

Report of an accident, dangerous occurrence or environmental incident

For instructions and general guidance in the use of this form, please see the last page.

Part 1 is required within 3 days of a notified incident.

Part 2 is required within 30 days of notified incident.

What was the date and time of the initial verbal incident notification to NOPSEMA?

Date	07 February 2017	Time	0900
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NOTE: It is a requirement to request permission to interfere with the site of an accident or dangerous occurrence. Refer OPGGS(S)R, Reg. 2.49.

What is the date and time of this written incident report?

Date	22 February 2017	Time	16:00
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What type of incident is being reported?

Please tick appropriate incident type

Accident or dangerous occurrence	<input checked="" type="checkbox"/>	Complete parts 1A, 1B & part 2
Environmental Incident	<input type="checkbox"/>	Complete parts 1A, 1C
BOTH (Accident or dangerous occurrence AND environmental incident)	<input type="checkbox"/>	Complete ALL parts (1A, 1B, 1C, 2)

Please tick all applicable (one or more categories)

To use electronically: MS Word 2007-10 – click in check box

Categories <i>Please select one or more</i>	Accidents		
		Death or Serious injury	<input type="checkbox"/>
		Lost time injury ≥3 days	<input type="checkbox"/>
	Dangerous occurrences	Hydrocarbon release >1 kg or ≥80 L (gas or liquid)	<input type="checkbox"/>
	Fire or explosion	<input type="checkbox"/>	
	Collision marine vessel and facility	<input type="checkbox"/>	
	Could have caused death, serious injury or LTI	<input type="checkbox"/>	
	Damage to safety-critical equipment	<input type="checkbox"/>	
	Unplanned event - implement ERP	<input type="checkbox"/>	
	Pipeline incident	<input type="checkbox"/>	
	Well kick >50 barrels	<input type="checkbox"/>	
	Other Performance Standard Non Conformance	<input type="checkbox"/>	
	F07 Reservoir Isolation	<input checked="" type="checkbox"/>	
Environmental incidents	Hydrocarbon release	<input type="checkbox"/>	
	Chemical release	<input type="checkbox"/>	
	Drilling fluid/mud release	<input type="checkbox"/>	
	Fauna Incident	<input type="checkbox"/>	
	Other _____	<input type="checkbox"/>	

Part 1A – Information required within 3 days of an accident, dangerous occurrence or environmental incident

General information – all incidents

1.	Where did the incident occur?	Facility / field / title name	Northern Endeavour – Laminaria / Corallina AC/L5 & WA-18-L	
		Site name and location <i>Latitude/longitude</i>	Timor Sea / 10o 37' S x 125o 59' E	
2.	Who is the registered operator/titleholder or other person that controls the works site or activity?	Name	Timor Sea Oil & Gas Australia	
		Business address	Level 5, 1101 Hay Street, West Perth, 6005	
		Business phone no.	(08) 6109 4000	
3.	When did the incident occur?	Time and time zone	0830 WST	
		Date	Between 23 rd and 26 th Jan 2017	
4.	Did anyone witness the incident?	Yes or no <i>If yes, provide details below</i>	Yes	
	Witness details	Witness no 1	Witness no 2	Witness no 3
	Full name	s 22 irrelevant material	s 22 irrelevant material	
	Phone no. (Business hours)			
	Phone no. (Home) (Mobile)			
	Email (Business) (Private)			
	Postal address	c/o Upstream PS Level 5 1101 Hay Street West Perth 6005	c/o Upstream PS Level 5 1101 Hay Street West Perth 6005	
<i>NB: If more witnesses, copy and insert this section (4) here , and add extra witness numbers appropriately</i>				
5.	Details of person submitting this information	Name	s 22 irrelevant material	
		Position	Northern Endeavour Operations Manager	
		Email	s 22 irrelevant material	
		Telephone no.		

Part 1A – Information required within 3 days of an accident, dangerous occurrence or environmental incident

General information – all incidents

6.	Brief description of incident	<p>LAMINARIA-8ST4 not been in production since Oct 2016, a subsea campaign was required to dissociate the hydrate preventing flow.</p> <p>During this campaign (19th to the 24th Jan) the PMV, PWV and AWV on the LAM-8 were found to be partially open during the initial ROV survey (GVI) despite the topsides control system registering them as closed. At the time it was assumed that the likely cause was the hydrate in the pipework as previous history indicated both valves as functional.</p> <p>The campaign progressed and the hydrate was dissociated successfully and the well was able to kick off production. As part of the campaign completion activities the function of the PMV and PWV were tested on the warm well. Analysis on the results of this testing showed that both valves are only able to move from 100% open to ~75% open and that this restriction in operation is not likely to be caused by hydrates. This represents the failure of a primary and secondary well barrier. The integrity of the subsea production system isolation was confirmed by visual ROV inspection as far as possible.</p> <p>The well was subsequently stalled by shutting in gaslift and by closing the SSSV. It was however noted on the pressure temperature transmitters in the manifold that the well continued to flow despite the aforementioned measures. It was hence established that the SSSV is not closing as well and that the well is flowing without gaslift. The well was subsequently shut in by closing Lam-8PIV and Lam-8TIV (see attached drawing).</p>			
7.	Work or activity being undertaken at time of incident	Campaign completion activities.			
8.	What are the internal investigation arrangements?	A team in the Northern Endeavour office of 4 subsea engineers have been tasked with the investigation which is ongoing.			
9.	Was there any loss of containment of any fluid (liquid or gas)?	Yes or no <i>If Yes, provide details below</i>	No		
Type of fluid (liquid or gas) <i>If hydrocarbon release please complete item no.15 as well</i>		Hydrocarbon <input type="checkbox"/>			
		Non-hydrocarbon <input type="checkbox"/>			
Estimated quantity <i>Liquid (L), Gas (kg)</i>					
Estimation details		Calculation <input type="checkbox"/>	Measurement <input type="checkbox"/>		
		Please specify _____			
Composition <i>Percentage and description</i>					
		Toxicity to people			

Part 1A – Information required within 3 days of an accident, dangerous occurrence or environmental incident

General information – all incidents

		Known toxicity to people and/or environment	Toxicity to environment			
		How was the leak/spill detected?	F&G detection CCTV	<input type="checkbox"/> <input type="checkbox"/>	Visual Other	<input type="checkbox"/> <input type="checkbox"/>
		Did ignition occur?	No Yes	<input type="checkbox"/> <input type="checkbox"/>	Immediate Delayed	<input type="checkbox"/> <input type="checkbox"/>
			If yes, what was the likely ignition source	Hotwork Spark electrical source Spark metallic contact Hot surface Other	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
10.	Has the release been stopped and/or contained?	Yes or no				
		Duration of the release <i>hh:mm:ss</i>				
		Estimated rate of release <i>Litres or kg per hour</i>				
11.	Location of release	What or where is the location of the release?				
		What equipment was involved in the release?				
		Is this functional location listed as safety-critical equipment?				
12.	Weather conditions <i>Please complete as appropriate</i>	Ambient temperature °C				
		Relative humidity %				
		Wind speed m/s <i>NB: for enclosed areas use</i> Air change per hour				
		Wind direction e.g. from SW				
		Significant wave height m				
		Swell m				
		Current speed m/s				
		Current direction e.g. from SW				
13.	Hydrocarbon release details	System of hydrocarbon release	Process	<input type="checkbox"/>	Utilities	<input type="checkbox"/>
			Drilling	<input type="checkbox"/>	Well related	<input type="checkbox"/>
			Subsea / Pipeline	<input type="checkbox"/>	Marine	<input type="checkbox"/>

Part 1A – Information required within 3 days of an accident, dangerous occurrence or environmental incident

General information – all incidents

If hydrocarbon fluid (liquid or gas) was released, please complete this section as well	Estimated inventory in the isolatable system <i>Litres or kg</i>		
	System pressure and size of piping or vessel <i>diameter (d in mm)</i> <i>length (l in m)</i> <i>or volume (V in L)</i>	Pressure MPag	
		Size Piping (d) and Piping (l) or Vessel (V)	
	Estimated equivalent hole diameter <i>d in mm</i>		

Part 1B - Complete for accidents or dangerous occurrences

Accidents and dangerous occurrences information

	Was NOPSEMA notified through the dedicated notification phone line? <i>Phone No. 08 6461 7090</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
15.	Action taken to make the work-site safe	Was permission given by a NOPSEMA inspector to interfere with the site? OPGGS(S)R 2.49.		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
		Action taken	Laminaria 8 well shut in and isolated via the Lam 8 PIV, TIV and GIV valves at the Laminaria 2 slot central manifold.		
	Details of any disturbance of the work site	Nil			
16.	Was an emergency response initiated?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
	Type of response	Manual <input type="checkbox"/> Automatic alarm <input type="checkbox"/>	Muster <input type="checkbox"/> Evacuation <input type="checkbox"/>		
	How effective was the emergency response?				
17.	Was anyone killed or injured? <i>Provide details below</i>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
	Injured persons (IP) <i>If different from item 2.</i>	Casualty No 1			
	Employer name	Employer address			
	Employer phone no.	Employer email			
	IP full name				

Part 1B - Complete for accidents or dangerous occurrences
Accidents and dangerous occurrences information

	IP date of birth		Sex	M	<input type="checkbox"/>	F	<input type="checkbox"/>
	IP residential address						
	IP phone no. (Work)		IP phone no. (Home) (Mobile)				
	IP occupation/job title		Contractor or core crew				
	Details of injury						
	<i>Based on TOOCS (refer last page)</i> Nature of injury	a. Intracranial injury b. Fractures c. Wounds, lacerations, amputations, internal organ damage	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	d. Burn e. Nerve or spinal cord injury f. Joint, ligament, muscle or tendon injury g. Other _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Part of body	G1. Head or face G2. Neck G3. Trunk G4. Shoulder or arm	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	G5. Hip or leg G6. Multiple locations G7. Internal systems G8. Other _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Mechanism of injury	G0. Falls, stepping, kneeling, sitting on object G1. Hitting object G2. Being hit or trapped	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	G3. Exposure to sound or pressure G4. Muscular stress G5. Heat, cold or radiation G6/7 Chemical, biological substance G8. Other _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Agency of injury	1. Machinery or fixed plant 2. Mobile plant or transport 3. Powered equipment 4. Non-power equipment	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	5/6. Chemicals, materials, substances 7. Environmental agencies 8. Human or animal agencies 9. Other _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	Details of job being undertaken						
	Day and hour of shift	Day e.g. 5 th day of 7 (5/7)		Hour e.g. 3 rd hour of 12 (3/12)			
<i>NB: If more casualties, please copy/paste this section (19) for each additional casualty and insert here</i>							
18.	Was there any serious damage? <i>Provide details below</i>		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	
	Details	Item 1	Item 2		Item 3		
	Equipment damaged						
	Extent of damage						
19.	Will the equipment be shut down? <i>Yes or No</i>	Yes					
	If Yes, for how long?	T.B.C.					
<i>NB: If more equipment seriously damaged, please copy/paste this section as required</i>							

Part 1B - Complete for accidents or dangerous occurrences
Accidents and dangerous occurrences information

20.	Will the facility be shut down?	Yes or no <i>If yes provide details below</i>		No
	Facility shutdown	Date		dd/mm/yyyy
		Time		24 hour clock
		Duration		days / hours / minutes
21.	Immediate action taken/intended, if any, to prevent recurrence of incident.	Action	Responsible party	Completion date <i>Actual or intended</i>
22.	What were the immediate causes of the incident?	<p>Review of previous records indicates the LAM-8 PMV and PWV to be functional. This failure was detected by operation of these valves with an ROV deployed on site.</p> <p>Valve signatures indicate that the signal is sent by the SCM (Subsea Control Module) to the valves. It can therefore be concluded that the fault is between the SCM and the valve (including the valve itself).</p>		

Attachments

Are you attaching any documents?			Yes or no <i>If yes provide details below</i>	
No.	ID	Revision	Date	Title/description
1	M2000-DP-206.03	6	21/02/97 marked up 02/2017	Laminaria & Corallina Field Development Process Flow Diagram Sheet 3 of 4
<i>Insert or delete rows as required</i>				

Part 1C – Complete for environmental incidents
Environmental Impacts

23.	What is the current environment plan for this incident?	Environment plan			
24.	Has the incident resulted in an impact to the environment?	Yes or no <i>If yes provide details below</i>			
		Incident details <i>e.g. estimated area of impact, nature/significance of impact</i>			
		ENVIRONMENTAL RECEPTORS			
	Open ocean	<input type="checkbox"/>	Macroalgae	<input type="checkbox"/>	
	Shoreline	<input type="checkbox"/>	Coral Reef	<input type="checkbox"/>	
	Population centre	<input type="checkbox"/>	Benthic invertebrates	<input type="checkbox"/>	
	Stakeholders	<input type="checkbox"/>	Seagrass	<input type="checkbox"/>	
	Other sensitivity <i>e.g. conservation area, nesting beach</i>	<input type="checkbox"/>	Mangrove	<input type="checkbox"/>	
	Further details				
	Details	Environment 1	Environment 2	Environment 3	
Location of receiving environments <i>Lat/Long</i>					
Date & time of impact					
Action taken to minimise exposure					
Specify each matter protected under Part 3 of the EPBC Act impacted					
<i>NB: If more environments were damaged, please copy/paste this section (Item E3) and add extra data</i>					
25.	Are any environments at risk? <i>Including as a result of spill response measures</i>	Yes or no <i>If yes, provide details</i>			
		Details <i>e.g. zone of potential impact</i>			
		AT RISK ENVIRONMENTS			
	Open ocean	<input type="checkbox"/>	Macroalgae	<input type="checkbox"/>	
	Shoreline	<input type="checkbox"/>	Coral Reef	<input type="checkbox"/>	
	Population Centre	<input type="checkbox"/>	Benthic Invertebrates	<input type="checkbox"/>	
	Stakeholders	<input type="checkbox"/>	Seagrass	<input type="checkbox"/>	
	Other sensitivity <i>e.g. conservation area, nesting beach</i>	<input type="checkbox"/>	Mangrove	<input type="checkbox"/>	
	Details	Environment 1	Environment 2	Environment 3	
	Estimated location of 'at-risk' environments				
Estimated impact date & time					
Action required to minimise exposure					

Part 1C – Complete for environmental incidents
Environmental Impacts

	Specify each matter protected under Part 3 of the EPBC Act at risk			
<i>NB: If more environments at risk of damage, please copy/paste this section (Item E2) and add extra data</i>				
26.	Was an oil pollution emergency plan activated?	Yes or no		
		If yes, what action has been implemented /planned?		
		If yes, how effective is/was the spill response?		
27.	Was an environmental monitoring program initiated?	Yes or no		
		If yes, what actions have been implemented and/or planned?		
28.	Did the incident result in the death or injury of any fauna?	Yes or no (If yes provide details of species in the table below)		
	Injured fauna	Species 1	Species 2	Species 3
	Species name (common or scientific name)			
	Number of individuals killed or injured	Killed: Injured:	Killed: Injured:	Killed: Injured:
<i>NB: If more species were injured or killed, please copy/paste this section (Item E4) and add extra data</i>				
29.	Actions taken to avoid or mitigate any adverse environmental impacts of the incident.	Action	Responsible party	Completion date <i>Actual or intended</i>
<i>NB: If more actions, please add extra rows as required</i>				
30.	Corrective actions taken, or proposed, to stop, control or remedy the incident.	Action	Responsible party	Completion date <i>Actual or intended</i>
<i>NB: If more actions, please add extra rows as required</i>				
31.	Actions taken, or proposed, to prevent a similar incident occurring in the future.	Action	Responsible party	Completion date <i>Actual or intended</i>

Part 1C – Complete for environmental incidents
Environmental Impacts

<i>NB: If more actions, please add extra rows as required</i>				

Attachments

Are you attaching any documents?			Yes or no <i>If yes provide details below</i>	
No.	ID	Revision	Date	Title/Description
<i>Insert or delete rows as required</i>				

Part 2 – Information required within 30 days of accident or dangerous occurrence

NOPSEMA acknowledges that in many circumstances an operator may not have completed an investigation within 3 days of an accident or first detection of a dangerous occurrence and agrees that these items must be provided within 30 days unless otherwise agreed, in writing with NOPSEMA. In circumstances where an investigation has been completed within 3 days, and these items are available (supplemented, as required by any attachments) this part should also be completed at that time.

	Has the investigation been completed?	Yes or no	Desktop investigation completed, however confirmation of findings is only possible when the tree is recovered at some time in the future.	
	Root cause analysis <i>What were the root causes?</i>	Root cause 1	Gas migration via stem seals into compensation system leading to hydrate formation and/or corrosion.	
		Root cause 2	Blockage within compensation system.	
		Root cause 3	Blockage in the valve control system.	
	Other root causes			
32.	Full report <i>Describe investigation in detail, including who conducted the investigation and in accordance with what standard/procedure with reference to attachments listed in the 'attachments table' (following) as applicable</i>	<p>All available Valve signatures were reviewed and indicate that the signal is sent by the SCM (Subsea Control Module) to the valves. It can therefore be concluded that the fault is between the SCM and the valve (including the valve itself) and not within or upstream of the SCM.</p> <p>Review of historic records showed that issues with the compensation system of the trees were found as early as 2006 (tree change out campaign), however were deemed not to have an impact on valve functionality back then. Previous strip down reports also mention seawater and gas in the compensation system which would lead to the conclusion that hydrate formation within the valves is likely to occur given that hydrostatic pressure and seabed temperature are already within the hydrate region.</p> <p>A failure of the return spring for the failsafe close has been ruled out due to the failure occurring on 3 valves (PMV,PWV and AWV) and all presenting similar valve movement.</p> <p>The investigation reached out to many experts in the industry in a variety of companies all confirming that the reached conclusion on the failure mechanism is the most likely one.</p>		
33.	Actions to prevent recurrence of same or similar incident	Action	Responsible party	Completion date <i>Actual or intended</i>
		Monitor valve signatures to detect early valve deterioration.	CCR / SSE team	Ongoing
		If valve function can be restored during this coming campaign by the planned repair of the compensation system, then in future any cases of valve deterioration may be managed in a similar manner.	SSE team	Intended

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NB: Add or delete rows as appropriate

Attachments (Insert/delete rows as required)

Are you attaching any documents?			Yes or no	
			<i>If yes provide details below</i>	
No.	ID	Revision	Date	Title/description

Instructions and general guidance for use:

1. The use of this form is voluntary and is provided to assist operators and titleholders to comply with their obligations to give notice and provide reports of incidents to NOPSEMA under the applicable legislation.
2. Accidents, dangerous occurrences or environmental incidents can all be reported using this same form.
3. The applicable legislation for incident reporting is:
 - a. Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 [OPGGS(S)R]; and
 - b. Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 [OPGGS(E)R], for facilities located in Commonwealth waters; or
 - c. for facilities located in designated coastal waters, the relevant State or Territory Act and associated Regulations where there is a current conferral of powers to NOPSEMA.
4. In the context of this form an incident is a reportable incident as defined under:
 - a. OPGGSA, Schedule 3, Clause 82.
 - b. OPGGS(E)R, regulation 4.
5. This form should be used in conjunction with NOPSEMA Guidance Notes available on the NOPSEMA website:
 - a. N-03000-GN0099 Notification and Reporting of Accidents and Dangerous Occurrences
 - b. N-03000-GN0926 Notification and Reporting of Environmental Incidents
6. Part 1 requires completion for all incidents; then ALSO complete part 2 if the incident is an accident or dangerous occurrence.
7. NOPSEMA considers that a full report will contain copies of documentary material referenced and/or relied on in the course of completing this form, which may include (but not be limited to) as appropriate: witness statements, management system documents, drawings, diagrams and photographs, third party reports (audit, inspection, material analysis etc.), internal records and correspondence.
8. This form is intended to be completed electronically using Microsoft Word by completing the unshaded cells which will expand as required to accept the information required and the check boxes where relevant (NB: check boxes may appear shaded and have reduced functionality in MS Word versions prior to 2010).
9. The completed version of this form (and any attachments, where applicable) should be emailed to: submissions@nopsema.gov.au or submitted via secure file transfer at: <https://securefile.nopsema.gov.au/filedrop/submissions> as soon as practicable, but in any case within three days of the incident.

References

NOPSEMA website: www.nopsema.gov.au

TOOCS – Type of Occurrence Classification System.

The *Type of Occurrence Classifications System, Version 3.0* (TOOCS3.0) was developed to improve the quality and consistency of data. This system aligns with the International Classification of Diseases –Australian Modification (ICD10-AM).

[http://www.safeworkaustralia.gov.au/sites/SWA/AboutSafeWorkAustralia/WhatWeDo/Publications/Documents/207/TypeOfOccurrenceClassificationSystem\(TOOCS\)3rdEditionRevision1.pdf](http://www.safeworkaustralia.gov.au/sites/SWA/AboutSafeWorkAustralia/WhatWeDo/Publications/Documents/207/TypeOfOccurrenceClassificationSystem(TOOCS)3rdEditionRevision1.pdf)

OPGGS(S)R. Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009. Select Legislative Instrument 2009 No. 382 as amended and made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*. Commonwealth of Australia.

OPGGS(E)R. Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009. Statutory Rules 1999 No. 228 as amended and made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*. Commonwealth of Australia.

Privacy Notice

NOPSEMA collects your personal information for the purpose of investigating accidents, dangerous occurrences and environmental incidents under the Offshore Petroleum and Greenhouse Gas Storage Act 2006.

NOPSEMA will not use or disclose your personal information for any other purpose without your consent, unless it is required or authorised by law, or relates to NOPSEMA's enforcement activities. Your personal information may be disclosed to the following organisations, entities or individuals:

- individuals who make a request under the *Freedom of Information Act 1982*
- the Australian National Audit Office and other privately-appointed auditors
- other law enforcement bodies (for example, the police or the Coroner)
- NOPSEMA's legal advisors.

NOPSEMA may occasionally be required to disclose information to overseas recipients in order to discharge its functions or exercise its powers, or to perform its necessary business activities.

Information about how you can access, or seek correction to, your personal information is contained in NOPSEMA's APP Privacy Policy at www.nopsema.gov.au/privacy. If you have an enquiry or a complaint about your privacy, please contact NOPSEMA's Privacy Contact Officer on (08) 6188 8700 or by email at: privacy@nopsema.gov.au.