



Minerva Decommissioning Progress Report

This annual decommissioning report provides a progress update on BHP's decommissioning activities for the Minerva Field, from 1 January to 31 December 2021, including planning towards and progress with undertaking the actions required by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) General Direction 831.

Description of Facilities

The offshore Minerva gas field is located in graticular block VIC/L22 and comprises the Minerva subsea pipeline which runs from the Minerva wells to the boundary of the Victorian State Waters. Production licence VIC/PL33 is located in Commonwealth waters, approximately 11 km south, south-west of the township of Port Campbell, Victoria.

The Minerva Gas Field was discovered in March 1993. Production of the field ceased in September 2019 and the Minerva-3 and Minerva-4 wells were subsequently suspended.

The facilities encompass:

- Four Minerva wells;

- Associated subsea infrastructure in production licence VIC/L22;
- Subsea pipeline (VIC/PL33) and piggyback umbilical.

Since cessation, the following activities have occurred:

- Flowlines flushed and preserved;
- Well barriers isolated and tested;
- Disconnection of the flowlines from the wells and plugging with pressure retaining plugs;
- Subsea facilities integrity inspection completed with no issues identified.

Decommissioning Progress in 2021

BHP is progressing an Environmental Plan Strategy to meet its obligations under the *Offshore Petroleum Greenhouse Gas Storage Act* (OPGGSA). The Strategy separates Environmental Plans based on activity type, complexity and location.

To meet our obligations under the Act, BHP's general decommissioning principles are:

- That the majority of property be removed from the title area;

- All items with contaminants above the accepted threshold, items that are predominantly plastic, well heads are removed and
- Any other items that are small and easily recoverable are removed.

Deviations from the Act are being considered only for large, benign concrete and steel structures, such as concrete gravity bases, for which an equal or better environmental, safety and well integrity outcome can be justified.

Two Environment Plans are proposed to be submitted to NOPSEMA for the decommissioning of the Minerva field, with the potential for a third.

The Minerva Field Well Plugging and Abandonment Environment Plan covers the following scope:

- Plug and abandon of 4 Minerva wells
- continue field management scopes which comprise inspection, maintenance, monitoring and repair (IMMR) and remotely operated vehicle (ROV) surveys on the remaining subsea infrastructure.

The Environment Plan will be developed and submitted in June 2022.

The Minerva Remove Environment Plan covers the following scope:

- remove subsea infrastructure within the Minerva field in Permit Area VIC –L22.

The Environment Plan will be developed and submitted by 30 December 2022.

Engineering work is still underway to determine if there is a case to leave any equipment in situ. A deviation Environment Plan will be submitted by the end of calendar year 2022, if it is determined that there is an equal or better environmental outcome from decommissioning in situ.

Relevant persons will have the opportunity to provide feedback through the course of BHP’s routine stakeholder engagements in addition to the public consultation period required under Act.

During 2021, the following activities were undertaken:

- Engineering studies to support decommissioning strategy;
- Completion of offshore isolation by disconnecting the flowline from the wells and plugging with pressure retaining plugs, collection of flowline samples;
- Baseline environmental survey;

- Naturally Occurring Radioactive Material survey;
- Analysis of contaminants in subsea flowlines; and
- Collection of an onshore spool sample for contaminants analysis.

Decommissioning Plan in 2022

It is expected that submission of the Environment Plans will occur in 2022 with the initial Environment Plan approved.

During 2022, the following activities are planned:

- Completion of engineering studies to support proposed final end state; and
- Planning for execution campaign.

Legal Obligations

Until such time as decommissioning activities have been completed, BHP will maintain all property on the titles to NOPSEMA’s satisfaction to ensure removal of the property is not precluded, as per the Subsea Integrity Management Plan.

At the completion of the field decommissioning activities BHP will provide, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the title areas within 12 months after property is removed and make good any damage to the seabed or subsoil in the title areas caused by any person engaged or concerned in the operations.

Schedule

An indicative schedule for the activities is provided below:

	2021				2022				2023				2024				2025				2026			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
Minerva Decommissioning																								
Well P&A timeline																								
Facilities Timeline																								
EP development, submissions, approval																								
Well P&A campaign																								
Offshore Removal Campaign																								

Details of General Direction

Details of the General Direction and the associated key planning tasks and timeframes for their completion are tabulated below:

Direction	Key Planning Tasks	Progress in CY2021	Look ahead for CY2022
Direction 1 Plug or close off, to the satisfaction of NOPSEMA, all wells made in the title area by any person engaged or concerned in operations authorised by the title as soon as practicable and no later than 30 June 2025.	WOMP submission	Planning for WOMP development	Submit WOMP, Q3 2022
	P&A/Cessation EP submission	Loss of Well Control study work commenced Planning for EP development, engagement of contractors	P&A EP submission by June 2022
	Rig planning/ engagement		Rig availability study, Q2 2022, Preparation for EOI Q4 2022
Direction 2 Remove, or cause to be removed, to the satisfaction of NOPSEMA, from the title area all property brought into that area by any person engaged or concerned in the operations authorised by the title as soon as practicable and no later than 30 June 2025.	EP submissions	Development of Environmental Plan Strategy, engagement of contractors	Submit Remove EP by 31 Dec 2022
	Study work to support end state conclusions	Engineering studies to support decommissioning strategy; Completion of offshore isolation by disconnecting the flowline from the wells and plugging with pressure retaining plugs, collection of flowline samples; Baseline environmental survey	Complete engineering work to determine if there is a case to leave any equipment in situ, end Q2 2022. Submit Deviation EP Plan by end Q4 2022, if it is determined that there is an equal or better environmental outcome from decommissioning in situ
	Other regulatory permissioning	Commenced engagement with DAWE regarding Sea Dumping Permits	Ongoing engagement with DAWE on Sea Dumping Permit requirements
Direction 3 Until such time as direction 1 and 2 are complete, maintain all property on the title to NOPSEMA's satisfaction, to ensure removal of the property is not precluded.	EP preparation	Ongoing IMMR activities as per Subsea Integrity Management Plan	Ongoing IMMR activities as per Subsea Integrity Management Plan
Direction 4 Provide, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the title area within 12 months after property referred to in direction 2 is removed.	EP preparation and Concept studies	Concept studies have been undertaken to identify feasible decommissioning options	Submission of all EPs in 2022
Direction 5 Make good, to the satisfaction of NOPSEMA, any damage to the seabed or subsoil in the title area caused by any person engaged or concerned in the operations authorised by the title within 12 months after the property referred to in direction 2 is removed.			
Direction 6 Annual progress reporting until all directions have been met	Annual Progress Report	2021 Annual Progress report submitted Dec 2021	Submit Annual Progress report in Dec 2022

