov-24	14-Nov-24	Chief Engineer
107	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	14-Nov-24	14-Nov-24	14-Nov-24	Chief Engineer
108	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	14-Nov-24	14-Nov-24	14-Nov-24	Chief Engineer
109	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	21-Nov-24	21-Nov-24	21-Nov-24	Chief Engineer
110	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	21-Nov-24	21-Nov-24	21-Nov-24	Chief Engineer
111	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	21-Nov-24	21-Nov-24	21-Nov-24	Chief Engineer
112	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	28-Nov-24	28-Nov-24	28-Nov-24	Chief Engineer
113	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	28-Nov-24	28-Nov-24	28-Nov-24	Chief Engineer
114	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	28-Nov-24	28-Nov-24	28-Nov-24	Chief Engineer
115	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	3-Oct-24	3-Oct-24	3-Oct-24	Chief Engineer
116	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	3-Oct-24	3-Oct-24	3-Oct-24	Chief Engineer
117	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	3-Oct-24	3-Oct-24	3-Oct-24	Chief Engineer
118	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	3-Oct-24	3-Oct-24	3-Oct-24	Chief Engineer
119	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	10-Oct-24	10-Oct-24	10-Oct-24	Chief Engineer
120	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	10-Oct-24	10-Oct-24	10-Oct-24	Chief Engineer
121	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	10-Oct-24	10-Oct-24	10-Oct-24	Chief Engineer

				Ship Name	PRIDE 1		
122	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	17-Oct-24	17-Oct-24	17-Oct-24	Chief Engineer
123	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	17-Oct-24	17-Oct-24	17-Oct-24	Chief Engineer
124	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	17-Oct-24	17-Oct-24	17-Oct-24	Chief Engineer
125	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	26-Sep-24	26-Sep-24	26-Sep-24	Chief Engineer
126	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	26-Sep-24	26-Sep-24	26-Sep-24	Chief Engineer
127	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	26-Sep-24	26-Sep-24	26-Sep-24	Chief Engineer
128	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	19-Sep-24	19-Sep-24	19-Sep-24	Chief Engineer
129	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	19-Sep-24	19-Sep-24	19-Sep-24	Chief Engineer
130	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	19-Sep-24	19-Sep-24	19-Sep-24	Chief Engineer
131	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	19-May-24	19-May-24	19-May-24	Chief Engineer
132	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	19-May-24	19-May-24	19-May-24	Chief Engineer
133	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	23-May-24	23-May-24	23-May-24	Chief Engineer
134	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG3	12-May-24	12-May-24	12-May-24	Chief Engineer
135	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG2	12-May-24	12-May-24	12-May-24	Chief Engineer
136	W282	TURBOCHARGER WATER WASHING	TURBOCHARGER - DG1	16-May-24	16-May-24	16-May-24	Chief Engineer
137	I031	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	20-Aug-24	20-Aug-24	20-Aug-24	Chief Engineer
138	I031	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	20-Jul-24	20-Jul-24	20-Jul-24	Chief Engineer
139	I031	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	20-Jun-24	20-Jun-24	20-Jun-24	Chief Engineer
140	I031	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	20-Apr-24	20-Apr-24	20-Apr-24	Chief Engineer
141	I031	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	20-Sep-24	20-Sep-24	20-Sep-24	Chief Engineer
142	I031	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	20-Oct-24	20-Oct-24	20-Oct-24	Chief Engineer
143	I031	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	20-Nov-24	20-Nov-24	20-Nov-24	Chief Engineer
144	I031	VISCOTHERM	DG VISCOSITY CONTROL SYSTEM	20-May-24	20-May-24	20-May-24	Chief Engineer
145	K004	D-G GOVERNOR OIL CHANGE	GOVERNOR - DG3	26-Jun-24	26-Jun-24	68678	Chief Engineer
146	K004	D-G GOVERNOR OIL CHANGE	GOVERNOR - DG1	9-Sep-24	9-Sep-24	71565	Chief Engineer
147	K004	D-G GOVERNOR OIL CHANGE	GOVERNOR - DG2	11-Sep-24	11-Sep-24	67624	Chief Engineer
148	K007	D-G GENERATOR OIL CHANGE	LO SYSTEM - DG1	9-Sep-24	9-Sep-24	71565	Chief Engineer
149	K007	D-G GENERATOR OIL CHANGE	LO SYSTEM - DG3	11-Aug-24	11-Aug-24	68678	Chief Engineer
150	K007	D-G GENERATOR OIL CHANGE	LO SYSTEM - DG2	11-Sep-24	11-Sep-24	67624	Chief Engineer
151	O081	DIESEL GENERATOR ENGINE - B&W DG	DG NO3(P) - DG3	19-Oct-23	19-Oct-23	68678	Chief Engineer
152	O081	DIESEL GENERATOR ENGINE - B&W DG	DG NO2(CNTR) - DG2	11-Sep-24	11-Sep-24	67624	Chief Engineer
153	O081	DIESEL GENERATOR ENGINE - B&W DG	DG NO1 (S) - DG1	9-Sep-24	9-Sep-24	71565	Chief Engineer
154	O082	AIR COOLER OVERHAUL - B&W DG	AIR COOLER - DG1	9-Sep-24	9-Sep-24	71565	Chief Engineer
155	O082	AIR COOLER OVERHAUL - B&W DG	AIR COOLER - DG2	11-Sep-24	11-Sep-24	67624	Chief Engineer
156	O082	AIR COOLER OVERHAUL - B&W DG	AIR COOLER - DG3	17-May-24	17-May-24	68678	Chief Engineer
157	O083	DIESEL GENERATOR ENGINE - B&W DG	DG NO3(P) - DG3	19-Oct-23	19-Oct-23	68678	Chief Engineer

ME & AE BEARING RUNNING HOURS (R/H)

Vessel
Month

M T PRIDE 1
Nov-24

R/H last Month : 8928.2
R/H this Month : 8928.2
Total this month : 0

Main Engine

Cyl. No

EXHAUST VALVE

PISTIN & STUFFING BOX

Fuel Valves

Fuel Pumps

Main Bearing

X-Head Brq

Crankpin Brq

Running Hours Since Last Renewal

1	2	3	4	5	6	7	8	9	10	M/E T/Charger
87	87	87	87	87	87	87				Date O/H
87	87	87	87	87	87	87				19-Oct-23
87	87	87	87	87	87	87				AT R/H
87	87	87	87	87	87	87				8928.2
87	87	87	87	87	87	87				
87	87	87	87	87	87	87				
87	87	87	87	87	87	87				
87	87	87	87	87	87	87				

Aux Engine No.1

Cyl. No

Bottom End Brq

Bottom End Bolts

Main Bearing Check

Liners

Plunger/Barrels

Injector nozzle

Running Hours Since Last Renewal

Monthly R/H:- 127

Aux Eng. #1

A/E No.1 T/Charger

1	2	3	4	5	6	7	8	Since Last Top O/H	878	Hours Since	
878	878	878	878	878	878			Since Last Compl O/H	878	Rotor Chngd	72996
8934	8934	8934	8934	8934	8934			Since Last Oil Chng	878	Casing Chngd	Catridge renewd @92861
878	878	878	878	878	878			Total R/Hours	72996		Nozzle ring renewed @92861
8934	8934	8934	8934	8934	8934			Prev. Month	127		
878	878	878	878	878	878			Thrust brq	8934		LAST O/H IN OCT24
878	878	878	878	878	878						

Aux Engine No.3

Cyl. No

Bottom End Brq

Bottom End Bolts

Main Bearing Check

Liners

Plunger/Barrels

Injector nozzle

Running Hours Since Last Renewal

Monthly R/H:-356

Aux Eng No.3

A/E No.3 T/Charger

1	2	3	4	5	6	7	8	Since Last Top O/H	1524	Hours Since	
2796	2796	2796	1524	1524	1524			Since Last Compl O/H	1524	Rotor Chngd	UNIT NO: 1,2,3 O/H IN DRY DOCK
8286	8286	8286	8286	8286	8286			Since Last Oil Chng	1524	Casing Chngd	Changed
2796	2796	2796	1524	1524	1524			Total R/Hours	69166		Changed
8286	8286	8286	8286	8286	8286			Prev. Month	356		UNIT NO: 4,5,6 O/H IN JUN24
1524	1524	1524	1524	1524	1524			Thrust brq	8286		
1524	1524	1524	1524	1524	1524						

Aux Engine No.4

Cyl. No

Bottom End Brq

Bottom End Bolts

Main Bearing Check

Liners

Plunger/Barrels

Injector nozzle

Running Hours Since Last Renewal

Monthly R/H:-286

Aux Eng No. 4

A/E No.4 T/Charger

1	2	3	4	5	6			Since Last Top O/H	3315	Hours Since Rotor Chngd Casing Chngd	19-Oct-23
3315	3315	3315	3315	3315	3315			Since Last Complt O/H	3315		
8497	8497	8497	8497	8497	8497			Since Last Oil Chng	1230		O/H IN DRY DOCK
3315	3315	3315	3315	3315	3315			Total R/Hours	70740		
8497	8497	8497	8497	8497	8497			Prev. Month	286		
3315	3315	3315	3315	3315	3315			Thrust Brq	8497		
1230	1230	1230	1230	1230	1230						

SANJAY SINGH
CHIEF ENGINEER

ภาคผนวกเรือกักเก็บปิโตรเลียม-4.2

ตัวอย่างสมุดบันทึกน้ำมัน

Name of ship:

PRIDE 1

Distinctive number or letters:

9205873

MACHINERY SPACE OPERATIONS

Date	Code (letter)	Item Number	Record of operations/signature of officer in charge
27 OCT 24	C	11.1	WASTE OIL 1
		11.2	CAP: 2.5 M ³
		11.3	RET: 1.5 M ³
			Saini H.L. CE H.S.SAINI 27 OCT 2024
27 OCT 24	C	11.1	WASTE OIL 2
		11.2	CAP: 2.5 M ³
		11.3	RET: 1.5 M ³
			Saini H.L. CE H.S.SAINI 27 OCT 2024
27 OCT 24	I		WEEKLY INVENTORY OF BILGE TANK
			CAP: 18.4 M ³
			RET: 6.6 M ³
			Saini H.L. CE H.S.SAINI 27 OCT 2024
30 OCT 24	H	26.1	ROSSUKON OIL FIELD
		26.2	START: 1346 HRS STOP: 1458 HRS
		26.3	HIGH SPEED DIESEL (HSD) B7, 66.64 MT TAKEN IN D.O. PORT TANK. RETAINED IN D.O. PORT TANK: 160.87 MT
			Saini H.L. CE H.S.SAINI 30 OCT 2024
03 NOV 24	C	11.1	WASTE OIL TANK
		11.2	CAP: 23.9 M ³
		11.3	RET: 9.55 M ³
			Saini H.L. CE H.S.SAINI 03 NOV 2024
03 NOV 24	C	11.1	SLUDGE TANK
		11.2	CAP: 3.0 M ³
		11.3	RET: 0.04 M ³
			Saini H.L. CE H.S.SAINI 03 NOV 2024
03 NOV 24	C	11.1	LANTERN TANK

Signature of Master

Name of ship:

PRIDE 1

Distinctive number or letters:

9205873

MACHINERY SPACE OPERATIONS

Date	Code (letter)	Item Number	Record of operations/signature of officer in charge
		11.2	CAP: 0.2 M ³
		11.3	RET: 0.004 M ³
			Saini H.L. CE H.S.SAINI 03 NOV 2024
03 NOV 24	C	11.1	WASTE OIL 1
		11.2	CAP: 2.5 M ³
		11.3	RET: 1.5 M ³
			Saini H.L. CE H.S.SAINI 03 NOV 2024
03 NOV 24	C	11.1	WASTE OIL 2
		11.2	CAP: 2.5 M ³
		11.3	RET: 1.5 M ³
			Saini H.L. CE H.S.SAINI 03 NOV 2024
03 NOV 24	I		WEEKLY INVENTORY OF BILGE TANK
			CAP: 18.4 M ³
			RET: 6.6 M ³
			Saini H.L. CE H.S.SAINI 03 NOV 2024
10 NOV 24	C	11.1	WASTE OIL TANK
		11.2	CAP: 23.9 M ³
		11.3	RET: 9.55 M ³
			Saini H.L. CE H.S.SAINI 10 NOV 2024
10 NOV 24	C	11.1	SLUDGE TANK
		11.2	CAP: 3.0 M ³
		11.3	RET: 0.04 M ³
			Saini H.L. CE H.S.SAINI 10 NOV 2024
10 NOV 24	C	11.1	LANTERN TANK
		11.2	CAP: 0.2 M ³
		11.3	RET: 0.004 M ³
			Saini H.L. CE H.S.SAINI 10 NOV 2024

Signature of Master

Name of ship: PRIDE 1

Distinctive number or letters: 9205873

MACHINERY SPACE OPERATIONS

Date	Code (letter)	Item Number	Record of operations/signature of officer in charge
10 NOV 24	C	11.1	WASTE OIL 1
		11.2	CAP: 2.5 M ³
		11.3	RET: 1.5 M ³
			Saini H.L. CE H.S. SAINI 10 NOV 2024
10 NOV 24	C	11.1	WASTE OIL 2
		11.2	CAP: 2.5 M ³
		11.3	RET: 1.5 M ³
			Saini H.L. CE H.S. SAINI 10 NOV 2024
10 NOV 24	I		WEEKLY INVENTORY OF BILGE TANK
			CAP: 18.4 M ³
			RET: 6.6 M ³
			Saini H.L. CE H.S. SAINI 10 NOV 2024
17 NOV 24	C	11.1	WASTE OIL TANK
		11.2	CAP: 23.9 M ³
		11.3	RET: 9.55 M ³
			Sh CIE SANJAY SINGH 17-NOV-2024
17 NOV 24	C	11.1	SLUDGE TANK
		11.2	CAP: 2.0 M ³
		11.3	RET: 0.04 M ³
			Sh CIE SANJAY SINGH 17-NOV-2024
17 NOV 24	C	11.1	CANTERN TANK
		11.2	CAP: 0.2 M ³
		11.3	RET: 0.004 M ³
			Sh CIE SANJAY SINGH 17-NOV-2024
17 NOV 24	C	11.1	WASTE OIL TANK - 1
		11.2	CAP: 2.5 M ³

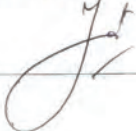
Signature of Master 

Name of ship: PRIDE-1

Distinctive number or letters: 9205873

MACHINERY SPACE OPERATIONS

Date	Code (letter)	Item Number	Record of operations/signature of officer in charge
		11.3	RET 1.5 M ³
			Sh CIE SANJAY SINGH 17-NOV-2024
17-NOV-24	C	11.1	WASTE OIL TANK-2
		11.2	CAP: 2.5 M ³
		11.3	RET: 1.5 M ³
			Sh CIE SANJAY SINGH 17-NOV-2024
17-NOV-24	I		WEEKLY INVENTORY OF BILGE TANK
			CAP: 18.4 M ³ RET: 6.6 M ³
			Sh CIE SANJAY SINGH 17-NOV-2024
24-NOV-24	C	11.1	WASTE OIL TANK
		11.2	CAP: 23.9 M ³
		11.3	RET: 9.55 M ³
			Sh CIE SANJAY SINGH 24-NOV-2024
24-NOV-24	C	11.1	SLUDGE TANK
		11.2	CAP: 2.0 M ³
		11.3	RET: 0.04 M ³
			Sh CIE SANJAY SINGH 24-NOV-2024
24-NOV-24	C	11.1	CANTERN TANK
		11.2	CAP: 0.2 M ³
		11.3	RET: 0.004 M ³
			Sh CIE SANJAY SINGH 24-NOV-2024
24-NOV-24	C	11.1	WASTE OIL TANK - 1
		11.2	CAP: 2.5 M ³
		11.3	RET: 1.5 M ³
			Sh CIE SANJAY SINGH 24-NOV-2024
24-NOV-24	C	11.1	WASTE OIL TANK-2

Signature of Master 

Distinctive number or letters: 9205873

MACHINERY SPACE OPERATIONS

[illegible]

Signature of Master _____

ภาคผนวกเรือกักเก็บปิโตรเลียม-4.3

รายการเวชภัณฑ์สำหรับการปฐมพยาบาล
และการรักษาพยาบาลเบื้องต้น

MT. PRIDE 1

FIRST AID KIT INVENTORY

Sr.no	Location	Quantity
1	Navigation bridge	1
2	Engine control room	1
3	Cargo control room	1
4	Hospital	1
5	Mid ship store	1
6	Galley	1

2nd Officer THEERA H.
30 Oct 2024

Version:01 Date:15 MAY 2024
Revision :00

Medical Scale Inventory Sheet (Recommended Medicines and Equipments)

Form No: C-30

Vessel: MT.PRIDE 1

Month: 31-Oct-24

Note:

- Quantities for the recommended minimum number of medicines & equipments items based on an estimated 3 weeks inventory & duration of travel without a doctor onboard.
- This form C 30 is extracted from the International Medical Guide for Ships 3rd edition as published by WHO in 2007.
- For dosage, contra-indications, unwanted effects, radiomedical advice and further remarks, the users needs to refer to the Medical guide available on board.

S.N	RECOMMENDED MEDICINES / DOSAGE / STRENGTH	INDICATIONS	QTY. OF MEDICINES		OPENING STOCK	Received	Consumed	In Stock	CLOSING STOCK	Expiration Date
			20 persons	30 persons						
1	Acetylsalicylic acid 300mg tablet	- high dose (600-900mg): to reduce pain, fever, inflammation - low dose (100-150mg) to inhibit formation of blood clots in angina pectoris, myocardial infarction, stroke See pages 17-25 and 113-116, 133-135, 137, 138	200	300	300	-	-	-	300	Jul-25
2	Aciclovir 400mg tbl.	- treatment of primary or recurrent herpes simplex virus infection; - may be useful for severe varicella and herpes zoster infection (doctor should be consulted) See pages 125-126, 198-199, 256	35	70	70	-	-	-	70	Jun-27
3	Adrenaline 1:1000 ampoule 1ml =1 mg	- to raise blood pressure in anaphylaxis - to dilate airways in severe asthma or anaphylaxis See pages 145-147	10	10	10	-	-	-	10	Mar-25
4	Amethocaine (tetracaine hydrochloride) 0.5% eye drops, single-use vial 1ml	for eye examination and procedures See pages 33-34	20	20	0	-	-	-	0	NA
5	Amoxicillin + clavulanate tablets 875mg/125mg	- to treat infections responsive to this antibiotic See pages 7-776, 140-144, 181-183, 204, 216-217, 221-223, 262 and 288	30	30	46	-	-	-	46	Aug-25
6	Antimalarial prophylaxis (prevention) tablets	Prophylaxis and treatment of Malaria as recommended by: www.who.int/malaria/publications.html or www.cdc.gov/travel/regionalmalaria/index.html See pages 265-269	Quantity dependent of crew number, risk of acquiring malaria in a given port and duration of dwell in risk area. Seek medical advice		0	-	-	-	0	NA
7	Artemether Ampoule 1 ml = (80mg)	Treatment of severe malaria. See pages 265-269 required only for voyages to areas where malaria transmission is a risk	5	5	20	-	-	-	20	Mar-25
8	Artemether + Lumefantrine tablets 20mg + 120mg	Treatment of malaria. See pages 265-269 required only for voyages to areas where malaria transmission is a risk	24	48	48	-	-	-	48	Jul-25
9	Atropine ampoule 1.2 mg/ml	- to treat slow heart rate in myocardial infarction - to treat organophosphate insecticide poisoning See pages 96, 136	10	10	20	-	-	-	20	Dec-25
10	Azithromycin tablet 500mg	to treat infections responsive to this antibiotics See pages 141-144, 195-207, 260, 274, 277, 281	3	6	50/60	-	-	-	50/60	Mar25/Sep26
11	Ceftriaxone ampoule 1g powder for injection (dissolve in water for injection)	- to treat infections responsive to this antibiotic See pages 16, 141-144, 153, 160-161, 172, 175, 187, 194, 195-207, 269-270	30	45	54	-	-	-	54	Mar25/May27/Jun27
12	Cetirizine tablet 10mg	- to treat allergy symptoms in hay fever, hives, allergic dermatitis, etc. See page 145	30	30	50	-	-	-	50	Oct-25
13	Charcoal, activated 50g in 300 ml purified water	to absorb ingested poisons. See pages 93-96	2	2	2	-	-	-	2	Mar-26
14	Ciprofloxacin tablet 250mg	- to treat infections responsive to this antibiotic See pages 77, 156-157, 181-183, 195-207, 221-223, 262 and 277	40	40	40	-	-	-	40	Nov-25
15	Cloves, oil of 10 ml	Toothache, see pages 287-289	1	1	0	12	-	-	12	Mar-28
16	Dexamethasone ampoule 4mg/ml	- to treat life-threatening and severe asthma - to treat anaphylaxis - to treat severe allergic reactions	5	5	55	-	-	-	55	Oct24/July27
17	Diazepam tablets 5mg	to treat alcohol withdrawal. See pages 235-239.	50	100	0	100	-	-	100	Mar-26
18	Docusate with Senna tablet 50mg + 8mg	- to avoid straining in patients with anal fissure and haemorrhoids - to prevent constipation caused by opioid use See pages 168-169	20	40	40	-	-	-	40	Jan-27

Medical Scale Inventory Sheet

(Recommended Medicines and Equipments)

Form No: C-30

Medical Scale Inventory Sheet

(Recommended Medicines and Equipments)

Form No: C-30

S.N	RECOMMENDED MEDICINES / DOSAGE / STRENGTH	INDICATIONS	QTY. OF MEDICINES		OPENING STOCK	Received	Consumed	In Stock	CLOSING STOCK	Expiration Date
			20 persons	30 persons						
19	Doxycycline tablet 100mg	as recommended in IMGS3 for the specific infection See pages 195-207, 209-210, 221-223, 271-272.	20	40	30/40	-	-	-	30/40	May25/Feb26
20	Ethanol 70%, hand cleanser gel 250ml	an alternative to hand-washing when hands are not obviously soiled	4	6	16	-	-	-	16	Mar25/Oct25
21	Ethanol 70%, liquid Liquid 500 ml	to disinfect instruments and surfaces	1	2	5	-	-	-	5	Sep-25
22	Fluorescein 1%, strips or single use vials 1 ml	to detect damage to cornea: damaged area stains yellow/green. See pages 33-34	20	20	40	-	-	-	40	Dec-27
23	Frusemide Ampoule 4ml = 40mg	to treat severe fluid retention in lungs (pulmonary oedema) due to cardiac failure, see pages 15, 136	5	5	10	-	-	-	10	Sep-25
24	Glucagon, ready to use ampoule 1mg amp	to treat low blood sugar (hypoglycaemia) due to insulin when oral intake is impossible and intravenous glucose cannot be given. See pages 123, 125. It is recommended to carry a glucose measuring instrument on board.	1	1	0	3	-	-	3	Sep-26
25	Haloperidol Ampoule 1 ml= 5mg	- to treat psychotic hallucinations and delusions - to treat severe agitation and aggressiveness See pages 126-132.	5	10	5	5	-	-	10	Feb-25/Jan-28
26	Hydrocortisone 1% cream Cream (20 -30 gramm)	to treat allergy and some other inflammatory skin conditions. See pages 169, 212-213, 219-221	4	6	6	-	-	-	6	May-26
27	Ibuprofen coated tablet 400 mg	-to treat inflammation - to reduce mild-to-moderate pain, especially if associated with inflammation See pages 17-25.	100	150	200	-	-	-	200	26-Mar-28
28	Insect repellent lotions for skin. Vials for personal use DEET 20-35% formulation or Picardin or p-menthane- 3,8-diol	Consider diseases transmitted by mosquitoes as Dengue Fever p 258-259, Malaria p. 265-269, Yellow fever p 284 See also pages 363-364 for mosquito control in general	One vial per person in areas of risk of acquiring a disease transmitted by mosquitoes in a given port		0	-	-	-	0	NA
29	Isosorbide dinitrate tablet 5mg sublingual.	- to treat angina pectoris (chest pain) - to treat myocardial infarction	20	40	20	20	-	-	40	Jul27/Mar27
30	Lignocaine 1% (without adrenaline) Ampoule 5ml	for local anaesthesia when suturing wounds or performing minor surgery See pages 71-74, 216-219	5	10	10	-	-	-	10	Sep-25
31	Loperamide tablet 2mg	to treat symptoms of diarrhoea See pages 156-157	60	90	50	50	-	-	100	May26/Dec27
32	Mebendazole tablet 100mg	- to treat intestinal worm infections not effective for tapeworm infection or hydatid disease See pages 281-284	10	20	30	-	-	-	30	May-25
33	Metoprolol tablet 100mg	- to treat hypertension (high blood pressure) - to treat atrial fibrillation (irregular or rapid heart rate) - to treat angina pectoris (chest pain) - to prevent migraine See pages 133-137	60	60	80	-	-	-	80	Aug-26
34	Metronidazole tablet 500mg	to treat infections responsive to antibiotics See pages 160-163, 172, 203-204	30	30	30/30	-	-	-	30/30	May25/Sep25
35	Miconazole 2% cream	to treat fungal skin infections See pages 203-204, 214 If women on board, supply also Miconazole vaginal cream	4	6	9/10	-	-	-	9/10	Jan25/Apr25
36	Midazolam ampoule 1ml (= 5mg)	to terminate epileptic fits. See pages 121, 128-130	5	10	2	-	-	-	2	Jul-25
37	Misoprostol tablet 200µg	to prevent post-partum haemorrhage. Page 192 If women on board	3	3	12	-	-	-	12	Jan-25
38	Morphine (injectable) ampoule 1 ml = 10mg	- to reduce severe pain - to reduce pain not relieved by other analgesics See pages 17-25.	10	30	10	-	-	-	10	Apr-26
39	Morphine (oral) liquid 1mg/ml 100ml bottle or 10 tablets with 10 mg	to reduce severe pain likely to last several days in patients able to eat and drink See pages 17-25	1	1	0	-	-	-	0	NA
40	Naloxone Ampoule 1 ml (=0.4mg)	to reverse effects of opioids, especially in case of overdose See pages 123, 240	10	10	15	-	-	-	15	Feb-25
41	Omeprazole tablets 20mg	- to treat gastro-oesophageal reflux - to treat peptic ulcer disease See pages 152, 163-167 and 173	30	60	120	-	-	-	120	28-Sep-26
42	Ondansetron tablet 4mg	- to prevent vomiting - to prevent seasickness See page 347.	10	20	40	-	-	-	40	Jan-25


S.N	RECOMMENDED MEDICINES / DOSAGE / STRENGTH	INDICATIONS	QTY. OF MEDICINES		OPENING STOCK	Received	Consumed	In Stock	CLOSING STOCK	Expiration Date
			20 persons	30 persons						
43	Scopolamin transderma	Caution: Scopolamine treatment causes sedation, see remarks on page 347	5	10	0	-	-	-	0	NA
44	Oral rehydration salts sachets of powder for reconstitution	- to prevent or treat dehydration, especially due to diarrhoea, see pages 257-258 and 347	10	20	180	-	-	-	180	Feb25/Aug27
45	Oxymetazoline 0.5% (or equivalent) drops or spray	- to treat nasal obstruction due to allergies or viral infection - to improve sinus drainage in sinusitis	5	6	8	-	-	-	8	Nov-26
46	Paracetamol Tablets 500mg	- to reduce pain and fever (but not inflammation) See pages 17-25	200	300	25/300/100	-	-	-	25/300/100	Jul25/Sep28/May29
47	Permethrin 1% lotion 250 ml	- to eliminate hair, pubic, and body lice See pages 219-221	1	2	3	-	-	-	3	22-Jul-26
48	Permethrin 5% Lotion, vial of 250 g	- to treat scabies See pages 219-221	1	2	2	-	-	-	2	Jan-26
49	Povidone iodine ointment 10% 25 to 50 g	- to disinfect skin and wounds See pages 67-77, 215-219	3	4	5	-	-	-	5	Oct-28
50	Povidone iodine solution 10% 30 to 120ml	- to disinfect skin and wounds See pages 67-77, 215-219	3	4	6	-	-	-	6	Jun-25
51	Prednisone tablet 25mg	- to treat severe asthma - to treat other inflammatory conditions (on medical advice) See pages 125-126, 145-147	30	60	60	-	-	-	60	Jan-26
52	Petroleum jelly 50 g to 100 g (vaseline)*	-to treat chapped skin. See page 212, 261 for lubricating rectal thermometer	3	4	10	-	-	-	10	15-Jul-27
53	Salbutamol aerosol inhaler 0.1mg/dose	- to treat asthma - to treat chronic bronchitis - to treat emphysema - to treat other lung diseases See pages 145-147	2	3	6	-	-	-	6	Jan-26
54	Volume spacer for salbutamol inhaler	To make inhaling salbutamol more effective See page 146	1	1	1	-	-	-	1	NA
55	Sodium chloride 0.9% infusion plastic-bottle 1 litre or 2x 500ml plastic bottle	for fluid replacement Can also be used for sterile eye irrigation, see page 38	5	5	3/2/10	-	-	-	3/2/10	Jun25/Sep25/Jan29
56	Sodium chloride 0.9% infusion plastic-bottle 5 ml	For sterile eye bathing and application of wet compresses, see page 38	2	2	5	-	-	-	5	Aug-27
57	Tetracycline 1% ointment Eye – ointment 5 g	to treat minor eye infections; to prevent infections following damage to the cornea. See pages 33-34, 40-42, 261.	4	6	10	-	-	-	10	Aug-26
58	Tetanus Immunoglobulin ampoule. (keep at 2-8°C)	Part of wound care if state of vaccination is unknown, see page 68	1	1	0	1	-	-	1	Jan-27
59	Tetanus toxoid vaccination ampoule (keep at 2-°C)	Part of wound care if state of vaccination is unknown, see page 68	1	1	0	1	-	-	1	Mar-27
60	Tramadol tablets 50 mg .	Against moderate pain; See pages 22-23 In severe pain use morphine; See pages 17-25	50	50	20	50	-	-	70	May-27/Jan-29
61	Vitamin K (Phytomenadione) Ampoule 1 ml = 10mg	to reverse excessive or unwanted effects of warfarin or related drugs. See pages 96, 173	2	2	0	2	-	-	2	Mar-26
62	Water for injection Ampoules 5ml	reconstitution of injectable drugs provided as powders	30	40	20	20	-	-	40	Dec-25/Mar-29
63	Zidovudine plus Lamivudine tablets, 300mg+150mg Consider adding further or using other antiviral substance following current guidelines: http://www.who.int/hiv/pub/prophylaxis/pep_guidelines/index.html , www.liv.ac.uk/hiv/guidelines.htm , http://www.cdc.gov/mmwr/preview/mmwrhtml/r540	Prophylaxis against HIV infections after needle-stick injury. One tablet daily twice daily for four weeks. See page 252 In case of exposure immediately seek radio-medical advice for risk assessment in individual person.	Carry at least 60 tablets		60	-	-	-	60	Apr-26
64	Zinc oxide 20% paste or ointment 50-100g	protection of irritated skin	5	5	8	-	-	-	8	Mar-26


Master Name & Signature


2nd Officer Name & Signature



ภาคผนวกเรื่องกักเก็บปิโตรเลียม-4.4




ตัวอย่างรายงานการตรวจประเมินความปลอดภัย
และสุขลักษณะของสถานที่ทำงานและที่พักอาศัย


Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
1.	Portable Fire Extinguisher, Fire Hose Reel, Fire Hose Boxes		<ul style="list-style-type: none"> Monthly Inspection not complete all portable fire extinguisher on Pride 1FSO 	<ul style="list-style-type: none"> Shall prepare the list of portable fire extinguisher and fire equipment on FSO Pride1 Monthly inspection shall perform to comply all fire fighting equipment in the list and can tracking 		



Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
2.	Life Raft <ul style="list-style-type: none"> 2 Life Rafts at STBD (16 Person x2 Ea.) 2 Life Rafts at Port (16 Persons x 2 Ea.) 1 Life Raft at Forecastle (4 Personns x1) 		<ul style="list-style-type: none"> Plastic wrapping was found on liferaft incase of emergency may delay to deploy the life rafts. The permanent location of life raft far from the STBD handrail When will deploy life raft, C/O explained that 2 persons will lift the life raft at the permanent location (as the picture) to deploy 	<ul style="list-style-type: none"> Take out the wrapped plasting on life raft. Designage life raft location shall plan in the approved document 		



Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
3.	Life Boat		<ul style="list-style-type: none"> STDB Life Boat 30 Person PORT Life Boat 30 Persons 	<ul style="list-style-type: none"> Life boat certificate is require (PORT & STBD) to submit NGP 		
4.	Life Jacket		<ul style="list-style-type: none"> Not found life jacket on Muster Station (PORT & STBD) (C/O explained provided only cabin room) 	<ul style="list-style-type: none"> Shall additonal provide life jacket at the muster station (PORT & STBD) comply with the life boat capacity (30 Persons) 		



Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
5.	Life Ringbouy		<ul style="list-style-type: none"> Life bouy inspection not cover all life bouy on Pride1 FSO 	<ul style="list-style-type: none"> Weekly or/and Monthly inspection shall cover all life ring buoy as the designage area of Pride 1 FSO Designage area of all life ring buoy and summary inspection report shall submit NGP 		
6.	Muster Point		<ul style="list-style-type: none"> Muster Station Sign, size is to small, fade out and not clearly identify T Card system not found 	<ul style="list-style-type: none"> Install proper size of muster station sign Provide T Card system 		


Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
7.	Gas Storage Area		<ul style="list-style-type: none"> Good Practice for Separated the Acetylene and Oxygen gas cylinder 	<ul style="list-style-type: none"> SDS is require at the location and mediccccc / clinic on Pride 1 FSO Gas Cylinder certificate is require (Every 5 year presuure test) 		
8.	Personnel basket	 	<ul style="list-style-type: none"> Personnel basket in good condition with ABS certified, 	<ul style="list-style-type: none"> N/A 		


Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
9.	Mid-Ship Crane		<ul style="list-style-type: none"> Crane Main Block /Hook, Safety Latch need to inspection and certify Crane certificate is require. No Secondary life line for personnel basket 	<ul style="list-style-type: none"> Crane Inspection by certify person / authorized engineer and comply with API standard & Thai law is require. Install secondary life line for personnel basket with crane block everytime when lifeting the personnel basket. 		

Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
10.	EEBD (Emergency Escape Breathing Device)		<ul style="list-style-type: none"> Ensure all of EEBD performed weekly /monthly inspection 	<ul style="list-style-type: none"> Designage area for EEBD on Pride1 FSO is require and monthly summary report can tracking. 		
11.	EPIRB (Emergency Position Indicating Radio Beacon)		<ul style="list-style-type: none"> EPRIB Battery Expired on Jan 2026 EPIRB HRU Expired date not identify. 	<ul style="list-style-type: none"> Shall identify EPIRB HRU expire date Certificate is Require. 		

Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
12.	SOPEP / Oil Spill Equipment Box		<ul style="list-style-type: none"> Oil Spill Equipment in the SOPEP box not comply with the SOPEP list that present on the SOPEP Box 	<ul style="list-style-type: none"> Re-inventory the oil spill equipment in the SOPEP box 		
13.	Safety Equipment Room		<ul style="list-style-type: none"> SOLAS equipment improper store 	<ul style="list-style-type: none"> Re-arrange the this store and inventory list is require. Separate flamable mat . (SOLAS equipment) from the other equipment. 		

Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
14.	First Aid Room		<ul style="list-style-type: none"> Drugs & Medicine cannot open intime (the room lock and difficult to find out the key to open the drug & medicine room 	<ul style="list-style-type: none"> Drugs & Medicine control shall submit Inventory list included F/A Equipment The person incharge of Medic to be certified person 		
15.	General Housekeeping		<ul style="list-style-type: none"> Improper equipment in the Oil Spill Locker and bosun store at forecastle 	<ul style="list-style-type: none"> Need to be re arrange and inventory 		

Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
16.	Sewage treatment unit		<ul style="list-style-type: none"> Sewage Treatment Unit system was is presented by C/E and 2E 	<ul style="list-style-type: none"> PM Shedule/ PM Plan and record shall recorded for tracking and maintain this unit in good condition. 		

Safety Inspection on Pride1 FSO			Inspection By:	1. Thu Rein Phoo 2. Chalermpong K.	Inspection Date:	25 Oct 2023
No	Descriptions	Photo	Finding	Recommendations	Action By	Status/ Remarks
17.	Oily Water Separator		<ul style="list-style-type: none"> Oily Water Separator system was is presented by C/E and 2E 	<ul style="list-style-type: none"> PM Shedule/ PM Plan and record shall recorded for tracking and maintain this unit in good condition. 		

<div data-bbox="194 183 282 193">RNM</div>	<div data-bbox="421 183 696 189">ACCOMMODATION INSPECTION</div>	<div data-bbox="806 180 981 196"> No. RNM.100 A Date: 05/07/2023 Prep: VR Appr: VHS Version: 0 Page: 1 / 1 Rev. 0 </div>
--	---	--

SECTION 1. ACCOMMODATION					
No	Checks	Yes	No	NA	Remarks
1	Accommodation spaces are well illuminated, clean, tidy, in a hygienic condition and obstruction free.	✓			
2	No overloaded electrical sockets.	✓			
3	Condition of electrical equipment is satisfactory.	✓			
4	Smoking regulations are being observed.	✓			
5	Laundries are free of accumulations of clothing that could constitute a fire hazard.	✓			
6	Laundry driers and vents are free of accumulations of lint and fluff that could constitute a fire hazard.	✓			
7	Weathertight doors, windows and portholes are in good order and capable of being properly secured.	✓			
8	Ship's hospital is ready for immediate use and not being used as an additional cabin or storeroom.	✓			
9	The refrigerated room alarm is operational and regularly tested.	✓			
10	Thermal personal protective equipment readily available near Refrigerated room	✓			
11	Stores stowed properly and secured for heavy weather	✓			
12	Garbage is being collected, segregated and discharged as per Garbage Management Plan	✓			
13	Oven hood and ducts clear and free of grease, and date of last cleaning clearly marked, exhaust fan working satisfactorily	✓			
14	FFA / LSA / First aid items readily available	✓			

ภาคผนวกเรือกักเก็บปิโตรเลียม-4.5

ตัวอย่างบันทึกปริมาณและรายการน้ำมัน และสารเคมี

LUBE OIL INVENTORY						NOVEMBER'2024
SR NO	NAME OF LUBRICATING OIL	USED	RECEIVED	ROB	REMARKS	
1	SHELL TELLUS S2 VX 68 (MINERAL OIL BASED HYDRAULIC FLUID)	80		906	FOR DECK HYDRAULIC SYSTEMS (4 drums and in use tank 150 ltrs)	
2	GULFSEA HYDRAULIC HVI PLUS 68 (MINERAL OIL BASED HYDRAULIC FLUID)			200 LTR	FOR DECK HYDRAULIC SYSTEMS	
3	WINCH OIL VG 68			100LTR	FOR DECK HYDRAULIC SYSTEMS (in use tank)	
4	TOTAL EQUIVIVS ZS32 (MINERAL BASED HYDRAULIC FLUID)			72 LTR	FOR HYDRAULIC SYSTEMS OTHER THAN DECK HYDRAULICS	
5	TOTAL CARTER 460 (MINERAL OIL FOR ENCLOSED GEAR)			36 LTR	FOR ENCLOSED GEARS	
6	TOTAL CARTER EP 220 (MINERAL OIL FOR ENCLOSED GEAR)			40 LTR	FOR ENCLOSED GEARS	
7	EPONA Z 220			100 LTR	FOR ENCLOSED GEARS	
8	SHELL OMALA S2 G 220 GEAR OIL (ADVANCED SYNTHETIC GEAR OIL)			100 LTR	FOR ENCLOSED GEARS	
9	TOTAL CARTER EP 150 (ADVANCED SYNTHETIC GEAR OIL)			60 LTR	FOR ENCLOSED GEARS	
	MOBILTAC 375 NC (OPEN GEAR OIL)			10 LTR	HOSE HANDLING CRANE OPEN GEARS	
11	TOTAL LUBMARINE BARELF CH 100 (SYNTHETIC OIL)			40LTR	FOR RECIPROCATING AIR COMPRESSORS & HEAVY DUTY TURBO CHARGERS	
12	GULFSEA SYNTHETIC COMPRESSOR OIL 68 (SYNTHETIC OIL)			120 LTR	FOR ROTARY SCREW, RECIPROCATING & CENTRIFUGAL COMPRESSORS	
13	SHELL CORENA S4 R 68 (SYNTHETIC OIL)			40 LTR	ROTARY SLIDING VANE, SCREW AIR COMPRESSOR & DG TURBOCHARGERS	
14	SHELL CORENA S4 R 46 (SYNTHETIC OIL)			535 LTR	FOR NITROGEN GENERATOR COMPRESSORS & DG TURBOCHARGERS	
15	BARELF SM 46			80 LTR	FOR NITROGEN GENERATOR COMPRESSORS & DG TURBOCHARGERS	
16	CASTROL AIRCOL SR 46 (SYNTHETIC OIL)			80 LTR	FOR ROTARY SCREW AIR COMPRESSORS	
17	SHELL TURBO T32 (MINERAL BASED TURBINE OIL)			10 LTR	FOR AIR MOTOR LUBRICATORS	
18	GULFSEA PE COOL OIL 32 (SYNTHETIC REFRIGERATION SYSTEM OIL)			100 LTR	FOR REEFER COMPRESSORS	
19	GULF SEA PE COOL OIL 68 (SYNTHETIC REFRIGERATION SYSTEM OIL)			60 LTR	FOR REEFER COMPRESSORS	
20	SHELL REFRIGERATION OIL S4 FR V68 (SYNTHETIC REFRIGERATION SYSTEM OIL)			100 LTR	FOR REEFER COMPRESSOR	
21	MOBIL GARGOYLEARCTIC SHC 426 (SYNTHETIC REFRIGERATION SYSTEM OIL)			40 LTR	FOR REFER COMPRESSOR , AIR CONDITIONING COMPRESSOR	
22	SHELL ALEXIA 70 CYLINDER OIL (MINERAL BASED OIL)			7309 LTR	FOR MAIN ENGINE CYLINDER OIL	
23	SINOPEC MARINE CYLINDER OIL 5040 (MINERAL BASED OIL)			7000 LTR	FOR MAIN ENGINE CYLINDER OIL	
24	SHELL MELINA S 30			16800 LTR	FOR MAIN ENGINE SYSTEM OIL	
25	SHELL ARGINA S3 SAE 30			0	FOR AUX ENGINE SYSTEM OIL	
26	TOTAL DISOLA M-4015	80		420	FOR AUX ENGINE SYSTEM OIL	
27	TOTAL DACNIS SE 100 (MARINE MINERAL BASED OIL)			15 LTR	FOR MAIN AIR COMPRESSORS	
28	SHELL TELLUS S2 VX 15 (MINERAL BASED HYDRAULIC FLUID)			280 LTR	FOR REMOTE CONTROL VALVE SYSTEM	
29	CERAN XM 220 (EP GREASE)			150 LTR	FOR GENERAL GREASING	

FSO PRIDE 1							
CHEMICAL INVENTORY							
SR. NO.	CHEMICAL NAME	UNIT SIZE	NO. OF CONTAINERS	PREVIOUS ROB	USED	RECEIVED	ROB
1	PURIFIER DISC CLEANER	30 LTRS/BUCKET	3	90 LTR			90 LTR
2	BLUE CLEANLY 9006-60HD VAP TREATMENT	25 LTRS/BUCKET	3	75 LTR			75 LTR
3	BLUE CLEANLY 3013-00 HD FUEL CARE TREATMENT	25 LTRS/BUCKET	1	25 LTR			25 LTR
4	METAL BRITE 505	25 LTRS/BUCKET	1	25 LTR			25 LTR
5	CARBON REMOVER	25 LTRS/BUCKET	1 (IN USE)	15 LTR			12 LTR
6	ECOMARINE N.C.L.T	25 LTRS/BUCKET	1	25 LTR			25 LTR
7	ALKALINITY CONTROL	30 LTRS/BUCKET	9 + 1 (IN USE)	276 LTR	7		269
8	HARDNESS CONTROL	30 LTRS/BUCKET	1 + 1 (IN USE)	10 LTR			8
9	D.C.W.T NON CHROMATE	30 LTRS/BUCKET	3	70LTR	5		65
10	BOILER COAGULANT	25 LTRS/BUCKET	1 (IN USE)	10 LTR			5
11	PHOSPHATE	25 LTRS/BUCKET	4	73 LTR	4		69
12	MARICHEM C.C.I	30 LTRS/BUCKET	4 + 1 (IN USE)	110 LTR	13		97
13	FC-DEXTROSE BOILER WATER TREATMENT	25 LTRS/BUCKET	3	75 LTR			75
14	OPTITREAT	30 LTRS/BUCKET	5	240 LTR			240
15	AUTOTREAT	30 LTRS/BUCKET	2	60 LTR			60
16	MARZINE PLUS	30 LTRS/BUCKET	4	100 LTR	13		87
17	EVAPORATOR TREATMENT	30 LTRS/BUCKET	9 + 1 (IN USE)	280 LTR			280
18	NORCHEM LC102C/A LIQUID COAGULANT	25 LTRS/BUCKET	2	50 LTR			50
19	ANTI FREEZE LIQUID	25 LTRS/BUCKET	2	50 LTR			50
20	PORTABLE WATER STABILIZER	25 KG/BUCKET	1 (IN USE)	5 KG			5
21	ACC 617, AIR COOLER CLEANER	25 LTRS/BUCKET	3 + 1 (IN USE)	80LTR			55
22	BIO SPEC 6020 EZ-POL MULTIPURPOSE SOAP	25 LTRS/BUCKET	2 + 1 (IN USE)	65 LTR			65
23	ANTI SEPTIC HAND GEL	4 KG/BUCKET	0	0 KG			0
24	SUPERSOL DECARBINIZED & PAINT STRIPPER	25 LTRS/BUCKET	0	0 LTR			0
25	CARETREAT SOOT	30 KG/BUCKET	1	10 KG			10
26	SOOT CLEANER	25 LTRS/BUCKET	3	75 LTR			75
27	ELECTRIC MOTOR CLEANER	18 LTRS/BUCKET	1 +1 (IN USE)	0			0
28	SOOT STICKS	25 KG/BUCKET	1	10 KG			10
29	PUMICE HAND CLEANER	4 LTR/BUCKET	7	24 LTR			20
30	ORGANIC WASTE TREATMENT	10 KG/BUCKET	1 (IN USE)	3 KG			3
31	ETHYLENE GLYCOL	20 LTRS/BUCKET	1 (IN USE)	15 LTR			15
32	FUEL CARE FUEL OIL TREATMENT	25 LTRS/BUCKET	1 (IN USE)	15 LTR			15
SR. NO.	CHEMICAL NAME	UNIT SIZE	NO. OF CONTAINERS	PREVIOUS ROB	USED	RECEIVED	ROB
33	OIL SPILL EMULSIFIER	25 LTRS/BUCKET	7 + 3 (IN USE)	210 LTR			210
34	AMERGY 222	25 LTRS/BUCKET	2 + 1 (IN USE)	65 LTR			65
35	AMEROYAL	25 LTRS/BUCKET	1 + 1 (IN USE)	30 LTR			30
36	RUST REMOVER	30 LTRS/BUCKET	3	90 LTR			90

37	BOILER SLUDGE CONDITIONER	30 LTRS/BUCKET	0	0 LTR			0
38	DESCALE- IT	25 LTRS/BUCKET	1	25 LTR			25
39	CHLORIDE TABLETS	5 KG/BUCKET	5	23			23
40	SULPHURIC ACID 30%	30 LTRS/BUCKET	2	60 LTR			60
41	ADVANCED GRANULAR MEDIA	12,5 LTR/BUCKET	1 (IN USE)	5 LTR			5
42	OXYBLOCK D	30 LTRS/BUCKET	1 + 1 (IN USE)	30 LTR			0
43	ALCACTIVE LIQUID	30 LTRS/BUCKET	2	60 LTR			60
44	ALCACLEAN HD	30 LTRS/BUCKET	1 + 1 (IN USE)	60 LTR			60
45	GENERAL CLEANING AND SOLVENT	30 LTRS/BUCKET	0	0 LTR			0
46	MARICHEM CR. LT.	25 LTRS/BUCKET	2	50 LTR			50
47	SOL BREAK	25 LTRS/BUCKET	4	100 LTR			100
48	ELECTROCLEAN	25 LTRS/BUCKET	1 + 1 (IN USE)	25 LTR	5		20
49	HAND CLEANER	5 LTR/BUCKET	2	10 LTR	4		6
50	HEAVY DUTY ALKALI CLEANER	35 LTR/BUCKET	1	35 LTR			35
51	DESCALER LIQUID	30 LTRS/BUCKET	1 + 1 (IN USE)	30 LTR			30
52	NORCHEM EC-564 ELECTRIC CLEANER	25 LTRS/BUCKET	1 (IN USE)	11 LTR			0
53	SOLVATE 610HEAVY DUTY SOLVENT DEGREASER	25 LTRS/BUCKET	0	0 LTR			0
54	CEMENT REMOVER (MURIATIC 33%)	25 LTRS/BUCKET	8	200 LTR			200
55	XYLENE	2.5 LTRS/BOTTLE	4	10 LTR			10

ภาคผนวกเรือกักเก็บปิโตรเลียม-4.6

รายการอุปกรณ์ระงับเหตุการณ์หกรั่วไหล
และตัวอย่างรายงานการบำรุงรักษาเชิงป้องกัน

Oil tankers and offshore oil barges with an overall length of 400 feet or more must carry appropriate equipment and supplies for the containment and removal of on-deck oil cargo spills of at least 12 barrels.

The minimum equipment and supplies must include:

Type	Location (Update)	Minimum ROB to be maintained	Use
Sorbents and Sawdust	No.1 Deck Store Fwd of "P" Manifold	100 Kg (500 Kg)	Smaller leaks, deck cleaning and wipe-offs
Non-sparking, Shovels, Mops, Scoops, Buckets, Brooms		6 Each (6 Each)	Deck Cleaning
Lined big-bag or container suitable for holding recovered waste.		200 Nos (200 Nos)	Storage of soiled sorbents
Emulsifiers (Dispersants)		200 Ltrs (200 Ltrs)	Deck Cleaning (must never be allowed to go overboard)
Protective clothing		6 Nos (9 Nos)	Personal Protection
Non-sparking portable pump with hoses		2 Nos (2 Nos)	Pumping spilled / leaking cargo off the deck
Oil Absorbent Pads		350 Nos (400 Nos)	
Oil Booms		12 Nos (15 Nos)	
Scupper plugs		Asper number of scupper +1 spare on each size	Plug all scuppers before any cargo or fuel movement

During cargo transfer operations, the equipment and supplies must remain ready for immediate use. (Add actual equipment inventory behind this)

CHIEF OFFICER'S LOG BOOK

21 NOV - 2024 (THU)

\$6. PAIDE 1
from _____ toward _____

@ ROSSUXON OIL FIELD

HOURS	LOG	COURSES			ERROR		WINDS		BARO METER	THER- MOM- ETER	REMARKS Etc. (Note carefully when boats are exercised) Day of _____ 20
		Gyro	Standard	Steering	Gyro	Standard	Direction	Force			
01	-	061	NEL	1/2 @ ROSSUXON OIL FIELD	0E	FIELD	E	4	1009	1009	AT 0100 HOURS PASSENGER CARRIED OUT TO TANKER LINE CHECKED NORMAL
02											INSURE CALCULATE A 50/PM MONITOR WINDS 15/PM
03											USE WATCH ON GULF 150 ALL TIME
04											WTS. BRADSHAW & CCL COMPLAINS NORMAL
05											LOADING CARGO ON 3W IN PROGRESS
06											MAINTENANCE & CCL/PM STARTING CARGO COMPART WITH
07	-	061	NEL	1/2 @ ROSSUXON OIL FIELD	NE	3	1009	30/24			PROCEEDS WARD OVER WATCH TO 2/PM
08	0730-1100										2000HRS TAKE OVER WATCH FROM 2/PM
09	0900										DEPARTER INSPECTED HURDLES CABLE AND ALL IN GOOD CONDITION
10											ALL 2 HOURS & MONITORING CRANE/TOWER & CCL ON FIELD
11											COMPLY WITH ALL DIVERS 'C' & DIVER 'C' WITH WATCH ON ON 10/PM
12											DEPARTER CHECKED & MONITOR CRANE & TOWER FROM 10/PM TO 11/PM

CURRENT SET & DRIFT

True Course made to Noon	Distance in Nautical Miles		Latitude		Longitude		Steaming Time		Speed		Distance per Log	
	Days Run		By Ac't		By Ac't		This day		Average		Error per cent	
	Total		Obs.		Obs.		Total		Total Average		Magnetic Variation	
13	-	061	NEL	1/2 @ ROSSUXON OIL FIELD	NE	5	1009	51/24				CARGO LOADING WITH JIM COY IN PROGRESS
14												8-FRAME TOWLINE & LANDING AREA PERMANENTLY CHECKED
15												CRANE BRADSHAW & CCL WITH 15/PM
16												WINDY & CARGO CALCULATED & WINDS 15/PM MONITOR
17												SAFETY & SECURITY FIRE TOWER CARRIED OUT
18												WTS. & CCL/PM JANDING ORDER COMPLY WITH
19	-	061	NEL	1/2 @ ROSSUXON OIL FIELD	ENE	5	1009	50/24				APPROX 1500 HOURS OVER WATCH TO 2/PM
20												PROCEEDS TAKE OVER WATCH & COMPLETED 1500 HRS & 15/PM 15/PM
21												APPROX 1500 HOURS CRANE TOWER CRANE NORMAL
22												NEL 1500 HRS & EXERCISE PASSENGER CARRIED NORMAL
23												NEL 1/2 @ ROSSUXON OIL FIELD WITH 5 CARGO STOPPED
24												FIELD SAFETY & SECURITY PERSONEL CARRIED OUT FROM NORMAL

WHEEL AND LOOK-OUT			
WATCH	WHEEL	LOOK-OUT	
00 04		AB NIDAS	0001 0400
04 08		AB SUTAT	0401 0800
08 12		AB POKPAN	0801 1200
12 16		AB UNAS	1201 1600
16 20		AB SUTAT	1601 2000
20 24		AB POKPAN	2001 2400

WATER IN HOLDS		WATER IN TANKS	
No. 1	000	No. 1	000
No. 2	000	No. 2	000
No. 3	000	No. 3	000
No. 4	000	No. 4	000
Eng. Room	000	No. 5	000
		Deep	000
		Fore Peak	000

REGULATION LIGHTS EXHIBITED	
From Midnight till	0100 HRS.
	1800 HRS. till midnight

SICK LIST	
	NIL

Master
Chief

Inspected 21/11/2024

$$\phi \rightarrow i/\omega$$


ภาคผนวกเรือกักเก็บปิโตรเลียม-4.7

ตัวอย่างรายงานการเกิดอุบัติเหตุ

INCIDENT REPORTING FORM		Version : 01 Date : 15 MAY-2024 Revision : 00		G33
A. Incident Details				
Vessel:	Pride 1	Incident Ref. No.:	01/2024	
Date of Incident:	28 July 2024	Time of Incident (UTC or Local):	1530 LT	
B. Vessel Operation / Activity at Time of Incident				
<input type="checkbox"/> Underway	<input type="checkbox"/> Tank Cleaning/Purging/Inerting	<input checked="" type="checkbox"/> Other (Specify)		
<input checked="" type="checkbox"/> At Anchor	<input type="checkbox"/> Bunkering	Receiving stores and personnel transfer from FSV to Own vessel		
<input type="checkbox"/> At Berth	<input type="checkbox"/> Performing Manuevers			
<input type="checkbox"/> Drifting	<input type="checkbox"/> Performing Maintenance			
<input type="checkbox"/> Being Towed	<input checked="" type="checkbox"/> Loading			
<input type="checkbox"/> Towing a Vessel	<input type="checkbox"/> Discharging			
C. Type of Incident				
<input type="checkbox"/> Man Over Board	<input type="checkbox"/> Grounding / Stranding	<input type="checkbox"/> Explosion		
<input type="checkbox"/> Capsizing / Listing	<input type="checkbox"/> Fatality	<input checked="" type="checkbox"/> Crane & Lifting Gear Accident		
<input type="checkbox"/> Flooding	<input type="checkbox"/> Personal Injury	<input type="checkbox"/> Power Failure		
<input type="checkbox"/> Structural/Hull Failure	<input type="checkbox"/> Pollution	<input type="checkbox"/> Bunkering Related		
<input type="checkbox"/> Mechanical Failure	<input type="checkbox"/> Loss of Propulsion	<input type="checkbox"/> Anchoring Related		
<input type="checkbox"/> Fire	<input type="checkbox"/> Loss of Steering	<input type="checkbox"/> Mooring / Unmooring Related		
<input type="checkbox"/> Collision	<input type="checkbox"/> Damage to Ship Equipment	<input type="checkbox"/> Cargo Operation Related		
<input type="checkbox"/> Contact	<input type="checkbox"/> Cyber Breach	<input type="checkbox"/> Security Breach/Petty Theft		
<input type="checkbox"/> ECDIS Failure	<input type="checkbox"/> Other Serious Machinery Failure			
D. Environmental Condition/Working Environment (tick any condition under each category)				
(1) Weather				
<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Cloudy <input type="checkbox"/> Hazy (Fog) <input type="checkbox"/> Rain				
(2) Wind Force (Beaufort)				
<input type="checkbox"/> Force 0-3 <input checked="" type="checkbox"/> Force 4-6 <input type="checkbox"/> Force 7-9 <input type="checkbox"/> Force 10-12 <input type="checkbox"/> > Force 12				
Wind Direction:				
(3) Sea State				
<input type="checkbox"/> Sheltered Waters <input type="checkbox"/> Calm <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Rough <input type="checkbox"/> Other				
(4) Swell Height				
<input type="checkbox"/> None <input type="checkbox"/> 0 - 2m <input checked="" type="checkbox"/> 2 - 4m <input type="checkbox"/> Over 4m <input type="checkbox"/> Not Known				
(5) Visibility				
<input checked="" type="checkbox"/> Good (>5nm) <input type="checkbox"/> Moderate (2-5nm) <input type="checkbox"/> Poor (1-2nm) <input type="checkbox"/> Fog >1nm Specify				
(6) Ship's Motion				
<input checked="" type="checkbox"/> Still <input type="checkbox"/> Rolling <input type="checkbox"/> Pitching <input type="checkbox"/> Taking on Seas				
(7) Lighting & Noise				
<input checked="" type="checkbox"/> Good Lighting <input type="checkbox"/> Poor Lighting <input type="checkbox"/> Visibility Hampered <input type="checkbox"/> Distracting Level of Noise				
(8) Deck Surface				
<input type="checkbox"/> Oily <input type="checkbox"/> Wet <input type="checkbox"/> Iced <input type="checkbox"/> Cargo Residue <input checked="" type="checkbox"/> Clean & in Good Order				
File No. : 350 #3 (Master) Retention : 3 Years / Frequency: Upon Occurrence Page 1 of 3				

INCIDENT REPORTING FORM		Version : 01 Date : 15 MAY-2024 Revision : 00		G33
E. Description of The Accident/Incident and Sequence of Events (Exact Description, Incident Location (Place), Data, Facts)				
Vessel was back loading from FSV AG Azzam. Prior to the operation, crane operation checklist was complied with, permit for small craft alongside was also issued. Visual checks of lifting equipment were done, all was found in order Vessel conducted 4 lifts successfully. During 5 th lift, weight (0.8 MT) was lifted from FSV using ship's hose handling crane. As soon as load was lifted, due to swell, load was air borne and load again made contact with FSV deck. During the contact FSV moved around 2 metre forward as she was finding it difficult to hold position in the weather prevalent. Due to said reasons block of the Hose Handling Crane encountered a strong jerk. It was found that crane wire slipped out of sheave of the block				
F. Person(s) Involved in the Incident				
Name	Rank	Duties at the time of the incident	Rest Hours Compliance	
[REDACTED]	CHIEF OFFICER	SUPERVISION	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	BOSUN	CRANE OPEARTOR	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	PUMPMAN	SIGNALLING FROM MAIN DECK	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
G. Person(s) Witnessing the Incident (Attach witness statements)				
Name	Rank	Duties at the time of the incident		
[REDACTED]	CHIEF OFFICER	SUPERVISION		
	BOSUN	CRANE OPEARTOR		
	PUMPMAN	SIGNALLING FROM MAIN DECK		
H. Personnel Injured				
Name (Rank / Purpose for being onboard)	Injury Description	LT1 / RWC / MTC	Immediate Action taken	
	NONE			
I. Damage to Equipment (Note: Specify below the damage to vessel / equipment)				
Crane wire slipped out of sheave due to the jerk on the crane block Although no permanent damage to the crane block. We will still need to order a spare and keep on board for eventualities				
File No. : 350 #3 (Master) Retention : 3 Years / Frequency: Upon Occurrence Page 2 of 3				

INCIDENT REPORTING FORM

Version : 01
Date : 15 MAY-2024
Revision : 00 G33

Immediate action taken: Hanging load was brought to vessel's main deck. Lifting operation was suspended. Lock bolts were removed and wire was again passed through the sheave. Examination of wire, sheave and block was carried out, no deformation or damage was noticed. Upon boxing back, crane was tested without and with load. All checks carried out after the mitigation were found to be satisfactory
Crane restored to its operational state

Preventive actions:

Keeping the above incident in consideration the following recommendations are being put forward for review and implementation by the Field Management:

- Criteria for personnel transfer operation: Weather – Wind NMT BF 4 / Sea State – NMT Douglas Scale 3 / Angle of roll on the FSV (or tug boat) – NMT 5 degrees either side
- Advise no transfer to be affected when the FSV is unable to hold position due to weather conditions
- Preventer guy which is attached to FSO Crane Hook should be tended to by the FSV staff (currently they are tending to the preventer guys of the PTB and of the loads being lifted. Propose to implement this going forward for all lifts

Please see photographs of the affected part with wire slipped and then afterwards with wire put back in place

J. Consequences to the Environment (Pollution)

Sources of Pollution	Specify the type (bunker, cargo, chemical, other) and the quantity spilled)
	No pollution

Immediate Action Taken: NA

Wire Slipped



After Putting Back In Place



ภาคผนวกเรือกักเก็บปิโตรเลียม-4.8

ตัวอย่างรายงานการฝึกซ้อมตอบสนองต่อเหตุฉุกเฉิน

Vessel: PRIDE 1Date: 15-Dec-24

Type of Drill:	MEDVAC BY BOAT/ HELICOPTER				Announced/Un-Announced:	Un-Announced
Exercised	From:	1600	To:	1630	Attended By:	Chief Officer

Scenario

MEDVAC BY BOAT/ HELICOPTER:

OS was found unconscious and rescued from pumproom. Further he was brought to a safe area, first aid given, it was found that he had swelling developed on thigh.

Findings

Did all personnel muster correctly at the appropriate stations and did the responsible persons report to the bridge?	YES
Was mustering completed in a satisfactory time (e.g. 2 – 3 minutes)?	YES
Were all personnel correctly dressed with appropriate gear?	YES
Was all equipment ready for use and in full working order?	YES
Were all personnel familiar with safety equipment appropriate to the exercise?	YES
Were all communications between parties satisfactory?	YES
Was any crew member late for the drill?	NO
Did all the equipment function properly?	YES
Were the newly joined crew well conversant with the use of equipment?	YES
Was a debriefing conducted on completion of drill?	YES

Suggestions for Improvement

DRILL CONDUCTED, FOUND ALL IN GOOD ORDER.

Training / Demonstration to be Carried Out	
1	1.1
2	2.1
3	3.1
4	4.1
5	5.1
6	6.1
7	7.1
8	8.1
9	9.1
10	10.1
11	11.1
12	12.1
13	13.1
14	14.1
15	15.1
16	16.1
17	17.1
18	18.1
19	19.1
20	20.1
21	21.1
22	22.1
23	23.1
24	24.1
25	25.1
26	26.1
27	27.1
28	28.1
29	29.1
30	30.1
31	31.1
32	32.1
33	33.1
34	34.1
35	35.1
36	36.1
37	37.1
38	38.1
39	39.1
40	40.1
41	41.1
42	42.1
43	43.1
44	44.1
45	45.1
46	46.1
47	47.1
48	48.1
49	49.1
50	50.1
51	51.1
52	52.1
53	53.1
54	54.1
55	55.1
56	56.1
57	57.1
58	58.1
59	59.1
60	60.1
61	61.1
62	62.1
63	63.1
64	64.1
65	65.1
66	66.1
67	67.1
68	68.1
69	69.1
70	70.1
71	71.1
72	72.1
73	73.1
74	74.1
75	75.1
76	76.1
77	77.1
78	78.1
79	79.1
80	80.1
81	81.1
82	82.1
83	83.1
84	84.1
85	85.1
86	86.1
87	87.1
88	88.1
89	89.1
90	90.1
91	91.1
92	92.1
93	93.1
94	94.1
95	95.1
96	96.1
97	97.1
98	98.1
99	99.1
100	100.1

Explained putting casualty on recovery position, securing casualty to stretcher and transfer to hospital.

Explanation on basic first aid, ABC, Resuscitation, Artificial breathing technique and CPR.

Communication with OIM AP1, followed by communication with medic explained.

Briefed on case where medic needs to come on board and preparation for transferring casualty ashore.

List the Individuals with any Additional Training Needs were Identified:

(Appropriate to function on board and future development in line with guidance established in SMS FOM 2.2.1.4)

	N/A
--	-----

Training Requirements

Training to include instructions in use and operation of ship's fire extinguishing appliances, life saving appliances and in survival at sea. Individual instructions may cover different parts of the ship's life saving and fire fighting appliances but all shall be covered in any period of 2 months. Instructions must further include operation and use of inflatable liferafts, problems of hypothermia, first aid treatment for hypothermia and other appropriate first aid procedures and special instructions necessary for use of ship's life saving appliances in severe weather and sea conditions. Demonstration on the operation of various critical equipment (emergency generator, emergency fire pump, emergency steering, fixed CO2 system, fixed foam system, starting of lifeboats, donning of BA set, lowering of lifeboats and liferafts, etc.).

Every crew member shall be instructed about risks associated with entering enclosed spaces and applicable procedures on board. The enclosed space drills need to be conducted every two months as per matrix; however, same can be carried out in combination with fire drill. The drill shall include the following:

- 1) checking and use of personal protective equipment,
- 2) Checking and use of communication equipment,
- 3) Checking and use of instruments for measuring the atmosphere,
- 4) Checking and use of rescue equipment, and
- 5) Instructions in first aid and resuscitation techniques

Note : Nature of training will depend on type of drill.

Drill Descriptions

1600-1620 : OS was found unconscious and rescued from pumproom. Further he was brought to a safe area preferably to Hospital, it was found that he had swelling developed on thigh. First aid treatment given.

Master contacted OIM of API, requiring advice from medic and possibly Medevac to take casualty ashore for treatment.

Medic from AP1 was sent to Pride1 by Supply boat (AG Azzam).

First Aid treatment given by AP-1 Medic to OS.

OS sent to AP-1 and to shore immediately by a helicopter.

1620-1630: De briefing done and drill called off.

Fire Drill : Reporting to stations and preparing for duties as per muster list. Starting of fire pump using atleast two required jets of water. Checking of fireman's outfits. Checking of relevant communication equipment. Checking the operation of water tight doors, fire doors, fire dampers and main inlets and outlets of ventilating system. Checking necessary arrangement for subsequent abandoning of the ship.

Abandonship : Reporting to stations and preparing for duties as per muster list. Starting of engine to run in either directions. Lowering of life boat up to water/deck level, launching in water and manoeuvring, launching free fall or simulation launching or launching by secondary means and manoeuvring in water.

Oil spill : Drills must be exercised based on enumeration specified for different kind of possible operational oil spills as laid in SOPEP / SMPEP.

Emergency towing : Deployment of both fwd and aft towing arrangements must be exercised. The aft arrangement to be capable of being deployed in a controlled manner in harbour condition by one person within 15 minutes and forward arrangement to be capable of being deployed in harbour condition in one hour.

Safety Officer: [REDACTED]

Master : CAPT. YATI ARORA

Note: In place of signature insert name. Stamp not required.

2024 Emergency Response & Preparedness Exercise Plan (FSO Pride1)

[illegible]**DRILL EVENT LOG**

No.	Operation Exercise Scenario	Date	Location
1	Abandonship drill	07.01.24	RSK FIELD
2	Muster station drill	07.01.24	RSK FIELD
3	Fire drill (Fire in steering gear room)	07.01.24	RSK FIELD
4	Abandonship drill	14.01.24	RSK FIELD
5	Muster station drill	14.01.24	RSK FIELD
6	Lifeboat lowering drill	14.01.24	RSK FIELD
7	SOPEP drill	14.01.24	RSK FIELD
8	Abandonship drill	22.01.24	RSK FIELD
9	Muster station drill	22.01.24	RSK FIELD
10	Fire drill (Fire in cargo pump room)	22.01.24	RSK FIELD
11	Abandonship drill	29.01.24	RSK FIELD
12	Muster station drill	29.01.24	RSK FIELD
13	ER flooding drill	29.01.24	RSK FIELD
14	Abandonship drill	04.02.24	RSK FIELD
15	Muster station drill	04.02.24	RSK FIELD
16	Fire drill (Fire in paint store)	04.02.24	RSK FIELD
17	Abandonship drill	11.02.24	RSK FIELD
18	Muster station drill	11.02.24	RSK FIELD
19	ECDIS failure	11.02.24	RSK FIELD
20	Heavy weather damage drill	11.02.24	RSK FIELD
21	SOPEP drill	18.02.24	RSK FIELD

22	Abandonship drill	25.02.24	RSK FIELD
23	Muster station drill	25.02.24	RSK FIELD
24	Security drill	25.02.24	RSK FIELD
25	Emergency steering gear drill	25.02.24	RSK FIELD
26	Cyber security	25.02.24	RSK FIELD
27	Fire drill (Fire in engine room, boiler platform)	03.03.24	RSK FIELD
28	Crane training	03.03.24	RSK FIELD
29	Abandonship drill	10.03.24	RSK FIELD
30	Muster station drill	10.03.24	RSK FIELD
31	SOPEP drill	10.03.24	RSK FIELD
32	STS operation drill	10.03.24	RSK FIELD
33	Enclosed space drill	17.03.24	RSK FIELD
34	Treatment of serious injury	17.03.24	RSK FIELD
35	Lowering lifeboat drill	29.03.24	RSK FIELD
36	Lifeboat launching for Man overboard drill	31.03.24	RSK FIELD
37	Fire drill (Fire in N2 room)	07.04.24	RSK FIELD
38	Emergency steering gear drill	07.04.24	RSK FIELD
39	Abandonship drill	14.04.24	RSK FIELD
40	Muster station drill	14.04.24	RSK FIELD
41	Abandonship drill	22.04.24	RSK FIELD
42	Muster station drill	22.04.24	RSK FIELD
43	SOPEP drill	22.04.24	RSK FIELD
44	Emergency towing and salvage drill	22.04.24	RSK FIELD
45	Abandonship drill	20.04.24	RSK FIELD
46	Muster station drill	28.04.24	RSK FIELD
47	Fire drill (Fire in pump room)	05.05.24	RSK FIELD
48	Enclosed space drill	05.05.24	RSK FIELD
49	Abandonship drill	12.05.24	RSK FIELD
50	Muster station drill	12.05.24	RSK FIELD
51	SOPEP drill	12.05.24	RSK FIELD
52	STS operation drill	12.05.24	RSK FIELD
53	Failure of electrical power drill	26.05.24	RSK FIELD
54	Cyber security	26.05.24	RSK FIELD
55	ECOS failure	26.05.24	RSK FIELD
56	Abandonship drill	02.06.24	RSK FIELD
57	Muster station drill	02.06.24	RSK FIELD
58	Fire drill (Fire in steering gear room)	02.06.24	RSK FIELD
59	SOPEP drill	09.06.24	RSK FIELD
60	Man overboard	09.06.24	RSK FIELD
61	Communication drill	09.06.24	RSK FIELD
62	Medevac drill	09.06.24	RSK FIELD
63	Cyber security	09.06.24	RSK FIELD
64	Muster station and Lowering lifeboat drill	16.06.24	RSK FIELD
65	Lifting operation and Personnel transfer basket training	23.06.24	RSK FIELD
66	Fire in galley drill	06.07.24	RSK FIELD
67	Piracy attack drill	06.07.24	RSK FIELD
68	Abandonship drill	07.07.24	RSK FIELD
69	Muster station drill	07.07.24	RSK FIELD
70	Excessive list drill	07.07.24	RSK FIELD
71	Cyber security drill	14.07.24	RSK FIELD

72	SOPEP drill	14.07.24	RSK FIELD
73	Enclosed space drill	20.07.24	RSK FIELD
74	Fire at port side manifold drill	11.08.24	RSK FIELD
75	Abandonship drill	11.08.24	RSK FIELD
76	Muster station drill	11.08.24	RSK FIELD
77	Failure of steering gear drill	11.08.24	RSK FIELD
78	STS operation drill	11.08.24	RSK FIELD
79	Cyber security drill	18.08.24	RSK FIELD
80	SOPEP and hazardous vapour release drill	16.08.24	RSK FIELD
81	Prohibition of carrying waist bags inside helicopter training	19.08.24	RSK FIELD
82	Security drill	25.08.24	RSK FIELD
83	ECDIS failure drill	25.08.24	RSK FIELD
84	Travel by helicopter training	25.08.24	RSK FIELD
85	Abandonship drill (Lowering LB above water level)	06.09.24	RSK FIELD
86	Muster station drill	06.09.24	RSK FIELD
87	Fire in paint store drill	06.09.24	RSK FIELD
88	Rescued from enclosed space drill	06.09.24	RSK FIELD
89	SOPEP drill	15.09.24	RSK FIELD
90	Cyber security drill	22.09.24	RSK FIELD
91	Hull failure drill	22.09.24	RSK FIELD
92	Man overboard drill	22.09.24	RSK FIELD
93	Typhoon evacuation exercise & RSK communication emergency guiding briefing	24.09.24	RSK FIELD
94	Abandonship drill	07.10.24	RSK FIELD
95	Muster station drill	07.10.24	RSK FIELD
96	Fire drill (N2 Room)	07.10.24	RSK FIELD
97	SOPEP drill	13.10.24	RSK FIELD
98	STS operation drill	13.10.24	RSK FIELD
99	Cyber security drill	25.10.24	RSK FIELD
100	Gyro failure drill	25.10.24	RSK FIELD
101	STS operation drill	25.10.24	RSK FIELD
102	Cyber security drill	03.11.24	RSK FIELD
103	ECDIS failure drill	03.11.24	RSK FIELD
104	Bracy attack drill	03.11.24	RSK FIELD
105	Abandonship drill (Lowering LB above water level)	10.11.24	RSK FIELD
106	Muster station drill	10.11.24	RSK FIELD
107	Fire drill (Sample locker midship)	10.11.24	RSK FIELD
108	SOPEP drill	10.11.24	RSK FIELD
109	Rescued from enclosed space drill	17.11.24	RSK FIELD
110	Failure of steering gear drill	24.11.24	RSK FIELD
111	Helicopter accident drill	24.11.24	RSK FIELD
112	Gas leak alarm drill	24.11.24	RSK FIELD
113	Abandonship drill (Lowering LB above water level)	01.12.24	RSK FIELD
114	Muster station drill	01.12.24	RSK FIELD
115	Fire drill (Galley)	01.12.24	RSK FIELD
116	SOPEP drill	06.12.24	RSK FIELD
117	Man overboard drill	06.12.24	RSK FIELD
118	Cyber security drill	06.12.24	RSK FIELD
119	Fire drill (Galley)	15.12.24	RSK FIELD
120	Collision Drill	15.12.24	RSK FIELD
121	Medevac drill	15.12.24	RSK FIELD

Vessel: M.T. PRIDE 1

Date: 24/11/2024

Type of Drill:	FFA TRAINING				Announced/Un-Announced:	Un-announced
Exercised	From:	1610	To:	1620	Attended By :	Chief Officer

Scenario

FFA training

Findings

Did all personnel muster correctly at the appropriate stations and did the responsible persons report to the bridge?	Yes
Was mustering completed in a satisfactory time (e.g. 2 – 3 minutes)?	Yes
Were all personnel correctly dressed with appropriate gear?	Yes
Was all equipment ready for use and in full working order?	Yes
Were all personnel familiar with safety equipment appropriate to the exercise?	Yes
Were all communications between parties satisfactory?	Yes
Was any crew member late for the drill?	No
Did all the equipment function properly?	Yes
Were the newly joined crew well conversant with the use of equipment?	Yes
Was a debriefing conducted on completion of drill?	Yes

Suggestions for Improvement

All crew participated in training actively, found satisfactory.

Training / Demonstration to be Carried Out

FFA equipments and system training.

List the Individuals with any Additional Training Needs were Identified:

Appropriate to function on board and future development in line with guidance established in SMS FOM 2.2.1.4)

N/A

Training Requirements

Training to include instructions in use and operation of ship's fire extinguishing appliances, life saving appliances and in survival at sea. Individual instructions may cover different parts of the ship's life saving and fire fighting appliances but all shall be covered in any period of 2 months. Instructions must further include operation and use of inflatable liferafts, problems of hypothermia, first aid treatment for hypothermia and other appropriate first aid procedures and special instructions necessary for use of ship's life saving appliances in severe weather and sea conditions. Demonstration on the operation of various critical equipment (emergency generator, emergency fire pump, emergency steering, fixed CO2 system, fixed foam system, starting of lifeboats, donning of BA set, lowering of lifeboats and liferafts, etc.).

Every crew member shall be instructed about risks associated with entering enclosed spaces and applicable procedures on board. The enclosed space drills need to be conducted every two months as per matrix; however, same can be carried out in combination with fire drill. The drill shall include the following:

- 1) checking and use of personal protective equipment,
- 2) Checking and use of communication equipment,
- 3) Checking and use of instruments for measuring the atmosphere,
- 4) Checking and use of rescue equipment, and
- 5) Instructions in first aid and resuscitation techniques

Note : Nature of training will depend on type of drill.

FFA training and Drill

Drill Critique Form

Drill Descriptions

1610-1620: FFA training carried out with all crew member regarding the points mentioned as follows:

- 1) Correct use and operation of different type of the fire extinguishers on board explained.
- 2) Location, donning procedure of fireman out fit shown and explained.
- 3) Location and operation of O2 resuscitator explained.
- 4) Location and how to secure casualty on stretcher explained.

Fire Drill : Reporting to stations and preparing for duties as per muster list. Starting of fire pump using atleast two required jets of water. Checking of fireman's outfits. Checking of relevant communication equipment. Checking the operation of water tight doors, fire doors, fire dampers and main inlets and outlets of ventilating system. Checking necessary arrangement for subsequent abandoning of the ship.

Abandonship : Reporting to stations and preparing for duties as per muster list. Starting of engine to run in either directions. Lowering of life boat up to water/deck level, launching in water and manoeuvring, launching free fall or simulation launching or launching by secondary means and manoeuvring in water.

Oil spill : Drills must be exercised based on enumeration specified for different kind of possible operational oil spills as laid in SOPEP / SMPEP.

Emergency towing : Deployment of both fwd and aft towing arrangements must be exercised. The aft arrangement to be capable of being deployed in a controlled manner in harbour condition by one person within 15 minutes and forward arrangement to be capable of being deployed in harbour condition in one hour.

Safety Officer: _____

Master : CAPT.YATI ARORA

Note: In place of signature Insert name. Stamp not required.

Drill Critique Form

Vessel: PRIDE 1

Date: 10-Nov-24

Type of Drill:	FIRE FIGHTING DRILL			Announced/Un-Announced:	Announced
Exercised	From:	1640	To:	1700	Attended By : Master

Scenario

ASSUMED CASE FIRE IN SAMPLE LOCKER MIDSHIP.

Findings

Did all personnel muster correctly at the appropriate stations and did the responsible persons report to the bridge?	YES
Was mustering completed in a satisfactory time (e.g. 2 – 3 minutes)?	YES
Were all personnel correctly dressed with appropriate gear?	YES
Was all equipment ready for use and in full working order?	YES
Were all personnel familiar with safety equipment appropriate to the exercise?	YES
Were all communications between parties satisfactory?	YES
Was any crew member late for the drill?	NO
Did all the equipment function properly?	YES
Were the newly joined crew well conversant with the use of equipment?	YES
Was a debriefing conducted on completion of drill?	YES

Suggestions for Improvement

DRILL CONDUCTED, FOUND ALL IN GOOD ORDER.

Training / Demonstration to be Carried Out

FIRE FIGHTING WITH WATER SPRINKLER EXPLAINED.

List the Individuals with any Additional Training Needs were Identified:

(Appropriate to function on board and future development in line with guidance established in SMS FOM 2.2.1.4)

N/A

Training Requirements

Training to include instructions in use and operation of ship's fire extinguishing appliances, life saving appliances and in survival at sea. Individual instructions may cover different parts of the ship's life saving and fire fighting appliances but all shall be covered in any period of 2 months. Instructions must further include operation and use of inflatable liferafts, problems of hypothermia, first aid treatment for hypothermia and other appropriate first aid procedures and special instructions necessary for use of ship's life saving appliances in severe weather and sea conditions. Demonstration on the operation of various critical equipment (emergency generator, emergency fire pump, emergency steering, fixed CO2 system, fixed foam system, starting of lifeboats, donning of BA set, lowering of lifeboats and liferafts, etc.).

Every crew member shall be instructed about risks associated with entering enclosed spaces and applicable procedures on board. The enclosed space drills need to be conducted every two months as per matrix; however, same can be carried out in combination with fire drill. The drill shall include the following:

- 1) checking and use of personal protective equipment,
- 2) Checking and use of communication equipment,
- 3) Checking and use of instruments for measuring the atmosphere,
- 4) Checking and use of rescue equipment, and
- 5) Instructions in first aid and resuscitation techniques

Note : Nature of training will depend on type of drill.

Drill Critique Form

Form No: D-10

Drill Descriptions

1640 : EMERGENCY FIRE ALARM SOUNDED. ANNOUNCEMENT ASSUMED CASE FIRE IN SAMPLE LOCKER MIDSHIP.
1643-1648 : ALL CREW MUSTERED AT THE MUSTER STATION, HEAD COUNT TAKEN ALL PRESENT.
COMMUNICATION CHECKED WITH THE COMMAND STATION, CHECKED HIS DUTIES, EXPLAINED SCENARIO, FIRE IN SAMPLE LOCKER.
1649 : VENTILATION CLOSED. FIRST AID KIT, STRETCHER STAND BY.
1650 : EMERGENCY FIRE PUMP START REPORTED BY C/ENGR.
1651 : FIRE HOSES RIGGED AND STARTED BOUNDARY COOLING FROM OUT SIDE OF SAMPLE LOCKER.
1653 : EMERGENCY TEAM AB THITIPONG AND MTM PONGTAP READY WITH FIRE MAN OUTFIT, BTLS PRESSURE 200(AB), 200(MTM). EMERGENCY TEAM REPORTED SPRINKLER SYSTEM STARTED IN SAMPLE LOCKER.
1657 : BACK UP TEAM ENTERED INTO THE SAMPLE LOCKER WITH FIRE HOSE. REPORTED FIRE TOTALLY EXTINGUISHED.
1700 : DEBRIEFED AND DRILL CALLED OFF.

Fire Drill : Reporting to stations and preparing for duties as per muster list. Starting of fire pump using atleast two required jets of water. Checking of fireman's outfits. Checking of relevant communication equipment. Checking the operation of water tight doors, fire doors, fire dampers and main inlets and outlets of ventilating system. Checking necessary arrangement for subsequent abandoning of the ship.

Abandonship : Reporting to stations and preparing for duties as per muster list. Starting of engine to run in either directions. Lowering of life boat up to water/deck level, launching in water and manoeuvring, launching free fall or simulation launching or launching by secondary means and manoeuvring in water.

Oil spill : Drills must be exercised based on enumeration specified for different kind of possible operational oil spills as laid in SOPEP / SMPEP.

Emergency towing : Deployment of both fwd and aft towing arrangements must be exercised. The aft arrangement to be capable of being deployed in a controlled manner in harbour condition by one person within 15 minutes and forward arrangement to be capable of being deployed in harbour condition in one hour.

Safety Officer: _____

Master : CAPT.YATI ARORA _____

Note: In place of signature insert name. Stamp not required.

ภาคผนวกเรือกักเก็บปิโตรเลียม-4.9

สถิติพนักงานที่พังกาศัยบนเรือกักเก็บปิโตรเลียม

[illegible]

PRIDE 1	
CREW	25
NGP	
AMPL	
OTHERS	
TOTAL ON BOARD	25

MASTER: BRIJESH CHANDER VIJ

[illegible]

ภาคผนวกเรือสำเภา

เรือสนับสนุน AG Azzam

- ความปลอดภัยของเรือ

ภาคผนวกเรือสับส่น-1.1

แผนผังของเรือสับส่น AG Azzam

Fire Fighting Appliances



UPDATED : Oct-2024

FIRE MAIN & HOSES 19 Sets						
No	Fire Hose Nozzles Type	Fire Hose Size	Quantity	Level	Located	Remarks
1	3-Way Nozz.	(L)15mtr x (D)52mm	1	Bridge	Bridge Dk	
2	3-Way Nozz.	(L)15mtr x (D)52mm	1	F'castle	F'castle Dk	
3	3-Way Nozz.	(L)15mtr x (D)52mm	1	F'castle	F'castle Dk	
4	3-Way Nozz.	(L)15mtr x (D)52mm	1	F'castle	F'castle Dk	
5	3-Way Nozz.	(L)15mtr x (D)52mm	1	Main Dk	Main Dk	
6	3-Way Nozz.	(L)15mtr x (D)52mm	1	Main Dk	Main Dk	
7	3-Way Nozz.	(L)15mtr x (D)52mm	1	Main Dk	Main Dk	
8	3-Way Nozz.	(L)15mtr x (D)52mm	1	Main Dk	Main Dk	
9	3-Way Nozz.	(L)15mtr x (D)52mm	1	Below Main Dk	Below Main Dk	
10	3-Way Nozz.	(L)15mtr x (D)52mm	1	Below Main Dk	Below Main Dk	
11	3-Way Nozz.	(L)15mtr x (D)52mm	1	Bow Thruster	Bow Thruster	
12	3-Way Nozz.	(L)15mtr x (D)52mm	1	Bow Thruster	Bow Thruster	
			TOTAL	12		

INTERNATIONAL SHORE CONNECTION						
Item	Maker	Type	Quantity	Level	Located	Remarks
1	-	-	1	MAIN DECK	MAIN DECK STBD ENTRANCE	
			TOTAL	1		

FIREMAN'S OUTFIT 4 Sets 2 spare (6set)						
Item	Maker	Type	Quantity	Level	Located	Remarks
1	Jia Xing Rong Sheng Lifesaving Equipment	FireFighter Protective Suit	3	Bridge	Below Table Chart	
2	Jia Xing Rong Sheng Lifesaving Equipment	FireFighter Protective Suit	5	Main Deck	Acc Skin Locker	
3	Jia Xing Rong Sheng Lifesaving Equipment	FireFighter Protective Suit	1	Main Deck	Acc Skin Locker	
4	Jia Xing Rong Sheng Lifesaving Equipment	FireFighter Protective Suit	1	Main Deck	Acc Skin Locker	
			TOTAL	5		

CHEMICAL SUIT 2 Sets						
Item	Maker	Type	Quantity	Level	Located	Remarks
1	Dongtai City DongFang Marine Fitting Co., Ltd	Chemical Protective Clothing	1	Forecastle Deck	IMDG Box	
2	Dongtai City DongFang Marine Fitting Co., Ltd	Chemical Protective Clothing	1	Forecastle Deck	IMDG Box	
			TOTAL	2		

FIREMAN'S AXE 2 Pcs						
Item	Maker	Type	Quantity	Level	Located	Remarks
1	Fire Axe		1			
2	Fire Axe		1			
			TOTAL	2		

Prepared by :

AS

2nd Officer

Nur Mohamed Ikmal Salam Bin Hussain

Acknowledge by

[Signature]

Master

Capt. Abd Majid Bin Abd Malek

Fire Extinguisher List

MV AQ AZZAM
Call Sign: 9 WKF 2

Updated : Oct-2024

FIRE EXTINGUISHER							
No	Maker	Type	Weight	Quantity	Next Service	Level	Located
1	Eversafe	Dry Powder	8kg	1	Aug-25	Bridge	Bridge
2	Eversafe	Dry Powder	8kg	1	Aug-25	Bridge	Bridge
3	Eversafe	Dry Powder	8kg	1	Aug-25	Forecastle	Forecastle Dk Accom
4	Eversafe	Dry Powder	8kg	1	Aug-25	Forecastle	Forecastle Dk Accom
5	Eversafe	Water	9 lt	1	Aug-25	Forecastle	Forecastle Dk Accom
6	Eversafe	Water	9 lt	1	Aug-25	Main Deck	Forecastle Dk Fuel Store
7	Eversafe	Dry Powder	8kg	1	Aug-25	Main Deck	Main Dk Galley
8	Eversafe	Dry Powder	8kg	1	Aug-25	Main Deck	Main Dk Paint Store
9	Eversafe	Dry Powder	8kg	1	Aug-25	Main Deck	Main Dk Eng Gen
10	Eversafe	Dry Powder	8kg	1	Aug-25	Main Deck	Main Dk AC Machn Room
11	Eversafe	Water	9 lt	1	Aug-25	Main Deck	Main Dk Accom
12	Eversafe	Water	9 lt	1	Aug-25	Main Deck	Main Dk Accom
13	Eversafe	Foam	9 lt	1	Aug-25	Main Deck	Main Dk
14	Eversafe	Foam	9 lt	1	Aug-25	Main Deck	Main Dk
15	Eversafe	Dry Powder	8kg	1	Aug-25	Below Main Deck	Bow Thruster Room
16	Eversafe	Dry Powder	8kg	1	Aug-25	Below Main Deck	Bow Thruster Room
17	Eversafe	Foam	45 lt	1	Aug-25	Below Main Deck	Bow Thruster Room
18	Eversafe	Dry Powder	8kg	1	Aug-25	Below Main Deck	Engine Room
19	Eversafe	Dry Powder	8kg	1	Aug-25	Below Main Deck	Engine Room
20	Eversafe	Water	9 lt	1	Aug-25	Below Main Deck	Engine Room
21	Eversafe	Foam	9 lt	1	Aug-25	Below Main Deck	Engine Room
22	Eversafe	Foam	9 lt	1	Aug-25	Below Main Deck	Engine Room
23	Eversafe	Foam	9 lt	1	Aug-25	Below Main Deck	Engine Room
24	Eversafe	Foam	9 lt	1	Aug-25	Below Main Deck	Engine Room
25	Eversafe	Foam	45 lt	1	Aug-25	Below Main Deck	Engine Room
26	Eversafe	Dry Powder	8kg	1	Aug-25	Below Main Deck	Steering Gear Room
27	Eversafe	Dry Powder	2kg	1	Aug-25	Forecastle	Rescue Boat
28	SRI	Dry Powder	9 lt	1	Aug-25	Main Deck	SPARE
29	Eversafe	Dry Powder	8kg	1	Aug-25	Main Deck	AHU ROOM
30	Eversafe	Dry Powder	2kg	1	Aug-25	Main Deck	Skin Locker
31	Eversafe			1	Aug-25	Main Deck	
32	Eversafe			1	Aug-25	Main Deck	
33	Safety Plus			1	Aug-25	Main Deck	
			TOTAL	33			

FIRE BLANKET		
No.	LOCATION	TYPE
1	ECR	Fire Provs
2	Galley	Fire Provs
		2 PCS

CO2 SYSTEM IN ENGINE ROOM							
No	Maker	Serial No.	Capacity	Quantity	Next Services	Level	Located
1	-	M9138138	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
2	-	M9138116	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
3	-	M9138088	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
4	-	M9138044	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
5	-	M9138050	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
6	-	M9138048	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
7	-	M9138080	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
8	-	M9138143	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
9	-	M9138136	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
10	-	M9138054	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
11	-	M9138034	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
12	-	M9138049	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
13	-	M9138020	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
14	-	M9138154	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
15	-	M9138159	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
16	-	M9138151	45kg	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
			TOTAL	16			

CO2 SYSTEM IN ENGINE ROOM PILOT CYLINDER							
No	Maker	Serial No.	Capacity	Quantity	Next Services	Level	Located
1	-	M7850	1.78KG	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk
2	-	M0708	1.78KG	1	Aug-26	Main Deck	CO ₂ Room S/S Main Dk

Prepared by :

AS

2nd Officer

Nur Mohamed Ikmal Salam Bin Hussain

Acknowledge by

[Signature]

Master

Capt. Abd Majid Bin Abd Malek

FIREMEN OUTFIT

NAME: M.V AG AZZAM
CALL SIGN: 9 WKF 2

UPDATED: October-24



Fire locker BRIDGE				done check				
Item	Maker	Capacity	Pressure	Next Service	Quantity	Level	Located	Remarks
1	Firemen Outfit	3 set			1	Wheelhouse Deck	Nav. Bridge	
2	Belt	2			2	Wheelhouse Deck	Nav. Bridge	
3	Helmet	1			1	Wheelhouse Deck	Nav. Bridge	
4	Life line	1			1	Wheelhouse Deck	Nav. Bridge	
5	SCBA/Mask/	6.0 ltr / 30minutes	200 bar	Aug-25	1	Wheelhouse Deck	Nav. Bridge	
6	Axe				1	Wheelhouse Deck	Nav. Bridge	
7	Boots	1 pair			1	Wheelhouse Deck	Nav. Bridge	
					TOTAL	8		

Acc Skin Locker				done check				
Item	Maker	Capacity	Pressure	Next Service	Quantity	Level	Located	Remarks
1	Firemen Outfit	1 set			1	Main Deck	Skin Locker	INSTALLED
2	Belt	1			1	Main Deck	Skin Locker	
3	Helmet				1	Main Deck	Skin Locker	
4	Life line				1	Main Deck	Skin Locker	
5	SCBA/Mask/	6.0 ltr / 30minutes	200 bar	Aug-25	1	Main Deck	Skin Locker	
6	Axe				1	Main Deck	Skin Locker	
7	Boots	1 pair			1	Main Deck	Skin Locker	
					TOTAL	7		

Acc Skin Locker				done check				
Item	Maker	Capacity	Pressure	Next Service	Quantity	Level	Located	Remarks
1	Firemen Outfit	1 set			1	Main Deck	Skin Locker	
2	Belt	0			0	Main Deck	Skin Locker	
3	Helmet				1	Main Deck	Skin Locker	
4	Life line				1	Main Deck	Skin Locker	
5	SCBA/Mask/	6.0 ltr / 30minutes	200 bar	Aug-25	1	Main Deck	Skin Locker	
6	Axe				1	Main Deck	Skin Locker	
7	Boots	1 pair			1	Main Deck	Skin Locker	
					TOTAL	6		

Acc Skin Locker				done check				
Item	Maker	Capacity	Pressure	Next Service	Quantity	Level	Located	Remarks
1	Firemen Outfit	1 set			1	Main Deck	Skin Locker	
2	Belt	0			0	Main Deck	Skin Locker	
3	Helmet				1	Main Deck	Skin Locker	
4	Life line				1	Main Deck	Skin Locker	
5	SCBA/Mask/	6.0 ltr / 24minutes - 10 min safety margin	160 bar	Aug-25	1	Main Deck	Skin Locker	
6	Axe				1	Main Deck	Skin Locker	
7	Boots	1 pair			1	Main Deck	Skin Locker	
					TOTAL	6		

Prepared by:

2nd Officer
Nur Mohamad Ikmal Salam Bin Hussain

Acknowledge:

Master
Capt. Abd Majid Bin Abd Malek

Life Saving Appliances

MV AG AZZAM
Call Sign: 9 WKF 2

UPDATED: Oct-2024

LIFERAFT								
Item	Description	Serial Number	Call No	Type	Next Service	Quantity	Level	Location
1	Shanghai Training Rubber	20021	00042882	KHA-25	Aug-25	1	Wheelhouse Deck	SIS Wheelhouse
2	Shanghai Training Rubber	10267	00042891	KHA-25	Aug-25	1	Wheelhouse Deck	SIS Wheelhouse
3	Shanghai Training Rubber	20196	00042892	KHA-25	Aug-25	1	Wheelhouse Deck	PIS Wheelhouse
4	Shanghai Training Rubber	10266	00042890	KHA-25	Aug-25	1	Wheelhouse Deck	PIS Wheelhouse
HYDROSTATIC RELEASE								
1	Hydrostatic Release				Aug-25	1	Wheelhouse Deck	SIS Wheelhouse
2	Hydrostatic Release				Aug-25	1	Wheelhouse Deck	SIS Wheelhouse
3	Hydrostatic Release				Aug-25	1	Wheelhouse Deck	PIS Wheelhouse
4	Hydrostatic Release				Aug-25	1	Wheelhouse Deck	PIS Wheelhouse

LIFE JACKET								
Item	Maker	Type	WHISTLE	LIGHT	Expired Date	Quantity	Level	Location
1	Coast Premier	43 Kg	0000	LALDAS	May-28	4	Wheelhouse	Bridge
2	Coast Premier	43 Kg	0000	LALDAS	May-28	4	Bridge	Engine Control Room
3	Coast Premier	43 Kg	0000	LALDAS	May-28	1	Forecast Deck	Master cabin
4	Coast Premier	43 Kg	0000	LALDAS	May-28	1	Forecast Deck	Chief engineer cabin
5	Coast Premier	43 Kg	0000	LALDAS	May-28	1	Forecast Deck	Chief officer cabin
6	Coast Premier	43 Kg	0000	LALDAS	May-28	2	Forecast Deck	Second engineer cabin
7	Coast Premier	43 Kg	0000	LALDAS	May-28	2	Forecast Deck	Second officer cabin
8	Coast Premier	43 Kg	0000	LALDAS	May-28	2	Forecast Deck	Third engineer cabin
9	Coast Premier	43 Kg	0000	LALDAS	May-28	2	Forecast Deck	Clerk & Steward cabin
10	Coast Premier	43 Kg	0000	LALDAS	May-28	2	Forecast Deck	AB 1 cabin
11	Coast Premier	43 Kg	0000	LALDAS	May-28	4	Forecast Deck	AB 2 cabin
12	Coast Premier	43 Kg	0000	LALDAS	May-28	4	Main Deck	Cook cabin
13	Coast Premier	43 Kg	0000	LALDAS	May-28	4	Main Deck	Passenger cabin
14	Coast Premier	43 Kg	0000	LALDAS	May-28	4	Main Deck	Passenger cabin
					TOTAL	37		

LIFE RING BUOY								
Item	Maker	Type	Line	Expired Month/Year	Light / WOB	Quantity	Level	Location
1	GOOD BROTHOR	QCYD 15-3.3	Yes		Oct-26	3	Wheelhouse Deck	Bridge Wings PIS
2	PERRY BUOY	HQZ6566	Yes		yes	2	Main Deck	Main Deck
3	PERRY BUOY	HQZ6567	Yes		yes	2	Forecast Deck	Forecast Deck PIS
4	PERRY BUOY	HQZ6568	Yes		yes	2	Wheelhouse Deck	AB 1 cabin
5	PERRY BUOY	HQZ6569	Yes		yes	2	Forecast Deck	Forecast Deck PIS
					TOTAL	10		

DEMO								
Item	Maker	Type	Pressure	Next Service	Quantity	Level	Located	Remarks
1	Espana	CF 15	200 bar 15 Min	Aug-25	1	Bridge	Bridge Cabinet PIS	MR AGAZAM 20240111
2	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Bridge	Bridge Cabinet PIS	Inspected Passed
3	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Bridge	Bridge Cabinet PIS	Inspected Passed
4	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Forecast Deck	Forecast Deck PIS	Inspected Passed
5	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
6	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
7	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
8	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
9	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
10	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
11	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
12	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
13	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
14	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
15	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
16	Espana	BO-S-CAPE	200 bar 15 Min	Aug-25	1	Main Deck	Main Deck PIS	Inspected Passed
					TOTAL	16		

12 Bottle Spine								
Item	Maker	Capacity	Pressure	Next Service	Quantity	Level	Located	Remarks
1	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
2	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
3	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
4	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
5	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
6	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
7	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
8	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
9	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
10	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
11	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
12	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
					TOTAL	12		

Breathing Air Apparatus								
Item	Maker	Capacity	Pressure	Next Service	Quantity	Level	Located	Remarks
1	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
2	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
3	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
4	Espana	6 LP	200 Bar	Aug-25	1	Main Deck	Skin Locker	Good Condition
					TOTAL	4		

MEDICAL OXYGEN								
Item	Maker	Capacity	Pressure	Next Service	Quantity	Level	Located	Remarks
1	CO PURE	3.4 ltr / 30 minutes	150 bar	Aug-25	1	Main Deck	Skin Locker	
					TOTAL	2		

Prepared by:
2nd Officer
Nur Mohamad Ikmal Salam Bin Hussain

Acknowledge:
Master
Capt. Abd Majid Bin Abd Malek

ภาคผนวกเรือสับสนุน-1.2

ตัวอย่างบันทึกการตรวจสอบอุปกรณ์ความปลอดภัยของเรือ

WEEKLY EQUIPMENT/MACHINERIES TEST



MONTHLY: OCTOBER 2024

NO.	DESCRIPTION	WEEK 1	WEEK 2	WEEK 3	WEEK 4	REMARK
1.	BILGES HIGH LEVEL ALARM	5.10.2024 w.p. 3/E	12.10.2024 w.p. 3/E	19.10.2024 w.p. 3/E	26.10.2024 w.p. 3/E	OK
2.	RESCUE BOAT ENGINE AND DAVIT CRANE	5.10.2024 w.p. 3/E	12.10.2024 w.p. 3/E	19.10.2024 w.p. 3/E	26.10.2024 w.p. 3/E	OK
3.	EMERGENCY GENERATOR ENGINE	5.10.2024 w.p. 3/E	12.10.2024 w.p. 3/E	19.10.2024 w.p. 3/E	27.10.2024 w.p. 3/E	OK
4.	MAN IN FRIGDE ALARM	6.10.2024 w.p. 3/E	13.10.2024 w.p. 3/E	20.10.2024 w.p. 3/E	27.10.2024 w.p. 3/E	OK
5.	SMOKE DETECTOR ALARM	6.10.2024 w.p. 3/E	13.10.2024 w.p. 3/E	20.10.2024 w.p. 3/E	27.10.2024 w.p. 3/E	OK
6.	EMERGENCY FIRE PUMP AND EMERGENCY SUCTION VALVE	6.10.2024 w.p. 3/E	12.10.2024 w.p. 3/E	20.10.2024 w.p. 3/E	26.10.2024 w.p. 3/E	OK
7.	CHECK BATTERIES OF MACHINERIES	6.10.2024 w.p. 3/E	12.10.2024 w.p. 3/E	20.10.2024 w.p. 3/E	26.10.2024 w.p. 3/E	OK
8.	ENGINE ROOM FIRE FLAPS	5.10.2024 w.p. 3/E	13.10.2024 w.p. 3/E	19.10.2024 w.p. 3/E	27.10.2024 w.p. 3/E	OK

Verified By:

A. K.

Chief Engineer
KITTI K.

CHIEF ENGINEER
AG AZZAM

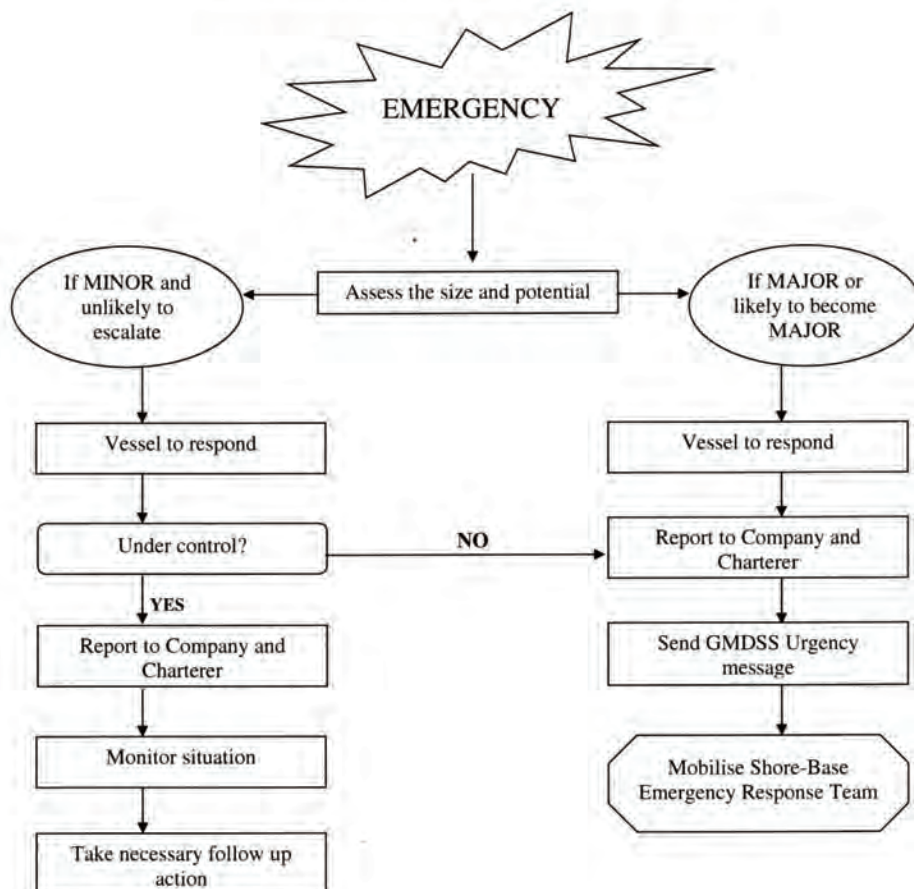
ภาคผนวกเรือสับสนุน-2

ข้อกำหนดและนโยบายต่าง ๆ ของเรือสับสนุน

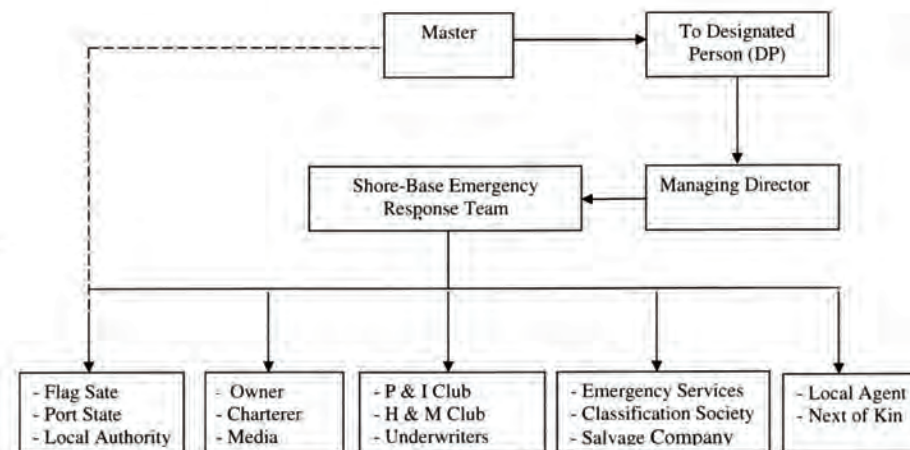
- ภาคผนวกเรือสับสนุน-2.1 คู่มือการตอบสนองกรณีเกิดเหตุฉุกเฉิน
- ภาคผนวกเรือสับสนุน-2.2 ตัวอย่างเอกสารการวิเคราะห์งานเพื่อความปลอดภัย
- ภาคผนวกเรือสับสนุน-2.3 ตัวอย่างเอกสารการขออนุญาตปฏิบัติงาน
- ภาคผนวกเรือสับสนุน-2.4 ตัวอย่างเอกสารข้อมูลความปลอดภัยของสารเคมี
- ภาคผนวกเรือสับสนุน-2.5 Mooring Buoy Procedure

ภาคผนวกเรื่องสนับสุนน-2.1
คู่มือการตอบสนองกรณีเกิดเหตุฉุกเฉิน

SHIPBOARD EMERGENCY RESPONSE FLOW CHART



SHORE-BASE EMERGENCY RESPONSE TEAM FLOW CHART



8.10.1 On-Site Emergency Response Team

Mobilisation of On-Site Emergency Response Team shall be determined by the emergency response team leader depending on the severity of the emergency and the need for it bearing location and availability of resources.

The On-Site Emergency Response Team shall consist of a Operation Manager and Technical Manager who is familiar with the vessel and to be the representatives of the Company at the site. The On-Site Emergency Response Team shall liaise with Company directly to update information on regular basis.


The On-Site Emergency Response Team shall liaise with the local authority and relevant interested parties and provide assistance to the vessel as required. The On-Site Emergency Response Team shall have good understanding and knowledge of the resources available at the location of the emergency, such as contractors, suppliers, service provider etc.

The On-Site Emergency Response Team shall not supersede Master's overriding authority. The Master has ultimate responsibility over safety of the vessel.


ภาคผนวกเรือสนับสนุน-2.2


ตัวอย่างเอกสารการวิเคราะห์งานเพื่อความปลอดภัย

Example JSA

Health, Safety and Environmental Management System											
Attachment 7.2B HSEMS Rev No: 01 15 th MARCH 2017		JOB HAZARD ANALYSIS WORKSHEET									
Vessel		AG-AZZAM		Date				JHA No (Running No/Year)			
Task Name		HOT WORK		Team Composition		DECK					
No	Description of Task Steps	Hazards (Source of possible harm or damage)	Consequence (Harm To) (P/E/A/K)	Existing Control Measures (Prior to Job)	Initial			Additional Control Measures	Revised		
					Severity 0-5	Probability A-F	Risk L/M/H		Severity 0-5	Probability A-F	Risk L/M/H
1	Prepare for hot work	<ul style="list-style-type: none"> Equipment failure Electrical hazards Improper Manual handling injuries Fire hazard 	P -- 1. Injury due to malfunction 2. Electric shock 3. Musculoskeletal injuries 4. Burns or fire-related injuries	<ul style="list-style-type: none"> Regular maintenance and inspection Use of certified equipment Training for personnel on equipment use Ensure proper grounding and insulation Use mechanical aids for lifting Keep fire extinguishers nearby	2	B	L	Nil	0	A	L
3	Start welding	1. Improper welding technique 2. Welding Arc Flash	P -- 1. Fire 2. Eye Injury	1. Ensure permit to work procedure is followed 2. Wear correct PPE	3	B	M	1. Sentry to be posted at worksite 2. Sentry to know worksite and ensure worksite is clear of flammable materials 3. Good housekeeping to be maintained at all times 4. Welder and sentry must know what is on the other side of any area being welded	2	B	L

Page 1 of 2 Section 7

Health, Safety and Environmental Management System											
Attachment 7.2B HSEMS Rev No: 01 15 th MARCH 2017		JOB HAZARD ANALYSIS WORKSHEET									
								5. Worksite to be manned at all times and a constant check kept on hot spots 6. Fire extinguisher to be kept at worksite and fire hose run out and armed 7. Worksite is to be monitored after welding is completes			
4	Work complete and any defects			1. Any defects should be reported to Chief Engineer / Master right away and any defects made good. 2. Equipment should be tested before being used again	0	A	L	Nil	0	A	L
5	Secure the job area / Housekeeping	<ul style="list-style-type: none"> Unsecured tools Unsecured Equipment 	P.A -- 1. Falling object 2. Injury due to Dropped object	<ul style="list-style-type: none"> Clean the area. Make sure all tools and equipment are secured being down to the ground. 	2	B	L	One man standby and monitor the job done	1	B	L


 Verified Master


Note: To be filed onboard.

Page 2 of 2 Section 7

ภาคผนวกเรือสับสนุน-2.3

ตัวอย่างเอกสารการขออนุญาตปฏิบัติงานของเรือ

Example PTW

Health, Safety and Environmental Management System		
Attachment 7.5E HSEMS Rev No: 01 15 th MARCH 2017	HOT WORK PERMIT	

1. Vessel Name:	Date:	Location:
• Permit No:	Control measures as identified by : <input type="checkbox"/> JHA	
* Running Number/Year - eg 001/2015	JHA Reference No:	
WORK DESCRIPTION:		

2. PERMIT VALIDITY (The permit will be valid for 12 hrs only. A new permit to be applied if the duration exceeds 12 hours)					
Permit Starts	Date:	Time:	Permit Expires	Date:	Time:
The permit is automatically suspended whenever an emergency alarm is activated. Work must stop, site made safe and permit return to source.					

3. WORKING CHECK LIST <i>(Tick box as appropriate)</i>			
		YES	NO
1	Working area and adjacent areas free from combustible material	<input type="checkbox"/>	<input type="checkbox"/>
2	Working area free from thermally sensitive equipment and adequately ventilated	<input type="checkbox"/>	<input type="checkbox"/>
3	Fire detection loops No: disconnected	<input type="checkbox"/>	<input type="checkbox"/>
4	Fire precautions and adequate Fire Fighting equipment provided during the work	<input type="checkbox"/>	<input type="checkbox"/>
5	Fire watch maintained for the next hours after work completed	<input type="checkbox"/>	<input type="checkbox"/>
6	Adequate illumination and safe access provided	<input type="checkbox"/>	<input type="checkbox"/>
7	Electric arc welding - cables, connections and electrode holder verified in good condition	<input type="checkbox"/>	<input type="checkbox"/>
8	Oxygen/Acetylene equipment - regulators, gauges, hoses and connections verified in good condition	<input type="checkbox"/>	<input type="checkbox"/>
9	Flashback arrestors in place	<input type="checkbox"/>	<input type="checkbox"/>
10	LOTO - Any energy isolation required? If YES, Has LOTO management form applied	<input type="checkbox"/>	<input type="checkbox"/>
11	Others <i>(Please specify)</i> :		


4. SOURCES OF IGNITION <i>(Tick boxes where applicable)</i>			
<input type="checkbox"/> Flame Cutting, Welding	<input type="checkbox"/> Welding Torch Igniters	<input type="checkbox"/> Chipping Sparks	
<input type="checkbox"/> Grit Blasting	<input type="checkbox"/> Explosives	<input type="checkbox"/> Others <i>(Please specify)</i> :	

5. ISOLATION <i>(Tick boxes where applicable)</i>		
<input type="checkbox"/> Instrument power supply	<input type="checkbox"/> Mechanical power supply	<input type="checkbox"/> Electrical isolation

6. SPECIAL PRECAUTIONS <i>(Tick boxes where applicable)</i>			
<input type="checkbox"/> Fire watchers must be in attendance at all times	<input type="checkbox"/> Trips and alarms to be overridden		
<input type="checkbox"/> Gas, flame, and smoke detectors to be smoked or isolated	<input type="checkbox"/> Combustible materials removed or protected		
<input type="checkbox"/> Hazardous drains or vents in vicinity to be isolated	<input type="checkbox"/> Instruments, sensors and light fittings must be protected		
<input type="checkbox"/> Artificial ventilation must be provided at the worksite	<input type="checkbox"/> Isolation of electrical instrument and mechanical power supply		
Others <i>(Please specify)</i> :			

7. PROTECTIVE EQUIPMENT <i>(Tick boxes where applicable)</i>			
<input type="checkbox"/> Coverall/Safety helmets/Safety footwear/Safety spectacles	<input type="checkbox"/> Hood/Helmet	<input type="checkbox"/> Gloves/Gauntlets	
<input type="checkbox"/> Ear muffs/Ear plugs	<input type="checkbox"/> Goggles/Face visor	<input type="checkbox"/> Fire blankets	<input type="checkbox"/> Work vest/Life jacket
<input type="checkbox"/> Boots/Chemical gloves	<input type="checkbox"/> Safety net		

Page 1 of 3
Section 7

Health, Safety and Environmental Management System		
Attachment 7.5E HSEMS Rev No: 01 15 th MARCH 2017	HOT WORK PERMIT	

<input type="checkbox"/> Safety warning signs	<input type="checkbox"/> Dust/Gas respirator	<input type="checkbox"/> Self Contained BA	<input type="checkbox"/> Wet tarpaulin
<input type="checkbox"/> Safety harness and lanyard	<input type="checkbox"/> Foam extinguisher ()	<input type="checkbox"/> Dry powder extinguisher ()	<input type="checkbox"/> CO ₂ extinguisher ()

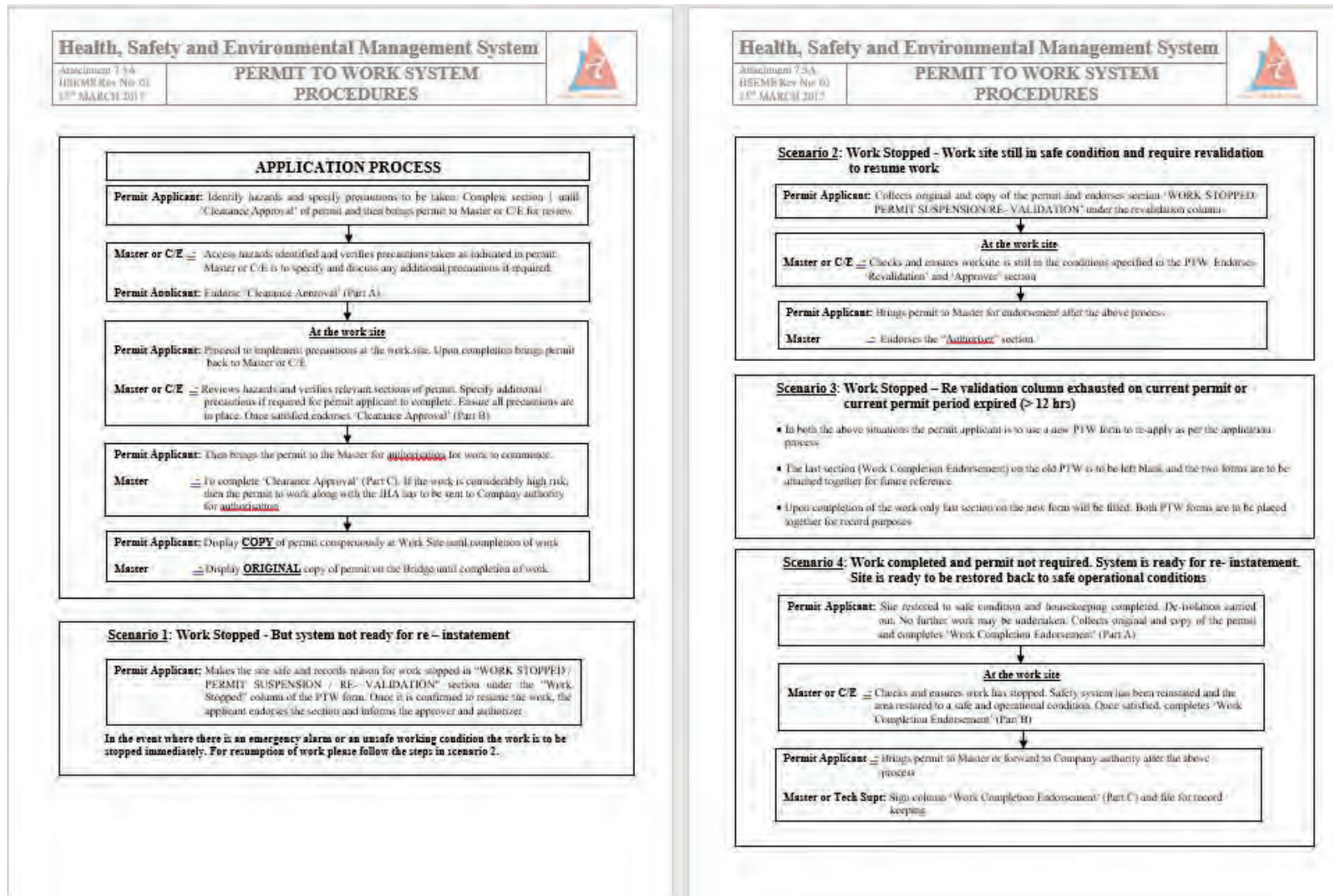
8. CLEARANCE APPROVAL			
A. PERMIT APPLICANT <i>(Chief Officer or 2nd Engineer)</i>		B. APPROVAL FOR WORK SIGNATORY <i>(Master or Chief Engineer)</i>	
I understand the precautions to be taken and agree to fully comply with the Company instructions/requirements stated above.		I have inspected the worksite and satisfied that it has been properly prepared for the work as specified on this permit.	
Sign:	Date:	Sign:	Date:
Name:		Name:	
Rank:		Rank:	
Remark (if any):		Remark (if any):	

9. WORK STOPPED / PERMIT SUSPENSION / RE-VALIDATION			
Once work is stopped/permit suspended the application is to state the reason for stoppage/ suspension, inform the approver and authoriser and endorse the "Work Stopped" column.			
ACTION	Work Stopped	Work Stopped	Work Stopped
Reason			
Examples : (a) Unacceptable work conditions (b) End of working day/shift (c) Emergency alarm activated (d) Others - specify			
Applicant	Date:		
	Time:		
	Sign:		
ACTION	Re-Validation	Re-Validation	
Applicant	Date:		When the applicant is ready to commence work again he has to endorse the relevant revalidation column. The approver is to ensure that the worksite is still in the conditions specified in the permit and the authoriser has to endorse before work can resume.
	Time:		
	Sign:		
Approver	Date:		If Work has been stopped 3 times then a new PTW form is to be used.
	Time:		
	Sign:		
Authoriser	Date:		
	Time:		
	Sign:		

10. WORK COMPLETION ENDORSEMENT
--

Page 2 of 3
Section 7

PTW Flow Chart



ภาคผนวกเรือสนับสนุน-2.4

ตัวอย่างเอกสารข้อมูลความปลอดภัยของสารเคมี

**SAFETY DATA SHEET****MULTI-PURPOSE DEGREASER****SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : MULTI-PURPOSE DEGREASER

Other means of identification : Not applicable

Recommended use : Degreaser

Restrictions on use : Reserved for industrial and professional use.

Product dilution information : 12.76 %

Company : Ecolab Inc.
1 Ecolab Place
St. Paul, Minnesota USA 55102
1-866-444-7450

Emergency health information : 1-800-328-0026 (US/Canada), 1-651-222-5352 (outside US)

Issuing date : 11/03/2022

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Product AS SOLD
Eye irritation : Category 2B

Product AT USE DILUTION

Not a hazardous substance or mixture.

GHS label elements

Product AS SOLD
Signal Word : Warning

Hazard Statements : Causes eye irritation.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.

Product AT USE DILUTION

Precautionary Statements : **Prevention:**
Wash hands thoroughly after handling.
Response:
Get medical advice/ attention if you feel unwell.
Storage:
Store in accordance with local regulations.

Product AS SOLD
Other hazards : None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

911615-01 1 / 11

SAFETY DATA SHEET**MULTI-PURPOSE DEGREASER**

Nitrogen oxides (NOx)
Sulfur oxides

Special protective equipment : Use personal protective equipment.
for fire-fighters

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Product AS SOLD
Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Product AT USE DILUTION

Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.

Environmental precautions : No special environmental precautions required.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

SECTION 7. HANDLING AND STORAGE**Product AS SOLD**

Advice on safe handling : Wash hands thoroughly after handling. In case of mechanical malfunction, or if in contact with unknown dilution of product, wear full Personal Protective Equipment (PPE).

Conditions for safe storage : Keep out of reach of children. Store in suitable labeled containers.

Storage temperature : 0 °C to 50 °C

Product AT USE DILUTION

Advice on safe handling : Wash hands after handling. In case of mechanical malfunction, or if in contact with unknown dilution of product, wear full Personal Protective Equipment (PPE). For personal protection see section 8.

Conditions for safe storage : Keep out of reach of children. Store in suitable labeled containers.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

911615-01 3 / 11

SAFETY DATA SHEET**MULTI-PURPOSE DEGREASER****Product AS SOLD**

Pure substance/mixture : Mixture

Chemical name	CAS-No.	Concentration (%)
Dodecylbenzenesulfonic acid, sodium salt	25155-30-0	5 - 10
Sodium poly(oxyethylene) dodecyl ether sulfate	68585-34-2	1 - 5
Dodecylbenzenesulphonic acid, compound with 2,2',2''-nitrioltriethanol (1:1)	27323-41-7	1 - 5
triethanolamine	102-71-6	1 - 5
ethanol	64-17-5	0.1 - 1

Product AT USE DILUTION

No hazardous ingredients

SECTION 4. FIRST AID MEASURES**Product AS SOLD**

In case of eye contact : Rinse with plenty of water.

In case of skin contact : Rinse with plenty of water.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

Protection of first-aiders : No special precautions are necessary for first aid responders.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Product AT USE DILUTION

In case of eye contact : Rinse with plenty of water.

In case of skin contact : Rinse with plenty of water.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

SECTION 5. FIRE-FIGHTING MEASURES**Product AS SOLD**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during fire fighting : Not flammable or combustible.

Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides

911615-01 2 / 11

SAFETY DATA SHEET**MULTI-PURPOSE DEGREASER****Product AS SOLD****Ingredients with workplace control parameters**

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
triethanolamine	102-71-6	TWA	5 mg/m3	ACGIH
		PEL	5 mg/m3	
ethanol	64-17-5	TWA	1,000 ppm	NIOSH REL.
			1,900 mg/m3	
		TWA	1,000 ppm	OSHA Z-1
			1,900 mg/m3	

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : No special protective equipment required.

Hand protection : No special protective equipment required.

Skin protection : No special protective equipment required.

Respiratory protection : No personal respiratory protective equipment normally required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

Product AT USE DILUTION

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : No special protective equipment required.

Hand protection : No special protective equipment required.

Skin protection : No special protective equipment required.

Respiratory protection : No personal respiratory protective equipment normally required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

	Product AS SOLD	Product AT USE DILUTION
Appearance	: liquid	liquid
Color	: purple	purple
Odor	: citrus	citrus
pH	: 8.4, (100 %)	6.5 - 6.79
Flash point	: Not applicable	
Odor Threshold	: No data available	
Melting point/freezing point	: No data available	
Initial boiling point and	: No data available	

911615-01 4 / 11

SAFETY DATA SHEET

MULTI-PURPOSE DEGREASER

boiling range	
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: 1.021
Water solubility	: soluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity, kinematic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Molecular weight	: No data available
VOC	: No data available

SECTION 10. STABILITY AND REACTIVITY

Product AS SOLD	
Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: None known.
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon oxides Nitrogen oxides (NOx) Sulfur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	: Inhalation, Eye contact, Skin contact
--	---

Potential Health Effects

Product AS SOLD	
Eyes	: Causes eye irritation.

911615-01 5 / 11

SAFETY DATA SHEET

MULTI-PURPOSE DEGREASER

STOT-single exposure	: No data available
STOT-repeated exposure	: No data available
Aspiration toxicity	: No data available
Components	
Acute inhalation toxicity	: ethanol 4 h LC50 Rat: 117 mg/l Test atmosphere: vapor

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product AS SOLD	
Environmental Effects	: Harmful to aquatic life with long lasting effects.

Product AT USE DILUTION	
Environmental Effects	: This product has no known ecotoxicological effects.

Product AS SOLD
Product

Toxicity to fish	: No data available
Toxicity to daphnia and other aquatic invertebrates	: No data available
Toxicity to algae	: No data available

Components

Toxicity to fish	: Dodecylbenzenesulfonic acid, sodium salt 96 h LC50 Fish: 3.2 mg/l Sodium poly(oxyethylene) dodecyl ether sulfate 96 h LC50 Fish: 28 mg/l Dodecylbenzenesulphonic acid, compound with 2,2',2''-nitritotriethanol (1:1) 96 h LC50: 2.5 mg/l triethanolamine 96 h LC50: 11,800 mg/l ethanol 96 h LC50 Pimephales promelas: > 100 mg/l
------------------	---

Components

Toxicity to daphnia and other aquatic invertebrates	: triethanolamine 48 h EC50: 609.88 mg/l ethanol 48 h EC50 Aquatic Invertebrate: 857 mg/l
---	--

Components

Toxicity to algae	: triethanolamine 72 h EC50: > 100 mg/l
-------------------	--

Persistence and degradability

911615-01 7 / 11

SAFETY DATA SHEET

MULTI-PURPOSE DEGREASER

Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Product AT USE DILUTION

Eyes	: Health injuries are not known or expected under normal use.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Product AS SOLD

Eye contact	: Redness, Irritation
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

Product AT USE DILUTION

Eye contact	: No symptoms known or expected.
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

Toxicity

Product AS SOLD

Product	
Acute oral toxicity	: Acute toxicity estimate : > 5,000 mg/kg
Acute inhalation toxicity	: No data available
Acute dermal toxicity	: Acute toxicity estimate : > 5,000 mg/kg
Skin corrosion/irritation	: No data available
Serious eye damage/eye irritation	: Mild eye irritation
Respiratory or skin sensitization	: No data available
Carcinogenicity	: No data available
Reproductive effects	: No data available
Germ cell mutagenicity	: No data available
Teratogenicity	: No data available

911615-01 6 / 11

SAFETY DATA SHEET

MULTI-PURPOSE DEGREASER

Product AT USE DILUTION
Biodegradable

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Product AS SOLD

Disposal methods	: Do not contaminate ponds, waterways or ditches with chemical or used container. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	: Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations.

Product AT USE DILUTION

Disposal methods	: Diluted product can be flushed to sanitary sewer.
Disposal considerations	: Dispose of in accordance with local, state, and federal regulations.

SECTION 14. TRANSPORT INFORMATION

Product AS SOLD

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Not dangerous goods

Sea transport (IMDG/IMO)

Not dangerous goods

SECTION 15. REGULATORY INFORMATION

Product AS SOLD

EP CRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Dodecylbenzenesulfonic acid, sodium salt	25155-30-0	1000	15594

911615-01 8 / 11

SAFETY DATA SHEET

MULTI-PURPOSE DEGREASER

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

California Cleaning Product Right to Know Act of 2017 (SB 258)

This regulation applies to this product.

Chemical Name	CAS-No.	Function	List(s)
water	7732-18-5	Diluent	Not Applicable
Dodecylbenzenesulfonic acid, sodium salt	25155-30-0	Cleaning Agent	Not Applicable
Sodium poly(oxyethylene) dodecyl ether sulfate	68585-34-2	Cleaning Agent	Not Applicable
Dodecylbenzenesulphonic acid, compound with 2,2',2''-nitrilotriethanol (1:1)	27323-41-7	Cleaning Agent	Not Applicable
magnesium chloride, hexahydrate	7791-18-6	Cleaning Agent	Not Applicable
Benzyl alcohol ethoxylated	Withheld	Cleaning Agent	Not Applicable
Limonene	5989-27-5	Fragrance	FRA
Oxyalkylated alcohol	Withheld	Cleaning Agent	Not Applicable
triethanolamine	102-71-6	Cleaning Agent	Not Applicable
Isothiazolinones	Withheld	Biocide	Not Applicable
benzenesulfonic acid, 3-[[4-amino-9,10-dihydro-9,10-dioxo-3-[sulfo-4-(1,1,3,3-tetramethylbutyl)phenoxy]-1-anthracenyl]am	72243-90-4	Dye	7
Colorant	Withheld	Dye	Not Applicable
Amine	Withheld	Dye	Not Applicable
distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	Dye	2
Nonionic surfactant	Withheld	Dye	Not Applicable
Oleic acid, ethylene oxide adduct	Withheld	Dye	Not Applicable
Polyglycol	Withheld	Dye	Not Applicable

*refer to ecolab.com/sds for electronic links to designated lists

The ingredients of this product are reported in the following inventories:

United States TSCA Inventory :

On TSCA Inventory

Canadian Domestic Substances List (DSL) :

This product contains one or several components that are not on the Canadian DSL nor NDSL.

911615-01

9 / 11

SAFETY DATA SHEET

MULTI-PURPOSE DEGREASER

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

911615-01

11 / 11

SAFETY DATA SHEET

MULTI-PURPOSE DEGREASER

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS) :
not determined

New Zealand. Inventory of Chemical Substances :
not determined

Japan. ENCS - Existing and New Chemical Substances Inventory :
not determined

Korea. Korean Existing Chemicals Inventory (KECI) :
not determined

Philippines Inventory of Chemicals and Chemical Substances (PICCS) :
not determined

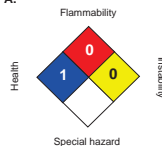
China. Inventory of Existing Chemical Substances in China (IECSC) :
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI) :
not determined

SECTION 16. OTHER INFORMATION

Product AS SOLD

NFPA:



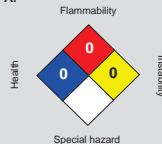
HMIS III:

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Product AT USE DILUTION

NFPA:



HMIS III:

HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Issuing date : 11/03/2022
Version : 1.4
Prepared by : Regulatory Affairs

911615-01

10 / 11

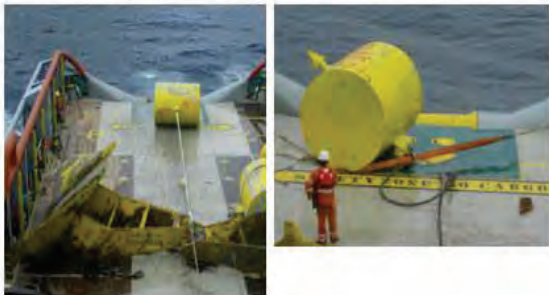
ภาคผนวกเรือสับสนุน-2.5
Mooring Buoy Procedure

Pre-installation of anchor:

The Pre-installation of anchor is most often done to reduce the risk of damage to the "infrastructure of the seabed" and the environment compared to installing the anchors in the usual manner.

Under given circumstances, pre-installation of anchor may be time saving as regards time during actual anchoring.

Anchor arrangement with buoy:



Portable tools:

Following tools have to be ready on main deck before operation:

- Sledge hammer
- split pin
- chisel (used to open split pins)
- crow bar
- cutting tools
- oxygen acetylene
- pin puncher
- lead plug for securing connection pins



- Boat hook



- webbing



- sling



Anchor with buoyed pennant:

The operational differences for anchors with buoyed pennant compared to chaser systems are:

- The pennant is directly connected to anchor and buoy
- Depending on water depth, insert will be added to the pennant

This insert will be stored on the Anchor Handling or storage winch



Deploying the anchor:

Once arriving above the **dropping point**, stretch the line.

Add insert to the anchor pennant.

Pay out insert until its end: **anchor is then on the bottom.**



Secure insert in shark jaw.

Maintain position over anchor.

Connect insert to buoy tail.

Inform the OIM about buoy connection and **wait for dropping order.**

Disconnect work wire from the pennant:

Use a tugger winch to draw out the shackle pin.

First undo the nut enough to get the sling around the pin head

Do not unscrew the nut completely until the tugger winch is ready and the deck clear of people.

A wire clamp can be used to avoid injuries caused by turned wire. When equipment is fitted, the clamp holds the wire firmly when working around the shark jaw.



Risk elements:

Turned wire:

Use an aid to draw out the pin

Points of attention:

Be very careful with the buoy connection (position of the buoy, rolling, tail length...)

For letting go the buoy, the shark jaw may be normally operated or quick released depending on the tail length.



Take cover when drawing out the pin.



Summary of the procedure: -

- 1) Lay up the work wire.
- 2) Connect the anchor wire with the work wire and spool in the wire into the work wire drum until the end of the anchor wire socket are at the shark jaw/kamfork.
- 3) Connect the anchor wire with the Delta Flipper anchor chain.
- 4) Once connected, bring the Delta Flipper anchor to the stern roller by using tugger wire or capstan wire (which is available at that moment).
- 5) Once anchor at the stern roller, vessel will proceed to the anchor position that given by the OIM/Authorized Personnel at field.
- 6) Pay out the work wire to drop the anchor once reach at the position given.
- 7) Report to OIM when anchor at the seabed. Mark position inside the radar and take the exact latitude and longitude.
- 8) Resume to pay out the work wire until another end of anchor wire socket reached the shark jaw/kamfork. Secure the end of the anchor wire socket at the shark jaw/kamfork, disconnect the anchor wire from the work wire.
- 9) Connect the anchor wire with the Mooring Buoy chain.
- 10) All connection using the shackles **must be tack weld** as an additional securing arrangement for the shackles other than the safety split pin.
- 11) After the anchor wire if safely connected to the Mooring Buoy, connect the mooring hawser with the Mooring Buoy and install the Norwegian Buoy at the end of the mooring hawser.
- 12) Double checked all the connections again and if found satisfactory, ready to splash the buoy.
- 13) All crews clear the deck. Vessel moves ahead and release all the shark jaw/kamfork and towing pins.
- 14) Mooring Buoy splash on the water, vessel will keep moving ahead to keep clear from the Mooring Hawser.
- 15) Let go all the Mooring Hawser and Norwegian Buoy.
- 16) Completed Mooring Buoy installation. Report to OIM.

ภาคผนวกเรือสับสนุน-3

ใบรับรองการตรวจสอบเรือสับสนุน

- o ภาคผนวกเรือสับสนุน-3.1 International Sewage Pollution Prevention Certificate
- o ภาคผนวกเรือสับสนุน-3.2 International Oil Pollution Prevention Certificate

ภาคผนวกเรือสำเภา-3.1

International Sewage Pollution Prevention Certificate



INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE

No MIR0/WAR/20231011074740

Issued under the provisions of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, and as amended by resolution MEPC.115(51) (hereinafter referred to as "the Convention") under the authority of the Government of

MALAYSIA

By BUREAU VERITAS MARINE & OFFSHORE

Name of Ship BV No : 15716K	IMO	Distinctive Number or Letters	Port of Registry	Gross Tonnage	Number of persons which the ship is certified to carry
AG AZZAM	9553531	9WKF2 333099	PORT KELANG	959	27

Type of ship* ☒ New ☐ Existing

Type of ship for the application of regulation 11.3*:

☐ Passenger ship ☐ New ☐ Existing

☒ Ship other than a passenger ship

Date on which keel was laid or ship was at a similar stage of construction or, where applicable, date on which a conversion or an alteration or modification of a major character was commenced **03 October 2008**

THIS IS TO CERTIFY:

- 1 That the ship is equipped with a* ☒ sewage treatment plant
☐ comminuter
☒ holding tank

and a discharge pipeline in compliance with regulations 9 and 10 of Annex IV of the Convention as follows*:

- 1.1 ☒ Description of the sewage treatment plant

Type of sewage treatment plants: ISS-35

Name of manufacturer: ILSEUNG CO., LTD.

☒ The sewage treatment plant is certified by the Administration to meet the effluent standards as provided for in resolution MEPC.2(VI).

☐ The sewage treatment plant is certified by the Administration to meet the effluent standards as provided for in resolution MEPC.159(55).

☐ The sewage treatment plant is certified by the Administration to meet the effluent standards as provided for in the Guidelines on implementation of effluent standards and performance test for sewage treatment plants, adopted by resolution MEPC.227(64), as amended, ** the standards of section 4.2 thereof.



**BUREAU
VERITAS**

* Cross as appropriate
** Delete as appropriate

INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE No : MIR0/WAR/20231011074740
NAME OF SHIP : AG AZZAM
BV REGISTER : 15716K

- 1.2 ☐ Description of the comminuter

Type of comminuter: -

Name of manufacturer: -

Standard of sewage after disinfection: -

- 1.3 ☒ Description of the holding tank equipment

Total capacity of the holding tank: 10.4 m³

Location: Engine Room, Double Bottom, Centre, Fr: 53 - Fr: 56

- 1.4 A pipeline for the discharge of sewage to a reception facility, fitted with a standard connection.

- 2 That the ship has been surveyed in accordance with regulation 4 of Annex IV of the Convention.

- 3 That the survey shows that the structure, equipment, systems, fittings, arrangements and materials of the ship and the condition thereof in all respects satisfactory and that the ship complies with the applicable requirements of Annex IV of the Convention.

This certificate is valid until **10 October 2025**

subject to surveys in accordance with regulation 4 of the Annex IV of the Convention.

Completion date of the survey on which this certificate is based : **11 October 2023**

Issued at Miri, Malaysia, on the 11 October 2023



This document is electronically signed and does not require a manual signature as defined in IMO guideline FAL.5-Circ.39.
[Click here for the verification website](#)

**BUREAU VERITAS
MARINE & OFFSHORE**
Wan Kamarul Ariffin Bin
Wan Samat



By Order of the Secretary

INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE No : MIR0/WAR/20231011074740
NAME OF SHIP : AG AZZAM
BV REGISTER : 15716K

Endorsement to extend the Certificate if valid for less than 5 years where regulation 8.3 applies

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 8.3 of Annex IV of the Convention, be accepted as valid until .

Signed :
(Surveyor to BUREAU VERITAS MARINE & OFFSHORE)

Place :
Date :

Endorsement where the renewal survey has been completed and regulation 8.4 applies

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 8.4 of Annex IV of the Convention, be accepted as valid until .

Signed :
(Surveyor to BUREAU VERITAS MARINE & OFFSHORE)

Place :
Date :

Endorsement to extend the validity of the Certificate until reaching the port of survey or for a period of grace where regulation 8.5 or 8.6 applies

This Certificate shall, in accordance with regulation* ☐ 8.5 or ☐ 8.6 of Annex IV of the Convention, be accepted as valid until .

Signed :
(Surveyor to BUREAU VERITAS MARINE & OFFSHORE)

Place :
Date :

ภาคผนวกเรือสำเภา-3.2

International Oil Pollution Prevention Certificate



RECORD OF CONSTRUCTION AND EQUIPMENT FOR
PREVENTION OF OIL POLLUTION
For All Ships

Record No : MIR0/WAR/20231011172058

To meet the provisions of the applicable parts of Annex I of MARPOL 04 Convention
This form must be kept on board and be available for inspection by a nominated surveyor or recognized at all times.

Name of Ship BV Register: 15716K	Distinctive number or letters	Nationality Port of Registry	IMO	Gross Tonnage	Date Keel Laid
AG AZZAM	9WKF2 333099	MALAYSIA PORT KELANG	9553531	959	03 October 2008

Deadweight :
Type of ship (2) : Other Cargo Ship

Part 1 OIL DISCHARGE FROM MACHINERY SPACE BILGES
(oily water separator, oil filtering system, monitoring and control system, sludge tank, discharging piping)

Initial Survey carried out at : Miri, Malaysia

On the : 11 October 2023

This form has been completed by a surveyor of BUREAU VERITAS MARINE & OFFSHORE.
The information contained in this record is a correct description of the arrangements provided on board.

District :	Miri, Malaysia
Date :	11 October 2023
Surveyor Name and Signature :	Wan Kamarul Ariffin Bin Wan Samat
SSQM Name and Signature :	David Wong Ing Siing

BUREAU VERITAS
MARINE & OFFSHORE



This document is electronically signed and does not require a manual signature as
defined in IMO guideline FAL-5-Circ.39.
[Click here for the verification website](#)



- (1) Enter date on which conversion has commenced if applicable
(2) Specify whether crude oil tanker / crude oil and product carrier / ship other than oil tanker carrying cargo oil in bulk of aggregate capacity of 200 m3 or more / other type...

M/V : AG AZZAM - 15716K - Record No : MIR0/WAR/20231011172058

RECORD OF CONSTRUCTION AND EQUIPMENT FOR
PREVENTION OF OIL POLLUTION
For All Ships

PART 1 : OIL DISCHARGE FROM MACHINERY SPACE BILGES

Equipment surveyed :
for classification purpose
within the scope of Regulations 12/13/16/17 of Annex I of MARPOL 04

☒ Yes ☐ No
☒ Yes ☐ No

1. OIL WATER SEPARATING EQUIPMENT

1.1	Type of installation
1.1.1	With oil content of less than 15 ppm <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

1.2	Description of installation
	SEPARATING / FILTERING EQUIPMENT
1.2.1	Date of installation
1.2.2	Manufacturer
1.2.3	Type or model
1.2.4	Maximum output
1.2.5	Approved in the accordance with : <input type="checkbox"/> RESOLUTION 393 (X)
1.2.6	Certificate of type test issued by : on the :
	OIL FILTERING EQUIPMENT
	31 May 2010
	GEORIM ENGINEERING CO., LTD.
	GRS-10EB
	1.0m³/h
	<input type="checkbox"/> RESOLUTION MEPC. 60 (33)
	<input checked="" type="checkbox"/> RESOLUTION MEPC. 107 (49)
	Korean Register of Shipping
	15 October 2008

1.3	Miscellaneous
1.3.1	The pump has the same characteristics as the pump specified in the type test certificate <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.3.2	Indications relating to operational and installation limits are noted on a permanently attached plate <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.3.3	An instruction manual relating to the equipment is provided on board <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.3.4	A sampling point is provided in a vertical section of the water effluent piping <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.3.5	There are sufficient replaceable elements for filter and/or coalescer on board (if required by the makers) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

2. OIL FILTERING EQUIPMENT / 15 PPM ALARM

2.1	Description of installation
2.1.1	Date of installation on board :
2.1.2	Manufacturer :
2.1.3	Type or model :
2.1.4	The oil content meter is approved in accordance with :
2.1.5	Certificate of type test issued by on the
2.1.6	Alarm and automatic stopping device when oil content flow exceeds 15 ppm <input type="checkbox"/> Yes <input type="checkbox"/> No

2.2	Miscellaneous
2.2.1	Indications relating to operational and installation limits are noted on a permanently attached plate <input type="checkbox"/> Yes <input type="checkbox"/> No
2.2.2	An instruction relating to the system is provided on board <input type="checkbox"/> Yes <input type="checkbox"/> No

3. MEANS FOR RETENTION AND DISPOSAL OF OIL RESIDUES (REG 12)

3.1	Elements of calculation of minimal required capacity		
3.1.1	Daily consumption : 23.33 m ³ /day		
3.1.2	Type of fuel : Diesel Oil		
3.1.3	Incinerator-capacity - l/h	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3.1.4	Auxiliary boiler suitable for burning oil residues	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3.1.5	Tank for mixing oil residue with FO capacity - m ³	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3.1.6	Other acceptable means -	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

3.2	Sludge tanks		
3.2.1	Tank identification : Dirty Oil		
3.2.2	Location : Frame (from - to)	Lateral position	Volume (m ³)
	Fr: 48 - Fr: 53	Engine Room, DB (S)	5.2
	Total Volume		5.2 m ³
3.2.3	Above tanks are solely connected to the piping for discharge ashore (standard discharge connection) of oil residues		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

3.3	Holding tanks		
3.3.1	Tank identification : Bilge Holding		
3.3.2	Location : Frame (from - to)	Lateral position	Volume (m ³)
	Fr: 48 - Fr: 53	Engine Room, DB (P)	5.2
	Total Volume		5.2 m ³

4. STANDARD DISCHARGE CONNECTION

4.1	A standard discharge connection in compliance with Regulation 13 of Annex I of MARPOL 04 is provided on board	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
-----	---	---

5. SEGREGATION BETWEEN FUEL OIL AND WATER BALLAST SYSTEMS

5.1	Fuel oil and water ballast systems are completely independent	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5.2	If not, what are the means provided for isolating both systems? (for example blank flange, spool piece, appropriate notices posted, etc.) Description :	

6. OIL RECORD BOOK

6.1	An oil record book in compliance with Regulation 17 of Annex I of MARPOL 04 is provided on board	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
-----	--	---

7. OTHER REQUIREMENTS (REG 4 and 15)

Reminder : Any direct overboard outlet is a potential source of pollution.		
7.1	Is there any pump capable of discharging oily water to the sea without passing through the oily water separating / filtering equipment?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7.2	State which pump (ballast, general service, bilge, etc.) :	
	Have the above mentioned pumps and their associated hull valves been posted with warning notices to the effect that direct overboard discharge of oily water is forbidden, except in case of emergency at captain's satisfaction?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Are there means capable of discharging oil, oily residues or sludges to sea? (sludge, pump, ejector, etc.)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Which are the means provided for prohibiting such discharges ? (such as removing, blind flange, etc.)	

8. SHIPBOARD OIL POLLUTION EMERGENCY PLAN (SOPEP) (REG 37)

8.1	A SOPEP/SMPEP in accordance with Regulation 37 of Annex I, MARPOL 04 is provided on board	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
8.2	The SOPEP/SMPEP has been approved by : Bureau Veritas	
8.3	The following drawings are appended to the SOPEP/SMPEP : General Arrangement ; Mid Ship Structural Details ; Tank Capacity Plan ; Ship's Fuel System ; Bilge Ballast & Fire Main System	

9. REMARKS

ภาคผนวกสนับสนุน-4

บันทึกต่าง ๆ ของเรือสนับสนุน

- ภาคผนวกเรือสนับสนุน-4.1 ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง
- ภาคผนวกเรือสนับสนุน-4.2 ตัวอย่างสมุดบันทึกน้ำมัน
- ภาคผนวกเรือสนับสนุน-4.3 รายการเวชภัณฑ์สำหรับการปฐมพยาบาลและการรักษาพยาบาลเบื้องต้น
- ภาคผนวกเรือสนับสนุน-4.4 แผนการฝึกซ้อมการตอบสนองต่อเหตุฉุกเฉิน และตัวอย่างรายงานการฝึกซ้อมฯ ประจำปี พ.ศ. 2567
- ภาคผนวกเรือสนับสนุน-4.5 ตัวอย่างรายงานการตรวจประเมินความปลอดภัย และสัญลักษณ์ของสถานที่ทำงานและที่พักอาศัย
- ภาคผนวกเรือสนับสนุน-4.6 ตัวอย่างรายงานการเกิดอุบัติเหตุ
- ภาคผนวกเรือสนับสนุน-4.7 ตัวอย่างบันทึกปริมาณและรายการน้ำมัน และสารเคมี
- ภาคผนวกเรือสนับสนุน-4.8 รายการอุปกรณ์ระงับเหตุการณ์หกรั่วไหล และตัวอย่างรายงานการบำรุงรักษาเชิงป้องกัน (ORSE)
- ภาคผนวกเรือสนับสนุน-4.9 ตัวอย่าง Pilot Booking

ภาคผนวกเรือสนับสนุน-4.1

ตัวอย่างรายงานการตรวจสอบและการซ่อมบำรุง

PMS REPORT

Department : Engine

*★ - Equipment & Tech. sys. Which may result in hazardous situations in case of sudden operation failure

Critical Equip.	Code	Mach.	Equip/ No	Equipment	Job No.	Working Items	Pic	Interval (Type)	Previous Work Date	Last Work Date	Next Work Date	Remark
MAIN ENGINE PORT												
★	Aa	Main Engine Port	E1	Crankcase	01	Check condition Crankcase condition	2/E	6 M		6/1/2024	9/1/2024	
★	Aa	Main Engine Port	E1	Crankcase	02	Check condition Crankcase oil outlet	2/E	32,000 HRS		10/1/2023		
★	Aa	Main Engine Port	E1	Crankcase	03	Check condition Crankcase(loose nuts, bearing material fragments	2/E	3 M		6/1/2024	9/1/2024	
★	Aa	Main Engine Port	E3	Holding down & end chock bolts	01	Check condition	2/E	8,000 HRS		10/1/2023		
★	Aa	Main Engine Port	E4	Stay bolts	01	Check condition	2/E	32,000 HRS		10/1/2023		
★	Aa	Main Engine Port	E6	Oil mist detector	01	Check function of oil mist detector	2/E	6 M		6/1/2024	9/1/2024	
	Aa	Main Engine Port	E7	Axial vibration damper	01	Check condition	2/E	12 M		10/1/2023	10/1/2024	
★	Aa	Main Engine Port	E10	Cylinder Cover	01	Overhaul No.1 Cylinder cover	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E10	Cylinder Cover	02	Overhaul No.2 Cylinder cover	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E10	Cylinder Cover	03	Overhaul No.3 Cylinder cover	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E10	Cylinder Cover	04	Overhaul No.4 Cylinder cover	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E10	Cylinder Cover	05	Overhaul No.5 Cylinder cover	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E10	Cylinder Cover	06	Overhaul No.6 Cylinder cover	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E12	Cylinder Liner	01	Measure & inspection No.1 Cylinder liner	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E12	Cylinder Liner	02	Measure & inspection No.2 Cylinder liner	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E12	Cylinder Liner	03	Measure & inspection No.3 Cylinder liner	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E12	Cylinder Liner	04	Measure & inspection No.4 Cylinder liner	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E12	Cylinder Liner	05	Measure & inspection No.5 Cylinder liner	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E12	Cylinder Liner	06	Measure & inspection No.6 Cylinder liner	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	01	Overhaul No.1 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	02	Overhaul No.2 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	03	Overhaul No.3 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	04	Overhaul No.4 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	05	Overhaul No.5 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	06	Overhaul No.6 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	01	Overhaul No.1 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	02	Overhaul No.2 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	03	Overhaul No.3 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	04	Overhaul No.4 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	05	Overhaul No.5 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E13	Piston & Ring	06	Overhaul No.6 Cylinder piston & ring	2/E	16,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E16	X-Head Bearing	01	Check condition No.1 cylinder X-head bearing	2/E	8,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E16	X-Head Bearing	02	Check condition No.2 cylinder X-head bearing	2/E	8,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E16	X-Head Bearing	03	Check condition No.3 cylinder X-head bearing	2/E	8,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E16	X-Head Bearing	04	Check condition No.4 cylinder X-head bearing	2/E	8,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E16	X-Head Bearing	05	Check condition No.5 cylinder X-head bearing	2/E	8,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E16	X-Head Bearing	06	Check condition No.6 cylinder X-head bearing	2/E	8,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E16	X-Head Bearing	08	Overhaul, measuring No.1 cylinder X-head bearing	2/E	32,000 HRS		8/1/2021		

PMS REPORT

Critical Equip.	Code	Mach.	Equip/ No	Equipment	Job No.	Working Items	Pic	Interval (Type)	Previous Work Date	Last Work Date	Next Work Date	Remark
★	Aa	Main Engine Port	E16	X-Head Bearing	09	Overhaul, measuring No.2 cylinder X-head bearing	2/E	32,000 HRS		8/1/2021		
★	Aa	Main Engine Port	E16	X-Head Bearing	10	Overhaul, measuring No.3 cylinder X-head bearing	2/E	32,000 HRS		8/1/2021		

Health, Safety and Environmental Management System		
Attachment 7.5D HSEMS Rev No: 01 15 th MARCH 2017	MACHINERY AND EQUIPMENT REPAIR PERMIT	

1. Vessel Name:	Date:	Location:
* Permit No:	Control measures as identified by : <input type="checkbox"/> JHA	
* Running Number/Year - eg. 001/2024	JHA Reference No:	
WORK DESCRIPTION:		

2. PERMIT VALIDITY (The permit will be valid for 12 hrs only. A new permit to be applied if the duration exceeds 12 hours)					
Permit Starts	Date:	Time:	Permit Expires	Date:	Time:
The permit is automatically suspended whenever an emergency alarm is activated. Work must stop and site made safe and permit return to source.					

3. WORKING CHECK LIST (Tick box as appropriate)			
		YES	NO
1	Source of power to machinery isolated/disconnected by fuse withdrawn or breaker open	<input type="checkbox"/>	<input type="checkbox"/>
2	All relevant personnel informed	<input type="checkbox"/>	<input type="checkbox"/>
3	Adequate illumination and safe access to space is provided	<input type="checkbox"/>	<input type="checkbox"/>
4	LOTO procedure is enforced with warning notices displayed	<input type="checkbox"/>	<input type="checkbox"/>
5	Others (Please specify):		

4. SOURCES OF IGNITION (Tick boxes where applicable)			
<input type="checkbox"/> Flame Cutting, Welding	<input type="checkbox"/> Welding Torch Igniters	<input type="checkbox"/> Chipping Sparks	
<input type="checkbox"/> Grit Blasting	<input type="checkbox"/> Explosives	<input type="checkbox"/> Others (Please specify):	

5. ISOLATION (Tick boxes where applicable)			
<input type="checkbox"/> Instrument power supply	<input type="checkbox"/> Mechanical power supply	<input type="checkbox"/> Electrical isolation	

6. SPECIAL PRECAUTIONS (Tick boxes where applicable)			
<input type="checkbox"/> Fire watchers must be in attendance at all times	<input type="checkbox"/> Trips and alarms to be overridden		
<input type="checkbox"/> Gas, flame, and smoke detectors to be smoked or isolated	<input type="checkbox"/> Combustible materials removed or protected		
<input type="checkbox"/> Hazardous drains or vents in vicinity to be isolated	<input type="checkbox"/> Instruments, sensors and light fittings must be protected		
<input type="checkbox"/> Artificial ventilation must be provided at the worksite	<input type="checkbox"/> Isolation of electrical/instrument and mechanical power supply		
Others (Please specify):			

7. PROTECTIVE EQUIPMENT (Tick boxes where applicable)			
<input type="checkbox"/> Coverall/Safety helmets/Safety footwear/Safety spectacles			
<input type="checkbox"/> Ear muffs/Ear plugs	<input type="checkbox"/> Goggles/ Face visor	<input type="checkbox"/> Hood/Helmet	<input type="checkbox"/> Gloves/Gauntlets
<input type="checkbox"/> Boots/ Chemical gloves	<input type="checkbox"/> Safety net	<input type="checkbox"/> Fire blankets	<input type="checkbox"/> Work vest/Life jacket
<input type="checkbox"/> Safety warning signs	<input type="checkbox"/> Dust/Gas respirator	<input type="checkbox"/> Self Contained BA	<input type="checkbox"/> Wet tarpaulin
<input type="checkbox"/> Safety harness and lanyard	<input type="checkbox"/> Foam extinguisher ()	<input type="checkbox"/> Dry powder extinguisher ()	<input type="checkbox"/> CO2 extinguisher ()

8. CLEARANCE APPROVAL					
A. PERMIT APPLICANT (Chief Officer or 2 nd Engineer)		B. APPROVAL FOR WORK SIGNATORY (Master or Chief Engineer)		C. AUTHORISING SIGNATURE (Master or Company Authority)	
I understand the precautions to be taken and agree to fully comply with the Company instructions/requirements stated above.		I have inspected the worksite and satisfied that it has been properly prepared for the work as specified on this permit.		I authorise work to commence	
Sign:	Date:	Sign:	Date:	Sign:	Date:
Name:		Name:		Name:	
Rank:		Rank:		Rank:	
Remark (if any):		Remark (if any):		Remark (if any):	

Health, Safety and Environmental Management System		
Attachment 7.5D HSEMS Rev No: 01 15 th MARCH 2017	MACHINERY AND EQUIPMENT REPAIR PERMIT	

9. WORK STOPPED / PERMIT SUSPENSION / RE- VALIDATION				
Once work is stopped/permit suspended the application is to state the reason for stoppage/ suspension, inform the approver and authoriser and endorse the "Work Stopped" column.				
ACTION	Work Stopped	Work Stopped	Work Stopped	
Reason				
Examples : (a) Unacceptable work conditions (b) End of working day/shift (c) Emergency alarm activated (d) Others - specify				
Applicant	Date:			
	Time:			
	Sign:			
ACTION	Re-Validation		Re-Validation	
	Date:			When the applicant is ready to commence work again he has to endorse the relevant revalidation column. The approver is to ensure that the worksite is still in the conditions specified in the permit and the authoriser has to endorse before work can resume.
	Time:			
Sign:				
Approver	Date:			
	Time:			
	Sign:			
Authoriser	Date:			If Work has been stopped 3 times then a new PTW form is to be used.
	Time:			
	Sign:			

10. WORK COMPLETION ENDORSEMENT					
A. PERMIT APPLICANT (Chief Officer or 2 nd Engineer)		B. APPROVAL FOR WORK SIGNATORY (Master or Chief Engineer)		C. AUTHORISING SIGNATURE (Master or Company Authority)	
I have stopped work. The area has been restored to a safe and operational condition.		I have visited the worksite and satisfied myself that the work has stopped. The area has been restored to a safe and operational condition.		I am satisfied that the work has stopped and the area restored to a safe and operational condition.	
Signature:	Date:	Signature:	Date:	Signature:	Date:
Name/Rank		Name/Rank		Name:	
Remark (if any):		Remark (if any):		Remark (if any):	

11. PERMIT DISTRIBUTION	
ORIGINAL - To be displayed on Bridge till completion and to keep for record	COPY - To be displayed at the worksite till completion

MAIN ENGINE STBD

MV AG AZZAM

31/7/2024

	R/H	SW Pump	Fuel injector	T/C	Vibration Damper	Air Cooler	LD	G/B Oil	G/B Filter	Coolant	Coolant Filter	Drive Belt	Jacket Cooler	Air Filter	Ctr LD Filter	G/B Cooler	Racor Filter	FO Filter	SW Strainer	DATE	JOB DONE / MAINTENANCE
		12000psi	12000psi	12000psi	12000psi	5000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	12000psi	12000psi	12000psi	12000psi	12000psi	27/7/2024	CHANGED TC AIR FILTER (4 PCS)
B/F		4220.4	4220.4	4220.4	4220.4	4220.4	2382.4	2380.4	5220.4	3880.1	4220.4	4220.4	4220.4	4213.4	685.5	1328	792	792	1285		
1-Aug	24	4244.4	4244.4	4244.4	4244.4	4244.4	2386.4	2384.4	5244.4	3885.1	4244.4	4244.4	4244.4	4213.4	689.5	1328	792	792	1285		
2-Aug	12	4256.4	4256.4	4256.4	4256.4	4256.4	2318.4	2386.4	5256.4	3827.1	4256.4	4256.4	4256.4	0	701.5	1240	804	804	1217		
3-Aug	24	4280.4	4280.4	4280.4	4280.4	4280.4	2342.4	2380.4	5280.4	3861.1	4280.4	4280.4	4280.4	24	725.5	1364	828	828	1241		
4-Aug	9	4289.4	4289.4	4289.4	4289.4	4289.4	2351.4	2389.4	5289.4	3870.1	4289.4	4289.4	4289.4	33	734.5	1379	837	837	1250		
5-Aug	7.25	4296.65	4296.66	4296.65	4296.66	4296.65	2358.65	2406.65	5296.66	3877.35	4296.66	4296.66	4296.66	40.25	741.75	1380.25	844.25	844.25	1257.25		
6-Aug	18	4314.65	4314.66	4314.65	4314.66	4314.65	2376.65	2424.65	5314.66	3895.35	4314.66	4314.66	4314.66	58.25	759.75	1398.25	862.25	862.25	1275.25		
7-Aug	24	4338.65	4338.66	4338.65	4338.66	4338.65	2400.65	2448.65	5338.66	3919.35	4338.66	4338.66	4338.66	82.25	783.75	1422.25	886.25	886.25	1299.25		
8-Aug	12	4350.65	4350.66	4350.65	4350.66	4350.65	2412.65	2460.65	5350.66	3931.35	4350.66	4350.66	4350.66	94.25	795.75	1434.25	898.25	898.25	1311.25		
9-Aug	24	4374.65	4374.66	4374.65	4374.66	4374.65	2436.65	2484.65	5374.66	3955.35	4374.66	4374.66	4374.66	118.25	819.75	1458.25	922.25	922.25	1335.25		
10-Aug	12	4386.65	4386.66	4386.65	4386.66	4386.65	2448.65	2496.65	5386.66	3967.35	4386.66	4386.66	4386.66	130.25	831.75	1470.25	934.25	934.25	1347.25		
11-Aug	24	4410.65	4410.66	4410.65	4410.66	4410.65	2472.65	2520.65	5410.66	3991.35	4410.66	4410.66	4410.66	154.25	855.75	1494.25	958.25	958.25	1371.25		
12-Aug	12	4422.65	4422.66	4422.65	4422.66	4422.65	2484.65	2532.65	5422.66	4003.35	4422.66	4422.66	4422.66	166.25	867.75	1506.25	970.25	970.25	1383.25		
13-Aug	24	4446.65	4446.66	4446.65	4446.66	4446.65	2508.65	2556.65	5446.66	4027.35	4446.66	4446.66	4446.66	190.25	891.75	1530.25	994.25	994.25	1407.25		
14-Aug	24	4470.65	4470.66	4470.65	4470.66	4470.65	2532.65	2580.65	5470.66	4051.35	4470.66	4470.66	4470.66	214.25	915.75	1554.25	1018.25	1018.25	1431.25		
15-Aug	18	4488.65	4488.66	4488.65	4488.66	4488.65	2550.65	2598.65	5488.66	4069.35	4488.66	4488.66	4488.66	232.25	933.75	1572.25	1036.25	1036.25	1449.25		
16-Aug	24	4512.65	4512.66	4512.65	4512.66	4512.65	2574.65	2622.65	5512.66	4093.35	4512.66	4512.66	4512.66	256.25	957.75	1596.25	1060.25	1060.25	1473.25		
17-Aug	24	4536.65	4536.66	4536.65	4536.66	4536.65	2598.65	2646.65	5536.66	4117.35	4536.66	4536.66	4536.66	280.25	981.75	1620.25	1084.25	1084.25	1497.25		
18-Aug	24	4560.65	4560.66	4560.65	4560.66	4560.65	2622.65	2670.65	5560.66	4141.35	4560.66	4560.66	4560.66	304.25	1005.75	1644.25	1108.25	1108.25	1521.25		
19-Aug	12.5	4573.15	4573.16	4573.15	4573.16	4573.15	2635.15	2683.15	5573.16	4153.85	4573.16	4573.16	4573.16	316.75	1018.25	1656.75	1120.75	1120.75	1533.75		
20-Aug	24	4597.15	4597.16	4597.15	4597.16	4597.15	2659.15	2707.15	5597.16	4177.85	4597.16	4597.16	4597.16	340.75	1042.25	1680.75	1144.75	1144.75	1557.75		
21-Aug	12	4609.15	4609.16	4609.15	4609.16	4609.15	2671.15	2719.15	5609.16	4189.85	4609.16	4609.16	4609.16	352.75	1054.25	1692.75	1156.75	1156.75	1569.75		
22-Aug	24	4633.15	4633.16	4633.15	4633.16	4633.15	2695.15	2743.15	5633.16	4213.85	4633.16	4633.16	4633.16	376.75	1078.25	1716.75	1180.75	1180.75	1593.75		
23-Aug	12	4645.15	4645.16	4645.15	4645.16	4645.15	2707.15	2755.15	5645.16	4225.85	4645.16	4645.16	4645.16	388.75	1090.25	1728.75	1192.75	1192.75	1605.75		
24-Aug	12	4657.15	4657.16	4657.15	4657.16	4657.15	2719.15	2767.15	5657.16	4237.85	4657.16	4657.16	4657.16	400.75	1102.25	1740.75	1204.75	1204.75	1617.75		
25-Aug	24	4681.15	4681.16	4681.15	4681.16	4681.15	2743.15	2791.15	5681.16	4261.85	4681.16	4681.16	4681.16	424.75	1126.25	1764.75	1228.75	1228.75	1641.75		
26-Aug	8.5	4689.65	4689.66	4689.65	4689.66	4689.65	2751.65	2799.65	5689.66	4270.35	4689.66	4689.66	4689.66	433.25	1134.75	1773.25	1237.25	1237.25	1650.25		
27-Aug	6.33	4695.98	4695.99	4695.98	4695.99	4695.98	2757.98	2805.98	5695.99	4276.68	4695.99	4695.99	4695.99	439.58	1141.08	1779.58	1243.58	1243.58	1656.58		
28-Aug	18	4713.98	4713.99	4713.98	4713.99	4713.98	2775.98	2823.98	5713.99	4294.68	4713.99	4713.99	4713.99	457.58	1159.08	1797.58	1261.58	1261.58	1674.58		
29-Aug	24	4737.98	4737.99	4737.98	4737.99	4737.98	2799.98	2847.98	5737.99	4318.68	4737.99	4737.99	4737.99	481.58	1183.08	1821.58	1285.58	1285.58	1698.58		
30-Aug	12	4749.98	4749.99	4749.98	4749.99	4749.98	2811.98	2859.98	5749.99	4330.68	4749.99	4749.99	4749.99	493.58	1195.08	1833.58	1297.58	1297.58	1710.58		
31-Aug	24	4773.98	4773.99	4773.98	4773.99	4773.98	2835.98	2883.98	5773.99	4354.68	4773.99	4773.99	4773.99	517.58	1219.08	1857.58	1321.58	1321.58	1734.58		
TOTAL		553.58																			

PREPARED BY :

VERIFIED BY :

MOHD KHUSAIRI BIN MAMAT
2ND ENGINEERMUSA BIN MAHI
CHIEF ENGINEER

MV AG AZZAM
PORT KELANG IMO: 9553531
OFF: 333099 NT : 287
GT : 959 BHP: 4400

AUXILIARY ENGINE 2

MV AG AZZAM

31/8/2024

	R/H	Fuel injector	T/C	Vibration Damper	Air Cooler	Drive Belt	SW Pump	Jacket Cooler	L.O	Coolant	C. Filter	Air Filter	LD Filter	Racor Filter	FO Filter	SW Strainer	DATE	JOB DONE / MAINTENANCE
		3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	3000psi	08.08.2024	CHANGED LUB OIL SUMP CHANGED LO FILTER
B/F		4121.5	4121.5	4121.5	4121.5	4121.5	4121.5	449.4	449.4	449.4	449.4	3000.1	449.4	82	82	449.4		CHANGED JACKET COOLER
1-Aug	24	4145.5	4145.5	4145.5	4145.5	4145.5	4145.5	473.4	473.4	473.4	473.4	3044.1	473.4	106	106	473.4		CLEANED SW STRAINER
2-Aug	24	4169.5	4169.5	4169.5	4169.5	4169.5	4169.5	497.4	497.4	497.4	497.4	3048.1	497.4	130	130	497.4		CHANGED FO SECONDARY AND RACOR FILTER
3-Aug	6	4175.5	4175.5	4175.5	4175.5	4175.5	4175.5	503.4	503.4	503.4	503.4	3054.1	503.4	136	136	503.4		CLEANED CHARGE AIR COOLER
4-Aug	0	4175.5	4175.5	4175.5	4175.5	4175.5	4175.5	503.4	503.4	503.4	503.4	3054.1	503.4	136	136	503.4		
5-Aug	24	4199.5	4199.5	4199.5	4199.5	4199.5	4199.5	527.4	527.4	527.4	527.4	3078.1	527.4	160	160	527.4		
6-Aug	24	4223.5	4223.5	4223.5	4223.5	4223.5	4223.5	551.4	551.4	551.4	551.4	3102.1	551.4	184	184	551.4		
7-Aug	0	4223.5	4223.5	4223.5	4223.5	4223.5	4223.5	551.4	551.4	551.4	551.4	3102.1	551.4	184	184	551.4		
8-Aug	1	4224.5	4224.5	4224.5	4224.5	4224.5	4224.5	0	0	552.4	552.4	3103.1	0	185	185	0		
9-Aug	24	4248.5	4248.5	4248.5	4248.5	4248.5	4248.5	24	24	576.4	576.4	3127.1	24	209	209	24		
10-Aug	24	4272.5	4272.5	4272.5	4272.5	4272.5	4272.5	48	48	600.4	600.4	3151.1	48	233	233	48		
11-Aug	1.5	4274	4274	4274	4274	4274	4274	49.5	49.5	601.9	601.9	3152.6	49.5	234.5	234.5	49.5		
12-Aug	4.5	4278.5	4278.5	4278.5	4278.5	4278.5	4278.5	54	54	606.4	606.4	3157.1	54	239	239	54		
13-Aug	24	4302.5	4302.5	4302.5	4302.5	4302.5	4302.5	78	78	630.4	630.4	3181.1	78	263	263	78		
14-Aug	24	4326.5	4326.5	4326.5	4326.5	4326.5	4326.5	102	102	654.4	654.4	3205.1	102	287	287	102		
15-Aug	24	4350.5	4350.5	4350.5	4350.5	4350.5	4350.5	126	126	678.4	678.4	3229.1	126	311	311	126		
16-Aug	24	4374.5	4374.5	4374.5	4374.5	4374.5	4374.5	150	150	702.4	702.4	3253.1	150	335	335	150		
17-Aug	24	4398.5	4398.5	4398.5	0	4398.5	4398.5	174	174	726.4	726.4	3277.1	174	0	0	174		
18-Aug	24	4422.5	4422.5	4422.5	24	4422.5	4422.5	198	198	750.4	750.4	3301.1	198	24	24	198		
19-Aug	24	4446.5	4446.5	4446.5	48	4446.5	4446.5	222	222	774.4	774.4	3325.1	222	48	48	222		
20-Aug	24	4470.5	4470.5	4470.5	72	4470.5	4470.5	246	246	798.4	798.4	3349.1	246	72	72	246		
21-Aug	24	4494.5	4494.5	4494.5	96	4494.5	4494.5	270	270	822.4	822.4	3373.1	270	96	96	270		
22-Aug	24	4518.5	4518.5	4518.5	120	4518.5	4518.5	294	294	846.4	846.4	3397.1	294	120	120	294		
23-Aug	24	4542.5	4542.5	4542.5	144	4542.5	4542.5	318	318	870.4	870.4	3421.1	318	144	144	318		
24-Aug	4.5	4547	4547	4547	148.5	4547	4547	322.5	322.5	874.9	874.9	3425.6	322.5	148.5	148.5	322.5		
25-Aug	0	4547	4547	4547	148.5	4547	4547	322.5	322.5	874.9	874.9	3425.6	322.5	148.5	148.5	322.5		
26-Aug	24	4571	4571	4571	172.5	4571	4571	346.5	346.5	888.9	888.9	3449.6	346.5	172.5	172.5	346.5		
27-Aug	24	4595	4595	4595	196.5	4595	4595	370.5	370.5	922.9	922.9	3473.6	370.5	196.5	196.5	370.5		
28-Aug	24	4619	4619	4619	220.5	4619	4619	394.5	394.5	946.9	946.9	3497.6	394.5	220.5	220.5	394.5		
29-Aug	24	4643	4643	4643	244.5	4643	4643	418.5	418.5	970.9	970.9	3521.6	418.5	244.5	244.5	418.5		
30-Aug	24	4667	4667	4667	268.5	4667	4667	442.5	442.5	994.9	994.9	3545.6	442.5	268.5	268.5	442.5		
31-Aug	24	4691	4691	4691	292.5	4691	4691	466.5	466.5	1018.9	1018.9	3569.6	466.5	292.5	292.5	466.5		
TOTAL	868.5																	

PREPARED BY :

FAHME RAZALI
3RD ENGINEER

VERIFIED BY :

MUSA BIN MAHI
CHIEF ENGINEER

MV AG AZZAM
PORT KELANG RMG: 9553531
OFF: 333089 NT: 2887
ST: 955 BHP: 400

Health, Safety and Environmental Management System		
Attachment 10.8 HSEMS Rev No: 01 15 th MARCH 2017	MONTHLY ENGINE RUNNING HOURS REPORT	

Vessel Name	MV AG AZZAM	Month	AUG
Port/Location	AT SEA	Year	2024

Day of Month		Main Engine (Port)	Main Engine (Stbd)	Generator (No.1)	Generator (No.2)	Volvo Penta FIFI Engine	Emergency Generator	Bow Thruster Engine
Day	1	24	12	8	24	0	0	8
Day	2	12	24	3	24	0	0	3
Day	3	24	12	24	6	0	0	6
Day	4	12	24	24	0	0	0	0
Day	5	24	12	0	24	0	0	0
Day	6	18	24	1.5	24	0	0.5	1.5
Day	7	24	24	24	0	0	0	0
Day	8	13.5	13.5	24	1	0	0	1
Day	9	7	7.5	1	24	0	0	1
Day	10	24	18	1.5	24	0	0	1.5
Day	11	12	24	24	1.5	0	0	1.5
Day	12	24	12	24	4.5	0	0	4.5
Day	13	12	24	6	24	0	0.5	6
Day	14	24	12	0	24	0	0	0
Day	15	12	24	0	24	0	0	0
Day	16	18	18	0	24	0	0	0
Day	17	24	12	3	24	0	0	3
Day	18	18	18	1	24	0	0	1
Day	19	24	12	1.5	24	0	0	1.5
Day	20	18	18	4.5	24	0	0.5	4.5
Day	21	18	18	1.5	24	0	0	1.5
Day	22	18	18	1	24	0	0	1
Day	23	18	18	0	24	0	0	0
Day	24	18	18	24	4.5	0	0	4.5
Day	25	18	24	24	0	0	0	0
Day	26	9.5	9.5	4	24	0	0	4
Day	27	0.8	0.8	8	24	0	0.5	1
Day	28	0	0	1	24	0	0	0
Day	29	0	0	0	24	1	0	0
Day	30	10.25	10.25	1	24	0	0	1
Day	31	24	18	4.6	24	0	0	4.6
Total running Hours THIS MONTH		503.1	479.6	244.1	569.5	1	2	61.6
Total Running Hours - After Last Overhaul		26043.4	25950.6	4557.1	4631.7	1	616	7564.8



Prepared By: _____
Second Engineer
MOHD AZRAI MOHD SAUDI



Verified By: _____
Chief Engineer
MUSA BIN MAHI

ภาคผนวกเรือสับสนุน-4.2

ตัวอย่างสมุดบันทึกน้ำมัน



OIL RECORD BOOK

PART I - Machinery space operations (All ships)

Name of ship: MU AG AZZAM

Distinctive number or letters: 9WKF2

Gross tonnage: 959

Period from: OCTOBER 2023 to: _____

"The Form of Oil Record Book has been reproduced from the IMO sales publication MARPOL 73/78, with the kind permission of the International Maritime Organisation (IMO), London."

Note: Oil Record Book Part I shall be provided to every oil tanker of 150 gross tonnage and above and every ship of 400 gross tonnage and above, other than oil tankers, to record relevant machinery space operations. For oil tankers, Oil Record Book Part II shall also be provided to record relevant cargo/ballast operations.



USA
E-mail: sales-us@voyagerww.com
Phone: +1 562 590 8744

Singapore
Email: sales.sg@voyagerww.com
Phone: +65 6743 0706

Hong Kong
E-mail: sales.hk@voyagerww.com
Phone: +852 2854 3688

43

Name of ship AG AZZAM

Distinctive number or letters 9WKF2

IMO Number 9553531

MACHINERY SPACE OPERATIONS

Date	Code (letter)	Item (number)	Record of operations/signature of officer in charge
09 AUGUST 2024	H	26.1	BUNKERED HSD B7 AT PAKTEEP BETTY 80WAKU
		26.2	STANQ: 1015HRS/09-08-24 - STDB: 1215HRS/09-08-24
		26.3	83M ³ HSD B7 ADDED INTO TANK.
			4.15M ³ ADDED INTO 2P. REMAINING 21.02M ³
			24.15M ³ ADDED INTO 2S. REMAINING 20.15M ³
			24.9M ³ ADDED INTO 2C. REMAINING 39.33M ³
			24.9M ³ ADDED INTO 3P. REMAINING 35.63M ³
			24.9M ³ ADDED INTO 3S. REMAINING 35.5M ³
			<u>UE MUA B. MATH</u> 09 AUGUST 2024.
10 AUGUST 2024	C	11.1	DIRTY OIL TANK. (FR 48-53)
		11.2	TOTAL TANK CAPACITY: 5.2M ³ .
		11.3	TOTAL RETENTION: 1.91M ³ .
		11.4	0.12M ³ COLLECTED FROM KE-1 AND KE-2.
			SUMP TANK.
			<u>UE MUA B. MATH</u> 10 AUGUST 2024.
11 AUGUST 2024	C	11.1	DIRTY OIL TANK (FR 48-53)
		11.2	TOTAL TANK CAPACITY: 5.2M ³ .
		11.3	TOTAL RETENTION: 1.91M ³ .
			<u>UE MUA B. MATH</u> 11 AUGUST 2024.
11 AUGUST 2024	I		WEEKLY INVENTORY OF BILGE HOLDING TANK.
			TOTAL CAPACITY: 5.2M ³ .
			TOTAL RETENTION: 0.87M ³ .



ภาคผนวกเรือสนับทนน-4.3

รายการเวชภัณฑ์สำหรับการปฐมพยาบาล
และการรักษาพยาบาลเบื้องต้น

DUTA MARINE SDN BHD



VESSEL : **AG AZZAM**

VESSEL MEDICINE INVENTORY

MONTH/YEAR **Nov/2024**

NO	ITEM NO	DESCRIPTION	ISSUED ON	BATCH NO	QUANTITY	EXPIRY DATE	REMARKS
1	2000794	ASPIRIN 100MG + GLYCERIN (GLYPRIN)	29-08-23	2303084	5 STRIP	01-02-25	Medicine Purpose -
2	5290931000865	TAB ACYCLOVIR 400MG (MEDOVIR)	29-08-23	E4C132	3 STRIP OF 10S	12-06-26	
3	860287	AMOXICYLLIN/CLAVULANIC ACID 625MG (CO-AMOXICLAV)	29-08-23	BN5028768	1 STRIP OF 7S	01-06-26	
4	2002951	ATROPINE 1.2MG/ML (ACIPAN)	29-08-23	223735L	5 AMP	01-11-25	
5	1002091	AZITHROMYCIN 500MG (AZITHRAL)	29-08-23	P22b093X	2 STRIP OF 3S	01-01-26	
6	860025	CEFTRIAXONE 1G INJECTION (CEFTREX)	29-08-23	P22b093X	1 UNIT	13-11-25	
7	1000157	CETIRIZINE 10MG (XEPA ADEZIO)	29-08-23	461941	3 STRIP OF 10S	01-06-25	
8	2000095	CHARCOAL ACTIVATED (DYNAPHARM)	29-08-23	22T0079	09 STRIP OF 10S	01-05-26	Medicine Purpose
9	860750	CLOVE OIL 10ML - AIDWELL	29-08-23	2019/2256	1 BOT OF 10ML	01-03-25	
10	1001052	DOCUSATE SENNA/BISACODYL (NOVOLAX)	29-08-23	V32169	2 STRIP OF 15S	01-02-26	
11	860104	DOXYCYCLINE CAPSULE 100MG (DYNAPHARM)	14-11-24	2312107	30 STRIP OF 10S	30-11-26	Replace New
12	2002296	AIDWELL PROTECT ALCOHOL HAND SANITIZER	29-08-23	260822	1 BOT OF 500ML	-	
13	860873	FLUORESCIN 1% STRIPS	29-08-23	MW64638	20 UNIT	01-07-27	
14	2002956	GLUCAGON 1MG	29-08-23	MW64638	1 AMP	28-02-25	REFRIGERATOR
15	95552757021023	HYDROCORTISONE CREAM 15GM (SUNWARD)	29-08-23	210-23019	2 UNIT	01-04-26	
16	20022103	MYONIT INSTA 30'S (GLYCERYL TRINITRATE	14-11-24	M79595	10 BOTO OF 30S	01-11-25	REPLACED NEW
17	1003605	IBUPROFEN 400MG (YSP)	29-08-23	GK061	10 STRIP OF 10S	01-11-25	
18	2002959	LIGNOCAINE 1% 10ML (LAKAN)	29-08-23	223810L	5 AMP	01-10-25	
19	2001249	LOPERAMIDE 2MG (DYNA LOMODIUM)	29-08-23	23C1591	3 STRIP OF 10S	01-01-25	
20	8852662000926	ALBENDAZOLE 200MG (THELBAN TABLET)	14-11-24	T231009	3 BOX OF 2S	05-01-28	REPLACED NEW
21	1000280	METRONIDAZOLE 400MG (METROGYL)	29-08-23	PM922025	3 STRIP OF 10S	01-11-27	
22	9556492000291	(DYNA MICORT) MICONAZOLE NITRATE 2% + HYDROCORTISONE	08-08-24	514031	1 UNIT	31-03-27	
23	2002232	TRAMADOL 50MG (MABRON)	29-08-23	A6C002	10 STRIP	01-03-27	
24	1000173	OMEPRAZOLE 20MG (OMILOCK 20)	29-08-23	OM23B002	4 STRIP OF 7S	01-01-26	
25	9556492001908	DIMENHYDRINATE 50MG (NOVOMIN)	29-08-23	472321	3 STRIP OF 10S	01-10-27	
26	95557014400020	N-ORS ORAL REHYDRATION SALTS (ORANGE)	29-08-23	2301004	50 PACK	01-01-26	
27	9556258005034	OXYMETAZOLINE 0.05% (OXY-NASE NASAL SPARAL 15ML)	29-08-23	4925305	1 UNIT	03-05-26	
28	860517	PARACETAMOL TABLET 50MG (DYNA) 10'S	14-11-24	AT232.01	4 STRIP OF 10S	05-05-25	REPLACED NEW
29	9556258920139	PERMETRIN 5% (HOE A-SCABS) 30ML	29-08-23	4445208	1 UNIT	01-05-25	
30	9557046000170	DERMOPLEX ANTISEPTIC CREAM 25MG	29-08-23	2303007	1 UNIT	01-02-27	
31	860749	PREDNISOLONE 5MG (NP PREDNISOLONE)	29-08-23	2212013	3 STRIP OF 10S	01-12-25	
32	9557490212075	DYNA YELLOW LOTION 30ML	29-08-23	23E0654	1 UNIT	01-03-27	
33	1.89027E+13	SALBUTAMOL 100MCG/DOSE (ASTHALIN)	14-11-24	EE30542	4 UNIT	01-06-25	REPLACED NEW
34	2000679	SODIUM CHLORIDE 0.9% 1L (RINSCAP)	29-08-23	A6BE0421	2 UNIT	30-11-26	


35	2002965	TETRACAINE EYE DROP (ALCAINE) 15 ML	29-08-23	VF318D	5 BOX	31-03-25	REFRIGERATOR
36	1000429	SM POLYTET	08-08-24	PL24B002	1 UNIT	31-01-27	
37	2002962	VITAMIN K 1MG/ML/KISAN INJECTION	08-08-24	514031	2 AMP	31-03-27	

38	1000711	INFUSOL W-WATER FOR INJECTION 10ML	29-08-23	NA0F0014	5 UNIT	01-08-28	
39	860080	LAMIVUDINE/ZIDOVUDINE 150MG/300MG 60'S (ZOVILAM)	29-08-23	125/150320	1 UNIT	01-08-27	
40	95552757020725	ZINC OXIDE 10% (DICOMET CZ) CREAM 50G	29-08-23	125/150320	3 UNIT	01-02-26	
41	2002865	GUEDEL AIRWAY MEDIUM	14-11-24	N/A	1 UNIT	N/A	REPLACED NEW
42	2002866	GUEDEL AIRWAY LARGE	14-11-24	2403010420	1 UNIT	N/A	REPLACED NEW
43	2002867	MANUAL ASPIRATOR TO CLEAR UPPER AIRWAYS,INCLUDING 2	29-08-23	125/150320	1 SET	-	
44	860178	AMBUBAG	29-08-23	125/150320	1 UNIT	-	
45	860176	BROOK AIRWAYS,LIFEWAY,POCKET MASK (AIDWELL)	29-08-23	125/150320	1 UNIT	-	
46	2002870	SILVER ALGINATE (NON ADHERENT 10CM X 10CM), (ZORFLEX)	29-08-23	125/150320	1 UNIT	-	
47	9555362206467	BIOPLAST PE WATERPROOF & TRASPARENT DRESSING 10'S	29-08-23	06/2022	10 PACK	25-02-27	
48	860118	ISOMED GAUZE ROLL 90CM X 100M-COMBINED DRESSING ROLL	29-08-23	06/2022	1 UNIT	14-04-27	
49	860670	OXYMECX Q-HEAL NON-ADHESION ABSORBENT PAD 10CM X 10 CM	29-08-23	06/2022	10 UNIT	31-03-27	
50	GPGD	PARAFFIN GAUZE DRESSING (10CM X 10 CM (UNIGLOVES) 1'S	29-08-23	06/2022	10 UNIT	05-07-26	
51	1003843	ADHESIVE ELASTIC BANDAIDE (MEDIC SELF-FIX) 4CM X4.5CM	29-08-23	06/2022	1 UNIT	-	
52	9555172700032	AMBULANCE WOUND DRESSING (SMALL) NO 13	29-08-23	06/2022	5 UNIT	01-06-27	
53	9555172700049	AMBULANCE WOUND DRESSING (MEDIUM) NO 14	29-08-23	10/2021	5 UNIT	01-10-26	
54	9555172700056	AMBULANCE WOUND DRESSING (LARGE) NO 15	29-08-23	08/2022	5 UNIT	01-08-27	
55	2002876	BURNSHIELD 10 X 10CM	29-08-23	A430	1 UNIT	01-12-26	
56	2001402	MHE ELASTIC BANDAGE 5CM X 4.5M	08-08-24	514031	0 UNIT	31-03-27	
57	6931515000510	ISOMED TRIANGULAR BANDAGE	08-08-24	514031	5 UNIT	31-03-27	
58	2001862	MAKINTOSH SHEETING 90 X 150CM	29-08-23	33KM38	1 UNIT	-	
59	2002880	ZINC OXIDE BANDAGE	29-08-23	33KM38	2 UNIT	-	
60	9555193709076	LAMEILA COTTON SWAB/BUD 200'S	29-08-23	33KM38	1 UNIT	01-11-26	
61	2002948	SAFETY PIN 12PCS	29-08-23	33KM38	3 UNIT	-	
62	ST00018	BUTTERFLY SUTURE,STERISTRIP,STERILE 1'S (3M STERISTRIPS)	29-08-23	33KM38	20 UNIT	01-05-27	
63	2000831	SKIN ADHESIVE (2-OCTYL CYANOACRYLATE LIQUID)(GLUSTITCH)	29-08-23	202202508	1 UNIT	31-03-25	
64	9555934201487	DURASAFE DISPOSABLE LATEX GLOVE (L)	29-08-23	2019-274W5	1 BOX	01-01-26	
65	2002902	SURGICAL GLOVE STERILE IN PAIR SIZE 6.5	14-11-24	2031452545SL2A	3 PAIR	16-01-27	REPLACED NEW
66	2002903	SURGICAL GLOVE STERILE IN PAIR SIZE 7.0	14-11-24	2021-276WS	3 PAIR	15-09-26	REPLACED NEW
67	2002904	SURGICAL GLOVE STERILE IN PAIR SIZE 7.5	14-11-24	203106471SLZA	3 PAIR	30-04-25	REPLACED NEW
68	2002907	INSTRUMENT BOX (STAINLESS STEEL)	29-08-23	ATURS23060016	1 UNIT	-	
69	2002908	OPERATING SCISSORS,STRAIGHT (STAINLESS STEEL)	29-08-23	ATURS23060016	1 UNIT	01-09-25	
70	860163	BANDAGE SCISSORS (STAINLESS STEEL)	29-08-23	ATURS23060016	1 UNIT	-	
71	200910	SPLINTER FORCEP,POINTED (STAINLESS STEEL)	29-08-23	ATURS23060016	1 UNIT	-	
72	2002911	TEETH TISSUE FORCEPS (STAINLESS STEEL)	29-08-23	ATURS23060016	1 UNIT	-	
73	2002913	NEEDLE HOLDER,MAYO-HEGAR.180MM.STRAIGHT	29-08-23	ATURS23060016	1 UNIT	-	
74	2002913	MOSQUITO FORCEP STRAIGHT-125MM(SIZE 13)-STAINLESS	29-08-23	ATURS23060016	1 UNIT	-	
75	8888826019589	GILLETTE BLUE II PLUS RAZOR	29-08-23	ATURS23060016	1 UNIT	-	
76	1001546	UNIGLOVES DISPOSABLE TONGUE DEPRESSOR 100'S	29-08-23	ATURS23060016	1 BOX OF 100S	01-09-25	
77	2002914	ALLTEST REACTIVE STRIPS FOR URINE ANALYSIS,100S	29-08-23	ATURS23060016	1 BOX OF 100S	01-05-25	
78	2002915	MICROSCOPE SLIDES	29-08-23	BP022-0212/M0206-01	1 BOX OF 50S	-	

79	ST00207	STETHOSCOPE	29-08-23	BP022-0212/M0206-01	1 UNIT	-	
80	860965	X5 INNOMED BLOOD PRESSURE MACHINE.	29-08-23	BP022-0212/M0206-01	1 UNIT	-	

81	2002804	ALPHAMED INFRARED THERMOMETER (UFR102) RFQ:STANDARD	29-08-23	BP022-0212/M0206-01	1 UNIT	-	
82	8888307201717	KAWA DIGITAL THERMOMETER RFQ:HYPOTHERTHERIC	29-08-23	BP022-0212/M0206-01	1 UNIT	-	
83	860164	PENLIGHT + BLUE COVER	29-08-23	BP022-0212/M0206-01	1 UNIT	-	
84	2002226	MEDTOPIA SYRINGE, LUER CONNECTION 3ML	29-08-23	BP022-0212/M0206-01	30 UNIT	01-06-27	
85	2002227	MEDTOPIA SYRINGE, LUER CONNECTION 5ML	29-08-23	BP022-0313/M0206	29 UNIT	01-08-27	1 unit for Medical Use
86	UGB-N180H	UNIGLOVES DISPOSABLE NEEDLE 18G	29-08-23	191220	10 UNIT	01-01-25	
87	860387	TERUMO AGANI NEEDLE 21G 1's	29-08-23	191220	10 UNIT	01-11-25	
88	860136	TERUMO AGANI NEEDLE 19G 1's	14-11-24	N/A	1 UNIT	30-10-26	REPLACED NEW
89	2002923	INTRAVENOUS, INFUSION CANNULA 16G(1.2MM) LUER	29-08-23	313P20A	10 UNIT	01-04-25	
90	2002924	INTRAVENOUS, INFUSION CANNULA 22G(0.8MM) LUER	14-11-24	130P22	10 UNIT	30-04-27	REPLACED NEW
91	2002928	TOURNIQUET	29-08-23	572H19	1 UNIT	-	
92	860062	MALE CONDOM CATHETER	29-08-23	572H19	2 UNIT	01-11-25	
93	1001492	URINE COLLECTING BAG AND TUBE	29-08-23	MD206898	2 UNIT	-	
94	1000012	MALE EXTERNAL CATHETER L (35MM) RFQ:SHORT	08-08-24	514031	3 UNIT	31-03-27	
95	2000596	2 WAY FOLEY CATHETER SIZE 12	29-08-23	449H20	3 UNIT	01-08-25	
96	2000461	2 WAY FOLEY CATHETER SIZE 16	29-08-23	909H21-4	3 UNIT	01-11-26	
97	9556586201160	AXCEL LIGNOCAINE 2% STERILE GEL 20G	29-08-23	B2112039	3 UNIT	01-03-26	
98	1001492	URINE COLLECTING BAG AND TUBE	29-08-23	MD206898	2 UNIT	01-11-25	
99	rst1m	RUBBER SHEETING (MAKINTOSH) 1 METER, HNB	29-08-23	20220926	1 UNIT	-	
100	1000713	SHARP DISPOSAL BIN 5L (ZIPPER)	29-08-23	20220926	1 UNIT	-	
101	2002284	KN95 FACE MASK EARLOOP	29-08-23	20220926	1 BOX OF 10S	-	
102	2002933	TAPE MEASURE, VINYL COATED 1.5M	29-08-23	20220926	1 UNIT	-	
103	TPSBGD0062	NUR CARE UNDERPAD DISPOSABLE 75CM X 75 CM 10'S	29-08-23	20220926	1 UNIT	01-09-27	
104	1000720	HOT WATER BAG 2L WITH COVER	14-11-24	N/A	1 UNIT	N/A	REPLACED NEW
105	1001429	ISOMED URINAL PLASTIC UNISEX	29-08-23	N/A	1 UNIT	-	
106	860596	DURASAFE HOT & COLD GEL PACK 18 X 29.5CM	29-08-23	N/A	1 UNIT	-	
107	2002936	BOTTLE, 1 LITER PLASTIC WITH SCREW TOP	29-08-23	N/A	1 UNIT	-	
108	2002937	STAINLESS STEEL DRESSING TRAY, 300X200X30MM	29-08-23	N/A	1 UNIT	-	
109	860298	ISOLATION GOWN PLASTIC APRON STERILE PACK LONG SLEEVE	29-08-23	N/A	1 UNIT	-	
110	2002938	BOWL, STAINLESS STEEL 180ML	29-08-23	N/A	1 UNIT	-	
111	1001624	P.O.P BANDAGE SIZE 5CMX20M	29-08-23	N/A	5 UNIT	-	
112	1001625	P.O.P BANDAGE SIZE 10CMX20M	29-08-23	N/A	5 UNIT	-	
113	2000515	STOKINET FOR ARM SPLINTS	29-08-23	N/A	1 UNIT	-	
114	ST00205	STOKINET LEG SPLINT	29-08-23	N/A	1 UNIT	-	
115	1000656	M SHIELD ALCOHOL SWAB 100'S	29-08-23	N/A	2 BOX OF 100S	01-12-25	
116	2002939	NAIL BRUSH	29-08-23	N/A	1 UNIT	-	
117	2002940	MALLEABLE FINGER SPLINT	29-08-23	N/A	3 UNIT	-	
118	2002941	MALLEABLE FOREARM/HAND SAM SPLINT, 90 X 11cm	29-08-23	N/A	3 UNIT	-	

119	N/A	MASK OXYGEN RESSURIRATOR	29-08-23	N/A	1 UNIT	-	
120	N/A	OXYGEN RESSURIRATOR	29-08-23	N/A	1 UNIT	28-08-25	
121	N/A	ALCOHOL BREATH DETECTOR	24-12-23	N/A	1 SET	-	
122	N/A	EYE PAD	24-12-23	N/A	3 PCS	-	



 Prepared By 2nd Officer
 Nur Mohamad Ikmal




 Approved By Master
 Capt. Abd Majid Bin Abd Malek


ภาคผนวกเรือสนับสนุน-4.4

แผนการฝึกซ้อมการตอบสนองต่อเหตุฉุกเฉิน
และตัวอย่างรายงานการฝึกซ้อมฯ ประจำปี พ.ศ. 2567

Health, Safety and Environmental Management System		
Attachment 8.2	EMERGENCY DRILL SCHEDULE	
HSEMS Rev No: 03		
14 th July 2023		

VESSEL	AG AZZAM	YEAR	2024
--------	----------	------	------

Type of Drills	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MONTHLY												
Abandon Ship *	10	03	17	02	08	05	08	04	01	05	06	
Fire	10	03	17	02	08	05	08	04	01	05	06	
Launching, Maneuvering and Recovering Rescue Boat	20	20	17	18	15	11	08	04	28	08	06	
BI-MONTHLY												
Enclosed Space Entry	20		17		15		14		10		19	
Oil Spill / Pollution		03		18		11		11		08		
3 MONTHLY												
Emergency Steering	20			18			14			08		
Man Overboard *		03			02			04				
Main Engine Failure / Blackout			24			20			10			
Access Control / Personnel Search	18			22			21			19		
Unaccompanied Baggage / Bomb Threat		20			02			23				
Anti-Piracy / Security Incident			24			20			20			
Increased Security Levels	18			22			21			19		
*Lifeboat Waterborne (Davit Type)		-			N/A			N/A				
6 MONTHLY												
Collision / Contact	10						14					
Grounding / Stranding		20						11				
Flooding			24						20			
Heavy Weather / Structural Failure				24						26		
Serious Injury / Illness (Medical Drill)					05							
Breaking of Tow Line / Emergency Towing						05						
Passenger Evacuation	10						14					
*Lifeboat Waterborne (Free Fall)		-						N/A				

Health, Safety and Environmental Management System		
Attachment 8.2	EMERGENCY DRILL SCHEDULE	
HSEMS Rev No: 03		
14 th July 2023		

Note: 1) The Master may choose multiple items in a single drill. Upon completion of each drill, record the activities in Drill Report (Attachment 8.3) and email to fleet@dutamarine.com.

2) The lifeboat to be waterborne and maneuvered in 3 monthly basis. In case of this unable to carry out, the Master must log down in the deck log book and carry it out at next first available opportunity.
*The lifeboat drill for waterborne are vary (3-monthly and 6-monthly) depending on ships designed lifeboat. All lifeboat waterborne drill report should accompanied by picture evidence accordingly.

3) The Rescue Boat to be waterborne and maneuvered in monthly basis. In case this unable to carry out on 1st month, the subsequent month should be sought for any opportunity to be waterborne. The Master must log down in the deck log book and carry it out at next first available opportunity but not to exceeds 3 months from the last date rescue boat being waterborne.

4) Lifeboat, Rescue Boat and fire drill report should come along with pictorial evidence whenever conducted.

MV AG AZZAM
PORT KELANG IMO : 9553531
OFF: 333099 NT : 287
GT : 959 BHP: 4400

FFA training and Drill

12	Training Program and Drill Records	Requirement	Provided
12.4	Fire extinguisher and firefighting equipment training (Fire Fighting Training)	Provide evidence support for fire drill Provide training record for all crew onboard	Yes





Training Record














Health, Safety and Environmental Management System		
Attachment 6.11 HSEMS Rev No: 01 15 th MARCH 2017		
TRAINING ATTENDANCE RECORD		

Vessel Name	MV AG Azzam	Date	04.08.2024	Location	Rossukon Field
-------------	-------------	------	------------	----------	----------------

Titles Trained

1	Fire Drill	6	Portable Fire Extinguishers Training
2	Abandon Ship Drill	7	Fire Hose and Nozzles Training
3	MOB and Launching Rescue Boat Drill	8	Fire Detection System Training
4		9	Fixed Fire Fighting System Training
5		10	

Attendance

No	Name	Rank	Signature
1	Halim Bin Mat Yutin	Master	
2	Anwar Ashraf Bin Baharin	C/O	
3	Mohd Ismail Bin Mohd Ismail	2/O	
4	Musa Bin Mahi	C/E	
5	Mohd Khusairi Bin Mamat	3/E	
6	Mohamad Fahme Bin Razali	3/E	
7	Mohammad Asyraf Bin Abdul Kadir	Bin	
8	Mohamad Khalrudin Bin Mamat	Ab 1	
9	Mohamad Fuziel Bin Ismail	Ab 2	
10	Mohamad Zulhairi Bin Basri	Os	
11	Mohd Yusri Bin Razali	Officer	
12	Mohamad Daniel Haniqelshah Bin Mohd Shahrulnizam	Grs	
13	Mat Zaid Bin Mat Pa	Cook	
14			
15			
16			
17			
18			
19			
20			

Trainer's Name & Designation :

C/O Anwar Ashraf Bin Baharin

Trainer's Signature :

Verified by Master (Name & Signature) :


Capt Halim Bin Mat Yutin

ภาคผนวกเรือสนับสนุน-4.5

ตัวอย่างรายงานการตรวจประเมินความปลอดภัย
และสุขลักษณะของสถานที่ทำงานและที่พักอาศัย

Health, Safety and Environmental Management System	
Attachment 12.1 HSEMS Rev No: 03 17 th November 2023	INTERNAL AUDIT CHECKLIST



VESSEL AUDITING PROCEDURES

DATE	04&05 th January 2024	VESSEL	MV AG Azzam
VENUE	Prateep Jetty, Songkhla, Thailand.	D.P.A / C.S.O	Mr. Mohd Sapie Bin Sadi
AUDITOR	Mr. Ahmad Zaki Bin Baki - ADPA	AUDITTEE	Master and Crew AG Azzam

Each audit session started with the following agenda;

1. **Opening meeting.**

- The audit objectives.
- The terms used during the audit.
- The personnel whom will be audited.
- To deal will defect on any findings resulting on Major NC/Minor NC/Observation(Recommendation) and
- Meeting attendance list attached.

2. **Audit scope**

The scope will cover on any aspect related to Marine requirement and ISM procedures on vessel management/operations, maintenance, documentation, emergency and preparedness.

3. **Audit plan.**

- 1st stage : Introduction & Opening Remarks
- 2nd Stage : Review previous audit & NCR Record
- 3rd Stage : Verify the understanding of SMS – Q&A Session
- 4th Stage : Verify Documentation
- 5th Stage : Sharing on finding and Closing Remarks

4. **Verify last internal audit report. (ISM)**

	Description/Element of the code.	Findings	Result
1.	Any NC raised?	N/A – This is the first Internal Audit conducted.	N/A
2.	If yes, are all NCs were closed.	N/A	N/A
3.	Are all NCs closed within specific time?	N/A	N/A
4.	Are all NCs closed properly?	N/A	N/A
5.	Is there any NC close-out not acceptable and why?	N/A	N/A
6.	Way forward in managing re close-out NC?	N/A	N/A

Health, Safety and Environmental Management System	
Attachment 12.1 HSEMS Rev No: 03 17 th November 2023	INTERNAL AUDIT CHECKLIST



General View From Auditor.

PART A

	Element & Description of the code.	Objective Evidence	Result
1.	1.1 : Understanding of ISM code	Q&A done – verify understanding.	Understand
2.	1.2 : Objective of ISM Code	Q&A done – verify understanding.	Understand
3.	1.4 : Functional requirements for a safety management system	Q&A done – verify understanding.	Understand
4.	2 : HSE Policy Implementations (shore-based / vessel staff)	Q&A done – verify understanding.	Understand
5.	3 : Company Responsibility and Authorities	Q&A done – verify understanding.	Understand
6.	4 : Designated Person(s)	Q&A done – verify understanding.	Understand
7.	5: Master responsibility and authority	Q&A done – verify understanding.	Understand
8.	6.1: Properly and appropriately manned staff (shore-based / vessel staff)	Q&A done – verify understanding.	Understand
9.	6.2 : Procedure for newly joined crew / staff	Q&A done – verify understanding.	Understand
10.	6.3 : Understanding company HSEMS	Q&A done – verify understanding.	Understand
11.	6.4 : Training and Support	Q&A done – verify understanding.	Understand
12.	7 : Shipboards Operations and procedures	Record Checked – Verify compliance	Need Improvement
13.	8 : Emergency preparedness and Responses	Record Checked – Verify compliance	Need Improvement
14.	9 : Non-Conformities, accidents and hazardous occurrences	Record Checked – Verify compliance	Need Improvement
15.	10 : Maintenance / Inspection / corrective action / records	Record Checked – Verify compliance	Need Improvement
16.	11 : Documents controls and data restrictions	Record Checked – Verify compliance	Need Improvement
17.	12 : Company verifications, review and evaluations.	Q&A done – verify understanding.	Understand

PART B

	Element & Description of the code.	Objective Evidence	Result
1.	13 : Documents Of compliance or Interim Documents Of Compliance. 13.1 : issuance? 13.2 : Type of Ships? 13.3 : Renewal Verifications? 13.4 : Validity?	13 : Interim Documents Of Compliance checked and posted. 13.1 : Malaysia Marine Department. 13.2 : Anchor handling tug / supply. 13.3 : Ship Sampling Audit 13.4 : 18.03.2024	Checked. Complied.
2.	14 : Verifications Procedures for DOC	Show understanding and process.	Satisfactory
3.	15 : Form of Certificates - Language (English / Malay / Others)	English & Malay	Complied.


REMARKS BY AUDITOR

Vessel Master and crew to do further familiarization to company HSEMS. All necessary document stated inside HSEM to be made fully utilise.

NON-CONFORMITY : 12
OBSERVATIONS : Nil
TOTAL : 12

Remarks;


- 1) For non-conformity and observation list, kindly refer to attachments 9.1A & 9.1B.

Health, Safety and Environmental Management System		
Attachment 12.1 HSEMS Rev No: 03 17 th November 2023	INTERNAL AUDIT CHECKLIST	

AUDIT CHECKLIST

VESSEL CREW LIST				
Vessel: MV AG AZZAM		Date: 04&05 TH January 2024		
NO	Name	Position	Days Onboard	Documents checks (Y/N)
1		MASTER		Y
2		CHIEF OFFICER		Y
3		SECOND OFFICER		Y
4		CHIEF ENGINEER		Y
5		SECOND ENGINEER		Y
6		THIRD ENGINEER		Y
7		BOSUN		Y
8		ABLE BODIED		Y
9		ABLE BODIED		Y
10		ORDINARY SEAMAN		Y
11		OILER		Y
12		GREASER		Y
13		COOK		Y
14		ADD. MASTER		Y
15				

Remarks ;

Health, Safety and Environmental Management System		
Attachment 12.1 HSEMS Rev No: 03 17 th November 2023	INTERNAL AUDIT CHECKLIST	

INTERNAL AUDIT CHECKLIST

1. Compliance with mandatory rules and regulation

	Description/Element of the code.	Remarks (Y/N)
1.	All statutory and trading certificates available?	Y
2.	Any other certificates require by local authority?	N

2. Implementation of Safety & Environmental Protection policy

	Description/Element of the code.	Remarks (Y/N)
1.	The vessel's SMS is following the policy, maintained at all level?	Y
2.	Evident that showed the policy is being followed.	Y
3.	All policies been posted at areas visible to everybody?	Y

3. Responsibilities and Authorities of responsible person.

	Description/Element of the code.	Remarks (Y/N)
1.	The Master's know his duty and responsibility on SMS implementation onboard?	Y
2.	Evident that showed Master's aware of his duty and responsibility?	Master Standing Order and Night Order checked.
3.	Other officers know his duty and responsibility?	Y
4.	Master & other crews know the company's DPA and CSO?	Y

4. Master's responsibility and authority.

	Description/Element of the code.	Remarks (Y/N)
1.	Issuing instruction in simple & clear manner.	SIGHTED
	Is there Master night order for daily instruction?	Y
	Is the night order up-to-date basis?	Y
	Are the officers acknowledged the instruction?	Y
2.	Is there any standard Master's standing instruction?	Y
	Is the instruction coincide with current Master & Officers?	N
3.	Is Master aware on his overriding authority?	Y
4.	Is the Master aware of the ISM policy?	Y
5.	Is the Master aware of his responsibility in ensuring the proper implementation of the SMS?	Y
6.	Have the Master done the SMS review?	Y - MONTHLY
7.	Did the Master conduct any training onboard?	Y - MONTHLY

5. Resources and Personnel

	Description/Element of the code.	Remarks (Y/N)
1.	Is the Master verse with the SMS?	Y- IMPROVEMENT REQUIRED.
2.	Is the company given necessary support to the Master on implementing SMS onboard?	Y
3.	Master and all officers with valid C.O.C and Modular courses?	Y
4.	All watch keeping crews with valid certificate as per STCW 95?	Y
5.	Master & officers C.O.C issued not under Malaysian Flag was granted with C.O.R & Malaysian seaman card?	Y- ALL MALAYSIAN CREW
6.	Master and all crews are medically fit?	Y
7.	All personnel involved in the SMS have an adequate Understanding of relevant rules, regulations, codes and guidelines?	Y
8.	Any difficulties in English communication?	N

Health, Safety and Environmental Management System	
Attachment 12.1 HSEMS Rev No: 03 17 th November 2023	INTERNAL AUDIT CHECKLIST



6. Development of plans

	Description/Element of the code.	Remarks (Y/N)
1.	Where in the manual stated the shipboards plan?	HSEMS SECTION 7
2.	Refer plan and verify every each of the plan	
	Implemented:-	
	• Stability	Y
	• Routine cargo operation	Y
	• Lashing of deck cargo	Y
	• Preparation of arrival and departure	Y
	• Berthing and un-berthing	Y
	• Towing operation	Y
	• Anchor Handling operation	Y
	• Shipboard housekeeping	Y
	• Oil bunkering or transferring in port & at sea	Y
	• E/room watch keeping and handing over	Y
	• Safety of navigation	Y
	• Deck & Engine Monthly Inspection & Test	Y
	• Permit-to-work	Y
	• Control of Oil discharge	Y

7. Emergency preparedness

	Description/Element of the code.	Remarks (Y/N)
1.	Planned monthly safety drill carried out?	Y
2.	Other mandatory drill to be carried out?	Y
3.	Awareness of contingency plan?	Y
4.	Awareness of various emergency contact numbers?	Y
5.	Able to contact emergency numbers?	Y- TESTED
6.	Know the usage of safety equipment onboard?	Y
7.	Know the location of various LSA & FFA?	Y
8.	Know where to find duty assigned during Emergency and Muster station.	Y
9.	Know the various emergency signals?	Y
10.	Know procedure on handling various emergency situation?	Y

8. Report and analysis of Non Conformities, accident and hazardous occurrence

	Description/Element of the code.	Remarks (Y/N)
1.	Any N.C.R raised on defect findings been Properly rectified and closed?	N/A – VESSEL ARE NEW WITH 2 MONTH SERVICE.
2.	Does analysis done on the findings?	N/A
3.	Analysis on recurrence prevention effective or not?	N/A
4.	Accident or incident reported to the company?	Y
5.	Accident investigation done or not?	Y – BY SHIPS CREW
6.	Rectification and prevention action taken?	Y
7.	Any method used to identify hazard to prevent accident?	5-W TECHNIQUE
8.	Accident reporting procedure understood by Master and notification form available on-board?	Y

9. Maintenance of ships and equipment

	Description/Element of the code.	Remarks (Y/N)
1.	Maintenance plan available?	Y – HARD COPY AND ONLINE PMS
2.	Execution of plan as accordance to procedure?	Y
3.	Any defect found during execution and how defect been reported to the company?	Y
4.	Is there any procedure on any of the plan not able to be carried out as per plan?	Y

Health, Safety and Environmental Management System	
Attachment 12.1 HSEMS Rev No: 03 17 th November 2023	INTERNAL AUDIT CHECKLIST



5.	How maintenance carried out onboard reported to the company?	Y – EMAIL AND ONLINE PMS
6.	Are all the plan been properly carried out as per plan?	Y
7.	Any other defect found from other external party?	Y – PSC INSPECTION
8.	If yes, has it been rectified and closed?	Y
9.	List down all the critical equipment of the ship	AS PER VESSEL RECORD.
10.	All critical equipment been checked and tested?	Y
12.	Are all findings rectified & closely properly?	Y
13.	Auditor will carry out physical inspection of the vessel.	CONDUCTED

10. Documentation

	Description/Element of the code.	Remarks (Y/N)
1.	Are all SMS manuals and forms used under Control copy?	Y
2.	Are all forms used as accordance to the current version?	Y
3.	Is there any changes made to the SMS?	Y – LAST AMENDMENT ON 03 RD Jan 2024
4.	If yes, it has been done by authorized personnel?	Y
5.	Obsolete document has been disposed properly?	Y

11. Company verification, review and evaluation

	Description/Element of the code.	Remarks (Y/N)
1.	Last internal audit done within a year?	N/A
2.	Any findings on Major or minor NC or Observation been rectified and closed on timely manner?	N/A

12. Certification and verification

	Description/Element of the code.	Remarks
1.	All periodical audit and survey done accordingly?	Y
2.	S.M.C and other certificates was endorsed accordingly?	Y

Health, Safety and Environmental Management System

Attachment 12.1
HSEMS Rev No: 03
17th November 2023

INTERNAL AUDIT CHECKLIST



VESSEL INSPECTION REPORT

CERTIFICATION / DOCUMENTS			
Certificates / Documents	Valid (Y/N)	Date Last Endorsed	Valid (Y/N)
Certificate of Registry (Permanent)	Y	Ship Sanitation Control Exemption Certificate	Y
Classification Certificate	Y	LSA Equipment Servicing	Y
International Loadline Certificate	Y	FFA Equipment Servicing	Y
Cargo Ship Safety Construction Certificate	Y	LSA & FFA additional document	Y
Cargo Ship Safety Equipment Certificate + Form (E)	Y	P&I Certificate	Y
Exemption Certificate – CSSEC	Y	H&M Certificate	Y
Cargo Ship Safety Radio Certificate + Form R	Y	Record of Approved GMDSS Installation	Y
Shore base maintenance certificate	Y	Garbage Management Plan (SOC)	Y
I.A.P.P Certificate	Y	Exemption Certificate	NIL
International Tonnage Certificate 69 (Permanent)	Y	Sewage Pollution Prevention Certificate	Y
Ship Station License	Y	SOC For Carrier Cargo in Bulk	N/A
Copy of Document of Compliance (DOC)	Y-interim	Anti-Fouling System Certificate	Y
Safety Management Certificate (SMC)	Y-interim	Maritime Labour Certificate	Y
International Ship Security Certificate (ISSC)	Y- interim	DMLC Part I	Y
Continuous Synopsis Record – No 9	Y	DMLC Part II – Review Letter	N – under review
Medical Chest Certificate	Y	Ballast Water Management Certificate	N/A
Safe Manning Certificate + Exemption Letter	Y	BCC & WRC	Y
Crew Accommodation Certificate – SOC (BV)	Y	Port/Flag State Control	Y
Crew Accommodation Certificate (MMD)	NIL	SEEMP Part 1	Y
RECORDS			
ITEM	Available (Y/N)	ITEM	Available (Y/N)
Drill and Safety Meeting Records <ul style="list-style-type: none"> Abandonship Fire Man-overboard 	Y	Requisition Records	Y
Compass Deviation Card	Y	Medical Register	Y
Permit-To-Work	Y	Master / Night Order Book	Y
SMS Manuals available at relevant locations & updated	Y	Radio Log	Y
Crew / Passenger List	Y	Chart Correction Folio / Inventory	Y
Cargo Record / Manifest	Y	Crew Training / Familiarisation Records	Y
Garbage Disposal Record	Y	Passage Planning Record	Y
Sludge Disposal Record	NIL	Compass Observation	Y
Anchor Handling / Towing Records	NIL	Deck Log Book	Y
Deck / Engine / Safety Equipment / Publications Records (check items as per inventory)	Y	Engine Log Book	Y
Non-Conformity Record	NIL	Master Review Record	Y
ISPS Records	Y	PMS Records Deck / Engine	Y
		Master / Chief Engineer Hand-Over Notes	Y
SAFETY EQUIPMENT [LIFERAFT]			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Hydrostatic Release Units (state expiry)	Y	Embarkation Lights	Y
Liferafts painters connections	Y	Instructions posted	Y
Clear of Obstructions	Y	Embarkation Ladders	Y
Markings	Y	Date last Abandon ship Drill	Y
Sufficient capacity	Y		


Health, Safety and Environmental Management System

Attachment 12.1
HSEMS Rev No: 03
17th November 2023


INTERNAL AUDIT CHECKLIST



SAFETY EQUIPMENT [LIFEBOAT]			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Boats general conditions / Covers / Lashings	N/A	Grab Rails	N/A
Skates	N/A	Life boats markings	N/A
Davits general condition	N/A	Bilge Pump	N/A
Last date boat lowered embarkation / water level	N/A	Painters	N/A
Limit switches	N/A	Ration and equipment	N/A
Engine(s) / Gears (Date last tested).	N/A	Pyrotechnics (state validity)	N/A
Oars quantity / condition	N/A	First Aid kits (state validity)	N/A
Life boat falls / records last turn/changed	N/A	Embarkation Ladders	N/A
Condition of Tricing pennant	N/A	Embarkation Lights	N/A
Buoyant lines properly bracketed around hull	N/A	Plugs	N/A
SAFETY EQUIPMENT			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Boat general condition / grab lines / cover / skid	Y	Engine / Fuel Tank (last tested)	Y
Davit & Falls wire/hook (last turned / changed)	Y	Markings	Y
Equipment / Inventory	Y	Last launched / MOB drill	Y
SAFETY EQUIPMENT			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Life buoys c/w markings and reflective tapes	Y	EPIRB + HRU	Y
Life buoys c/w life line, markings & reflective tapes	Y	Transponder	Y
Life buoys c/w self igniting lights	Y	GMDSS approved walkie-talkie	Y
Life buoys c/w smoke & light	Y	Line Throwing Apparatus	Y
Parachute Rockets	Y	Table of Life Saving Signal	Y
Aldis lamp, batteries, power supplies	Y	Muster Lists	Y
Life jackets + markings + reflective tapes.	Y	Fire & Safety Plan (poster/cannister)	Y
Immersion suits / TPA	Y	Scrambling nets (state condition)	Y
Ship's bell	Y	Emergency Escape Breathing Apparatus	Y
Horn	Y		
SAFETY EQUIPMENT			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Fireman Outfit	Y	FiFi Pump	Y
B.A sets + spare btls.	Y	Sprinklers test (where available)	Y
Oxygen Resuscitator (where available)	Y	Hydrants / Hoses + nozzles	N – few nozzle stuck.
International Shore Connection	Y	Fire mains	Y
Emergency Fire Pump (test run with hose)	Y	Fire hoses / nozzles	Y
Main Fire Pump (test with 2 hoses)	Y	Equipment stored as per Fire Plan	Y
SAFETY EQUIPMENT			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Smoke / Fire detectors / Call Points unit	Y	Emergency quick closing valves	Y
Gas Detectors (where available)	Y	Fixed installation box alarms / fan stop	Y
Extinguishers (state date last service)	Y – tagging to be change	Emergency Stop switches (Fans / pumps)	Y
Spare charges for extinguishers	Y	Fire Blanket (state location)	Y - galley
Fire dampers / ventilators	Y	Date last Fire Drill	Y

Health, Safety and Environmental Management System		
Attachment 12.1 HSEMS Rev No: 03 17 th November 2023	INTERNAL AUDIT CHECKLIST	

HULL AND MACHINERY			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Emergency generator	Y	Anchor windlass and parts	Y
Emergency air start compressor (where available)	Y	Anchor chain condition	Y
External foam system	N/A	Skid for anchor windlass	Y
Emergency steering gear	Y	Hull external condition above waterline	Y
Alarms for steering system	Y	Fenderings	Y
Bridge to steering room communication	Y	Chain lockers	Y
Watertight doors / hatches / dogs / linings	Y	Fore tank / aft peak tanks	Y
Sliding watertight doors / alarms / indicators	Y	Deck hydraulic / cargo / etc. pipings	Y
Airvent heads	Y	Engine room piping	Y
Deck sounding pipes / caps	Y	Oil water separator	Y
Engine room DB tanks sounding pipes / caps.	Y	Rotating parts of machinery with covers	Y
Bulwarks / shipside railings / safety chains	Y	Bollards	Y
ELECTRICAL			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Emergency lights	Y	Spaces lighting fixtures	Y
Navigation lights	Y	Accommodation / passageways lighting	Y
Searchlights	Y	Insulation mats IWO switchboard	Y
Deck lighting fixtures	Y	Extinguishers available (non-conductive)	Y
Engine / bowthruster room lighting fixture	Y	Plugs & sockets outlets	Y
Steering / stern thruster room lighting fixtures	Y	Explosive proof lighting fixtures	Y
Stores lighting fixtures	Y	Radio & Emergency light batteries.	Y
RADIO & NAVIGATION EQUIPMENT			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Gyrocompass / repeaters (where available)	Y	EPIRB	Y
Standard compass / light (state last adjusted)	Y	Signal Flags	Y
Auto-pilot	Y	Echo sounder(s)	Y
Steering / indicators / feedbacks	Y	Weather Facsimile	N/A
Radar(s)	Y	Wind speed/direction indicator	Y
GPS	Y	Navtex receiver	Y
Inmarsat C	Y	BNWAS	Y
MF/HF Radio	Y	Radar transponder	Y
VHF Radio	Y	Automatic Identification System	Y
VHF Handheld GMDSS approved type	Y	Ship Security Alert System	Y
HOUSE KEEPING			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Galley / Chiller / Freezer	Y	Bow / stern thruster room	Y
Cooking facilities	Y	Cement tank compartment(s)	Y
Various garbage bins as manual.	Y	Engine room	Y
Mess halls	Y	Engine store	Y
Provision stores	Y	Bilges & tank top	Y
Cabins	Y	Floor plates	Y
Showers / toilets	Y	Control room (where available)	Y
Laundry room	Y	Steering room	Y
PERSONAL PROTECTIVE EQUIPMENT			
ITEM	Condition (Y/N)	ITEM	Condition (Y/N)
Coveralls	Y	Gloves	Y
Hard hats	Y	Welding / cutting gloves, goggles / shield, etc.	Y
Boots	Y	Harness	Y

Health, Safety and Environmental Management System		
Attachment 12.1 HSEMS Rev No: 03 17 th November 2023	INTERNAL AUDIT CHECKLIST	

***Remarks:**

- This checklist has been made reference to the ISM and OCIMF standards.
- Internal Audit checklist to be completed at each interval not more than 12 months.
- Management to be inform and approval to be obtain if the audit has to take place more than 12 month period from the last inspection.
- Internal Audit report must be completed and submit to management for review within 7 working days.

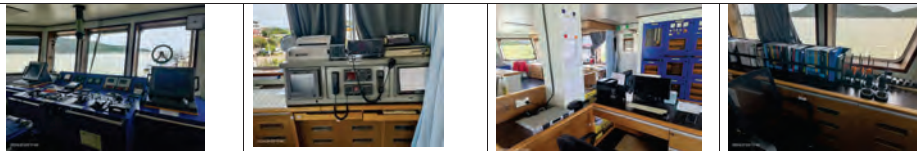
Health, Safety and Environmental Management System

Attachment 12.1
HSEMS Rev No: 03
17th November 2023

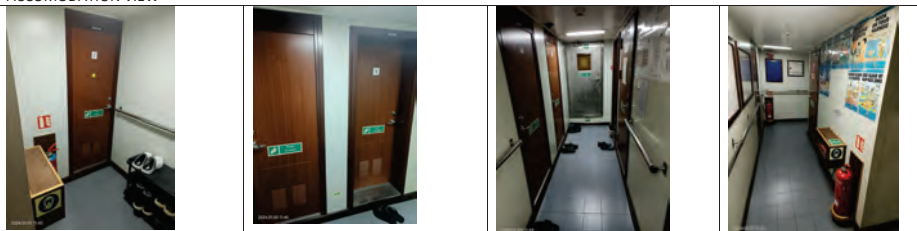
INTERNAL AUDIT CHECKLIST



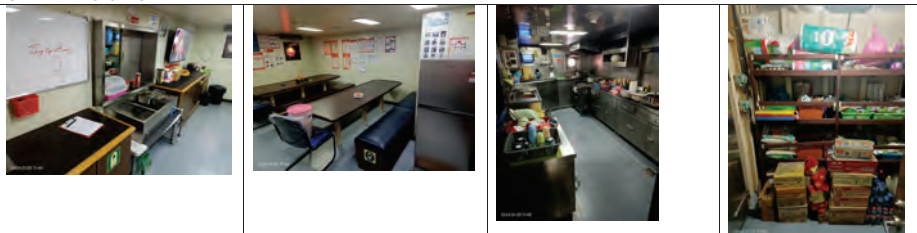
BRIDGE VIEW



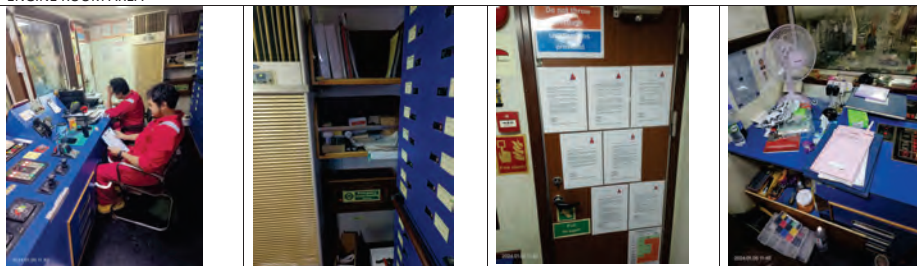
ACCOMMODATION VIEW



GALLEY AND STORAGE AREA



ENGINE ROOM AREA



ENGINE WORKING SPACE AREA



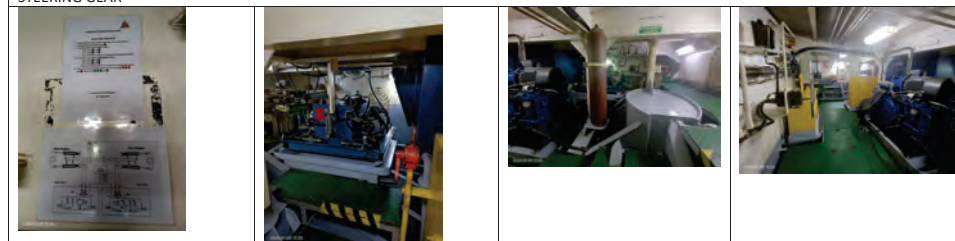
Health, Safety and Environmental Management System

Attachment 12.1
HSEMS Rev No: 03
17th November 2023

INTERNAL AUDIT CHECKLIST



STEERING GEAR



EMERGENCY GENERATOR ROOM



Health, Safety and Environmental Management System		
Attachment 7.28 HSEMS Rev No: 01 15 th MARCH 2017	ACCOMODATION AND GALLEY INSPECTION CHECKLIST	

Vessel Name	MV AG Azzam	Date	20.10.2024
-------------	-------------	------	------------

“✓” where appropriate or “NA”

No	Location	Satisfactory	Unsatisfactory	Remarks
1	Bridge			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Cabinet and fittings	✓		
	Posters, notices and notice boards	✓		
	LSA and FFA	✓		
2	Cabins and Hospital Facilities			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Cabinets and fitting	✓		
	Bedframe, mattress and linen	✓		
	Toilet	✓		
3	Toilets and Shower Rooms			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Flush, fitting, wash basin	✓		
4	Alleyways and Stairways			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Bulkhead, handrail and fitting	✓		
	Posters and notices	✓		
	LSA and FFA	✓		
5	Mess Room and Recreation Room			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Cabinets and fitting	✓		
	Table, chairs and dispensers	✓		
	TV, electrical equipment etc	✓		
	Posters, notices and notice boards	✓		
LSA and FFA	✓			

Health, Safety and Environmental Management System		
Attachment 7.28 HSEMS Rev No: 01 15 th MARCH 2017	ACCOMODATION AND GALLEY INSPECTION CHECKLIST	

Galley, Pantry, Provision Stores and Cold Room			
6	Cleanliness and neatness	✓	founded no expired food
	Food preservation and hygiene	✓	
	Flooring and lighting	✓	
	Cabinets and fitting	✓	
	Cooking utensils, exhaust hood and stove	✓	
	LSA and FFA	✓	


Master's Name	Capt. Abd Majid Bin Abd Malek	Master's Signature	
---------------	-------------------------------	--------------------	---

Health, Safety and Environmental Management System		
Attachment 7.28 HSEMS Rev No: 01 15 th MARCH 2017	ACCOMODATION AND GALLEY INSPECTION CHECKLIST	


Vessel Name	MV AG Azzam	Date	25.08.2024
-------------	-------------	------	------------

“✓” where appropriate or “NA”

No	Location	Satisfactory	Unsatisfactory	Remarks
1	Bridge			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Cabinet and fittings	✓		
	Posters, notices and notice boards	✓		
	LSA and FFA	✓		
2	Cabins and Hospital Facilities			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Cabinets and fitting	✓		
	Bedframe, mattress and linen	✓		
	Toilet	✓		
3	Toilets and Shower Rooms			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Flush, fitting, wash basin	✓		
4	Alleyways and Stairways			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Bulkhead, handrail and fitting	✓		
	Posters and notices	✓		
	LSA and FFA	✓		
5	Mess Room and Recreation Room			
	Cleanliness and neatness	✓		
	Flooring and lighting	✓		
	Cabinets and fitting	✓		
	Table, chairs and dispensers	✓		
	TV, electrical equipment etc	✓		
	Posters, notices and notice boards	✓		
LSA and FFA	✓			

Health, Safety and Environmental Management System		
Attachment 7.28 HSEMS Rev No: 01 15 th MARCH 2017	ACCOMODATION AND GALLEY INSPECTION CHECKLIST	

Galley, Pantry, Provision Stores and Cold Room			
6	Cleanliness and neatness	✓	
	Food preservation and hygiene	✓	
	Flooring and lighting	✓	
	Cabinets and fitting	✓	
	Cooking utensils, exhaust hood and stove	✓	
	LSA and FFA	✓	

Master's Name	Capt. Halim bin Mat Yatim	Master's Signature	
---------------	---------------------------	--------------------	---

ภาคผนวกเรือสำเภา-4.6

ตัวอย่างรายงานการเกิดอุบัติเหตุ

NORTHERN GULF PETROLEUM (NGP)

INCIDENT NOTIFICATION FORM



Type	Chief Executive Officer to notify the following notification list: (With IMPACT / Hi-PO / No IMPACT where relevant)	NGP to notify internally as follows:
<input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2 <input checked="" type="checkbox"/> Non-emergency	<input type="checkbox"/> With IMPACT / HIGH POTENTIAL INCIDENT* <ul style="list-style-type: none"> • NGP Management Committee <input checked="" type="checkbox"/> No IMPACT* <ul style="list-style-type: none"> • NGP Management Committee 	<ul style="list-style-type: none"> • Notification list as established by NGP
<input type="checkbox"/> Tier 3	<ul style="list-style-type: none"> • NGP Management Committee 	<ul style="list-style-type: none"> • Notification list as established by NGP
*DESCRIPTION OF IMPACT, EMERGENCY, NON-EMERGENCY & HI-PO		
Impact: <ul style="list-style-type: none"> • Fatality • Major injury / health effect that resulted in Permanent Partial Disability / Lost Workday Case more than 4 days • Occupational Illness with irreversible health impact • Asset damage equal or exceeding USD 100,000 • LOPC release equal to or above Tier 1 threshold quantity** • Spill no longer confined within company site, with off-site environmental impact (e.g. visible contamination to soil / water system, fish killed, vegetation damaged). • Emission or discharge from regulated / permitted source, exceeding regulatory standard 		Emergency: <ul style="list-style-type: none"> • Incident where emergency or crisis team have been activated (Tier 1, Tier 2, or Tier 3) High Potential (Hi-Po) Incident: <ul style="list-style-type: none"> • Any incident which, under different circumstances, would have caused more severe consequences leading to a major incident
** Note: Natural gas, Methane, Ethane, Propane, Butane, LPG, LNG = 500 kg Petrol, Gasoline, Methanol, above 15 API Gravity Crude oil = 1000 kg or 7 bbl. Diesel, below 15 API Gravity Crude oil = 2000 kg or 14 bbl. For other material, please refer to API 754 Standard		





	NOTIFICATION FORM		NGP (BKK):	
			Tel:	
			Fax:	
Type of Notification	<input checked="" type="checkbox"/> Initial <input type="checkbox"/> Stand Down / All Clear			
SECTION A: BASIC INFORMATION				
Location:	<input type="checkbox"/> MOPU Offshore: <input checked="" type="checkbox"/> FSO/Rig/Supply Vessel:	<input type="checkbox"/> BKK Office	Date	05.11.2023
			Time	00:08 AM
Department Responsible:				
SECTION B: TYPE				
HSE & Process Safety	<input type="checkbox"/> Fire/ Explosion <input type="checkbox"/> Hi-Po Incident		Release Volume:	
	<input type="checkbox"/> Loss of Primary Containment (Liquid)		Recovered Volume:	
	<input type="checkbox"/> Loss of Primary Containment (Gaseous)			
	<input type="checkbox"/> Spillage			
	<input checked="" type="checkbox"/> Others. Please specify: Hose stuck in Propeller			
Security	<input type="checkbox"/> Others. Please specify:			
Transportation	<input type="checkbox"/> Land	<input type="checkbox"/> Water	<input type="checkbox"/> Air	Others, please specify:
Natural Disaster	<input type="checkbox"/> Flood	<input type="checkbox"/> Earthquake	<input type="checkbox"/> Tsunami	Others, please specify:
SECTION C: IMPACT				
<input type="checkbox"/> People (specify in SECTION D)		<input type="checkbox"/> Environment	<input checked="" type="checkbox"/> Asset	<input type="checkbox"/> Reputation
SECTION D: INJURED / ILL / FATALITY / MISSING				
Number of Injured Person		Number of Ill Person		Number of Fatality
<input type="checkbox"/> NGP ()		<input type="checkbox"/> NGP ()		<input type="checkbox"/> NGP ()
<input type="checkbox"/> Contractor ()		<input type="checkbox"/> Contractor ()		<input type="checkbox"/> Contractor ()
<input type="checkbox"/> 3rd Party ()		<input type="checkbox"/> 3rd Party ()		<input type="checkbox"/> 3rd Party ()
SECTION E: POTENTIAL ESCALATION				
<input checked="" type="checkbox"/> Under control with available resources. No potential of escalation			<input type="checkbox"/> May require additional resources (e.g. authorities, contractors, mutual aid group)	
<input type="checkbox"/> Authorities may take over command and control			<input type="checkbox"/> May trigger significant authorities / public / community / media interest	
SECTION F: AUTHORITIES INFORMED				
Authorities / Date Informed:	<input type="checkbox"/> Police <input type="checkbox"/> Fire Dept. <input type="checkbox"/> MOPH <input type="checkbox"/> DMF/ MONRE	<input type="checkbox"/> HSE Regulator: e.g. Please specify:		<input type="checkbox"/> Others: e.g. Navy, Military, Marine Dept., Regional Authority., etc. Please specify:
SECTION G: BRIEF DESCRIPTION OF INCIDENT (Who, What, Where, When & Consequence)				

On 05th Nov 2023 around 00:08 AM, the drill water hose went into the boat deck and stuck into the port propeller while the boat crew unsecured the first securing point to bring back the hose back. The boat crew recommended to cut off the hose due to the hose deeply stuck in propeller. Finally, the boat crew cut off the hose. Deck crew brought back the remaining hose to the rig and replaced the new hose for the job. It was happened on MP Prestige.

SECTION H: ACTION TAKEN / ADDITIONAL INFORMATION (If any)

The drill water hose have two section#1 with 140 ft length connect from rig's loading station to station #2 with 50ft length connect to boat's manifold.
Section# 2 and half of section#1 went to boat's propeller when incident happened.

SECTION I: STAND DOWN / ALL CLEAR	Date: 05.11.2023	Time: 11:30 AM
Prepared / Reported by	Name:	Signature: 
	Designation: HSE	
	Contact No	
	Date 05.11.2023	
Approved and Submitted by	Name:	Signature: 
	Designation: DSV	
	Contact No	
	Date 05.11.2023	

SMS Template:

SAMPLE SMS Notification

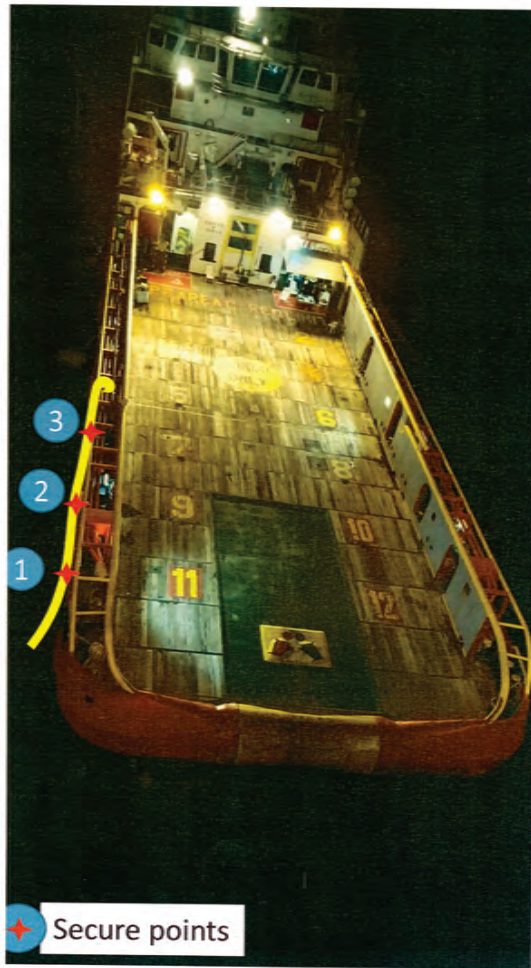
The following are the mandatory information for SMS notification:

- (1) Type of incident i.e. fire, injuries/casualty/fatality;
- (2) Basic Information: Incident location, date and time;
- (3) Incident Potential: Incident under control or potential to escalate;
- (4) Impact & Consequence: Fire/Injury/Environment/Security (No. of Casualty/Fatality);
- (5) Sender;

Sample of SMS notification showing all the information above is shown as below:

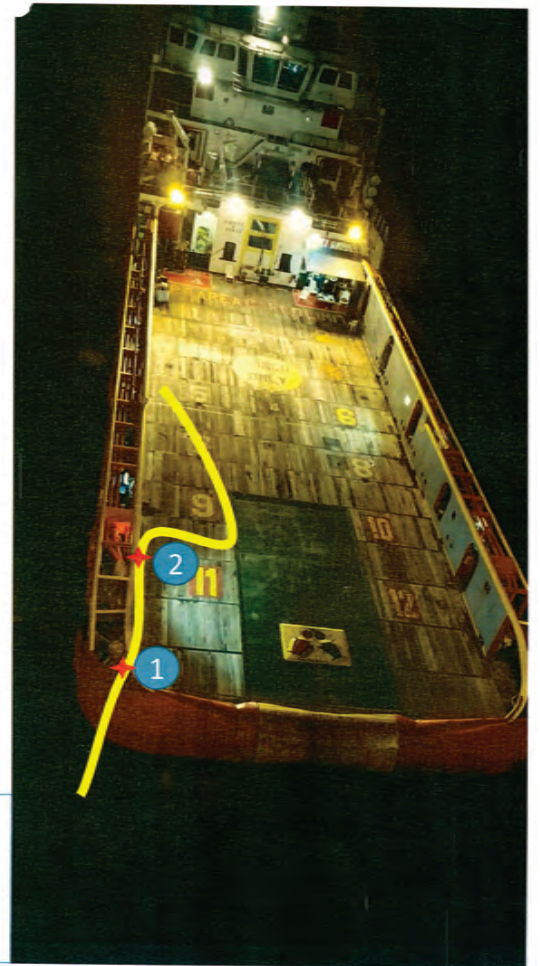
Initial Notification:
Fire incident @ Platform ABC, OPU XYZ on 31/12/2010 @0030 hrs.
Tier 2 declared & incident under control.
5 staff injured @ Medevac ongoing.

Sender:
Incident Commander, ECC – OPU XYZ




Boat's crew signaled
to Crane operator
to position the hose


Normally hose
position that Crane
operator thought
will be




ภาคผนวกเรือสนับสนุน-4.7

ตัวอย่างบันทึกปริมาณและรายการสารเคมี




Health, Safety and Environmental Management System		
Attachment 10.6 HSEMS Rev No: 01 15 th MARCH 2017	MONTHLY LUBRICANT REPORT	

Vessel Name :	MV AG AZZAM	Month :	JULY 2024
Name/Rank :	3/E FAHME RAZALI	Date :	31/07/2024
Department :	ENGINE	Signature :	

All Unit of Measurements are in Liters				
Name of Product	Quantity Last Inventory	Quantity Received	Quantity Consumed	Stock ROB (liters)
LUBRICATING OIL				
SHELL RIMULA R4 X 15W-40 -sump. tank M/E -sump. tank A/E -sump. tank BTE -sump. tank VOLVO PENTA -sump. tank EG	1627		90	1537
GEAR OIL				
SHELL OMALA S2 GX 100 -bow thruster	209	0	0	209
SHELL OMALA S2 GX 68 -fifi	209	0	0	209
PETRONAS URANIA 500 SAE 40 CF -gearbox M/E	209	0	0	209
SHELL R3 SAE 40 -gearbox M/E	660	0	0	660
HYDRAULIC OIL				
PETRONAS HYDRAULIC 32 -steering gear	463	0	0	463
SHELL TELLUS S2 VX 68 -power pack -strong jaw and towing pin	1462	0	0	1462


Health, Safety and Environmental Management System		
Attachment 10.6 HSEMS Rev No: 01 15 th MARCH 2017	MONTHLY LUBRICANT REPORT	


OTHERS OIL				
REFRIGERATION LUBRICANT RL 68H -compressor refer & aircond	8	0	0	8
SHELL CORENA S2 68 -air compressor	28	0	0	28
GREASES				
SHELL GADUS V220 2 (MULTIPURPOSE)	33kg	0	0	33kg
EXTREME PRESSURE GREASE	52kg	0	0	52kg
COOLANT ELI (Extended Life Inhibitor) -volvo penta	52	0	2	50
CHEMICAL				
RUST REMOVER	50	0	0	0
DEGREASER	50	0	0	0

 		31/07/2024
Master's Signature / Stamp HALIM BIN MAT YATIM	Chief Engineer's Signature MUSA BIN MAHI	Date

Note: To send to fleet@dutamarine.com at the end of the every month.




Health, Safety and Environmental Management System		
Attachment 10.6 HSEMS Rev No: 01 15 th MARCH 2017	MONTHLY LUBRICANT REPORT	



Vessel Name :	MV AG AZZAM	Month :	AUG 2024
Name/Rank :	3/E FAHME RAZALI	Date :	31/08/2024
Department :	ENGINE	Signature :	

All Unit of Measurements are in Liters

Name of Product	Quantity Last Inventory	Quantity Received	Quantity Consumed	Stock ROB (liters)
LUBRICATING OIL				
SHELL RIMULA R4 X 15W-40 -sump. tank M/E -sump. tank A/E -sump. tank BTE -sump. tank VOLVO PENTA -sump. tank EG	1537	1045	1090	1492
GEAR OIL				
SHELL OMALA S2 GX 100 -bow thruster	209	0	0	209
SHELL OMALA S2 GX 68 -fifi	20	0	0	20
PETRONAS URANIA 500 SAE 40 CF -gearbox M/E	209	0	0	209
SHELL R3 SAE 40 -gearbox M/E	660	0	0	660
HYDRAULIC OIL				
SHELL TELLUS S2 VX 32 -steering gear	463	627	0	1090
SHELL TELLUS S2 VX 68 -deck machinery power pack -strong jaw and towing pin	1462	2090	2050	1502

Health, Safety and Environmental Management System		
Attachment 10.6 HSEMS Rev No: 01 15 th MARCH 2017	MONTHLY LUBRICANT REPORT	

OTHERS OIL				
REFRIGERATION LUBRICANT RL 68H -compressor refer&aircond	8	0	2	6
SHELL CORENA S2 68 -air compressor	28	0	0	28
GREASES				
SHELL GADUS V220 2 (MULTIPURPOSE)	33kg	0	0	33kg
EXTREME PRESSURE GREASE	52kg	0	0	52kg
COOLANT ELI (Extended Life Inhibitor) -volvo penta	50	0	10	40
CHEMICAL				
RUST REMOVER	50	0	0	0
DEGREASER	50	0	0	0

 		31/08/2024
Master's Signature / Stamp ABD MAJID	Chief Engineer's Signature MUSA BIN MAHL	


PORT KELANG IMO: 9553531
OFF: 333099 NT: 287
GT: 959 BHP: 4400

Note: To send to fleet@dutamarine.com at the end of the every month.

ภาคผนวกเรือสนับทนน-4.8

รายการอุปกรณ์ระงับเหตุการณ์หกรั่วไหล และตัวอย่าง
รายงานการบำรุงรักษาเชิงป้องกัน (ORSE)

Load out Inspection QA/QC. Checklist									
A	ตรวจเช็ค Certificate ของ CCU ซึ่งจะต้องมี 2 อย่างควบคู่กันคือ Load test หรือ Visual Inspection และ MPI Certificate ซึ่งต้องมีอายุอย่างน้อย 1 เดือน และตรวจสอบว่า certificates ถูกออกตาม CCU และ Lifting Gears ขีดขึ้นๆ สำหรับ CCU ที่บรรจุพลาสมาเคมี จะต้องมีฉลากและมี MSDS & Label ติดมาด้วยทุกครั้ง Verify tested certificates MPI and Load Test valid at least one month MSDS label in accordance with IMDG code.	E	ตรวจเช็คสภาพ ต้องอยู่ในสภาพที่สมบูรณ์ ไม่มีรอยแตกหรือบิดเบี้ยว และ Color code ตรงกับที่ติด ต้องเจดสี Tag line ที่ขนาด สฟาว และความยาวเหมาะสม ปลายไม้แตก และถูกยึดในตำแหน่งที่กำหนด หรือตำแหน่งที่สามารถควบคุม Load ได้ ห้ามผูก Tag line บน shackle และ Check padeye condition for any defective or distortion. Correct color code of current year. Tagline secure correct position with appropriate length and size. Shackles must have cotter pin installed.						
B	ตรวจเช็คสภาพทั่วไป Lifting gears (Sling, Shackle, Ferrule, Thimble) เช่น การบิดเบี้ยว หักงอ แฉก ขาด หรือการกัดกร่อนจนยากเกินใช้ และสลิ้งขาไปโซวพื่นกัน หรือสลิ้งที่คล้องกับคาน้ำ, ความยาวของสลิ้งที่ขบัก ต้องไม่เกินหรือยาวเกินไป ซึ่งเมื่อพร้อมแล้วสลิ้ง Master link จะต้องสูงจากพื้นไม่เกิน 1.2 เมตร, และจะต้องเป็นแบบ Master link assembly (3 ห่วง). Check lifting gears general condition for any signs of damage, corrosion, twisted, trapped or snagged. CCUs lifting slings must be fitted with reachable length or not exceed 1.2 Meter above ground and equipped with 1 Master-link and 2 Sub-link (Master link assembly).	F	ตรวจเช็คสภาพทั่วไป เช่นแปรงและโครงสร้างด้านหน้า-หลัง-ข้างบน แปรง หน้าต่าง รวมทั้ง Check และกลอนล็อก ให้อยู่ในสภาพดี ไม่ชำรุดเสียหายหรือเกิดสนิมอย่างรุนแรง Check CCU condition inside frames, doors, seals and locks to ensure no signs excessive corrosion or deformation. Tamper seal and locking bolts						
		G	ตรวจเช็ค Marking on CCU and Lifting gears. สำหรับ CCUs ประเภทที่มีหลังคา จะต้องเขียนกำกับที่ท่อนคือ MGW และ S/N ไว้บนหลังคาและ S/N จะต้องใช้ด้านข้างทั้ง 4 ด้าน Check outside container marking MGW (Maximum Gross Weight) and S/N (Serial Number) shall be indicated on top of CCU. Check name plate with S/N. The S/N shall be displayed on all sides of CCU.						
C	ตรวจเช็คในโรงงาน ว่าวัตถุดิบที่ใช้ได้อยู่ในสภาพที่ดีไม่ชำรุด แฉก หรือหัก เพราะอาจจะเกิดผลกระทบระหว่างขนส่ง และตรวจเช็คเศษหิน เศษดินในช่องเสียบขาให้ดิสก์ หรือ Check Potential Dropped Objects รวมทั้งดูค่าครอมเบ็กคิวท์อาจจะจะมีไม่ (ให้รวม) Check Potential Dropped Objects includes foot bases condition, loosen nuts and bolts, casing threat protectors, excessive rust crust and rock fragments soil underneath CCU. Equipment cabinets on the roof.	H	ตรวจเช็คสินค้าที่บรรจุใน CCU จะต้องไม่ยื่นโผล่ออกมาด้านข้างหรือยื่นโผล่ขึ้นจากขอบด้านบน และน้ำหนักรวมจะต้องไม่เกินกว่า MGW ระบุไว้ รวมทั้งน้ำหนักที่ยกจะต้องสมดุล ไม่เอียงไปข้างใดข้างหนึ่งหรือเพิกการยก Check cargo load distribution, no protrusion or overload capacity of CCU.						
		I	การใช้ pallet ไม่ใช่ pallet carrier, จะต้องผูกมัด (banding) สินค้าที่แพเลทไม่ถล่ม แล้วจึงทำการผูกมัดสินค้าและแพเลทไม้กับ Pallet carrier อีกครั้ง Banding multi-layer and empty Pallet Carriers up to 10 units must have at least 2 bands on every sides (cross banding 4 total).						
D	ตรวจเช็ค อุปกรณ์ ที่ติดด้วยกาวบนเช่น แผ่นเทสต์, สำบียงลายทอต่างๆ มีผ้าใบคลุม Chemical Tote Tank check: valve cap, lid, check valve and canvas.								
No.	Activity	CCU Number							
		S/N. OSCST-TY-08-005		S/N. OSCST-TY-08-006		S/N.		S/N.	
		Vender	QA/QC PT/PEP	Vender	QA/QC PT/PEP	Vender	QA/QC PT/PEP	Vender	QA/QC PT/PEP
1	Check CCU conditions		/	/					
2	Check CCU certificates		/	/					
3	ตรวจดู Certificates จำนวนตามๆหรือมี (อย่าข้อมย 1 เดือน)		/	/					
4	Marking MGW & S/N will be painted on top of CCU. CCU ประเภทที่มีหลังคาจะต้องมี MGW &S/N ไว้บนหลังคา และนอกจากนั้น S/N ก็จะต้องเขียนติดที่ด้านข้างทั้ง 4 ด้าน.		/	/					
5	Check Tag line conditions & length.		/	/					
6	ตรวจดูสภาพทั่วไปของ Tag line และความยาวที่เหมาะสม		/	/					
7	Check CCU overload capacity or Load unbalance		/	/					
8	ตรวจดูน้ำหนักกรวมของ CCU ต้องไม่เกิน MGW และน้ำหนักต้องสมดุล ในขณะทำการยกขน		/	/					
9	Liquid leaking from packaging		/	/					
10	ตรวจดูการหกซึม รั่วไหลที่เกิดจากการรั่วจากขณะที่บรรจุ		/	/					
11	Check Lid, valve & seal are in good conditions	N/A		N/A					
12	ตรวจดูผ้าปิดถัง หรือผ้าปิดคาน้ำ วาล์วสภาพดีไม่ชำรุด	N/A		N/A					
13	Check valve cap or Canvas as required.	N/A		N/A					
14	ตรวจดูผ้าปิดวาล์ว หรือผ้าในสำหรับคลุมเป็นตามระเบียบ		/	/					
15	Check Cotter pin for shackle		/	/					
16	ตรวจดูอุปกรณ์สำหรับ Shackle ต้องมีครบถ้วน		/	/					
17	Check color coded		/	/					
18	ตรวจดู Color code ต้องชัดเจน ใช้สีให้ถูกต้องตามที่กำหนด เช่น ปี 2017 ใช้สีชมพู และต้องเป็นสีทึบไม่ใช่สีเปรย		/	/					
19	Check Potential Dropped Object		/	/					
20	ตรวจดูวัสดุสิ่งของ ซึ่งอาจจะร่วงหล่น ในขณะยกขน เช่น เศษหิน เศษเหล็ก หรือชิ้นส่วนอุปกรณ์ต่างๆจากการยกขนป่วน		/	/					
21	Check document of dangerous goods (MSDS & Label).	N/A		N/A					
22	ตรวจดูเอกสารสำหรับสินค้าจำพวกวัตถุอันตรายเช่น สารเคมี ซึ่งจะต้องมี MSDSและLabel ติดมาให้ถูกต้อง		/	/					
23	Check lifting set, sling leg twist or snagged with other.		/	/					
24	ตรวจดูสลิ้งขาไปโซวพื่นกัน หรือพื่นเกี่ยวติดอยู่กับสินค้าอื่น		/	/					
25	Check sling conditions (broken wire, wear or corrosion).		/	/					
26	ตรวจดูสภาพของสลิ้ง เช่น แฉกขาดขาด สึกหรือเป็นสนิม ขาด การบำรุงรักษา และเหตุอื่นๆ		/	/					
27	Check for Cargo protrude over the sides of CCU.		/	/					
28	ตรวจดูสินค้าที่ยื่นโผล่ขึ้นด้านบนหรือยื่นออกมาข้างของCCU.		/	/					
29	Check for packaging material are in good condition.		/	/					
30	1. ตรวจดูการบรรจุสินค้าให้เหมาะสมกับ CCU ที่เลือกไว้		/	/					
31	2. ตรวจดูการมัดห่อด้วยสลิ้งซึ่งจะต้องมัดด้วยกาวพัน 2 รอบ		/	/					
32	ตรวจดูการมัดห่อด้วยสลิ้งซึ่งจะต้องมัดด้วยกาวพัน 2 รอบ		/	/					
33	ตรวจดูการมัดห่อด้วยสลิ้งซึ่งจะต้องมัดด้วยกาวพัน 2 รอบ		/	/					
Remark:		Equipment Owner							
ไม่มีวัตถุอันตรายหรือสารเคมี		Company OSCST-THAILAND				Date			
		Inspection By				21 / 10 / 2024			
		Tel. 061 418 9775				STH-001 / 30-Sep-13 V.02			

OSCT - THAILAND
221 Bangkhuntien-Chaitalay Road, Samaedum, Bangkhuntien, Bangkok 10150
Tel. 02 894 0577-8 Fax. 02 894 0889
E-mail :

MANIFEST/DISPATCH NOTE

To: NGP
From: OSCT-TH

Date : 21/Oct/24

Item.	Description	Brand	SN. No.	Size (M.) WxLxH	Qty.	Unit	MGW (MT)	Weight (MT.)	Remark.
1	Container	OSCT	OSCT-TH-OB-005	3.26x2.80x2.86	1	Unit	9	7.6	Oil Boom
2	Container	OSCT	OSCT-TH-RS-005	3.26x2.80x2.86	1	Unit	9	5.1	Skimmer
				1.3	Sqr.M.			12.700	MT.

ISSUED/DISPATCHED BY :

Saman M.

RECEIVED BY

RECEIVED DATE

OSRE Inspection Report



Document no. NGP-HSE-FORM-002 (R0)






Production Field Name:		Rossukon Field		Location	AG AZZAM	Inspection Date:	22 Jul 2024
Inspection By	No.	Name	Company	Job Title	Condition / Satisfied	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
	01.		NGP	HSE.	All is functional and readiness for use in case of emergency.		
	02.		NGP	OIM			
	03.		AG AZZAM	ALL			

Description	Available?		Quantity Received	Equipment Serial No.	Valid color code?		Valid lifting certs?		Finding / Function Test Result Comments
	Yes	No.			Yes	No	Yes	No	
EQUIPMENT									
1) OSRE container	Y		1		Y		Y		
2) Boom container	Y		1		Y		Y		
3) Power pack unit	Y		1		N/A		N/A		
4) Weir skimmer unit	Y		1		Y		Y		
5) Dispersant spray pump 	Y		1		N/A		N/A		 Flat Tire-Need to be repair leak
6) Transfer pump unit	Y		1		N/A		N/A		 

OSRE Inspection Report



Document no. NGP-HSE-FORM-002 (R0)

7) Offshore inflation boom	Y		1		N/A	N/A		
8) Floating storage tank	N		-		N/A	N/A		Only Floating Oil Storage
9) Power pack battery	Y		1		N/A	N/A		
10) Spare battery Expire Jul 2024	Y		1		N/A	N/A		
11) Floating oil storage	Y		1		N/A	N/A		
12) Floatation devices	Y		1 Set		N/A	N/A		Good Condition
Accessories								
- Toolkit	Y		1		N/A	N/A		
- Hoses	Y		1					
- Webbing slings	N							
- Ropes	Y		1					
- Spare shackles	Y		1					
DOCUMENT LIST:								
a) OSRE User Manual	Y		1					
b) PLE lifting certificate copy	Y		1					
c) Vendor OSR packing list	Y		1					
d) OSRE maintenance record	Y							
e) Others:	Y							

ภาคผนวกเรือสำเภา-4.9

ตัวอย่าง Pilot Booking

Card no. SGZ2452/67

เขตท่าเรือ SONGKHLA

For Agent

Ship name : AG AZZAM		Flag : MY		Cargo :	
Reg :		C/S : 9WKF2			IMO no : 9553531
LOA (m/fi) : 165.00	LBP (m/fi) : 43.60	Drafit Fwd(m) 5.00		Afit(m) :	
Last port : THRFL	Next port : THRFL	G.R.T. : 959		N.R.T. : 287	
Agent company Bangkok freight forwarders Co., Ltd		Agent name : SUTHATIP		Phone no. :	
Date-ETA : 16/09/2567 06:30		Proceed ผ่านเข้า : 16/09/2567 06:30			Remark :
Berth no./mooring/anchorage : SGZ04			Date-ETA :		Drafit(m) : 4.90

For Staffi

[illegible]

ภาคผนวกแทนเจาะะ

ภาคผนวกแทนเจาะ-1

Rig Specification and Certificate

PV DRILLING I

JACK-UP

DRILLING UNIT

Since 2007



GENERAL SPECIFICATIONS

Rig name/Type	PV Drilling I / Independent Legs, Cantilever, Jack-Up
Design	KFELS MOD V, B CLASS MOBILE
Build/Year	KFELS Singapore/2007
Classification	ABS/AT Self-Propelled Drilling Unit
Overall Dimensions	234 ft. x 206 ft. x 25.3 ft.
Legs	Three legs (437 ft. inclusive of Spud Can)
Cantilever Capacity	Well pattern rectangular 30 ft. x 70 ft. Load rating drilling condition 1500 kips @ 70 ft. on center line
Water Depth	300 ft.
Accommodation	120 persons
Max Drill Depth	25,000 ft.
Helideck Capacity	Sikorsky S-61N, S92 & Mi-17 c/w WILMAX
Operating Conditions	Refueling System (Storage capacity 1,000 USG transfer rate 600GPM) Max Wave Height 36 ft., Corresponding Wave Period 8.7 sec Current at surface 4.0 Knots, Max Wind Speed 70 Knots Current at 164 ft. below surface & mud line 2.33 Knots
Storm Conditions	Max Wave Height 48 ft., Corresponding Wave Period 8.7 sec Current at surface 4.0 Knots, Max Wind Speed 70 Knots Current at 164 ft. below surface & mud line 2.4 Knots

DRILLING EQUIPMENT

Derrick	MH- Pyramid/ API STD 4F-Q1, 170 ft. clear working height, Static hook load capacity 758 MT w/12 lines, 1,300,000 lbs. With of base 36 ft. x 36 ft. With of top 16 ft. x 16 ft.
Racking Platform	200 stands of 5 1/2" DP, 9 stands of 8" DC, 10 stands of 9 1/2" DC
Drawworks	NOVA/DS-10T Automated Drawwork System Driven by 03 GEB-22A-2 High Torque Motors (1,150 HP for ea.) C/w 100% Dynamic Braking System
Trip Drive	NOV/TDS-65A-750 T, 62,250 ft-lbs Max Continuous Torque, 750 t rated capacity, 0-270 max RPM, 1 x 1150 HP GE20 AC Motor Make-up: 95,000 ft-lbs Break-out: 103,000 ft-lbs
Rotary Table	NOV 48 1/2" AC Rotary Table - Part No. D-495, Rate Capacity 600 t/l, driven by an independent electric motor 1150 HP rated @ continuous rating @ 5 RPM and 1400 HP @ intermittent rating
Iron Roughneck	NOV/ ARQ200M-Power Turnable Break-out torque: 120,000 ft-lbs / Make up torque: 100,000 ft-lbs Tubular range from 2 7/8" to 9 1/2" OD
Mud Pumps	Three NOV 14-P-220, 2200 HP Triplex Pumps, ea. driven by two motor GEB-22A-2 1150 HP rated @ 7,500 psi WP
Solid Control	Shale shaker: 4 NOV/Brandt/VMA300, Nominal flow rate 1000 GPM Desander NOV/Brandt-P100C/VP107, Desilter NOV/Brandt - SE-16 Degasser NOV/Brandt - DG-10

BOP's Stack

13-5/8" stack 10,000 psi CAMERON, one 5000 psi Annular + one 10,000 psi double ram BOP + 10,000 psi single ram;
21-1/4" stack 2000 psi CAMERON: one 2000 psi Annular BOP + one 2000 psi double ram BOP + one 2000 psi single ram BOP;
H/S service, c/w two hydraulic valves;
VETCO GRAY KFDU-500 Diverter System; 29-1/2", 500 psi
Two 12 1/2" discharge lines and two 14" 300 # RTJ ball valves
14" OD SCH 80 Pipe - ID 12 1/2" running from diverter to starboard & port sides.
CAMERON Hydraulic BOP Control Line
24 bottles x 11 gallons - Pneumatic Accumulator
CAMERON 3 1/16" x 15,000 psi H/S service
w/ 2 ea. Manual Adjustable Chokes and 2 ea. Power Rams.
1 x Colsep/PS-1412-34 API dual 4" ID 7,500 psi working pressure.
1 x Camlock/Colsep API single 4" ID 10,000 psi working pressure.

CAPACITIES

Fuel	4,738 bbls	Drill Water	5,000 bbls
Potable Water	2,492 bbls	Bulk Storage	6,000 cu.ft
Sack Storage	5,000 sacks	Base Oil	670 bbls
Bitum	3,297 bbls	Liquid Mud	3,333 bbls

POWER GENERATION

Diesel Engine	4 ea. Caterpillar-3516B DITA, rated at 1717 bKW, 1500 RPM
AC Generator	4 ea. ABB/AMG6054 DBASC, rated at 2000 KW per AC, 1,500 RPM and 600V
Emergency Engine	Caterpillar 3508B DITA, 665 bKW
Emergency Generator	Caterpillar SP4B rated at 800 KW, 1500 RPM and 600V.

HANDLING SYSTEMS

Deck Crane	3 x NOV w/120 ft. boom, Main Hoist Ratings 110,250 lbs. @ 30 ft. radius, 23,000 lbs. @124 ft. Hoisting speed: 2 m/s - 3 ea hydraulic - electric x 50 mT (King Post crane/48 DWS-125HD-2.25)
BOP Handling	2 x CFE BOP Hoist each with capacity of 60MT
Conductor Tensioner	1 x Kappel, with 4 Hydraulic Cylinders and 220st tension capacity. .305 mm stroke suitable for 30" Conductor

JACK-UP SPECIFICATIONS

Legs	Triangular Shape Lattice with 3 corner members
Leg Spacing	Transverse - 142 ft. Longitudinal - 129 ft.
Spud Can Diameter	Octagon shape with hard points, Diameter & Depth of Can: 47.2 ft. x 19 ft.
Leg Penetration	Max. 86 ft. Min: 5.5 ft.
Jacking System	Rack and Pinion, OTD-1000PV, 12 pinions per leg, Total of 36 pinions Capacity Pivon Jacking 800 kips (normal jacking); 1,040 kips (preload jacking); 1,480 kips (max. normal holding load) Jacking speed up: 1.5 ft./min; Jacking speed down: 1.5 ft./min.

LIFE-SAVING SYSTEMS

Life Boats	5 x 56 man capacity NORSAFE 7.4M TELB davit launched lifeboat
Life Rafts	8 x 25 man capacity RFD (UK) - man Davit Launchable
Lifo Jacks	240 life-jackets
Lifo Storage	06 installed in accordance with IMO MODU & SOLAS

MOORING SYSTEMS

Anchor Winches	Electric motor 2 speeds (rated speed: 735/1640 RPM)
Anchor	Four ea. Pinsoll Corporation/PC-EMWSD-40100, AC electric motor
Anchor Lines	Four DANFORTH/ARMSOLL type "FLUPPER" Delta Anchors. Weight: 8.9 mT Four length: IWRC RHOL - Galvanized Lubricated, Length 800 m, diameter 44.45 mm

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

SOCIALIST REPUBLIC OF VIETNAM

Independence - Freedom - Happiness

GIẤY CHỨNG NHẬN ĐỊNH BIÊN AN TOÀN TỐI THIỂU
MINIMUM SAFE MANNING CERTIFICATECấp theo quy định của Quy tắc 14 Chương V SOLAS 74 và các sửa đổi
Issued under the provisions of Regulation 14 of Chapter V of the SOLAS 74 as amended

Chi cục Hàng hải Việt Nam tại thành phố Hồ Chí Minh chứng nhận (Branch of Viet Nam Maritime Administration in Ho Chi Minh City certifies):

Tên tàu (Ship's Name): **PV DRILLING I**
Loại tàu (Type of Ship): **Self Elevating Drilling Unit**Tổng dung tích (Gross Tonnage): **10058 GT**
Vùng hoạt động: **As classification certificate**

(Trading Area)

Buồng máy không được trực ca thường xuyên (đúng/ không đúng): **Không đúng**

Periodically unattended machinery space (yes/no): No

Doanh nghiệp quản lý, khai thác (Operating Company): **TỔNG CÔNG TY CỔ PHẦN KHOAN VÀ DỊCH VỤ KHOAN DẦU KHÍ (PETRO VIETNAM DRILLING & WELL SERVICE CORPORATION)**

Tàu biển có tên trong Giấy chứng nhận này được xem xét bố trí định biên an toàn, bất kể khi nào tàu hành trình ra biển đều phải bố trí không được ít hơn số lượng chức danh và trình độ chuyên môn được chỉ ra ở bảng dưới đây (The ship named in this Certificate is considered to be safely manned if, whenever she proceeds to sea, she carries not less than the number and grades/capacities of personnel specified in the table below)

Chức danh (Grade/Capacity)	GCNKNCM (STCW Reg.) Hạn chế (nếu có) Limitation applying (if any)	Số lượng (Number)	Chức danh (Grade/Capacity)	GCNKNCM (STCW Reg.) Hạn chế (nếu có) Limitation applying (if any)	Số lượng (Number)
Thuyền trưởng (Master)	/	0	Máy trưởng (Chief Engineer)	/	0
Đại phó (Chief Officer)	/	0	Máy hai (Second Engineer)	/	0
Sỹ quan boong (Deck Officer)	/	0	Sỹ quan máy (Engine Officer)	/	0
Thủy thủ trực ca AB (Able Seafarer Deck Rating)	/	0	Thợ máy trực ca AB (Able Seafarer Engine Rating)	/	0
Thủy thủ trực ca OS (Rating forming part of a navigational watch)	/	0	Thợ máy trực ca Oiler (Rating forming part of an engine-room watch)	/	0
Sỹ quan TTVT hoặc Sỹ quan boong có G.O.C (Radio Officer or Deck Officer holding G.O.C)		0			

Ghi chú (Remark): Khi di chuyển trên biển phải bố trí 02 thủy thủ trực ca AB.

When moving at sea, must be arrange 02 AB crews.

Giấy chứng nhận này có giá trị theo Giấy chứng nhận Đăng ký tàu. Khi thông tin về doanh nghiệp quản lý, khai thác thay đổi, giấy chứng nhận này phải được cấp lại (This Certificate is subject to the validity of the Ship's Certificate of Registry. When information on management and operation company changes, this certificate must be re-issued)

Số: **149/21**
No.Cấp tại Tp. Hồ Chí Minh, ngày 11/10/2021
Issued at Ho Chi Minh City, dateCHI CỤC TRƯỞNG
Phạm Huy Toàn

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

SOCIALIST REPUBLIC OF VIETNAM

Independence - Freedom - Happiness

GIẤY CHỨNG NHẬN ĐĂNG KÝ
CERTIFICATE OF REGISTRY

Chi cục Hàng hải Việt Nam tại thành phố Hồ Chí Minh chứng nhận gián di động có các thông số dưới đây đã được đăng ký vào Sổ đăng ký tàu biển quốc gia Việt Nam:

Branch of Viet Nam Maritime Administration in Ho Chi Minh City hereby certify that mobile offshore drilling unit with the following particulars has been registered into The Viet Nam national ships registration book:

Tên: **PV DRILLING I**
NameHô hiệu/Số IMO: **3WNX/8768684**

Call sign/IMO number

Loại tàu: **Giàn khoan di động tự nâng**

Type of ship: Self Elevating Drilling Unit

Chiều dài lớn nhất: **71.32 M**

Length over all:

Chiều rộng: **63.40 M**

Breadth

Mớn nước: **4.877 M**

Draft

Tổng công suất máy chính: **0 HP**

M.E. power

Trọng tải toàn phần: **MT**

Dead weight

Tổng dung tích: **10058 GT**

Gross tonnage

Dung tích thực dụng: **3017 NT**

Net tonnage

Năm đóng: **2007**

Year of building

Nơi đóng: **Singapore**

Place of building: SINGAPORE

Nơi đăng ký: **SÀI GÒN**

Place of registry

Tổ chức đăng kiểm: **VR/ABS**

Classification Agency: VR/ABS

NỘI DUNG ĐĂNG KÝ
CONTENT OF REGISTRATION

A. ĐĂNG KÝ MANG CỜ QUỐC TỊCH VIỆT NAM

Registration for being Vietnamese flagged ship

Giàn di động PV DRILLING I được phép treo cờ quốc tịch Việt Nam từ ngày 26/06/2008

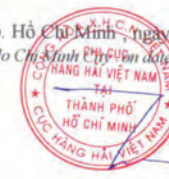
PV DRILLING I is sailing under Vietnamese flag from date 26th Jun 2008

B. ĐĂNG KÝ QUYỀN SỞ HỮU TÀU BIỂN

Registration for ownership

Giàn di động PV DRILLING I thuộc sở hữu của (tên, địa chỉ, tỷ lệ sở hữu): **TỔNG CÔNG TY CỔ PHẦN KHOAN VÀ DỊCH VỤ KHOAN DẦU KHÍ**, địa chỉ: **Lầu 4, Tòa Nhà Sailing Tower, Số****111A, Pasteur, Quận 1, Tp. Hồ Chí Minh, Việt Nam, tỷ lệ sở hữu: 100%**PV DRILLING I is owned by the (name, address, ratio of ownership): **PETRO VIETNAM DRILLING & WELL SERVICE CORPORATION**, address: **4th Floor, Sailing Tower, 111A Pasteur street, Ben Nghe ward, District 1, Ho Chi Minh City, Viet Nam, ratio of ownership: 100%**Số đăng ký: **SG-FAL-002290-2**

Number of registration

Ngày đăng ký: **26/06/2008**Cấp tại Tp. Hồ Chí Minh, ngày 11 tháng 10 năm 2021
Issued at Ho Chi Minh City, date month yearCHI CỤC TRƯỞNG
Phạm Huy Toàn

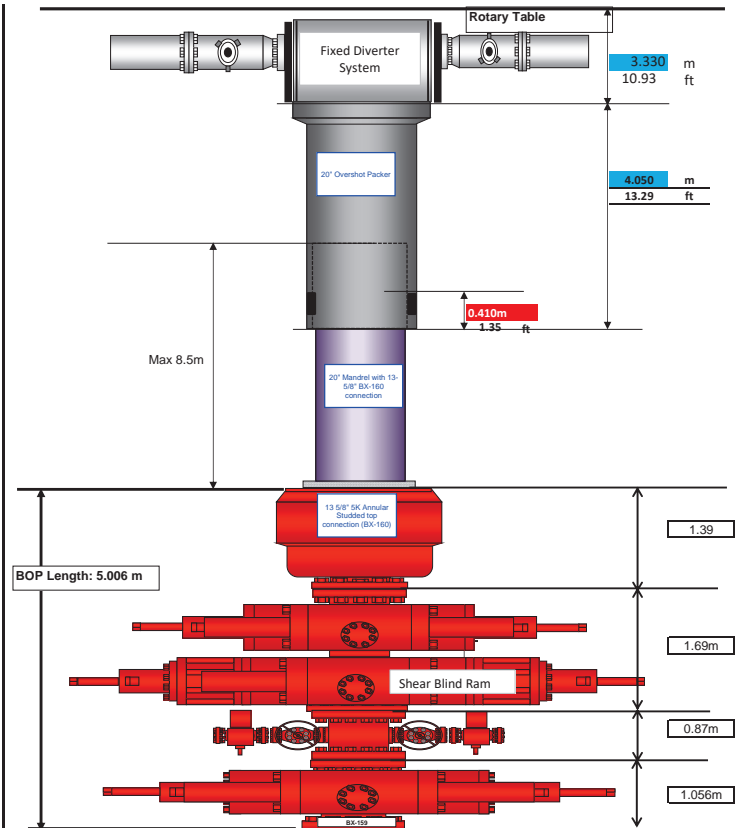
ภาคผนวกแทนเจาะ-2

อุปกรณ์ป้องกันการพลุ่ง

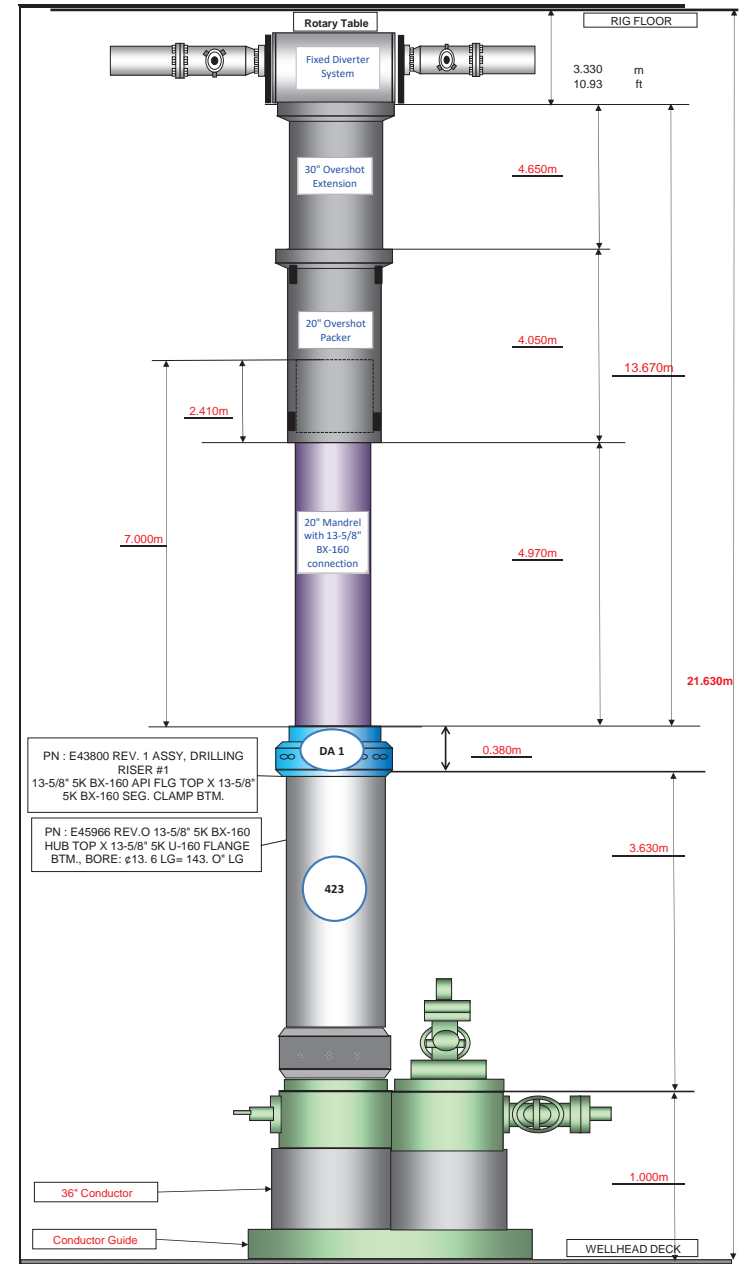
- ภาคผนวกแทนเจาะ-2.1 BOP Diagram
- ภาคผนวกแทนเจาะ-2.2 BOP Test

ภาคผนวกแทนเจาะ-2.1

BOP Diagram



Description	Total Length (m)
13 5/8" 5K Hydril GK: 13 5/8" 5K BX-160 Studded Top x 13 5/8" 10K BX-159 Flange Bttm	1.39
13 5/8" 10K Double U BOP, 13 5/8" 10K BX-159 Flange Top x 13 5/8" 10K BX-159 Flange Bttm	1.69
Drilling Spool, 13 5/8" 10K BX-159 Flange Top x 13 5/8" 10K BX-159 Flange Bttm	0.87
13 5/8" 10K Single U BOP, 13 5/8" 10K BX-159 Flange Top x 13 5/8" 10K BX-159 Flange Bttm	1.056
BOP Total	5.006



ภาคผนวกแทนเจาะ-2.2

BOP Test

Date: 12-Oct-23

NIGHT TOUR

ภาคผนวกแทนเจาะ-3

Mud control Layout

