



## **2D Seismic Survey in Block AD-10, Offshore Myanmar**

### ***Environmental Monitoring Report***

27 September 2016

**Environmental Resources Management**

*www.erm.com*



*The world's leading sustainability consultancy*

# 2D Seismic Survey in Block AD-10, Offshore Myanmar




## Environmental Monitoring Report

Document Code: 0267094\_AD10\_EN.docx

**Environmental Resources  
Management**

**ERM-Hong Kong, Limited**  
16/F, Berkshire House  
25 Westlands Road  
Quarry Bay  
Hong Kong  
Telephone: (852) 2271 3000  
Facsimile: (852) 2723 5660

<http://www.erm.com>

Client: Statoil Myanmar Private Limited		Project No: 0267094			
Summary:  This document presents the Environmental Monitoring Report for 2D Seismic Survey in Block AD-10, as required under the Environmental Impact Assessment Procedure (2015)		Date: 27 September 2016			
		Approved by:  Craig A. Reid Partner			
1	Final for MONREC	RS	CAR	CAR	27/09/16
0	Draft for Client	RS	CAR	CAR	21/09/16
Revision	Description	By	Checked	Approved	Date
		Distribution <input type="checkbox"/> Internal <input checked="" type="checkbox"/> Public <input type="checkbox"/> Confidential			
		 			

## CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>1.1</b>	<b>OVERVIEW OF THE PROJECT</b>	<b>1</b>
<b>1.2</b>	<b>OVERVIEW OF THE SURVEY</b>	<b>3</b>
<b>1.3</b>	<b>PURPOSE OF THE MONITORING REPORT</b>	<b>5</b>
<b>1.4</b>	<b>STRUCTURE OF THE MONITORING REPORT IN ALIGNMENT WITH EIA PROCEDURE</b>	<b>5</b>
<b>2</b>	<b>IMPLEMENTING THE EMP</b>	<b>7</b>
<b>2.1</b>	<b>DIFFICULTIES ENCOUNTERED AND REMEDIES</b>	<b>7</b>
<b>2.2</b>	<b>NUMBER AND TYPE OF NON-COMPLIANCES AND PROPOSED REMEDIAL MEASURES</b>	<b>7</b>
<b>2.3</b>	<b>ACCIDENTS OR INCIDENTS RELATING TO OCCUPATIONAL AND COMMUNITY HEALTH AND SAFETY, AND THE ENVIRONMENT</b>	<b>7</b>
<b>3</b>	<b>MONITORING DATA OF ENVIRONMENTAL PARAMETERS AND CONDITIONS IN THE EMP</b>	<b>9</b>
<b>3.1</b>	<b>WASTE GENERATION</b>	<b>9</b>
<b>3.2</b>	<b>UNDERWATER SOUND</b>	<b>10</b>
<b>3.3</b>	<b>ACCIDENTAL RELEASE AND LEAKS</b>	<b>12</b>
<b>4</b>	<b>SUMMARY OF THE SURVEY</b>	<b>13</b>

# 1 INTRODUCTION

## 1.1 OVERVIEW OF THE PROJECT

**Statoil Myanmar Pte Ltd (Myanmar Branch)** (Statoil) undertook an exploratory campaign by means of a two-dimensional (2D) seismic survey in Block AD-10, which was awarded to Statoil in 2014 as part of the Myanmar Government's 2013 Offshore Bid Round. This campaign aimed to provide information that will be used as a basis for future decisions on if, and where, further exploration will be undertaken. Such exploration may be in the form of additional seismic surveys or the potential to drill exploration wells.

The timeline of the Project and approval under the Environmental Conservation Law, EIA Procedures (2015), is presented below:

- Statoil signed the Production Sharing Contract (PSC) with the Myanmar Oil and Gas Enterprise (MOGE) on the **30<sup>th</sup> April 2015**;
- Statoil engaged Environment Resources Management (ERM) to undertake an Initial Environmental Examination (IEE) and Environmental Management Plan (EMP) for the Project in **September 2014**;
- Statoil submitted the Project Proposal Report to the Ministry of Natural Resources and Environmental Conservation (MONREC) in **October 2014**;
- Statoil undertook stakeholder engagement for the IEE in Thandwe and Gwa township in Rakhine State in **June 2015**;
- Statoil submitted the EIA and EMP Reports to MONREC in **December 2015**;
- Statoil undertook disclosure of Project information (such as Block coordinates) one month prior to the commencement of the survey in Thandwe and Gwa in **April 2016**;
- Statoil received a letter of approval to commence operations from MONREC in **May 2016**; and
- Statoil undertook the seismic survey in Block AD-10 in **June and July 2016**.

The location of the Block is shown in *Figure 1.1*.



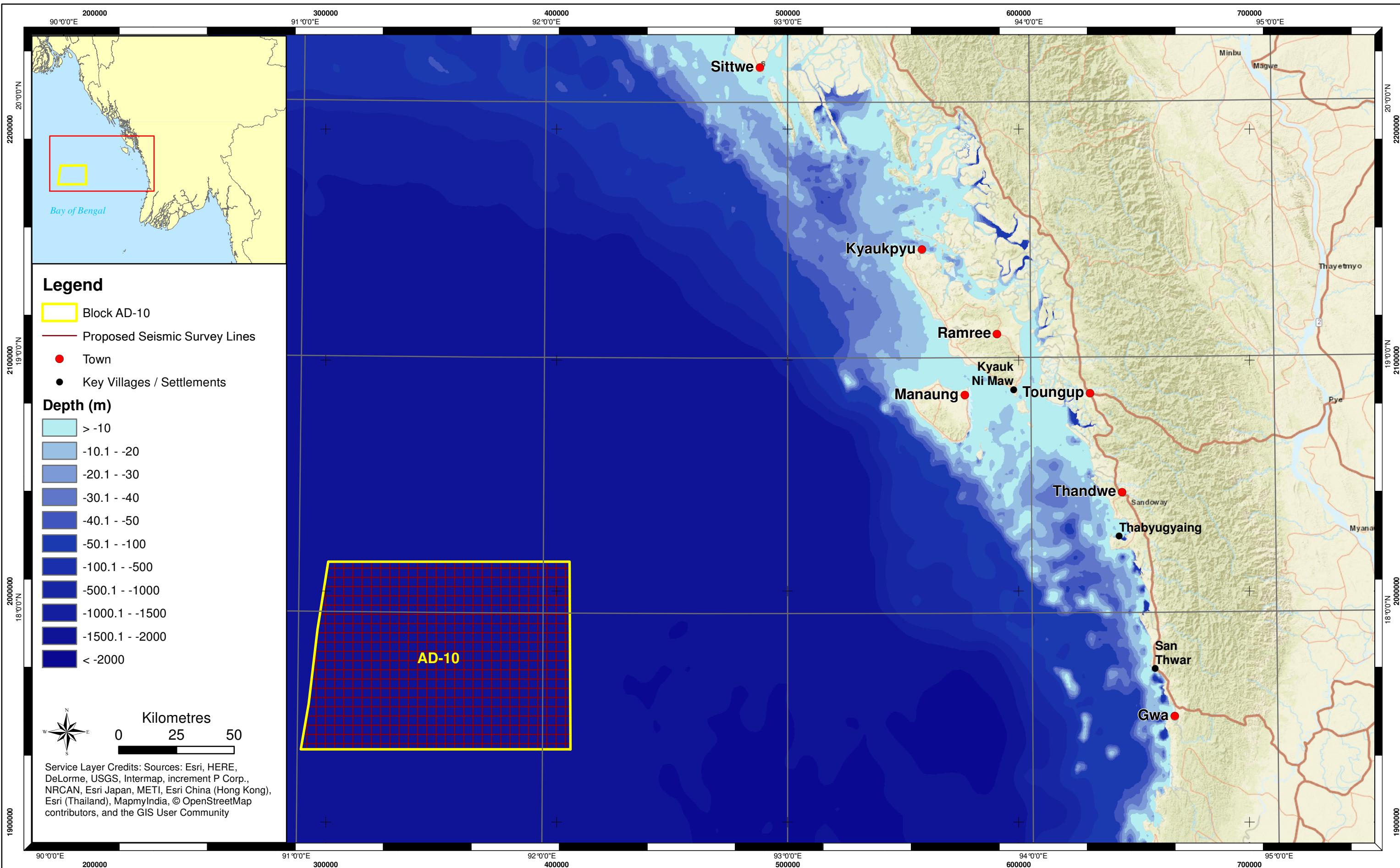


Figure 1.1

Location of Block AD10 and Seismic Survey

**Environmental  
Resources  
Management**



The 2D seismic acquisition survey carried out by the Polarcus Asia Pacific Ltd.'s survey vessel, M/V Polarcus Amani (*Figure 1.2*) operated by Polarcus Ltd. Polarcus Amani worked with two support vessels, M/V Nautika Resolute and M/V Crest Radiant 7.

This survey was conducted for Statoil in Block AD-10, located ~150 km (90 miles) offshore of Myanmar at its closest point to land. The survey commenced on the 12<sup>th</sup> June and was completed the 24<sup>th</sup> July, 2016. The survey ran for a total of 42 days.

Airgun tests and test lines, along with airgun and streamer maintenance, were all conducted in addition to the standard acquisition of survey lines. Additionally, four lines were spilt into two sequences, and a further four lines had to be re-shot.

Only minor difficulties was encountered with implementing the EMP in which the time from the start of the soft start, to the time of the start of line, exceeded the 40 minute duration as specified in the Joint Nature Conservation Committee (JNCC) guidelines for minimizing impacts and risks to marine mammals from seismic surveys <sup>(1)</sup>. However, the soft start was one (1) minute longer in only two (2) instances.

There were no encounters with fishing boats during the entire survey period. Some commercial vessels were observed but none within the survey area, and there were never any interactions i.e., no collisions with either vessels and / or fishing gear. There were two MOGE representatives on each of the three vessels, who filled the Fisheries Liaison Officer role as per the requirements in the approved EMP.

All activities during the survey were performed in accordance with the EMP.

---

<sup>(1)</sup> JNCC (2010). JNCC guidelines for minimising the risk of injury and disturbance to marine mammals from seismic surveys. Available at [http://jncc.defra.gov.uk/pdf/jncc\\_guidelines\\_seismic%20guidelines\\_aug%202010.pdf](http://jncc.defra.gov.uk/pdf/jncc_guidelines_seismic%20guidelines_aug%202010.pdf)



Figure 1.2 MV Polarcus Amani



A summary of the survey is provided in Table 1.1.

Table 1.1 Summary of Survey

Parameter	Description
Survey Dates	12 June - 24 July 2016 (42 days)
Project Location	Block AD-10, Rakhine Basin, Western Myanmar
Area covered by Survey	4,803.25 km in lines running both north- south and east-west
Distance from Nearest Coastline	250 km (150 miles)
Seismic Vessel	MV Polarcus Amani
Chase / Support Vessels	Nautika Resolute & Crest Radiant 7
Seismic Equipment	One streamer (~10 km long) 48 airguns four air gun sub-arrays operated at a pressure of 2,000 psi and a volume of 4,300 cubic inches

All wastes were disposed of at registered facilities in either Malaysia or Singapore. No waste was discharged to sea except that permitted under MARPOL <sup>(1)</sup>.

During the survey there were a total of two (2) marine mammal and 27 sea turtle sightings. The marine mammal sightings consisted of one unidentified large baleen whale and one sighting of a group of ~15 short-finned pilot

(1) MARPOL 73/78 is the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978.

whales. Most of the sea turtle sightings consisted of unidentified species (55%), with ten sightings of olive ridley sea turtles (37%) and one green sea turtle (4%).

### 1.3 *PURPOSE OF THE MONITORING REPORT*

This Monitoring Report has been prepared in order to comply with the EIA Procedure (2015) and to present the information on the compliance of Statoil to the commitments outlines in the IEE and EMP Reports for the Project.

Under this EIA Procedure; the Project Proponent shall undertake the requirements are listed in *Table 1.1*.

**Table 1.2** *Requirements for the Project Proponent as per the EIA Procedure*

Incident	Description
Undertake continuous, proactive and comprehensive self-monitoring of the Project and activities related thereto, all Adverse Impacts, and compliance with applicable laws, the Rules, this Procedure, standards, the ECC, and the EMP.	Statoil ensured that during the Project, the contractors adopted the commitments set out in the EMP.
Notify and identify in writing to the Ministry any breaches of its obligations or other performance failures or violations of the ECC and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of the Ministry is or may be required, within not later than twenty-four (24) hours, and in all other cases within seven (7) days of the Project Proponent becoming aware of such incident.	No breaches of the obligations of the EMP occurred during the Project. No official ECC was received for this Project. The Project commenced on an approval letter received by MIC from MONREC.
Submit monitoring reports to the Ministry not less frequently than <b>every six (6) months</b> , as provided in a schedule in the EMP, or periodically as prescribed by the Ministry.	The survey lasted for 42 days between the 12 <sup>th</sup> June and 24 <sup>th</sup> July, 2016. As such, this report covers the entire Project.
Within ten (10) days of completing a monitoring report as contemplated in Article 108 and Article 109 in accordance with the EMP schedule, the Project Proponent shall make such report (except as may relate to National Security concerns) publicly available on the Project's website, at public meeting places (e.g. libraries, community halls) and at the Project offices. Any organization or person may request a digital copy of a monitoring report and the Project shall, within ten (10) days of receiving such request, submit a digital copy via email or as may otherwise be agreed upon with the requestor	Statoil will disclose this Monitoring Report available on its website, at public meeting places and at their Project offices.  Statoil will also send copies should any interested parties request one.

### 1.4 *STRUCTURE OF THE MONITORING REPORT IN ALIGNMENT WITH EIA PROCEDURE*

In addition, as per the EIA Procedure (2015), the Monitoring Report shall include:



1. *Documentation of compliance with all conditions; presented in Annexes 3.1 & 3.2;*
2. *Progress made to date on implementation of the EMP against the submitted implementation schedule; as this Project is complete, the entire EMP has been implemented on schedule.*
3. *Difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties; presented in Section 2.1;*
4. *Number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation; presented in Section 2.2;*
5. *Accidents or incidents relating to the occupational and community health and safety, and the environment; presented in Section 2.3; and*
6. *Monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required: included in Section 3 and Annexes 3.1 & 3.2.*

### 2.1 DIFFICULTIES ENCOUNTERED AND REMEDIES

As the survey was conducted over 42 days and the survey has demobilised, the commitments in the EMP have been fully implemented. Given that the Project Proponent and survey contractor are both experienced in undertaking offshore seismic surveys around the world, the majority of commitments in the EMP were implemented without difficulty. However, this Section includes a summary of the commitments where difficulties were encountered.

No other difficulties were encountered, and no grievances have been received.

**Table 2.1 Implementation of the EMP**

Control / Mitigation Measures		Responsible Project Team Member	Difficulties in Implementing	Remedial Actions Taken During Project	Proposed Steps for Future Operations
SS5.2	<ul style="list-style-type: none"> <li>Implement JNCC Guidelines including alignment of Contractor operating procedures with JNCC Guidelines.</li> </ul>	Statoil	In two instances, where the time from the start of the soft start, to the time of the start of line, exceeded 40 minutes (due to uncontrollable circumstances), and lasted for 41 minutes; one minute longer than the JNCC guidelines suggest. However this is not regarded as a potential non-compliance issue to report.	Marine Mammal Observers made sure to conduct their searches in line with JNCC Guidelines.	Difficult to avoid this situation as operational issue.

### 2.2 NUMBER AND TYPE OF NON-COMPLIANCES AND PROPOSED REMEDIAL MEASURES

During the survey, no non-compliances were recorded. This means that all of the commitments listed in the EIA Report and listed in full in the EMP, were adopted.

### 2.3 ACCIDENTS OR INCIDENTS RELATING TO OCCUPATIONAL AND COMMUNITY HEALTH AND SAFETY, AND THE ENVIRONMENT

A full list of any accidents or incidents has been recorded in this Section. There were no safety incidents, but some equipment was lost at sea. This equipment is shown in **Annex 2.1**.

**Table 2.2**      **List of Incidents**

Incident	Description	Status	Date
Lighting strike	Lighting struck the survey vessel / close to the survey vessel.	Closed	9-6-16
Minor leak	WB saltwater cooling leak to bilge water	Open	11-6-16
Equipment lost	2*digibirds lost at sea	Closed	13-6-16
Technical	The airgun used for the survey auto fired	Open	28-6-16
Equipment lost	Equipment lost at sea	Closed	12-7-16
Equipment lost	Bird off collar	Rejected	12-7-16
Equipment lost	Bird off collar	Rejected	12-7-16
Equipment lost	SRD lost at sea	Rejected	12-7-16
Equipment lost	Unit SO1C16 lost at sea	Rejected	12-7-16

From the table above, it is shown that there was one health and safety incident (lighting strike), one minor leak (a few millilitres) to the bilge water and the remaining seven (7) incidents where either lost equipment and / or a technical fault.

There were no fishing interactions and no other social impacts (navigational or shipping related impacts).

### MONITORING DATA OF ENVIRONMENTAL PARAMETERS AND CONDITIONS IN THE EMP

This Section summarises the monitoring data that Statoil committed to reporting in the EMP Report. *Table 3.1* provides the table of the submitted EMP Report relating to reporting requirements.

**Table 3.1** *Reporting Commitments from the EMP Report*

Project Activity/ Environmental Aspect	Monitoring Measures	Frequency of Monitoring	Reporting	Responsibility
Waste Generation	<ul style="list-style-type: none"> <li>Waste Inventory Report, including quantity and types of wastes generated and disposal</li> </ul>	Weekly	Monitored weekly and included in Project Environmental Monitoring report	Statoil
Underwater sound from operation of airgun	<ul style="list-style-type: none"> <li>Marine Mammals Record</li> </ul>	Daily log for the Marine Mammals Observation	Marine Mammals Observation Report included in Project Environmental Monitoring report	Statoil
Accidental Release and Leaks	<ul style="list-style-type: none"> <li>Safety Record</li> </ul>	If accidental release occurs	Safety record included in Project Environmental Monitoring report	Statoil

### 3.1

#### WASTE GENERATION

The waste log for Polarcus Amani, Nautika Resolute (NR) and Crest Radiant 7 (CR) is provided in *Table 3.1* to *Table 3.3*. The waste receipts for delivery in port of waste from these three vessels are provided in *Annex 3.1*. For all vessels, there were no spills to the sea, no waste disposed of in the sea (except that permitted under MARPOL) and all waste was landed in either Malaysia or Singapore. The majority of waste generated was either plastic or domestic waste and most remained on-board to be disposed of at registered facilities in Malaysia or Singapore.

**Table 3.2** *Waste Log for Polarcus Amani*

MARPOL Category	Incinerated	To Support Vessel NR	To Sea	Remaining on-board	Total m <sup>3</sup>
Cat A (Plastic)	7	7		9	23.0
Cat B (Food waste)			0.9		0.9
Cat C (Domestic waste)	3	2		4	9.0
Cat D (cooking oil)	1				1.0
Cat E (Incinerator ash)		0.5		0.5	1.0
Cat F (operational Waste)	1	1.5		1.5	4.0



MARPOL Category	Incinerated	To Support Vessel NR	To Sea	Remaining on-board	Total m <sup>3</sup>
<b>Total m<sup>3</sup></b>	<b>12</b>	<b>11</b>	<b>0.9</b>	<b>15</b>	<b>38.9</b>

**Table 3.3** *Waste Log for Nautika Resolute*

MARPOL Category	Incinerated	From Polaris Amani	To Sea	Remaining on-board	Total m <sup>3</sup>
Cat A (Plastic)		7		7.2	14.2
Cat B (Food waste)			0.15		0.2
Cat C (Domestic waste)		2		6.5	8.5
Cat D (cooking oil)				0.15	0.2
Cat E (Incinerator ash)		0.5		0	0.5
Cat F (operational Waste)		1.5		0.7	2.2
<b>Total m<sup>3</sup></b>	<b>0</b>	<b>11</b>	<b>0.15</b>	<b>14.55</b>	<b>25.7</b>

**Table 3.4** *Waste Log for Crest Radiant 7*

MARPOL Category	Incinerated	To Support Vessel NR	To Sea	Remaining on-board	Total m <sup>3</sup>
Cat A (Plastic)				8.3	8.3
Cat B (Food waste)			0.1		0.1
Cat C (Domestic waste)				7.4	7.4
Cat D (cooking oil)				0.2	0.2
Cat E (Incinerator ash)					0.0
Cat F (operational Waste)				1.5	1.5
<b>Total m<sup>3</sup></b>	<b>0</b>	<b>0</b>	<b>0.1</b>	<b>17.4</b>	<b>17.5</b>

### 3.2 UNDERWATER SOUND

As per the IEE and EMP Report, marine mammal observers were utilised during the seismic survey. There were a total of two marine mammal and 27 sea turtle sightings between 12<sup>th</sup> June 2016 and 24<sup>th</sup> July 2016. The marine mammal sightings consisted of one unidentified large baleen whale and one sighting of a group of ~15 short-finned pilot whales. Most of the sea turtle sightings consisted of unidentified species (55%), with ten sightings of olive ridley sea turtles (37%) and one green sea turtle (4%). A breakdown of sightings per species is provided in *Table 3.5* and a full list of all marine fauna observations is provided in *Annex 3.2*.

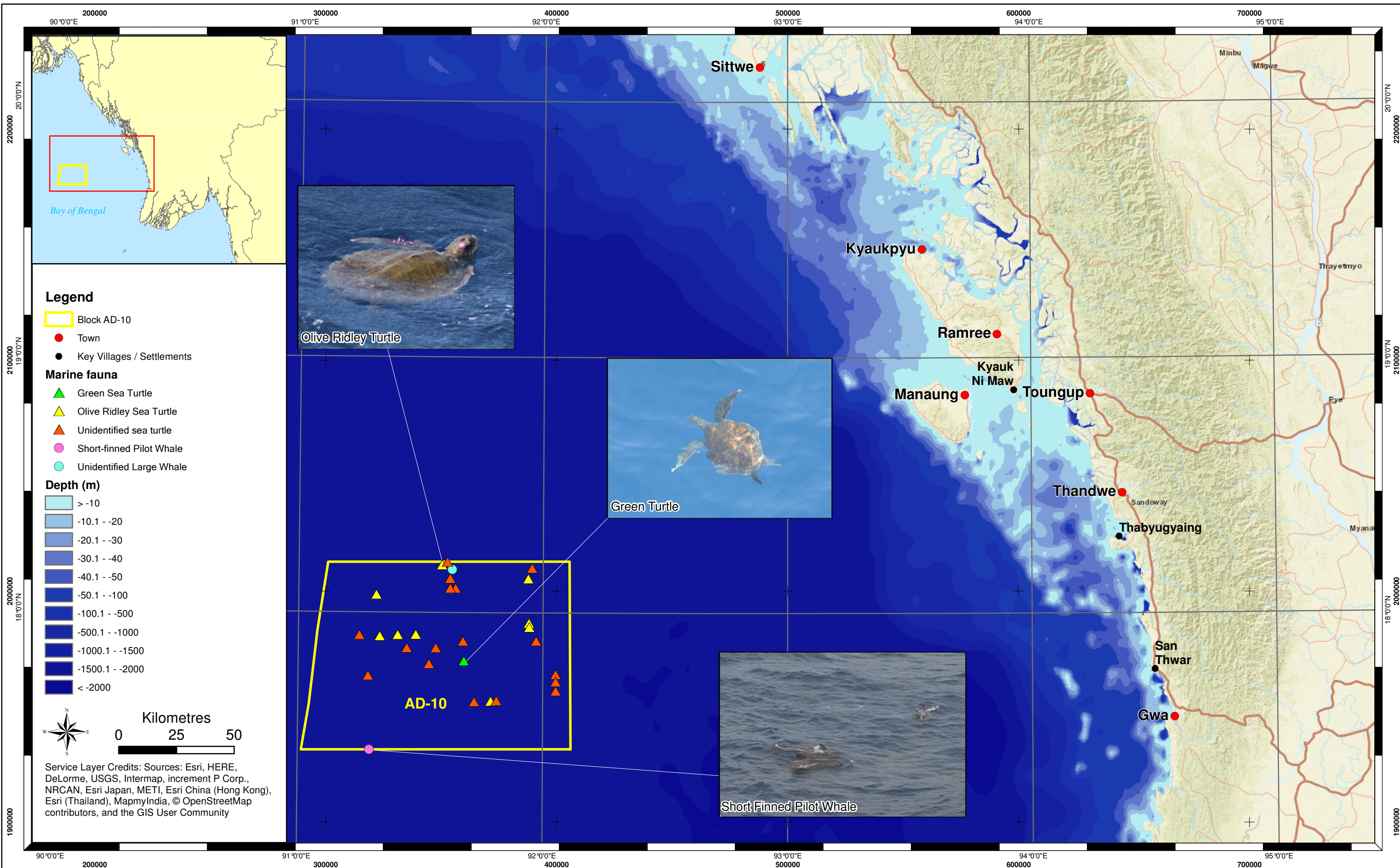


Figure 3.1

Visual Observations of Marine Fauna Observations during Survey

Environmental  
Resources  
Management



**Table 3.5 Marine Fauna Sightings by Species**

Species	Latin Name	IUCN Red List	No. of Sightings	Group Size Range
Green sea turtle	<i>Chelonia mydas</i>	EN	1	1
Olive ridley sea turtle	<i>Lepidochelys olivacea</i>	VU	10	1-2
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	DD	1	15
Unidentified large whale	N/A	-	1	1
Unidentified sea turtle	N/A	-	16	1-2

IUCN Red List: VU = Vulnerable, EN = Endangered, DD = Data Deficient

### 3.3 ACCIDENTAL RELEASE AND LEAKS

There was one minor leak as mentioned in *Section 2.3* relating to a saltwater cooling leak to bilge water. However this was noted as a technical issue and not a release or leak that should cause an adverse environmental impact.



## *SUMMARY OF THE SURVEY*

The 2D seismic acquisition survey was carried out for Statoil in Block AD-10 over a 42 day period in June and July 2016. Block AD-10 is located 150 km (90 miles) from the nearest coastline. The vessel used was the M/V Polarcus Amani operated by Polarcus Ltd with two supporting vessels; M/V Nautika Resolute and M/V Crest Radiant 7.

Airgun tests and test lines, along with airgun and streamer maintenance, were all conducted in addition to the standard acquisition of survey lines. Additionally, four lines were spilt into two sequences, and a further four lines had to be re-shot.

There were no encounters with fishing boats during the entire survey period. Some commercial vessels were observed but none within the survey area, and there were never any interactions i.e., no collisions with either vessels and / or fishing gear. During the survey there were two sightings of marine mammals and 27 sea turtle sightings.

For all vessels, there were no spills to the sea, no waste disposed of in the sea (except that permitted under MARPOL) and all waste was landed in either Malaysia or Singapore.

All activities during the survey were performed in accordance with the EMP.



## **Annex 2.1 Overview of Equipment Lost**

## ST16001 Myanmar

Gear Lost at Sea by MV Polarcus Amani:

4 x Digibirds serial numbers: - 70787, 75663, 71869, 75258

3 x Streamer Recovery Device: - 34337, 34890, 34337

*Of note an S01C16 is a Digibird!*

Digibird:



Streamer Recovery Device (SRD)



As seen together..



SRD-500S mounted above OYO Geospace's Navigator Bird cable leveling device

## **Annex 3.1 Waste Facility Receipts from Vessels**

### SERVICE REPORT

**Project** : POLARCUS AMANI  
**Duration date** : 30/07/2016 TO 02/08/2016  
**Contract No** : R-0039  
**Job No** : 1155  
**Subject** : Disposal of Waste/Hazardous Waste

This is to confirm that the Staging, Painting and Cleaning Department of Sembcorp marine Admiralty yard had collected and disposed the following waste items from the above mentioned vessel throughout the duration of her stay in the yard.

CATEGORY	Quantity
BILGE WATER ( BILGE HOLDING TANK)	15 m <sup>3</sup>

Description	Serviced By	Acknowledged By
Dept / Vessel	Staging, Painting & Cleaning	POLARCUS AMANI
Name	RAGU	<i>T. Elliott</i>
Designation	Foreman	CHIEF ENGINEER
Signature	<i>T. Papp</i>	<i>A. Bell</i>
Date	02/08/2016	02/08/2016



MV Polarcus Amani, Nassau  
 Call sign: C6ZD3  
 Official no: 9610171  
 Gross Ton: 7709 MT  
 Power: 13320 kW



**V8 ENVIRONMENTAL PTE LTD**20 Jalan Samulun Singapore 629130  
TEL: 6569 2300 FAX: 6569 3226  
Co. Reg. No: 99900681R

ENVIRONMENTAL

D/O NO: **SS 1293**Date: 02/08/16M/s: SEMPAWANG SHIPYARDLocation: POLARCUS AMANI

Time in: \_\_\_\_\_ Time Out: \_\_\_\_\_

Description
VACUUM SERVICE XB 5005 J

Service	Refuse	Clean Hardcore	Hardcore + Refuse	Scrap	Vacuum Service	Portable Toilet	Others
Qty					✓		

MV - POLARCUS AMANI, NASSAU

Call sign: C6ZD3

Official No: 9619171

Gross Ton: 7709 MT

Power 13320 KW

DWT - 4427,1 T

Client's Name

V8 Environmental Pte Ltd

Client's Signature &amp; Stamp

**V8 ENVIRONMENTAL PTE LTD**20 Jalan Samulun Singapore 629130  
TEL: 6569 2300 FAX: 6569 3226  
Co. Reg. No: 99900681R

ENVIRONMENTAL

D/O NO: **SS 1291**Date: 01/08/16M/s: SEMPAWANG SHIPYARDLocation: POLARCUS AMANI

Time in: \_\_\_\_\_ Time Out: \_\_\_\_\_

Description
VACUUM SERVICE XB 5005 J

Service	Refuse	Clean Hardcore	Hardcore + Refuse	Scrap	Vacuum Service	Portable Toilet	Others
Qty					✓		

Chief Engineer  
MV Polarcus Amani

Client's Name

V8 Environmental Pte Ltd

Client's Signature &amp; Stamp



Pacific  
Radiance

**CRESTSA MARINE & OFFSHORE PTE LTD**

15 Pandan Road Singapore 609263  
Tel: +65 6238-8881 Fax: +65 6278-2759

### Waste Receipt

Vessel Name : CREST RADIANT 7.

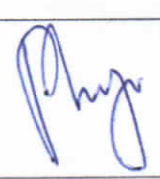

IMO Number : 9543172

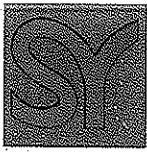
Date : 04.08.2016

This is to confirm that the vessel had disposed the total amount of waste during her stay in our

Shipyard premise DATE FROM 04.08.2016 DATE TO 04.08.2016

Group	Description of Garbage	Pumped Ashore		Amount (m3)	Way of Delivery and Amount Unpacked Drums Bags Plastic Iron
		Yes	No		
A	Paint Waste			NIL	
B	Oily Waste in General (Oil Rags, Oil Filters)			3.5 M <sup>3</sup>	
C	Rags with organics solvents (Thinner, paint etc)			NIL	
D	Sludge from cleaning the Funnel			NIL	
E	Batteries Containing Mercury			NIL	
F	Others( Ropes etc)			0.1 M <sup>3</sup>	
Cat. 1	Plastics			8.3 M <sup>3</sup>	
Cat. 2	Dunnage, Lining or packing material			3.1 M <sup>3</sup>	
Cat. 3	Paper Products, Rags, Glass, Metal, Bottles			4.3 M <sup>3</sup>	
Cat. 4	Food Waste			NIL	
Cat. 5	Incinerator Ash			NIL	

<p><b>CREST RADIANT 7</b>          FLAG : SINGAPORE          CALL SIGN : 9V8467          IMO NO : 9543172          OFF NO : 1414          GRT/NRT : 714/229          e/o TRISA SAMARADANI / 04.08.2016</p>	<p>            PHYO 3/8/16</p>
<p>Vessel Captain/Chief Officer          Name / Date / Signature &amp; Vessel Stamp</p>	<p>CrestSA Marine &amp; Offshore Pte Ltd Supervisor          Name / Date / Signature</p>



# SHIN YANG SHIPYARD SDN. BHD.

(No. Syarikat 55215 - W)

Yard 2 : Sub Lot 153 (Parent Lot 70), Jalan Kuala Baram, Kuala Baram, 98100 Miri, Sarawak, Malaysia.

Tel : 085-406516, 406566, Fax : 085-406999

GST NO : 001956585472

## TAX INVOICE

M/s:

Nautika Sdn Bhd  
Lot 5209, Lorong Setia Di-Raja,  
Kg. Sg. Duhon, Kuala Belait KA3131,  
Brunei Darussalam.  
Tel : +673 333 2790/2759, Fax : +673 333 6021

Tax Invoice No. : SY2S 1608002  
Date : 2nd Aug, 2016  
Account No. :  
Refer No. : Resolute/01/16  
Credit Term : Cash

No.	Particulars	Amount Excl GST (RM)	GST Amount @ 6% (RM)	Total Incl GST (RM)
1	<p><b>NAUTIKA RESOLUTE</b></p> <p>Being supplied manpower, machinery and transportation for the garbage collection and disposal.</p> <p>a) Garbage item included :-</p> <ul style="list-style-type: none"> <li>- Category A - Plastic, synthetics (fishing net, polystrene packaging)</li> <li>- Category C - Domestic waste - paper, rags, glass, metal, bottles, crockery, etc. (Recycle cans, bottles, damage aluminium spider reel, scrap metal)</li> <li>- Category E - Incinerator ash</li> <li>- Category F - Operation waste (fishing nets, plastic flaps, old cabling, various scrapped ropes, broken wooden reels and oil drums)</li> </ul> <p style="text-align: right;"><i>(Total = 19 trips @ RM100.00 / trip)</i></p> <p>Bank Account Details :- <b>Bank : AMBANK (M) BERHAD</b> Address : Lot 2504 &amp; 2505, Boulevard Commercial Centre, KM3, Jalan Miri-Pujut, 98000 Miri, Sarawak. <b>Account No. : 019-201-200316-7</b> Swift Code : ARBKMYKL</p>	1,900.00	NIL	1,900.00
<b>Total Amount Due :</b>		<b>1,900.00</b>	-	<b>1,900.00</b>

(Ringgit Malaysia : One Thousand And Nine Hundred Only.)

### Conditions

Late payment charge at the rate of one and a half percent (1.5%) per month will be imposed on all overdue accounts.

All cheques must be crossed and drawn to order of SHIN YANG SHIPYARD SDN. BHD.

No payment is recognised unless confirmed by the Company's Official Receipt.

For SHIN YANG SHIPYARD SDN. BHD.

*[Signature]*

Authorised Signatory

SHIN YANG SHIPYARD SDN BHD (55215-W)

YARD 2

Registered Add: Sublot 153 (Parent Lot 70), Jalan Kuala Baram, Kuala Baram, 98100 Miri, Sarawak, Malaysia. Tel: +6085 428399 Fax: +6085 435506

Yard Add: Survey Lot 2125, Asean Bridge, Kuala Baram, Sungai Tujuh, 98000 Miri, Sarawak, Malaysia. Tel: +6085 406566 / 406516 Fax: +6085 406999



## ADDITIONAL QUOTATION FORM

To : Nautika Sdn Bhd  
Attn : Mr. Jimmy & Mr. Henri  
Vessel : Nautika Resolute

From (Billing Officer) : Kho Hong Siong  
Date : 02/08/2016  
Quotation Ref. : Resolute/01/16  
Project No. : RS/018/16

NO.	DESCRIPTION	AMOUNT (RM)
1	Yard arrange manpower, machinery and transpotion for the garbage collection & disposal. a) Garbage items included :- - Category A - Plastic, synthetics, (fishing net, Polystrene Packaging) - Category C - Domestic waste - paper, rags, glass, metal, bottles, crockery, etc. (Recycle cans, bottles, damage aluminium spider reel, scrap metal) - Category E - Incinerator Ash - Category F - Operation waste (fishing nets, plastic flaps, old cabling, various scrapped ropes, broken wooden reels and oil drums)  <i>TOTAL : 19 Trips @ RM 100.00 / trip</i>  <i>Duration : 1-2 working days to finish the work</i>	1,900.00
<b>TOTAL :</b>		<b>1,900.00</b>

Note:

- 1) Validity : 1 working days from the date of quotation.
- 2) The above quotation is offered in accordance with shipyard's standard conditions

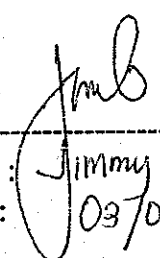
*Schedule impact : Additional time required shall be mutually discussed and agreed between your good self and the project manager / project in-charge.*

*The above additional work shall extend the original schedule by days*

APPROVED BY :

ACCEPTED BY (OWNER REPRESENTATIVE) :

  
MR. VINCENT LING  
DIRECTOR

  
NAME : Jimmy Baluyas  
DATE : 03/08/16



**SHIN YANG SHIPYARD SDN BHD (55215-W)**

Yard 2

Registered Add: Sublot 153 (Parent Lot 70), Jalan Kuala Baram, Kuala Baram, 98100 Miri, Sarawak, Malaysia. Tel: +6085 428399 Fax: +6085 435506

Yard Add : Survey Lot 2125, Asean Bridge, Kuala Baram, Sungai Tujuh, 98000 Miri, Sarawak, Malaysia. Tel: +6085 406566 / 406516 Fax: +6085 406999

**Delivery Order**

No. 25434

To : Nautika S/B (Nautika Resolute) Date: 3/8/16

Address : \_\_\_\_\_

Contact Person : \_\_\_\_\_ Tel: \_\_\_\_\_

Transport Charge :  F. O. B.  C. I. F.

號碼 NO.	內容 PARTICULARS	數量 QTY	UOM	備注 REMARK
1)	Garbage collection & disposal	19	Trips	
	a) Garbage items included:			
	- Category A - plastic, synthetics, (fishing net, polystyrene packaging)			
	- Category C - domestic waste, paper, rags, glass, metal, bottles, crockery, etc (recycle cans, bottles, damaged aluminium spool-reel, scrap metal)			
	- Category E - Incinerator Ash			
	- Category F - Operation waste (plastic flaps, old cabling, various scrap ropes, broken wooden reel & oil drums)			

SHIN YANG SHIPYARD SDN BHD 2	CARRIER	ACKNOWLEDGE RECEIPT
Signature _____ Name _____	Signature _____ Name _____ I. C. No. _____ Lorry No. _____	Signature & Chop _____ Name _____ I. C. No. _____ Date _____

Carrier to acknowledge receipt of goods from Shin Yang Shipyard Sdn. Bhd. (Yard 2) in good order and condition. Carrier to deliver the same in good order &amp; condition to the Consignee.

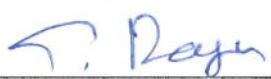
Distribution: 1. Consignee (White) 2. Account (Blue) 3. Carrier Copy (Green) 4. Gate Security (Pink) 5. Copy (Yellow)

### SERVICE REPORT

**Project** : POLARCUS AMANI  
**Duration date** : 30/07/2016 TO 02/08/2016  
**Contract No** : R-0039  
**Job No** : 1155  
**Subject** : Disposal of Waste/Hazardous Waste

This is to confirm that the Staging, Painting and Cleaning Department of Sembcorp marine Admiralty yard had collected and disposed the following waste items from the above mentioned vessel throughout the duration of her stay in the yard.

CATEGORY	Quantity
CAT A – PLASTIC, SYNTHETICS, ( FISHING NETS, POLYSTRENE PACKAGING)	6.0 m <sup>3</sup>
CAT B – FOOD WASTE	0.07 m <sup>3</sup>
CAT C – DOMESTIC WASTE – PAPER RAGS, GLASS, METAL, BOTTLES, CROCKERY ETC. ( RECYCLABLE CANS, BOTTLES, DAMAGE ALUMINIUM SPIDER REEL, SCRAP METAL.)	5.0 m <sup>3</sup>
CAT E – INCINERATOR ASH	0.5 m <sup>3</sup>
CAT F – OPERATIONAL WASTE	4.5 m <sup>3</sup>

Description	Serviced By	Acknowledged By
Dept / Vessel	Staging, Painting & Cleaning	POLARCUS AMANI
Name	RAGU	
Designation	Foreman	CHIEF OFFICER
Signature		
Date	02/08/2016	02/08/2016



## WASTE RECEIPT

The following waste was discharged to Sembawang shipyard,  
02-08-2016

Cat A:	Plastic, synthetics, (Fishing nets, Polystrene Packaging )	6.0 m <sup>3</sup>
Cat B:	Food Waste	0.07 m <sup>3</sup>
Cat C:	Domestic Waste – paper, rags, glass, metal, bottles, crockery etc. (Recyclable cans, bottles, damage aluminium spider reel, scrap metal.)	5.0 m <sup>3</sup>
Cat E:	Incinerator Ash	0.5 m <sup>3</sup>
Cat F:	Operational Waste	4.5 m <sup>3</sup>
	<b>TOTAL</b>	<b>16.07 m<sup>3</sup></b>

MV - POLARCUS AMANI, NASSAU  
 Call sign: C6ZD3  
 Official No: 9619171  
 Gross Ton: 7709 MT  
 Power 13320 KW  
 DWT - 4427,1 T

  
 -----  
 m/v Polarcus Amani

~~M/V Nautika Resolute~~  
 -----  
 Sembawang



# SCRAP DISPOSAL NOTIFICATION

Vessel Name: POLARUS AMANI

Main Code: 6039

SDN No: 3227

**TO BE COMPLETED BY SUPERINTENDENT/ OWNERS' REPRESENTATIVE via PROJECT MANAGER FOR OWNERS' SCRAP ITEMS OR**

**TO BE COMPLETED BY DEPARTMENT MANAGER FOR REPAIR SCRAPS**

- We confirm the disposal of the following equipment or scrap items from the vessel: - OR
- We confirm the disposal of the following repair scraps:-
- To charge related costs  Not to charge related costs

To credit sales proceed, if any

Not to credit scrap sales proceed

To be completed by Superintendent via/or Project Manager		To be completed by Superintendent via/or Project Manager		To be completed by Superintendent via/or Project Manager		To be completed by Superintendent via/or Project Manager	
S/N	Description	Dimensions	Est. Weight	Qty	Dept-in-Charge	Offloading Location	Duration, if needed
01	Washed Batteries (As per list)		1452kg	128			

To be disposed by Shipyard

To be disposed by Owners' Agent

Superintendent's/ Owners' Representative's Name: Superintendent  
Signature: [Signature] Ship Stamp / Date: 9389-3371

Project/Dept Manager's Name, Signature / Date: [Signature]  
MM/SM/AGM's Name, Signature/ Date (If disposed by Owners' Agent)

**TO BE COMPLETED BY STORES OFFICER/ MANAGER**

Services & Resources Needed	Estimated Cost	Stores Personal	De-commissioned	Crane & rigging	Gas-Free	Tank cleaning	Staging	Hot work Permit	Cutting	Land /Sea Transport

MV - POLARUS AMANI, NASSAU  
Call sign: C6ZD3  
Official No: 9619171  
Gross Ton: 7709 MT  
Power 13320 KW  
DWT - 4427,1 T

Other Observations/remarks: \_\_\_\_\_  
Stores Officer's/ Manager's Name, Signature/ Date

Gate Pass Number & Date \_\_\_\_\_

Collected by: \_\_\_\_\_

# CLEANIS-TEE DISPOSAL SERVICES

BLOCK 176 BUKIT BATOK WEST AVENUE 8 #06-313

SINGAPORE 650176

HP: 97399398 FAX: 65656139

BRC No. 52938726C

## GARBAGE CERTIFICATE

Date: 31<sup>st</sup> July 2016

Document no: CTD 1607-033

To:

GAC (Singapore) Pte Ltd  
70 ALPS Avenue, #03-02  
Singapore 498801

Attn: Amran Amin

Being collection from Sembawang Shipyard to disposal on 31<sup>st</sup> Jul 2016 from following Polarcus Amani items:-

1. Expired Medicine-1box (0309J230039)

Medication / Dose / Volume / Lot No / Expiry Date

Diazepam / 10mgs in 2ml / x 20 amps / 14053041 / 12/2015

Midazolam / 5mgs/ml / x 40 amps / N00147 / 12/2015

Tramadol / 100mg in 2mls / x 26 amps / DF9908/920C04 / 05+06/2016

Codeine Phosphate / 30mg / x 40 Tablets / 390234 / 02/2016

Codeine Phosphate / 25mg / x 20 Tablets / 10718351 / 10/2016

Pethidine / 100mg in 2ml / x 10 amps / 345060 / 11/2016

Ketamine / 500mg in 10ml / x 1 amp / 70176F / 11/2016

2. Sharps Bin 4Litre – 3 box



Cleanis-Tee Disposal Services  
Authorised Signature



Date: -31 July 2016

Place: - Singapore

## Medical Waste Manifest

The following items of medical waste were disposed.

<i>Description</i>	<i>Amount</i>	<i>Weight (kg)</i>	<i>Comments</i>
Sharps Bins 4Litre	3	5	

**Other Comments:**

**Biohazard waste - For incinerator destruction by a licensed provider.**

Please provide a copy of destruction for recording purposes



**Richard Wills**

ISOS / Polarcus Amani Medic  
 VSAT : +47 23675203 (Direct)  
 VSAT : +47 23675200 (Bridge)  
 Iridium: + 881 67770 2545

amani.medic@polarcus.com

MV AMANI

26 July 2016

**Manifest for Destruction of Expired Controlled / Narcotic Medications**

Medication	Dose	Volume	Lot No	Expiry Date
Diazepam	10 mgs in 2 ml	X 20 amps	14053041	12/2015
Midazolam	5mgs / ml	X 40 amps	N00147	12/2015
Tramadol	100mg in 2 mls	X 26 amps	DF9908/920C04	05+06/2016
Codeine Phosphate	30mg	X 40 Tablets	390234	02/2016
Codeine Phosphate	25mg	X 20 tablets	10718351	10/2016
Pethidine	100mg in 2 ml	X 10 amps	345060	11/2016
Ketamine	500mg in 10ml	X 1 amp	70176F	11/2016

Please provide appropriate paperwork for CD register on-board and inspection/audits.

Kind Regards:

Master Gunnar Bisp




Richard Wills RODP

InternationalSOS / Polarcus Amani Medic

VSAT: +47 23675203 (Direct)

[amani.medic@polarcus.com](mailto:amani.medic@polarcus.com)



0310

## **Annex 3.2 Marine Fauna Observations**

**Table of Marine Fauna Observations**

No.	Date	Species	Total No.	Behaviour	Range of Animals (m)
1	14/06/2016	Short-finned pilot whale	15	Traveling toward vessel, split into 2 groups, travelled same direction as vessel	600
2	22/06/2016	Olive ridleysea turtle	1	Swimming around a piece of floating garbage, submerged and resurfaced	20
3	22/06/2016	Olive ridleysea turtle	1	Swimming around a floating bucket then swimming away	400
4	22/06/2016	Olive ridleysea turtle	1	Swimming at surface	20
5	22/06/2016	Unidentifiedsea turtle	1	Floating near surface, fully submerged for most of the sighting	80
6	23/06/2016	Unidentifiedsea turtle	1	Swimming rapidly at surface, diving	10
7	23/06/2016	Unidentifiedsea turtle	2	Swimming at surface, saw both pick up their heads	1,000
8	23/06/2016	Unidentifiedsea turtle	1	Swimming at surface, then dove	420
9	26/06/2016	Unidentifiedsea turtle	1	Observed swimming rapidly, underwater, away from the vessel	10
10	28/06/2016	Unidentifiedsea turtle	1	Floating at surface, did not move the entire time it drifted by, sleeping or	75
11	28/06/2016	Unidentified large whale	1	Blows, crossed bow	200
12	28/06/2016	Unidentifiedsea turtle	1	Floating just under surface, not seen surfacing	15
13	28/06/2016	Unidentifiedsea turtle	1	Floating just under surface, just head seen breaking the surface	30
14	28/06/2016	Unidentifiedsea turtle	1	Swimming just beneath the surface	30
15	28/06/2016	Olive ridleysea turtle	1	Swimming just beneath the surface, surfacing with head out	25
16	29/06/2016	Unidentifiedsea turtle	1	Swimming around a small balloon and drifting	50
17	04/07/2016	Olive ridleysea turtle	2	Both were entangled in fish net drifting	30
18	04/07/2016	Unidentifiedsea turtle	1	Floating just under surface, not seen surfacing	15
19	08/07/2016	Unidentifiedsea turtle	1	Observed swimming rapidly, underwater, away from the vessel	10
20	08/07/2016	Olive ridleysea turtle	1	Swimming beneath surface with plastic, surfaced once with head out	50
21	15/07/2016	Olive ridleysea turtle	1	Floating at surface, carapace and head out of water	60
22	17/07/2016	Unidentifiedsea turtle	1	Fast swim just beneath surface of water, fully submerged	40
23	17/07/2016	Olive ridleysea turtle	1	Floating just beneath surface, head seen out of water	60
24	17/07/2016	Olive ridleysea turtle	1	Swimming around a piece of plastic	80

Reporting Dates	START	DATE	TIME	END	DATE	TIME
		12-06-2016	6:32		14-07-2016	19:17

Observer Summary Table	Full Power Firing	Soft Start Firing	Airgun Testing	Airgun Silence
Total Hours of Visual Observation	280:49:00	9:05	3:13	102:08:00
Total Hours of Acoustic Observation	273:13:00	9:41	1:37	60:39:00
Total Hours with no Acoustic or Visual Observation	199:49:00	1:14	0:00	N/A
Total hours of pre-shooting watch	N/A	58:25:00	14:00	N/A
Number of Mitigation Actions	N/A	0	0	1 (prior to SS)
Number of Visual Detections	21	0	0	8
Number of Acoustic Detections	5	0	0	3
Number of incidents of potential difficulties	0	2	0	0
Number of ramp ups during the day	N/A	27	9	N/A
Number of ramp ups during the night	N/A	27	4	N/A
Number of ramp ups during dawn	N/A	3	1	N/A
Number of ramp ups during dusk	N/A	1	0	N/A

Protected Species Observation Summary Table	Unidentified Large Whales	Dolphins	Sea Turtles
Total Number (visual)	1	15	29
Total Number (acoustic)	0	Unknown	0
Total Adults	Unknown	Unknown	19
Total Juveniles	Unknown	Unknown	10
Average closest distance to sound source (m)	600	400 (visual only)	362
Average distance at first sighting (m)	200	600 (visual only)	135
Most common behavior observed	Blows	Travelling (visual), various whistles (acoustic)	Swimming
Other behaviors observed	Travelling	Clicks, echolocation (acoustic only)	Floating, entangled

Species Summary Table		Category (Whale, Dolphin, Turtle)	Total Number Observed	Dates Observed
Common Name	Genus species			
Green sea turtle	<i>Chelonia mydas</i>	Turtle	1	18-07-2016
Olive ridley sea turtle	<i>Lepidochelys olivacea</i>	Turtle	11	14/07/2016, 08/07/2016
Short-finned pilot whale	<i>Globicephala macrohynchus</i>	Dolphin	15	14-06-2016
Unidentified large whale	N/A	Whale	1	28-06-2016
Unidentified sea turtle	N/A	Turtle	17	19/06/2016, 04/07/2016