PATRICIA BALEEN OFFSHORE NON-OPERATIONAL PHASE

ENVIRONMENT PLAN SUMMARY

Production Licence Vic/L21 and Pipeline Licences Vic/PL31 and Vic/PL31(V)

Revision 0

15 January 2016

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ABBREVIATIONS and ACRONYMS

AFMA	Australian Fisheries Management Authority
AHO	Australian Hydrographic Office
ALARP	As Low As Reasonably Practicable
AMSA	Australian Maritime Safety Authority
AMOSC	Australian Marine Oil Spill Centre
AMOSPlan	Australian Industry Cooperative Oil Spill Response Arrangements
AQIS	Australian Quarantine and Inspection Service
CAC	Community Advisory Committee
DEDJTR	Department of Energy, Development, Jobs, Transport and Resources (Vic)
DEDJTR EMD	Department of Energy, Development, Jobs, Transport and Resources (Vic) Emergency Management Division
DELWP	Department of Environment, Land, Water and Planning (Vic)
EHS	Environment, Health and Safety
EHSMS	Environment, Health and Safety Management System
EP	Environment Plan
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
FV	Fisheries Victoria
HAZID	Hazard identification
HIPPS	High Integrity Pressure Protection System
IAPP	International Air Pollution Prevention
IMO	International Maritime Organization
IMR	Inspection, Maintenance and Repair
KEF	Key Ecological Feature
LEFCOL	Lakes Entrance Fishermen's Cooperative Limited
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships
MEG	Mono Ethylene Glycol
MoC	Management of Change
MUTA	Main Umbilical Termination Assembly
NATPLAN	National Marine Oil Spill Contingency Plan
NEBA	Net Environment Benefit Analysis
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
OPEP	Oil Pollution Emergency Plan
OPGGS (E) (Regs)	*Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*
OSRL	Oil Spill Response Limited
PLEM	Pipeline End Manifold
ROV	Remotely Operated Vehicle
Santos	Santos Ltd
SCAT	Shoreline Clean-up Assessment Team
SETFIA	South East Trawl Fishing Industry Association
STCW	Standards of Training, Certification and Watchkeeping
VicPlan	Victorian Plan for Maritime Environmental Emergencies

1 INTRODUCTION

Basin Oil Pty Ltd, a fully owned subsidiary of Santos Ltd (Santos), is the titleholder for Production Licence Vic/L21 which contains the Patricia and Baleen gas fields, offshore from East Gippsland, Victoria, in the eastern waters of Bass Strait.

Santos (N.T.) Pty Ltd, also a fully owned subsidiary of Santos Ltd, is the titleholder for pipeline licences Vic/PL31 and Vic/PL31(V) which contains the Patricia Baleen offshore pipeline that was used to transport gas and condensate from the Longtom-3 and Longtom-4 wells to the Patricia Baleen Gas Plant for processing.

The Patricia and Baleen gas fields and the majority of the pipeline are within Commonwealth waters with pipeline from 3 nm to the shoreline within State waters.

Following substantial depletion of the Longtom wells and an offshore electrical fault that occurred in May 2015, Santos is moving the Patricia Baleen asset to a non-operational phase while options for future use of the pipeline (future tie-ins) are being investigated. As this is a new stage of the Patricia Baleen operations, a new Environment Plan is required, which was accepted by the Commonwealth regulator (National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)) on 5 January 2016.

The "*Petroleum activity*" as defined under Regulation 4(1) of the Offshore Petroleum Greenhouse Gas Storage (Environment) Regulations (OPGGS (E) Regs) is the non-operational phase of the offshore facilities and maintenance activities associated with the Patricia Baleen Offshore Asset within the Licences Vic/L21, and Vic/PL31.

This EP Summary has been prepared in accordance with Regulation 11 (7) and (8) of the OPGGS (E) Regs.

Activities associated with Vic/PL31(V) within State waters are included in the EP and hence this summary, but are assessed and accepted by the State regulator.

2 ACTIVITY LOCATION

The Patricia and Baleen wells are located in water depths of approximately 54 m in Vic/L21, approximately 25 km off the coast from Marlo in East Gippsland, Victoria, in the eastern waters of Bass Strait (Figure 2.1). The coordinates of the Patricia and Baleen wells and subsea infrastructure are provided in Table 2.1.

The Patricia Baleen gas pipeline (Vic/PL31 and Vic/P31V) which runs from the Patricia and Baleen wells to the Patricia Baleen Gas Plant is in water depths ranging from 0 to 54 m (Figure 2.1).

The main umbilical runs parallel to the Patricia Baleen Pipeline, approximately 20 m to the west.

Table 2.1: Coordinates of Patricia Baleen Infrastructure

Infrastructure	Location (GDA 1994 – Degrees Minutes Seconds)	
	Latitude	Longitude
Patricia-2 well	38° 1' 34.111" S	148° 27' 2.480" E
Baleen-4 well	38° 0' 15.419" S	148° 26' 39.008" E
Patricia Baleen Pipeline End Manifold	38º 01’ 34.38” S	148º 27’ 2.7” E
Patricia Baleen Gas Plant (NE corner)	37º 47’ 50” S (NE corner)	148º 27’ 07” E
Main Umbilical Termination Assembly	38º 00’ 15.68” S	148º 26’ 38.56” E
Horizontal Directional Drill site (start of Patricia Baleen Pipeline)	37º 48’ 14.0” S	148º 26’ 34.44” E

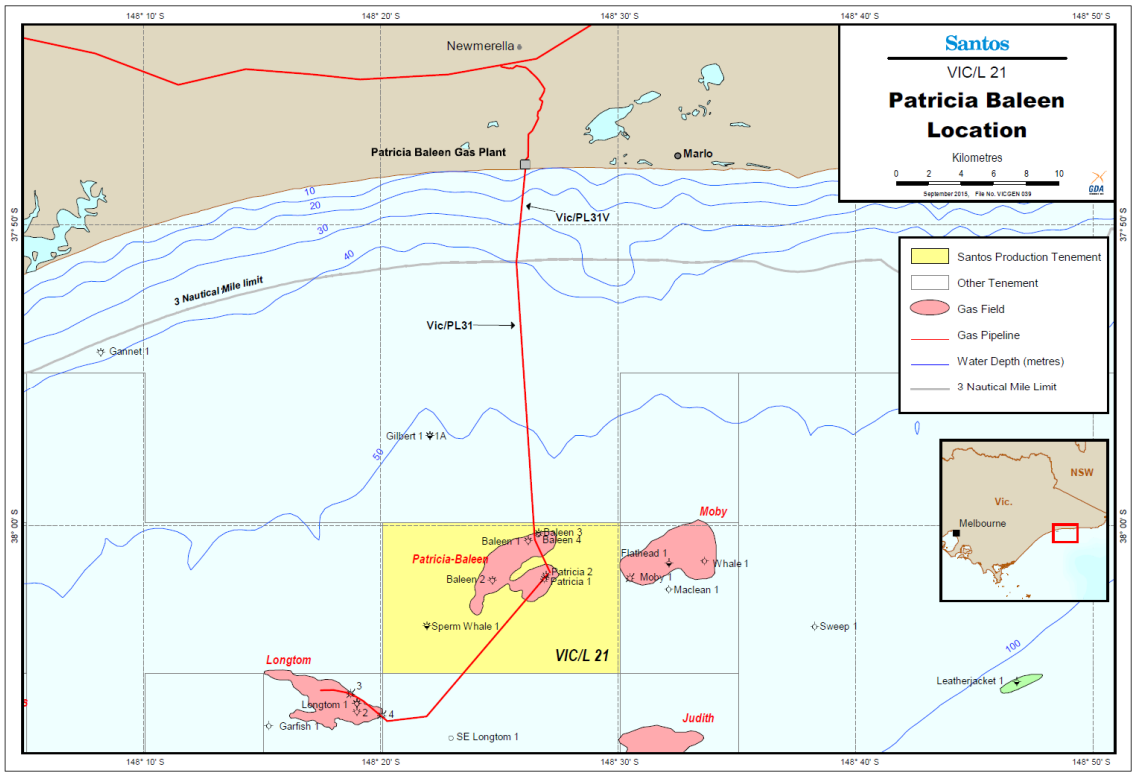

Figure 2.1: Patricia, Baleen and Longtom fields and Pipeline location

3 DESCRIPTION OF THE ACTIVITY

3.1 Patricia Baleen Offshore Asset

The Patricia and Baleen gas fields were discovered through the drilling of the Baleen-1 exploration well in 1981 and the Patricia-1 exploration well in 1987.

The offshore component of the Santos Patricia Baleen asset consists of:

- The Patricia-2 and Baleen-4 wells, which are shut-in.
- A 25 km subsea pipeline and umbilical cable connecting the Patricia-2 and Baleen-4 wells to the Patricia Baleen Gas Plant.

3.2 Patricia and Baleen Wells

The Patricia and Baleen fields are significantly depleted and consist of dry gas. The Patricia-2 and Baleen-4 wells were historically shut in and the recent use of the Patricia Baleen offshore pipeline was to transport Longtom gas and condensate rather than Patricia and Baleen gas production.

The Patricia-2 and Baleen-4 wells are shut in at their subsea trees and valves confirmed closed. A general visual inspection survey conducted in January 2015 found the wells appeared to be in good condition.

Although not part of the Patricia Baleen asset, the status of the Longtom wells is as follows:

- The Longtom 3 well has been shut-in since February 2014 and is disconnected from the control system due to a prior electrical fault.
- The Longtom-4 subsea tree master and wing valves are closed following bleed-off of hydraulic pressure.

3.3 Patricia Baleen Pipeline

The Patricia and Baleen wells tie into the 300 mm (12 inch) Patricia Baleen pipeline via short carbon steel jumper spools. The Patricia Baleen pipeline is connected to the Longtom pipeline via a pipeline end manifold (PLEM) which consists of a manual valve and a T-junction available for future connections. The T-junction has double isolation.

Production from the Longtom field was shutdown in May 2015 due to an electrical fault in the subsea umbilical that tripped the offshore control system. The umbilical electrical failure resulted in the inability to control offshore valves or utilise chemical injection functions.

The status of the Patricia Baleen offshore pipeline system in the non-operational phase is as follows:

- The pipeline is isolated at the High Integrity Pipeline Protection System (HIPPS) and at the onshore plant inlet:
    - The HIPPS isolation valves closed on loss of electrical signal following the electrical fault, thereby isolating the Patricia Baleen Pipeline (and a section of Longtom pipeline downstream of the HIPPS) from the Longtom wells. The pipeline was then blown down to 230 kPa, and this pressure was monitored and proved to be holding static, indicating that the HIPPS valves are not passing.
    - Isolation valves and a spectacle blind at the onshore plant inlet (within the plant boundary) have been closed to isolate the pipeline from the plant, and a provision for vent relief has been installed. The onshore plant has been mothballed.
- The pipeline was then injected with nitrogen to establish a pressure of 630 kPa. This positive pressure has been chosen to exceed the seawater head by 100 kPa to support the early identification of a passing valve and prove ongoing pipeline integrity.
- The pipeline contains approximately 2700 m3 natural gas, 4550 m3 nitrogen, 5 m3 Longtom condensate and 150 m3 mono-ethylene-glycol (MEG)MEG/water mix (40:60).
- Residual fluids in the pipeline have been left in-situ based on the following:
    - The approved Safety Case (PB-STO-8200-002) confirms that the pipeline is not considered to be subject to internal corrosion. Suspension of a pipeline in accordance with AS2885 only requires the contents to be purged or flushed to remove all hydrocarbons when the pipeline is considered to be at risk of internal corrosion.

  - A complete purge/flush of the pipeline would require an offshore campaign and potential diving/pigging operations, i.e. introduction of additional risks which are not justified due to the negligible risk of internal corrosion and minimised hydrocarbon pipeline contents.
- The electro-hydraulic multiplexed control system which previously provided remote control and monitoring of the pipeline system from the onshore gas plant is offline.
- The control system hydraulics have been depressured, hence all downhole/tree valves for the wells are closed in their failed position.
- The HIPPS valves closed on loss of electrical signal; this was subsequently confirmed during a brief period when communications was re-established with the offshore assets.

3.3.1 Pipeline Suspension

The decision to suspend the pipeline instead of repairing the umbilical and reinstating production is based on:

- An offshore campaign to rectify the control system is not justified as Longtom field production was due to be shut down and the Patricia Baleen plant mothballed in Q3 2015 when Longtom-4 reservoir pressure was predicted to have declined to the extent where plant inlet flowrates were insufficient to maintain stable operations at the plant. The electrical fault effectively brought forward the production shutdown date.
- The rectification campaign would have likely required diving operations, introducing additional risks.
- The suspended pipeline does not require a functioning control system to be in place as all isolation valves are confirmed closed.

The pipeline will be maintained in a suspended state until 2020. Options for future use of the pipeline (future tie-ins) are being investigated.

3.4 Patricia Baleen Umbilical

The main umbilical consists of power, chemical (MEG and hydraulic fluid) and communication lines to and from the subsea infrastructure and the Patricia Baleen Gas Plant. The subsea main umbilical runs from the Patricia Baleen Gas Plant to the Main Umbilical Termination Assembly (MUTA), located adjacent to the Baleen-4 well. A smaller umbilical runs from the MUTA to the Patricia-2 well. Due to the electrical fault, the umbilical's power signal, hydraulic and chemical injection functions are inactive.

3.5 Inspection, Maintenance and Repair Activities

Offshore inspection, maintenance and/or repair (IMR) activities generally require remotely operated vehicles (ROV) from a vessel.

Planned inspections during the non-operational phase will consist of:

- Three yearly routine visual inspection of wellheads and pipeline.

Unplanned IMR activities may consist of:

- Inspection, maintenance or repair work of the pipeline, wells and associated subsea infrastructure.
- Pipeline span rectification works.

3.6 Monitoring Arrangements

During the non-operational phase, the onshore plant will be managed by two Operator/Maintainers. The only regular activity relating to the offshore pipeline is monitoring of the Patricia Baleen pipeline pressure from the onshore gas plant.

A pipeline pressure transmitter at the plant inlet (with local indication and linked to the plant control system and a control room display) has been established for pressure monitoring from the onshore plant. The pressure transmitter setpoint has been set with high and low pressure alarms. These alarms have been routed to an auto-dialer which will notify the on-call Operator/Maintainer.

Monitoring the offshore pipeline holding pressure (via either local indication or in the control room) has been added to the daily site checklist for the plant operators to provide a timely warning of changing conditions.

3.7 Support Activities - Helicopters

Due to the size of vessel to be used for IMR activities and short distance to shore, helicopters are not required.

4 DESCRIPTION OF EXISTING ENVIRONMENT

The Patricia Baleen asset and the area that may be affected by the activity is within the South-east Marine Bioregion and more specifically the South-east Shelf Transition Provence. The South-east Marine Region Profile (DoE 2015a) has been used in conjunction with the Commonwealth Department of Environment Protected Matters Database, site specific surveys, third party advice / reports and other relevant management plans to inform this description of the environment. At the time of writing this EP there is currently no bioregional plan for the South-east Marine Region.

4.1 Existing Environment Summary

A summary of the existing environment that may be affected by the activity, including under potential emergency conditions or by the implementation of emergency response arrangements is provided in Table 4.1.

From the risk assessment for planned activities and unplanned events, with the exception of a diesel or condensate spill, the environment that may be affected would be limited to within the immediate area around the permit areas. In the unlikely event of a diesel or condensate spill, the majority of the hydrocarbons would weather in a number of hours but there is the potential for small quantities of residual oil to move towards the near shore areas to the north-east of the Patricia Baleen offshore area towards Cape Conran. Thus, the existing environment within this area is also described.

Table 4.1: Existing Environment Summary of Patricia Baleen Area that May be Affected

Physical Environment	**Summary**
Air temperature	Average temperatures of ~ 6.0°C in July to 23ºC in February
Winds	High occurrence of south-westerly and north-easterly ranging from 5 to 25 m/s.
Rainfall	~ 710 mm. Highest in November and least in February
Currents	Tides - semi-diurnal Tidal currents - north-east/south-west axis, speeds 0.1 to 2.5 m/s
Sea surface temperature	Minimum of 12.6ºC to a maximum of 18.4ºC
Waves	Wave heights of 3 to 4 m or more
Underwater noise	90 dBre1µPa under very calm, low wind conditions to 110 dBre1µPa under windy conditions.
Environment Receptor	**Summary**
Benthic	Medium sand and shell grit with areas of sand waves. Epibiota sparse to commonly occurring sea pens and occasional sponges and stalked colonial ascidians. Sea pens common in water depths of 22 to 27 m. Small and distinct area of sponges and bryozoans along pipeline alignment at ~ 50 m.
Marine Birds	22 EPBC listed marine bird species, including: • 15 species of EPBC listed threatened and migratory albatross. • Five species of threatened petrels, of which two are migratory. • One threatened prion species. • One migratory shearwater species. Albatrosses, petrels, prions and shearwaters are known to be highly dispersive, migratory and oceanic, rarely coming to land unless to breed. These species forage in wide areas potentially including the marine waters around the Patricia Baleen area. There are no known breeding areas for these species within the area that may be affected. The nearest breeding colony of threatened seabirds is Albatross Island, approximately 400 km south west of the Patricia Baleen area.

Environment Receptor	Summary
Shore birds	3 EPBC listed shore bird species, including: • Hooded plover (threatened). • Australian fairy tern (threatened). • Little tern (migratory). These species all nest on sandy beaches above the high tide mark and may be present on the sandy coastline along the coast from the Patricia Baleen asset, Point Ricardo, Cape Conran and the Snowy River estuary.
Sharks	5 EPBC listed shark species, including: • Great white shark (threatened). • Grey nurse shark (east coast population) (threatened). • Whale shark (threatened). • Shortfin mako (migratory). • Porbeagle shark (migratory). The great white, whale shark, shortfin mako and porbeagle sharks are oceanic species widely distributed in Australian waters. The Grey nurse shark (east coast population) has been regularly reported from southern Queensland and around south-east Australia, although the species is uncommon in Victorian waters. There are no known feeding, breeding or aggregation areas for these species within the area that may be affected. Low numbers may be encountered.
Fish	1 EPBC listed fish species, the Australian grayling (threatened) may occur within the area that may be affected. This species inhabits coastal streams and migrates between streams and the ocean and therefore has the potential to be in the vicinity of the Snowy River estuary. No critical fish habitat was identified in the Patricia Baleen area.
Cetaceans	Eight EPBC listed cetaceans, including: • Blue whale (threatened). • Southern right whale (threatened). • Humpback whale (threatened). • Five migratory cetaceans (Bryde's whale, pygmy right whale, dusky dolphin, killer whale, Antarctic minke) There are no known feeding, breeding or aggregation areas for these species within the area that may be affected. Low numbers may be encountered.
Turtles	Four EPBC listed turtles, including: • Loggerhead turtle. • Leatherback turtle. • Hawksbill turtle. • Green turtle. All turtles are listed as threatened and migratory. Based on geographical range, the leatherback is only species potentially occurring in area. There are no known feeding, nesting or aggregation areas for these species within the area that may be affected. Low numbers of leatherback turtles may be encountered.
Shire	The nearest onshore municipality is the Shire of East Gippsland
Settlements	Nearest communities – Newmerella, Marlo and Orbost
Recreational activities	Popular recreational activities in the area include camping, onshore and offshore fishing and recreational activities undertaken in Marlo Coastal Reserve and Cape Conran Coastal Park.
Petroleum Activities	Gippsland Basin has 13 exploration permit areas and 25 current offshore production licenses (Victorian State Government, 2012a).
Shipping	High traffic shipping areas are located south of the Patricia Baleen area.
Defence Areas	None
Maritime Heritage	None

Environment Receptor	Summary
Commercial fishing	Commonwealth fisheries that operate in and around the Patricia Baleen area include: • Southern and Eastern Scalefish and Shark Fishery incorporating; Southern Shark Fishery, Southeast Trawl Fishery, Southeast Non-trawl Fishery. • Southern Squid Jig Fishery. • Eastern Small Pelagic fishery. Victorian fisheries that operate in and around the Patricia Baleen area, include: • Abalone • Rock lobster • Scallop • Wrasse Most fishing vessels that operate in eastern Bass Straight operate out of Lakes Entrance, although some vessels may come from other Victorian and interstate ports.
Defence Areas	None
Maritime Heritage	None
State Protected Areas	Two onshore protected areas: • Marlo Coastal Reserve ~ 2km east of pipeline • Cape Conran Coastal Park ~ 13 km east of pipeline One marine protected area: • Beware Reef Marine Sanctuary ~ 30 km east of pipeline
Commonwealth Protected Areas	None. The closest wetland of international significance is the Gippsland Lakes Ramsar Wetlands, 54 km to the west. The nearest Commonwealth marine reserves are the Beagle Commonwealth Marine Reserve 100 km to the south, and the East Gippsland Commonwealth Marine Reserve 150 km to the north-east.
Key Ecological Features (KEF)	The Patricia Baleen offshore area is within the KEF *Upwelling East of Eden*, which stretches for several hundreds of kilometres along the coastline of Victoria and New South Wales (Figure 4.1) The KEF *Big Horseshoe Canyon* is within the region (76 km north-east of the Patricia Baleen pipeline). Both the Upwelling East of Eden and Big Horseshoe Canyon are classed as KEFs due to their high productivity and aggregations of marine life.

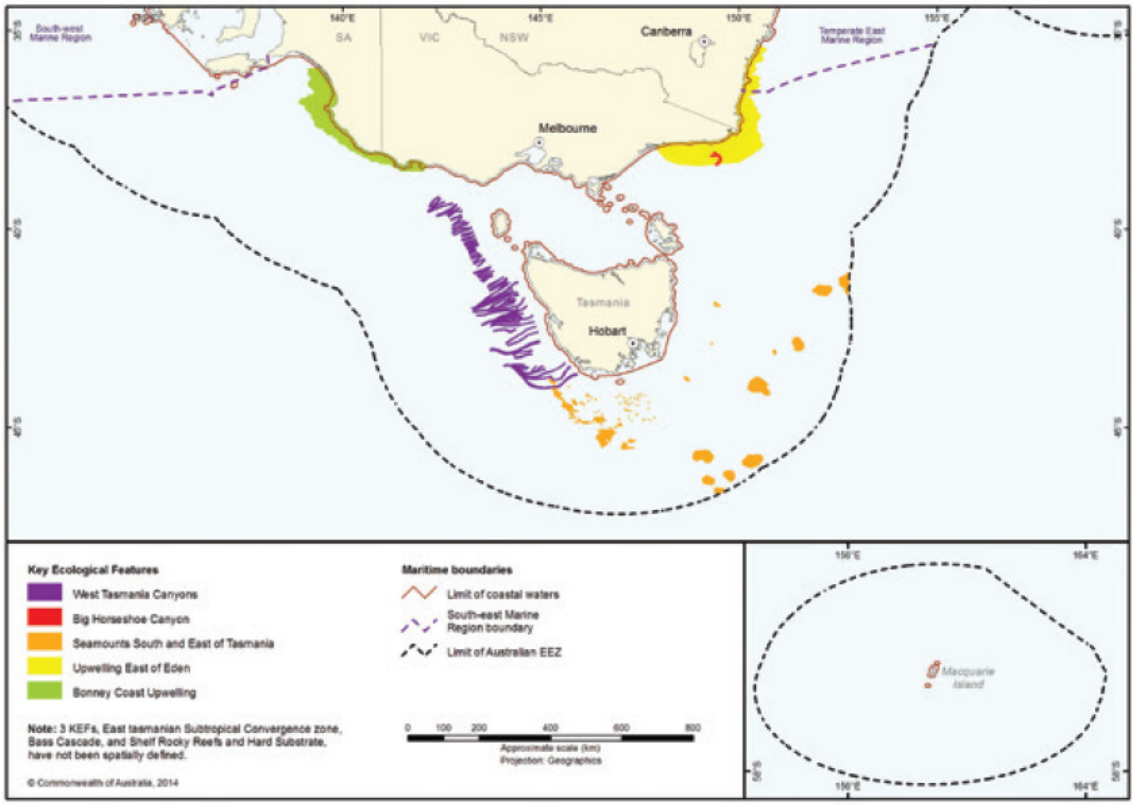

Figure 4.1: Key Ecological Features within the South-east Marine Region Profile (DoE 2015a)

5 ENVIRONMENTAL RISK IDENTIFICATION, EVALUATION & CONTROL

Environmental risk assessment refers to a process where hazards associated with an activity are assessed to determine their impact on the environment (physical, biological, and socio-economic) at a defined location and specified period of time.

The environmental risk assessment process applied to the Patricia Baleen Non-Operational Phase is based on the Santos Environment Health and Safety Management System (EHSMS) Standard 09 "*Managing EHS Risks*", which describes the Santos standard and process with respect to risk assessment for all Santos activities. The methodology is based upon the risk management process described in AS/NZ ISO 31000.

A risk assessment workshop (HazID) was held on the 24th August 2015 and the information from that workshop was used to inform the environmental risk assessment process.

The environmental risk assessment process undertaken comprised of the following components that are discussed further in the following sections:

1. Identification of environmental hazards
2. Identification of the area that may be affected
3. Description of the environment that may be affected
4. Identification of the particular values and sensitivities
5. Identification of potential impacts associated with hazards
6. Determine severity of consequence
7. Determine likelihood
8. Identify control measures
9. Determine residual risk ranking
10. Determination of As Low As Reasonability Practicable (ALARP)
11. Determination of Acceptability

The outcome of the risk assessment process is summarised in Appendix 1.

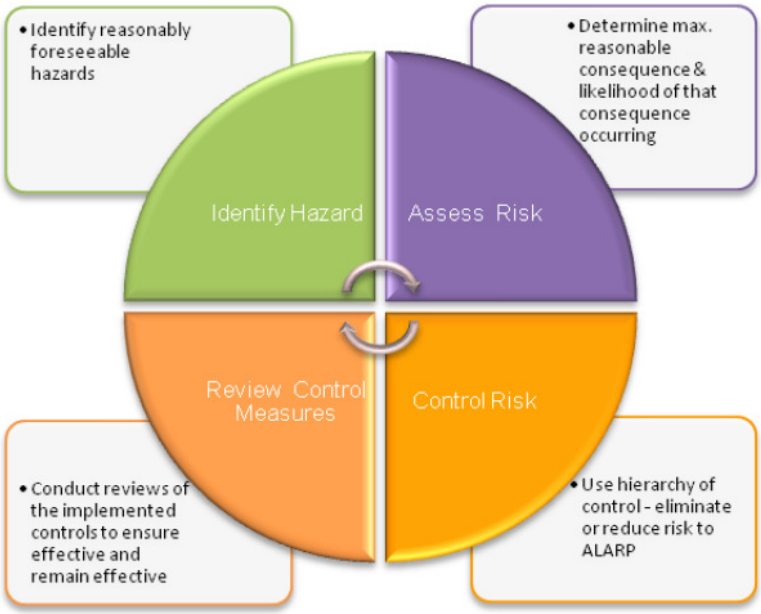

Figure 5.1: Santos Risk Assessment Process

Identification of Environmental Hazards (Aspects)

Environmental hazards or aspects are those elements of an activity that can interact with the environment. Environmental hazards were identified for planned activities, unplanned events and spill response strategies. An assessment of each component of the activity, event or response strategy was undertaken and the environmental hazards (aspects) identified.

Identification of the Area that may be Affected

Following the identification of environmental hazards, the likely extent of the hazards was determined. Information from previous studies and modelling by Santos and from publicly available information from other industry operators was used to determine the area potentially affected.

For planned activities and unplanned events, with the exception of a diesel or condensate spill, the environment that may be affected would be limited to within the immediate area around the permit areas. In the unlikely event of a diesel or condensate spill, the majority of the hydrocarbons would weather in a number of hours but there is the potential for small amounts of residual oil to move towards the near shore areas to the north-east of the Patricia Baleen offshore area towards Cape Conran.

Description of Environment that may be Affected

Section 4 describes the existing environment including any relevant cultural, social and economic aspects.

Identification of Particular Values and Sensitivities

A review of the existing environment was undertaken to identify any environmental values and / or sensitivities. Table 4.1 provides a summary of the values and sensitivities identified. These were used to inform the risk assessment as they provide the potential worst case consequence.

Identification of Potential Impacts Associated with Hazards

The hazards associated with each planned activity, unplanned event and spill response strategy were correlated to the receptors that had been identified with the potential to occur within the area likely to be affected.

Determination of Severity of Consequence

Once the potential hazards and receptors were identified the potential level of impact (consequence) was assessed and assigned using the Santos Operational Risk Matrix. The level of consequence is determined by the potential level of impact based on:

- How can the receptor be impacted by the activity (directly or indirectly)?
- What is the worst case extent of the impact on the receptor?
- What is the duration of the impact?
- What is the worst case concentration / magnitude of the impact?

Determination of Likelihood

Likelihood is defined as the likelihood of the consequence occurring. This defined using the Santos Operational Risk Matrix and incorporates the likelihood of the event occurring and the subsequent likelihood of the consequence occurring.

Control Measures

Control measures are identified for each hazard with the aim of eliminating the hazard, or if this is not reasonably practicable, to minimise the risk to as low as reasonably practicable (ALARP). The process of identifying control measures is an iterative process of:

- Identifying a risk control
- Assessing the risk control
- Deciding whether residual risk levels are tolerable
- If not tolerable, identifying a new risk control
- Assessing the effectiveness of that control

Santos uses a hierarchy of control to develop appropriate control measures. This method identifies the following type of controls, in order of preference: eliminate, substitute, engineering, isolation, administrative and protective controls.

Once a control measure is defined a measurable performance standard is developed from that control measure to ensure a defined environmental performance outcome. A summary of the control measures and performance standards is provided in Appendix 1.

Residual Risk Ranking

Risk is expressed in terms of a combination of the consequence of an impact and the likelihood of the impact occurring. Santos uses a Corporate Risk Matrix to plot the consequence and likelihood to determine the level of risk. The HazID for the activity identified 12 sources of environmental risk that were associated with either planned activities or unplanned events.

The EP contains a range of control measures to ensure potential impacts and risks are reduced to ALARP and acceptable levels. A summary of the key environmental risks, controls and residual risk ranking is presented in Appendix 1.

Determination of ALARP

ALARP is a concept used for determining if risk control is adequate – is the risk as low as we can reasonably achieve? Santos demonstrates ALARP taking into account and weighing up all relevant matters including:

- The likelihood of the hazard or risk occurring.
- The degree of harm that might result from the hazard or risk.
- What is known or ought reasonably to be known about the hazard or the risk and ways of eliminating or minimising the risk.
- The availability and suitability of ways to eliminate or minimise the risk.
- After assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

Santos uses the hierarchy of control model to demonstrate that impacts and risks for each hazard are ALARP. Risk controls that were considered to be reasonably practicable are implemented while those considered not to be reasonably practicable have not been implemented, with reasoning provided in the EP. Where additional treatments to reduce potential impacts and risks are not considered to be effective or reasonably practicable, the risk is said to have been reduced to ALARP.

Determination of Impact and Risk Acceptability

The impact and risk acceptability model used by Santos is based on a tiered acceptance model. In summary:

A Level 5 residual risk is intolerable and must not be accepted or approved by Management.

A Level 2 – 4 residual risk is acceptable provided that ALARP has been achieved and demonstrated.

A level 1 residual risk is acceptable and it is assumed that ALARP has been achieved.

In addition to the requirements detailed above, for the purposes of offshore petroleum activities, impacts and risk to the environment are considered broadly acceptable if:

- The residual risk is determined to be 1, or
- The residual risk is determined between 2 and 4 and ALARP can be demonstrated; and
- The following have been met:
    - Principles of ecologically sustainable development
    - Environmental requirements such as laws, policies, standards
    - Santos policies and standards
    - Stakeholder expectations.

5.1 Planned Activities

Environmental risks identified for the Patricia Baleen Non-operational Phase relate to the inherent risk posed by the non-operating infrastructure as well as non-routine planned activities such as IMR campaigns and vessel operations. These include:

- Seabed disturbance from erosion / sediment buildup on infrastructure, disturbance from IMR activities or span rectification.

- Underwater noise from vessel engines, thrusters or ROVs
- Light emissions from vessels
- Atmospheric emissions from vessel engines or waste incineration
- Waste water discharges associated with vessel sewage / greywater, bilge water and deck drainage
- Waste generated during IMR operations

5.2 Unplanned Events

During the risk assessment process a number of environmental risks associated with unplanned events and emergency conditions were identified. These include:

- Cetacean interactions with vessel during IMR activities
- Third party marine user interactions due to the physical presence of the Patricia Baleen wells and pipelines and IMR vessels
- Introduction of invasive marine species from vessel ballast or IMR vessel / ROV biofouling
- Minor spills from vessel, ROV or IMR activities
- Diesel spill from vessel collision
- Leak or rupture from the Patricia Baleen pipeline.

A summary of the environmental risk assessment for planned and unplanned events is presented in Appendix 1.

5.3 Oil Pollution Emergency Plan

A Patricia Baleen Oil Pollution Emergency Plan (OPEP) is in place for the Patricia Baleen non-operational phase. In the unlikely event of a diesel or condensate spill, the majority of the hydrocarbons would weather and in a number of hours but there is the potential for small quantities of residual oil to move towards the near shore areas to the north-east of the Patricia Baleen offshore area towards Cape Conran. A summary of the response arrangements in the OPEP is provided in Appendix 2.

6 ONGOING MONITORING OF ENVIRONMENTAL PERFORMANCE

The EP defines the implementation strategy for the Patricia Baleen Non-Operational phase. The strategy aims to ensure that the control measures, environmental performance outcomes and standards detailed in the EP, are implemented and monitored to ensure environmental impacts and risk are continually identified and reduced to a level that is ALARP and acceptable.

The implementation strategy is based on the requirements of the Santos EHSMS supported by Patricia Baleen-specific practices and procedures. The Santos EHSMS is based on international standards to provide a formal and consistent framework for all activities of Santos employees and contractors.

The EHSMS includes:

- Management Standards - defines the requirements necessary to ensure that environmental, health and safety risks are systematically managed.
- Hazard Standards - outline the documents used to ensure the risks of particular hazards are managed to an acceptable level.

Monitoring of compliance with the EP and general environmental performance consists of.

Emissions and Discharges Monitoring

No emissions or discharges will occur from the shut-in wells or pipeline. Emissions and discharges will only occur when a vessel is used for IMR activities. During these activities relevant emissions and discharges such as fuel use, incinerator flue temperature, bilge oil in water content, waste volumes and ballast water discharges will be monitored and the data reported in an IMR End of Program report.

Audit and Inspection

Santos EHSMS16 *EHS Audit and Inspection* details the requirements to provide assurance that EHS systems and processes are effectively implemented, fit for purpose and are meeting relevant statutory requirements.

To ensure that the EP requirements have been effectively implemented and that the performance outcomes and standards in the EP have been met the following audits/inspections will be undertaken:

- Annual audit of the EP implementation strategy and performance outcomes and standards to inform the annual EP Performance Report.
- Vessel pre-start audit and inspection.

Audits and inspection findings are recorded and communicated to affected parties, and corrective actions tracked to closure.

Management of Non-Conformances

For the EP a non-conformance is classed as:

- A breach of an environmental performance outcome or environmental performance standard. This triggers the requirement to report as a “Recordable Incident” under the OPGGS (Environment) Regulations.
- Failure to implement a requirement in the implementation strategy.

Non-conformances are identified via:

- Audits and inspections
- Emissions and discharge monitoring
- Incident investigations
- Preparation of the Annual Performance Report

Where a non-conformance is identified actions are implemented to correct the non-conformance and prevent reoccurrence. Non-conformances and associated actions are recorded in EHS Toolbox and actions tracked to completion.

Annual Performance Report

Santos prepares an annual EP Performance Report to NOPSEMA and Vic DEDJTR with sufficient information to enable the regulator to determine whether the environmental performance outcomes and standards in the environment plan have been met.

Management of Change

The Santos Management Standard *EHSMS12 Management of Change* (MoC) describes the Santos standard in respect to managing change. The standard establishes the processes required to ensure that when changes are made to a project, control systems, an organisational structure or to personnel, the EHS risks and other impacts of such changes are identified and appropriately managed.

The standard requires that all environmentally relevant changes must obtain environmental approval (internal i.e. within Santos and/or external i.e. regulatory) prior to undertaking any on-ground activity.

Environmentally relevant changes include:

a) new activities, assets, equipment, processes or procedures proposed to be undertaken or implemented that have potential to impact on the environment and have not been:
    - assessed for environmental impact previously, in accordance with the requirements of this standard; and
    - authorised in the existing management plans, procedures, work instructions, or maintenance plans.

b) proposed changes to activities, assets, equipment, processes or procedures that have potential to impact the environment or interface with an environmental receptor; and

c) changes to requirements of an existing external approval (e.g. changes to conditions of environmental licence).

Where an environmentally relevant change is identified, the MoC is assessed by an Environmental Adviser and if required appropriate technical and/or legal advice is sought.

In the event that the proposed change introduces a significant new environmental impact or risk, results in a significant increase to an existing environmental impact or risk, or, as a cumulative effect results in an increase in environmental impact or risk, this EP will be revised and submitted for re-assessment and acceptance by the regulator.

7 CONSULTATION

Santos has a long history of community and other stakeholder consultation associated with the Patricia Baleen operations. Ongoing consultation is guided by *EHSMS07 Consultation and Communication*, which defines a stakeholder as:

> *Any affected persons, interested persons or organisations that are impacted by, or can impact a project.*

This definition aligns with the requirement under both the Commonwealth and Victorian petroleum regulation requirements.

As a minimum consultation for the Patricia Baleen asset incorporates the following:

- Regular community updates in Orbost via a Community Advisory Committee (CAC);
- Targeted activity / issue specific consultation associated with specific campaigns or changes (such as the transition to this non-operational phase); and
- Complaints / incident management.

Stakeholder identification and engagement has been ongoing since the Patricia Baleen asset was commissioned in 2003. A review of stakeholders identified as part of the Patricia Baleen Operations and Maintenance EP process was undertaken to identify if stakeholders were still relevant or if there were any new stakeholders relevant to the Patricia Baleen non-operational phase. No new stakeholders were identified.

Table 7.1 details potential relevant stakeholders. A further review was then undertaken to determine those that are actually relevant to the non-operational phase based on engagement with Commonwealth and State departments and agencies, fishing association groups and Community Advisory Committee meetings.

A summary of the consultation that has been undertaken with relevant stakeholders for the Patricia Baleen non-operational phase is presented in Appendix 3.

Ongoing consultation during the non-operational phase will consist of:

- Community meetings, scheduled based on operational change / community interest.
- Ongoing campaign specific consultation as agreed with local fishing industry and other stakeholders where required.
- Notifications to mariners when undertaking IMR vessel activities.

Table 7.1: Patricia Baleen Asset Relevant Stakeholders

Stakeholder	Relevant to non-operational phase	Reasoning
Department or agency of the Commonwealth to which the activities to be carried out under the environment plan, or the revision of the environment plan, may be relevant		
Australian Fisheries Management Authority (AFMA)	✓	Manage Commonwealth fisheries.
Australian Maritime Safety Authority (AMSA)	✓	Statutory and combat agency for vessels in Commonwealth waters.
Australian Hydrographic Office (AHO)	✓	Notification of vessel activity required via Notice to Mariners
Department of Environment (DoE)	×	The activity is within the NOPSEMA environmental management authorisation process endorsed by the Federal Minister for the Environment as a Program that meets the requirements under the EPBC Act.
National Offshore Petroleum Safety Environment Management Authority (NOPSEMA)	✓	Statutory authority for offshore petroleum activities. Consultation prior to EP submission is not required.
Department or agency of the State to which the activities to be carried out under the environment plan, or the revision of the environment plan, may be relevant and the Department of the responsible State Minister		
Department of Economic Development. Jobs, Transport and Resources – Energy and Earth Resources Division	✓	Statutory authority for petroleum activities in Victorian waters
Department of Economic Development. Jobs, Transport and Resources – Emergency Management Division	✓	Control agency for marine pollution emergency in Victorian waters
Fisheries Victoria	✓	Manage Victorian fisheries.
Department of Environment, Land, Water and Planning - Wildlife Emergencies and Biodiversity Regulation	✓	Response agency for affected wildlife in Victoria.
A person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan, or the revision of the environment plan		
Abalone Fishery (Victoria)	×	May potentially fish in the area. However, Fisheries Victoria and LEFCOL did not see any need to notify individual licence holders specifically about the transition to 'non-operational' phase of the project as their interests and activities would not be affected.
Australian Marine Oil Spill Centre (AMOSC)	✓	Santos is a participating member of AMOSC. In an oil spill AMOSC would provide equipment and support.
Esso Australia	✓	May supply Santos with oil spill response equipment in Victoria via AMOSC Mutual Aid.
Lakes Entrance Fishermen's Cooperative Limited (LEFCOL)	✓	Ongoing consultation as part of the operating phase identified that LEFCOL act on behalf of the fisheries that operate out of and in the vicinity of Lakes Entrance (and hence in the vicinity of the Patricia Baleen assets) and pass on information and notifications to their members.
South East Trawl Fishing Industry Association (SETFIA)	✓	Ongoing consultation as part of the operating phase identified that SETFIA act on behalf of the Trawl Sector of the Southern and Eastern Scalefish and Shark Fishery and pass on information and notifications to their members.

Stakeholder	Relevant to non-operational phase	Reasoning
Rock Lobster Eastern Zone Fishery (Victoria)	×	May potentially fish in the area. However, Fisheries Victoria and LEFCOL did not see any need to notify individual licence holders specifically about the transition to 'non-operational' phase of the project as their interests and activities would not be affected.
Scallop Fishery (Victoria)	×	May potentially fish in the area. However, Fisheries Victoria and LEFCOL did not see any need to notify individual licence holders specifically about the transition to 'non-operational' phase of the project as their interests and activities would not be affected.
Southern Squid Jig Fishery	×	May potentially fish in the area. However, Fisheries Victoria and LEFCOL did not see any need to notify individual licence holders specifically about the transition to 'non-operational' phase of the project as their interests and activities would not be affected.
Southern and Eastern Scalefish and Shark Fishery	×	May potentially fish in the area. However, SETFIA, Fisheries Victoria and LEFCOL did not see any need to notify individual licence holders specifically about the transition to 'non-operational' phase of the project as their interests and activities would not be affected.
Wrasse Fishery (Victoria)	×	May potentially fish in the area. However, Fisheries Victoria and LEFCOL did not see any need to notify individual licence holders specifically about the transition to 'non-operational' phase of the project as their interests and activities would not be affected.

8 TITLEHOLDER LIAISON

For further information about this activity, please contact:

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9 REFERENCES

Department of Environment. 2015a. South-east Marine Region Profile. Commonwealth of Australia.

Victoria State Government. 2012a. Gippsland Basin Map. State Government of Victoria, Melbourne.

Appendix 1: Environmental Impacts, Risks and Controls

Environmental Hazard & Source	Known and Potential Impact	Controls	Residual Risk
Planned Activities			
Seabed Disturbance - **Erosion / sediment build up due to infrastructure** - **Dropped objects during IMR activities** - **Temporary placement of subsea infrastructure on seabed during IMR activities** - **Vessel anchoring during IMR activities** - **Span rectification activities**	• Localised disturbance or loss of benthic habitat • Localised turbidity of the near-seabed water column	*Sensitive receptors identified and avoided* • Sponge and bryozoan habitat at ~ 50 m water depth along the pipeline identified and communicated to IMR project team. *IMR Program Work Plan* • IMR Program Work Plan includes no equipment laydown or anchoring within sponge and bryozoan habitat at ~ 50 m water depth along the pipeline. *Chemical Assessment Process* • Santos Offshore Chemical Assessment Process used to assess and approve grout to be used in grout bags.	Very Low (1)
Underwater Noise • **Vessel engines, thrusters and ROV**	• Behavioural changes in fauna. • Localised avoidance.	*Vessel/Cetacean Caution Zones* • Vessels will travel at less than 6 knots within the caution zone of a cetacean (150 m radius for dolphins, 300 m for whales).	Very Low (1)
Light Emissions • **IMR vessel activities**	• Localised fauna attraction	*Vessel lighting requirements* • External vessel lighting meets the requirements of the AMSA Marine Orders Part 30 (Prevention of Collisions).	Very Low (1)
Atmospheric Emissions • **Combustion of fuel from vessel engines, deck equipment** • **Incineration of waste**	• Localised and temporary decrease in air quality • Contribution to global greenhouse gas effect	*Marine diesel quality* • Low-sulphur marine diesel used as primary fuel source. *Equipment maintenance* • Combustion equipment maintained in accordance with Planned Maintenance System. *Air Pollution Certificate* • Vessels with gross tonnage > 400 t have International Air Pollution Certificate (IAPP). *Incinerator certificate* • If incineration is undertaken, incinerator has International Maritime	Very Low (1)

Environmental Hazard & Source	Known and Potential Impact	Controls	Residual Risk
		Organization (IMO) certificate. *Training* • Personnel responsible for operation of the incinerator are trained. *Operating parameters* • Minimum flue gas temperature is 850 degrees Centigrade.	
Waste Water Discharges • **Sewage and grey water** • **Deck drainage** • **Bilge water**	• Localised impact on water quality from nutrients and hydrocarbons.	*Sewage treatment plant* • Where sewage is discharged, it is treated via an operational MARPOL approved sewage system. *Containment* • Equipment, chemicals and hydrocarbons with the potential for spillage are contained. *Oil-water separator* • Bilge water passes through a MARPOL approved oil-water separator prior to overboard discharge. • Bilge only discharged while en-route. *SOPEP response kits* • SOPEP response kits are available on vessel and stocked.	Very Low (1)
Waste • **IMR vessel activities**	• Marine and onshore litter • Injury to marine fauna and seabirds • Localised and temporary increase in nutrient matter	*Waste Management Plan* • Waste is handled according to the vessel waste management plan. • Waste with potential to be windblown is stored in covered containers. • Waste sent onshore is disposed at a licensed facility. • Waste blown overboard is recovered if possible. • All food scraps are macerated prior to discharge. • Inside 3 nm food scrap sent to shore for disposal.	Very Low (1)
Unplanned Activities			
Cetacean Interactions	• Injury and/or death from vessel	*Vessel/Cetacean Requirements*	Very Low

Environmental Hazard & Source	Known and Potential Impact	Controls	Residual Risk
• **IMR vessel activities**	strike.	• Vessels will travel at less than 6 knots within the caution zone of a cetacean (150 m radius for dolphins, 300 m for whales).	(1)
Marine Users Interactions • **Physical presence of the Patricia Baleen wells and pipelines and IMR vessels**	• Damage to fishing equipment. • Loss of commercial fish catches. • Vessel collision	*Navigational requirements* • Patricia Baleen wellheads and pipeline are marked on navigation charts. • Wellheads have a 500m exclusion zone. • Class certificate demonstrates vessel complies with the Navigation Act 2012 and applicable Marine Orders. *Notifications* • Notice to Mariners and communication to relevant commercial fishers provided prior to commencement of IMR works. *Training* • Vessel Master, First Mate and Second Mate have a valid Standards of Training, Certification and Watchkeeping (STCW) certificate.	Very Low (1)
Introduction of Invasive Marine Species • **Vessel ballast water discharge containing foreign species.** • **Biofouling of vessel hull or ROV equipment.**	• The survival, colonisation and spread of foreign species that may compete with native species for resources, reducing species diversity and abundance.	*AQIS requirements* • Overseas vessels contracted receive AQIS clearance to enter Australian waters. *Victorian Ballast Water requirements* • Vessels entering Victorian waters and visiting a Victorian Port complete and submit Victorian Ballast Water Report Form to EPA. • If discharging ballast water in Victorian waters approval obtained from EPA prior to discharge. *ROV inspection* • Pre-use inspection records include requirement for checking and removing biofouling.	Very Low (1)
Minor spills from vessel, ROV or IMR activities • **Vessel hydraulic hose leak**	• Toxic effects to the marine environment including marine fauna and benthic habitats.	*Containment* • Equipment, chemicals and hydrocarbons with the potential for spillage are contained.	Very Low (1)

Environmental Hazard & Source	Known and Potential Impact	Controls	Residual Risk
• **Vessel material bulk storage leak** • **ROV hydraulic hose leak** • **Disconnection of subsea umbilicals during IMR activities**		*ROV inspection* • ROV hydraulic hoses checked prior to deployment. *Clean-up of spills* • Spills of chemicals or hydrocarbons are cleaned up immediately. *Preventative equipment* • Umbilical connections on subsea infrastructure have non-return valves. *Chemical Assessment Process* • Santos Offshore Chemical Assessment Process used to assess and approve fluids with potential to be discharged to marine environment.	

Diesel Spill from Vessel Collision	• Toxic effects to the marine environment including marine fauna
	• Key potential receptors include:
	  • Marine mammals such as dolphins, fur seals and migratory whales
	  • Migratory marine birds such as albatrosses and petrels
	  • Shorebirds such as plovers and terns
	  • Fish including commercials species, scallops and lobster
	  • Recreational users
		Notifications
		• Notice to Mariners and communication to relevant commercial fishers provided prior to commencement of IMR works.
		Training
		• Vessel Master, First Mate and Second Mate have a valid STCW certificate.
		Navigation requirements
		• Vessel complies with the Navigation Act 2012 and applicable Marine Orders.
		OPEP implementation in the unlikely event of a spill
		• PB Non-Operational Phase OPEP implemented.
			Low (2)

Leak or Rupture from Patricia Baleen Pipeline	• Toxic effects to the marine environment including marine fauna • Key potential receptors include: • Marine mammals such as dolphins, fur seals and migratory	*Pipeline design* • Pipeline design meets the specifications in Pipeline Licence Vic/PL31. *Navigational requirements* • Patricia Baleen wellheads and pipeline are marked on navigation charts. *Pipeline pressure monitoring*	Very Low (1)

Environmental Hazard & Source	Known and Potential Impact	Controls	Residual Risk
	whales • Migratory marine birds such as albatrosses and petrels • Shorebirds such as plovers and terns • Fish including commercials species, scallops lobster and abalone	• Pipeline pressure monitored with low and high pressure alarms and auto-dialler to on-duty operator. *Routine visual inspections* • Three yearly routine visual inspection of pipeline and wells is undertaken. *Pipeline integrity review* • Pipeline integrity data review undertaken in 2018 in accordance with Safety Case requirements. *OPEP implementation in the unlikely event of a spill* • PB Non-Operational Phase OPEP implemented in response to a spill.	

Appendix 2: Oil Pollution Emergency Plan – Summary Response Arrangements

The *Patricia Baleen Non-Operational Phase Oil Pollution Emergency Plan* (Dec, 2015) (OPEP) describes the offshore spill response arrangements that would be implemented by Santos in response to an oil spill from the activities associated with the Patricia Baleen non-operational phase.

The objectives of this OPEP are to ensure:

- Santos has timely access to appropriately trained people and resources in order to effectively respond to and manage an oil spill response.
- The timely implementation of pre-determined response strategies.
- That the procedures used by Santos are consistent with those used by the applicable plans including the National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances (NatPlan), Victorian Plan for Maritime Environmental Emergencies (VicPlan) and Australian Industry Cooperative Oil Spill Response Arrangements (AMOSPlan).
- Effective integration and use of industry/government response efforts and resources.

Spill Response Arrangements

The OPEP interfaces with the broader Santos Eastern Australia Business Unit Incident Management Plan and Patricia Baleen Emergency Response Plan. These plans detail the incident management team structure, mobilisation procedures and escalation protocols. For oil spill response emergencies that require escalation, the OPEP details the following support arrangements:

- Master Service Contract with the Australian Marine Oil Spill Centre (AMOSC) for the provision of oil spill response services, trained support personnel, response equipment and consumables on a 24/7 call out.
- Industry Core Group access to approximately 110 trained response personnel employed by AMOSC member companies.
- Participant membership with Oil Spill Response Limited (OSRL), the largest international industry-funded oil spill response cooperative providing 24/7 response services, including equipment, personnel and aircraft.
- Mutual-aid agreements with other oil and gas operators in the region to access and utilise resources in the event of a spill response.

Spill Response Strategies

In response to the potential spill scenarios identified in the risk assessment process the OPEP details the spill response process that Santos would employ in the unlikely event of an oil spill. Based on the nature and scale of the spill scenarios and a pre-spill Net Environmental Benefit Analysis (NEBA) the following response strategies have been included:

- Monitor and Evaluate – to gain situational awareness and inform the spill response.
    - Aerial observations from aircraft to identify spill (where it is and where it is headed)
    - Predictive modelling to estimate the movement and behaviour of oil
    - Estimation of spill volume based on known parameters and/or aerial observations
- Shoreline Clean-up Assessment Technique (SCAT) – if required, shoreline assessment and clean-up activities would be undertaken in consultation with the Victorian Department of Economic Development Jobs Transport and Resources in order to undertake consistent shoreline assessments and prioritise clean-up response activities.
- Protection and Deflection - to protect sensitive areas.
    - Boom deployment in the event that residual oil is predicted to be heading towards the Snowy River mouth in order to protect the environmental, social and recreational values of this location.
- Oiled Wildlife Response – Santos would provide resources and assistance to the Victorian Department of Environment, Land, Water and Planning in their role as response agency for wildlife affected by a marine pollution emergency in Victoria.

- Scientific Monitoring – receiving waters and sediment monitoring to assess impacts from hydrocarbons and monitor recovery.

All response strategies will be the subject to an operational NEBA to confirm that there is a net environmental benefit in implementing a particular response strategy. The operational NEBA would be undertaken every 24 hours as a minimum, or when relevant new information is received, until a decision is made (in consultation with State and Commonwealth stakeholders) to cease response operations.

A summary of key control and mitigation measures associated with a potential spill response is presented in the table below.

Spill Response Risk and Controls

Environmental Hazard & Source	Known and Potential Impact	Controls	Residual Risk
• **Monitor and Evaluate**	• Disturbance to fauna from aircraft.	• Aircraft for safety reasons are not able to fly low enough to disturb nesting fauna therefore impacts would be negligible. • Visual observations from aircraft are initiated within 12 hours (during daylight hours only). • Aircraft contractor meets Santos pre-qualification requirements to ensure appropriate training and safety requirements.	Very Low (1)
• **Shoreline Assessment**	• Loss of vegetation • Disturbance of fauna • Restricted access for recreational activities	• SCAT crew deployed and operational to provide a consistent and repeatable assessment of clean-up priority. • NEBA analysis agreed with DEDJTR EMD prior to implementation of response strategy. • Use of existing paths and tracks. • Access outside of existing tracks and paths is determined in consultation with DEDJTR EMD. • Only DELWP trained oiled wildlife responders handle wildlife. • Consultation undertaken with appropriate land manager prior to shoreline clean-up commencing.	Low (2)
• **Protection and Deflection**	• Loss of vegetation • Restricted access for recreational activities • Oil spill from waste handling	• AMOSC response personnel and equipment deployed and operational to implement protection and deflection at Snowy River mouth. • NEBA analysis agreed with DEDJTR EMD prior to implementation of response strategy. • Use of existing paths and tracks. • Access outside of existing tracks and paths is determined in consultation with DEDJTR EMD. • Consultation undertaken with appropriate land manager prior to commencing protection and deflection activities. • Storage tanks and hoses within contained area • Spill kit available at oil recovery area • Spills reported as per Santos and external reporting requirements	Low (2)
• **Oiled Wildlife Response**	• Disturbance, injury or death of fauna	• If oiled wildlife are observed Santos will notify DELWP as soon as practicable. • Any oiled wildlife response is undertaken	Very Low (1)

Environmental Hazard & Source	Known and Potential Impact	Controls	Residual Risk
		under the direction of DELWP with Santos providing support. • Equipment and human resources for oiled wildlife response shall be provided on site. • Only DELWP trained oiled wildlife responders handle wildlife.	
• **Scientific Monitoring**	• Negligible impacts predicted.	• Sampling of water and shoreline sediments undertaken in both affected and non-affected areas. • Use of existing paths and tracks. • Access outside of existing tracks and paths is determined in consultation with DEDJTR EMD.	N/A

Appendix 3: Consultation Summary

Stakeholder	Date of contact	Summary of Consultation/Response	Assessment of Merit of Feedback/Actions
AFMA	11 Sep 15	Meeting with to discuss Commonwealth Fisheries within the Patricia Baleen area. Santos informed AFMA about the non-productive status of the Patricia Baleen plant. From a fisheries perspective little will change. The pipeline and well infrastructure and petroleum safety zone will still be in place. Confirmed only Commonwealth-managed fisheries likely to operate in the area are the Southern and Eastern Scalefish and Shark Fishery and Southern Squid Jig Fishery.	Existing Environment Commercial Fisheries section updated to reflect those Commonwealth fisheries likely to operate in the area. Consultation with individual fishers not required as their interests and activities would not be affected by the non-operational phase. Campaign specific (IMR) consultation to continue.
AMSA	17 Feb 14	Santos has a signed MoU with AMSA regarding response arrangements. Under the MoU AMSA do not require consultation for individual OPEPs. Wording of Santos/AMSA MoU to be included in OPEP. Electronic copy of OPEP required on acceptance by regulator.	Wording of Santos/AMSA MoU included in OPEP. OPEP controlled Copy distribution list updated to include AMSA.
AHO	As required	Notification of vessel activity required via Notice to Mariners.	Notices to Mariners and navigational chart information already in place for Patricia Baleen wells and pipeline. Requirement for Notice to Mariners for IMR vessel activity is included as a performance standard.
AMOSC	24 Sep 15	Met with AMOSC to: • Review spill scenario trajectory predications. • Identify appropriate response strategies. • Identify location of equipment and deployment strategies. • AMOSC to review OPEP final draft. AMOSC advised using the spill trajectory predications analysis from previous modelling to determine the fate modelling/weathering of diesel and condensate in lieu of using Adios.	Updated spill trajectory predications using fate modelling/weathering analysis from previous modelling. Detailed response strategies, equipment locations and deployment in OPEP. Confirmed with Esso use of booms, skimmers and auxiliary equipment via the Mutual Aid Agreement. Sent AMOSC OPEP final draft.
AMOSC	8 Oct 15	Final draft of OPEP submitted to AMOSC for review.	
AMOSC	16 Oct 15	Met with AMOSC to discuss comments on OPEP.	OPEP updated to reflect comments.
DEDJTR –	12 Oct 15	Email from DEDJTR:	Incident reporting details in EP/OPEP updated with

Stakeholder	Date of contact	Summary of Consultation/Response	Assessment of Merit of Feedback/Actions
Energy and Earth Resources Division		• Clarify State reportable incident reporting requirements. • Provide State incident and reporting telephone number. • Provide State reporting email addresses.	reportable incident reporting requirements, telephone number and emails addresses.
DEDJTR - Emergency Management Division (EMD)	25 Sep 15	Met with DEDJTR EMD to: • Present spill scenario trajectory predications. • Present identified response strategies. • Present priorities for protection. • Discuss role of DEDJTR EMD. • Confirmed contact details. From presentation, no issues identified and response strategies seen as appropriate. DEDJTR EMD requested to review final Draft OPEP to confirm and include DELWP review with respect to priority sensitivities and wildlife. OPEP to include: • DEDJTR EMD is the Control Agency in Victorian State Waters. • Given small spill volumes DEDJTR EMD unlikely to activate State IMT or assume incident control but would provide liaison officer within Santos IMT who would coordinate State involvement. • Oiled wildlife response in Victoria is the responsibility of DELWP. • DEDJTR EMD liaison officer would activate DELWP oiled wildlife response capability. • DELWP would work with the OWR officer in the IMT to implement the response. • DEDJTR EMD to review final draft. • DEDJTR EMD would coordinate review and comments and refer to DELWP for advice on OWR. • Once OPEP accepted, Santos to provide an electronic copy to DEDJTR EMD.	OPEP updated to reflect response arrangements with DEDJTR EMD and DEWLP. Final draft of OPEP sent to DEDJTR EMD. OPEP controlled copy distribution list updated to include DEDJTR EMD.
DEDJTR - Emergency	8 Oct 15	Final draft of OPEP submitted to DEDJTR EMD for review. DEDJTR EMD forwarded to DEWLP Wildlife Emergencies	

Stakeholder	Date of contact	Summary of Consultation/Response	Assessment of Merit of Feedback/Actions
Management Division		and Biodiversity Regulation for review.	
DEDJTR - Emergency Management Division DEWLP – Wildlife Emergencies and Biodiversity Regulation	16 Oct 15	Met with DEDJTR EMD and DELWP to discuss comments on OPEP. Comments relate to: • DELWP is a lead agency for oiled wildlife response, not a support agency. • It is not appropriate to use a NEBA to determine whether oiled wildlife will be responded to. If wildlife is oiled, DELWP will respond. It is required under the Protection of Cruelty to Animals Act. • It is appropriate to use NEBA to decide whether to undertake pre-emptive work (i.e. hazing, capture etc).	All comments accepted and OPEP updated to reflect comments.
Department of Economic Development, Jobs, Transport and Resources – Victorian Fisheries (FV)	14 Oct 15	FV has strict privacy requirements within their own Act as well as the Privacy Act and cannot provide any information that might identify fishers. FV did not see any need to notify licence holders specifically about the 'non-operational' phase of the project as their interests and activities would not be affected. Confirmed that Santos' current practice of notifying fishers prior to and during any offshore inspection campaigns will continue throughout the non-operational phase.	Existing Environment Commercial Fisheries section updated to reflect those Victorian fisheries likely to operate in the area. Consultation with individual fishers not required as their interests and activities would not be affected by the non-operational phase. Campaign specific consultation to continue.
Esso Australia	29 Sep 15	Confirmed Esso equipment on the Industry Mutual Aid Equipment Register. Confirmed Santos could access equipment via the AMOSC Mutual Aid Process for Activation.	Esso equipment in Victoria that would be used in a spill response and how activated via AMOSC Mutual Aid included in the OPEP.
Esso Australia	16 Oct 15	Confirmed that Santos response capability is planned without relying on mutual aid, but it may be called upon in an incident if it provides a quicker response. Esso confirmed mutual aid arrangements and that Santos would have access to response kit at their various locations around Victoria. Esso provided Santos with an updated inventory of response equipment available.	Esso equipment in Victoria that would be used in a spill response and how activated via AMOSC Mutual Aid included in the OPEP.

Stakeholder	Date of contact	Summary of Consultation/Response	Assessment of Merit of Feedback/Actions
South East Trawl Fishing Industry Association (SETFIA)	29 July 15	Informal meeting to advise of shut-in of offshore facilities, planned transition to non-operational phase and generally discuss interactions / relationships between oil and gas and fishing industry. Santos advised nothing changing from a physical infrastructure perspective and that routine visual inspections and/or minor maintenance would continue where required. Consultation with respect to offshore campaigns would continue. No issues identified.	No issues raised. Santos undertook to touch base again once further information on non-operational phase is known.
Lakes Entrance Fishermen's Co-operative Limited (LEFCOL) South East Trawl Fishing Industry Association (SETFIA)	15 Oct 15	Meeting to discuss Patricia Baleen non-operations phase and Sole project. SETFIA & LEFCOL advised that while the fishing industry's interests would not be affected by the non-operational phase, they would want to be involved in scoping of any future decommissioning or abandonment. Advised that some infrastructure would be seen as beneficial to be left in situ, while some might be better removed. SETFIA & LEFCOL advised that they agreed that there was no need to consult individual fishers regarding the transition to non-operational phase. SETFIA / LEFCOL advised that Santos' current practice of notifying fishers prior to and during any offshore inspection campaigns is well received and should continue throughout the non-operational phase.	No further consultation required with fisheries in the area in regards to the Patricia Baleen non-operations phase. Consultation would be ongoing with LEFCOL and SETFIA in regards to the Sole project and any offshore decommissioning activities for Patricia Baleen (although these activities are outside the scope of the Non-operational phase EP). Campaign specific consultation to continue as agreed.