



APPROVAL

The Narrabri Gas Project, Gunnedah Basin, NSW (EPBC 2014/7376)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). Note that section 134(1A) of the EPBC Act applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Santos NSW (Eastern) Pty Ltd
ACN of approval holder	009 321 662
Action	To develop and operate a coal seam gas field in the Gunnedah Basin, southwest of Narrabri, NSW [see EPBC Act referral 2014/7376].

Approval decision

My decisions on whether or not to approve the taking of the action for the purposes of each controlling provision for the action are as follows.

Controlling Provisions

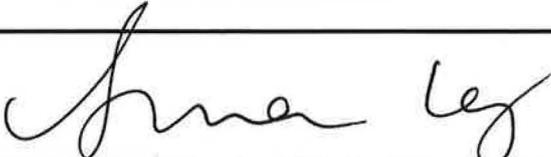
Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve
Coal seam gas or large coal mining development impact on water resources	
Section 24D	Approve
Section 24E	Approve
Commonwealth land	
Section 26	Approve
Section 27A	Approve

Period for which the approval has effect

This approval has effect until 31 December 2045.

Decision-maker

Name and position The Hon Sussan Ley MP
Minister for the Environment

Signature 

Date of decision 24th November 2020

Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

1. The **approval holder** must undertake the action as described in and in accordance with the **NSW approval**.
2. The **approval holder** must not **clear** more than 989 hectares (ha) of **native vegetation** within the **project area** and must not **clear** outside the **project area**.
3. The **approval holder** must notify the **Department** in writing of the date of **commencement** of each **Phase** within 2 **business days** of the date of **commencement** of that **Phase**. The **approval holder** must notify the **Department** in writing of the date of **completion** of each **Phase** within 2 **business days** of the date of **completion** of that **Phase**.
4. To minimise **impacts** on **protected matters**, the **approval holder** must comply with conditions B1-B6 of the **NSW approval** relating to gas field development. The **approval holder** must:
 - a. Provide a copy of the approved Field Development Protocol required by condition B2 of the **NSW approval** and the Field Development **Plan** required by condition B4 of the **NSW approval** to the **Department** within 10 **business days** of them (and of any subsequent approved revised version of either **plan**) being approved by the NSW Government.
 - b. Prior to the **commencement** of **Phase 2**, provide to the **Department** **shapefiles** of the approved location of all **infrastructure**.

Water resources

5. For the protection of **water resources**, the **approval holder** must comply with conditions A15-A17 and B26-B42 of the **NSW approval** relating to water management.

The **approval holder** must achieve and maintain the **performance measures** in the **NSW approval** to demonstrate that the outcomes and sub-outcomes specified in [Appendix B](#) are being achieved and maintained.
6. The **approval holder** must provide the **Department** with the approved Water Management **Plan** required by condition B41 of the **NSW approval** within 2 **business days** of its approval by the NSW Planning Secretary. The **approval holder** must notify the **Department** within 2 **business days** of any proposed changes to the approved Water Management **Plan**. If the NSW Planning Secretary approves a revised version of the Water Management **Plan**, the **approval holder** must provide the **Department** with the approved revised Water Management **Plan** within 2 **business days** of its approval by the NSW Planning Secretary.
7. The **approval holder** must establish an early warning monitoring system to detect groundwater pressure changes in deeper hydrostratigraphic units, so as to be able to take corrective actions in sufficient time to prevent **impacts** in shallow productive aquifers and **GDEs**. In addition to the monitoring requirements specified in the approved Groundwater Management **Plan** required under condition B41 of the **NSW approval**, the **approval holder** must:
 - a. Establish and maintain a network of groundwater monitoring bores across the **project area** in the Napperby Sandstone. In the **project area** where the Napperby Sandstone is in direct contact with the Namoi Alluvium, an appropriate network of groundwater monitoring bores must also be established and maintained in those areas in the Digby Formation. These monitoring bores must be installed prior to the commencement of **Phase 2**;
 - b. Monitor groundwater levels in these bores at a minimum of 3-monthly intervals from the commencement of **Phase 1** or bore construction (whichever is first) until the **completion of the action**; and

- c. Publish all groundwater monitoring data from all bores, updated to add the most recent readings each quarter, on the **website**, and maintain that data on the **website** until the **completion of the action**. The monitoring data must include hydrographs for all monitoring bores and explain what the data means in relation to the groundwater performance criteria specified in the NSW-approved Groundwater Management **Plan**.
8. If, at any time until the end date of this approval:
 - a. the **approval holder** detects an exceedance of any groundwater performance criterion (including trigger levels), specified in the approved Groundwater Management **Plan** required by condition B41 of the **NSW approval**; and/or
 - b. the groundwater model, including any update required under condition B39 of the **NSW approval**, predicts an exceedance of the groundwater performance criteria (including trigger levels), specified in the approved Groundwater Management **Plan**;

the **approval holder** must notify the **Department** of the exceedance within 10 **business days** of detecting or predicting the exceedance.
 9. The **approval holder** must, within 6 months of detecting or predicting an exceedance as described in condition 8, publish on the **website** a report describing:
 - a. all potential and actual **impacts** to **water resources** arising from the exceedance;
 - b. any further investigations undertaken to determine the cause of and remedy for the exceedance; and
 - c. the mitigation and management measures that the approval holder has taken and proposes to take to reverse the exceedance, including data demonstrating the effectiveness of the mitigation and management measures.

The **approval holder** must notify the **Department** within 2 **business days** of the report being published and retain the report on the **website** for the life of the approval.
 10. If, after the implementation of condition 9 the **approval holder** detects or predicts that the outcomes specified in Appendix B cannot or will not be achieved, or the **Minister** considers that the outcomes specified in Appendix B cannot or will not be achieved, then the **approval holder** must provide a site-specific assessment for the **Minister's** written approval within 3 months of making the prediction or of receiving a request from the **Minister**.
 11. Each site-specific assessment must incorporate data collected from the groundwater monitoring bores required by condition 7 and be prepared by a **suitably qualified water resources expert** to derive a scientifically-robust **cease-work limit**. Each site-specific assessment must include justification for how the outcomes specified in Appendix B will be achieved and maintained and include:
 - a. multiple lines of evidence and field data to support the assessment of the environmental value and groundwater-dependence of any potential **GDEs** identified in the area of predicted **impact**;
 - b. conceptual modelling, including a review of all historical monitoring data to determine the stressor-response relationships for any potential **GDEs** and consideration of potential contributing activities;
 - c. local scale numerical modelling with consideration of potential contributing activities and identification of potential **contributing well/s**; and
 - d. a peer review undertaken by an **independent suitably qualified water resources expert** including details of how the **approval holder** has addressed any inadequacies raised in the peer review.

12. The **approval holder** must publish each site-specific assessment approved by the **Minister** on its **website** within 5 **business days** of receiving approval for the site-specific assessment and for the remainder of the life of the action.
13. The **Minister** may specify an interim **cease-work limit** to manage groundwater **impacts** where the **Minister** is not satisfied that the **cease-work limit** proposed by the **approval holder** in accordance with condition 11 will ensure the outcome/s specified in Appendix B will be, or are likely to be, achieved and maintained.
14. If the **approval holder** detects or is informed that a **cease-work limit** has been exceeded the **approval holder** must, in addition to the **incident** reporting requirements of condition 35, provide in writing details of the **contributing well/s** to the **Department** within 10 **business days** of the detection or of being informed.
15. Unless otherwise notified by the **Minister** in writing, the **approval holder** must **cease groundwater extraction** associated with any **contributing well/s** within 10 **business days** of reporting the exceedance of a **cease-work limit** to the **Department**.

*Note: The **Minister**, in determining whether to give notice to the **approval holder** that it is not required to cease **groundwater extraction**, will consider all relevant information including but not limited to legislation and policy, information provided by the **approval holder**, and any other information available to the **Minister** at the time of the decision.*

16. If the **approval holder** has been required to cease **groundwater extraction** pursuant to condition 15 the **approval holder** must implement corrective actions so as to achieve and maintain the outcomes and sub-outcomes specified in Appendix B.
17. The **approval holder** must not recommence **groundwater extraction** from any **contributing well/s** until it can be demonstrated that the outcomes and sub-outcomes specified in Appendix B are being achieved and the **Minister** approves in writing **groundwater extraction** from those **contributing well/s**.

*Note: Approval to recommence **groundwater extraction** may be subject to conditions that the **Minister** considers reasonable.*

Chemicals management

18. To minimise **impacts** on **water resources**, the **approval holder** must comply with conditions B67-B71 of the **NSW approval** relating to chemicals and waste.
19. The **approval holder** must, prior to the commencement of **coal seam gas operations**, submit to the **Minister** for written approval a Chemical Risk Assessment Framework (CRAF) that details how the risk of adverse **impacts** on **protected matters** posed by **chemicals** will be assessed and managed for the duration of this approval. The CRAF must include, but is not limited to:
 - a. Details of how these risks will be assessed consistent with **best practice risk assessment methodologies**, and how assessment will address:
 - i the process lifecycle for **chemicals**;
 - ii how risk from geogenic chemicals in recovered drilling fluids will be managed to prevent adverse **impacts** to **protected matters**; and
 - iii minimum mitigation and management measures to be undertaken as part of **coal seam gas operations**.
 - b. Details of the criteria by which **chemicals** will be categorised, based on the properties of each **chemical**. Criteria must include, but not be limited to:
 - i combined persistence, bioaccumulative and toxicity assessment;
 - ii chemical database of concern assessment; and
 - iii specific persistence, bioaccumulative and toxicity assessment.

These details must be used to determine the risk assessment requirements appropriate to all **chemicals** in each category. This will include consideration of toxicological profile, qualitative risk assessment, quantitative risk assessment and site-specific information requirements.

- c. Detail a risk assessment process for each **chemical** to determine risk to **protected matters** from the **chemical's** use. This process must:
 - i identify the risk assessment requirements based on the **chemical's** category;
 - ii consider the **chemical's** intended use and function, and an estimation of the quantity of the **chemical** likely to be used, and at what concentration, in a typical year;
 - iii consider the likely **environmental fate** of the **chemical**; and
 - iv consider what, if any, mitigation and management measures are needed to prevent adverse **impacts to protected matters** from that **chemical** for the duration of this approval.
 - d. Details of the process by which risk assessments for **low risk chemicals** will be peer reviewed by an **independent chemical risk assessment expert**. This process must:
 - i consider any checklists completed by the **independent chemical risk assessment expert**, to demonstrate that risks have been adequately assessed; and
 - ii include provision of a signed and dated statement from the **independent chemical risk assessment expert** confirming that the **chemical** has been correctly categorised.
 - e. Detail a process for recording each **chemical's** risk assessment in a register on the **approval holder's website** and for the provision of each **chemical's** risk assessment to the **Department**.
 - f. Details of a process to monitor and report on the implementation of any mitigation and management measures undertaken during use and handling of **chemicals** to demonstrate no adverse **impacts to protected matters**, including processes to notify the **Department** if an adverse **impact to protected matters** is detected.
 - g. Details of the process by which information in the risk assessments will be adaptively used to address any accidental release of a **chemical** to prevent adverse **impacts to protected matters**.
20. The **approval holder** must not commence **coal seam gas operations** until the CRAF has been approved by the **Minister** in writing. The **approval holder** must implement the approved CRAF for the duration of this approval and publish the CRAF on its **website** within 20 **business days** of it being approved by the **Minister** and for the duration of this approval.
 21. The **approval holder** must not use a **low risk chemical** until that **chemical's** risk assessment has been recorded in the register and it has been provided to the **Department** as required by the approved CRAF.
 22. The **approval holder** must not use a **high risk chemical** until the **Minister** has approved that **chemical's** risk assessment in writing and the risk assessment has been recorded in the register as required by the approved CRAF.
 23. The **approval holder** must engage a **chemical risk assessment expert** to peer review all risk assessments at least once every 5 years, commencing from the date of the **Minister's** approval of the CRAF. The peer review of all risk assessments must be completed before the end of each 5-year anniversary of the **Minister's** approval of the CRAF. The peer review must include:
 - a. an assessment of whether all risk assessments on the register are consistent with current scientific knowledge;
 - b. an evaluation of the adequacy of relevant monitoring, mitigation and management measures that have been implemented by the **approval holder**; and

- c. an explanation of how the **approval holder** will address or has addressed any concerns raised by the peer review.
24. The **approval holder** must, within 60 **business days** of the completion of the peer review, submit to the **Department** a signed statement by the **chemical risk assessment expert** detailing the findings of the 5-year peer review and evidence of how any concerns raised by the peer review have been addressed.

Threatened species and communities

25. The **approval holder** must comply with conditions B43 - B52 of the **NSW approval** as they relate to the following **protected matters**:
- a. **Brigalow woodland**;
 - b. **Weeping Myall woodland**;
 - c. **Regent Honeyeater**;
 - d. **Koala**;
 - e. **Spotted-tail Quoll**;
 - f. **Swift Parrot**;
 - g. **Superb Parrot**;
 - h. **South-eastern Long-eared Bat**;
 - i. **Pilliga Mouse**;
 - j. *Bertya oppositifolia*;
 - k. *Lepidium aschersonii*;
 - l. *Lepidium monoplocoides*;
 - m. *Androcalva procumbens*; and
 - n. *Tylophora linearis*.
26. The **approval holder** must, prior to any exceedance of **Phase 2** credits specified in Tables 8-10 of the **NSW approval**, advise the **Department** in writing of the actual **impacts** to any **protected matters** listed in condition 25 (a-i), or modelled **impacts** for **protected matters** listed in condition 25 (j-n), and the residual credits to be **retired** for **protected matters**.
27. Prior to the **commencement** of **Phase 3**, the **approval holder** must provide the **Department** with:
- a. **shapefiles** and other identifying information, as agreed to in writing by the **Department**, of all records of **protected matters** located during surveys undertaken for the assessment of the **action** and for in-field micro-siting;
 - b. **shapefiles** of the actual **clearance areas** for each of the **protected matters**; and
 - c. a copy of either the credit retirement report or statement of assessment of reasonable equivalence issued by **BCD** and **shapefiles** of the final offset/s.

Commonwealth land

28. To minimise visual and lighting **impacts** to Siding Spring Observatory, the **approval holder** must comply with condition B65 (a-d) of the **NSW approval**.

Part B – Standard administrative conditions

Notification of date of commencement of the action

29. The **approval holder** must notify the **Department** in writing of the date of **commencement of the action** within 10 **business days** after the date of **commencement of the action**.

30. If the **commencement of the action** does not occur within 5 years from the date of this approval, then the **approval holder** must not **commence the action** without the prior written agreement of the **Minister**.

Compliance records

31. The **approval holder** must maintain accurate and complete **compliance records**.
32. If the **Department** makes a request in writing, the **approval holder** must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request.

Note: Compliance records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the Department's website or through the general media.

Annual compliance reporting

33. The **approval holder** must prepare a **compliance report** every calendar year from **commencement of the action**. The **approval holder** must:
- publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;
 - notify the **Department** by email that a **compliance report** has been published on the **website** and provide the weblink for the **compliance report** within 5 **business days** of the date of publication;
 - keep all **compliance reports** publicly available on the **website** until this approval expires;
 - exclude or redact **sensitive ecological data** from **compliance reports** published on the **website**; and
 - where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.
34. The **compliance report** must also include a dedicated section on groundwater that includes, but is not limited to, the following information:
- all relevant interpreted and analysed groundwater monitoring data (including level, pressure and water quality).
 - evidence that groundwater performance criteria in the NSW-approved Groundwater Management **Plan** have been achieved.
 - how the management measures committed to in the approved Water Management **Plan** have been effective in achieving **performance measures** and the outcomes for groundwater resources specified in Appendix B.
 - if condition 9 is triggered, a description of any mitigation and management measures implemented to achieve the outcomes specified in Appendix B, and monitoring data showing the effectiveness of those measures.
 - a report of all recommendations made by each Water Technical Advisory Group meeting. This must include a statement of how these recommendations have been implemented and where they have not, a statement as to why not.
 - evidence that all points in condition B39 (f) (vi) of the **NSW approval** are not exceeded.

Note: Compliance reports may be published on the Department's website.

Reporting non-compliance

35. The **approval holder** must notify the **Department** in writing of any **incident** within 2 **business days**, or any non-compliance with the conditions of this approval within 10 **business days**. The notification must specify:
- a. any condition which is or may be in breach, including a reference to the relevant NSW condition (if required);
 - b. a short description of the **incident** and/or non-compliance; and
 - c. the location (including co-ordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.
36. The **approval holder** must provide to the **Department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:
- a. any corrective action or investigation which the **approval holder** has already taken or intends to take in the immediate future;
 - b. the potential **impacts** of the **incident** or non-compliance; and
 - c. the method and timing of any remedial action that will be undertaken by the **approval holder**.

Submission and publication of plans

37. The **approval holder** must:
- a. submit **plans** electronically to the **Department**;
 - b. unless otherwise agreed to in writing by the **Minister**, publish each **plan** on the **website** within 20 **business days** of the date:
 - i of this approval, if the version of the **plan** to be implemented is specified in these conditions; or
 - ii that the **plan** is submitted to the **Minister** or the **Department** if the **plan** does not require the approval of the **Minister** but was not finalised before the date of this approval; or
 - iii that the **plan** was approved by the **Minister** in writing, if the **plan** requires the approval of the **Minister**;
 - c. exclude or redact **sensitive ecological data** from **plans** that are to be published on the **website** or provided to a member of the public; and
 - d. keep **plans** published on the **website** for the period for which this approval has effect.

Independent audit

38. The **approval holder** must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**.
39. For each **independent audit**, the **approval holder** must:
- a. provide the name and qualifications of the **independent** auditor and the draft audit criteria to the **Department**;
 - b. only commence the **independent audit** once the audit criteria have been approved in writing by the **Department**; and
 - c. submit an audit report to the **Department** within the timeframe specified in the approved audit criteria.

40. The **approval holder** must publish the audit report on the **website** within 10 **business days** of receiving the **Department's** approval of the audit report and keep the audit report published on the **website** until the end date of this approval.

Completion of the action

41. Within 30 **business days** after whichever is the earlier of:

- a. the **completion of the action**, or
 - b. 60 **business days** before the end date of the period for which this approval has effect;
- the **approval holder** must notify the **Department** in writing and provide **completion data**.

If **completion of the action** is unlikely to occur before the end date of the period for which the approval has effect, the **approval holder** must submit to the **Department**, before the end date of the period for which the approval has effect, a request, in accordance with the requirements of section 145C of the **EPBC Act**, to extend the period of effect of the approval.

Part C - Definitions

In these conditions, except where contrary intention is expressed, the following definitions are used:

Androcalva procumbens means *Androcalva procumbens* (previously *Rulingia procumbens*) listed as a threatened species under the **EPBC Act**.

Approval holder means the person to whom the approval is granted as identified on the approval notice for EPBC 2014/7376, or to whom the approval is transferred under section 145B of the **EPBC Act**, or a person who may take the action in accordance with section 133(2A) of the **EPBC Act**.

Aquatic GDEs means groundwater dependent ecosystems dependent on the surface expression of groundwater, including:

- river baseflow systems, aquatic and riparian ecosystems that exist in or adjacent to streams (including the hyporheic zone (subsurface interface between surface and groundwater bodies)) which are fed by groundwater; and
- **wetlands** (aquatic communities and fringing vegetation dependent on groundwater-fed lakes and **wetlands**), including palustrine (non-tidal **wetlands** dominated by vegetation) and lacustrine (lake) **wetlands** that receive groundwater discharge, and can include spring and swamp ecosystems.

Associated users means groundwater supply bores, **aquatic GDEs**, **terrestrial GDEs** and **subterranean GDEs**.

BCD means the Biodiversity Conservation Division of the NSW Department of Planning, Industry and Environment.

Bertya opponens means *Bertya opponens* listed as a threatened species under the **EPBC Act**.

Best practice risk assessment methodology means a risk assessment in accordance with best practice national or international standards and guidelines and may be based on the following:

- US EPA (2014). EPA-Expo-Box (A Toolbox for Exposure Assessors), available at <https://www.epa.gov/expobox>
- OECD (2014). "The OECD Environmental Risk Assessment Toolkit: Tools for Environmental Risk Assessment and Management, available at <https://www.oecd.org/env/ehs/risk-assessment/environmental-risk-assessment-toolkit.htm>
- The most recently published and approved guideline recommended by the **Minister**.

Brigalow woodland means the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community listed as a threatened ecological community under the **EPBC Act**.

Business day means a day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.

Cease groundwater extraction means to promptly discontinue all **groundwater extraction** from the **contributing well/s**.

Cease-work limit means a groundwater drawdown limit, agreed to or set by the **Minister** in writing, beyond which the **approval holder** must **cease groundwater extraction** at the identified **contributing well/s**.

Chemical/s means the drilling fluid compound/s to be used in, or arising from, **coal seam gas operations**.

Chemical risk assessment expert/s means a natural person with a relevant postgraduate degree (or equivalent) and a minimum of 10 years relevant experience in chemical risk assessment, including at least one year of experience in Australia

Clear/ clearing/ clearance means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation (but not including weeds – see the *Australian weeds strategy 2017 to 2027* for further guidance) available from <https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/pests-diseases-weeds/consultation/aws-final.pdf>.

Coal seam gas operations means the drilling of coal seam gas wells.

Commencement of a phase means the first instance of any specified activity associated with the **phase**.

Commencement of the action means the first instance of any specified activity associated with the action, including clearing and **construction**. **Commencement of the action** does not include minor physical disturbance necessary to:

- undertake pre-clearance surveys or monitoring programs;
- install signage and /or temporary fencing to prevent unapproved use of the project area;
- protect environmental and property assets from fire, weeds and pests, including the erection of temporary fencing, and use of existing surface access tracks; and
- install temporary site facilities for persons undertaking pre-commencement activities so long as these are located where they have no **impact** on the **protected matters**.

Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met. The **Department's** preferred spatial data format is **shapefile**.

Completion of a phase means all specified activities associated with that **phase** have permanently ceased.

Completion of the action means all specified activities associated with the action have permanently ceased.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the **approval holder's** possession or that are within the **approval holder's** power to obtain lawfully.

Compliance reports/reporting means written reports:

- providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions and the **plans**;

- consistent with the **Department's Annual Compliance Report Guidelines** (2014) found at <https://www.environment.gov.au/epbc/publications/annual-compliance-report-guidelines>;
- include a **shapefile** of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period; and
- annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

Contributing well/s means any coal seam gas development well/s identified as contributing, or likely to be contributing, to the exceedance of a **cease-work limit**.

Department means the Australian Government agency responsible for administering the **EPBC Act**.

Development means any activity associated with the exploration, construction, operation, production and decommissioning of a coal seam gas action.

Ecosystem services means the benefits and services obtained from **water resources**. These include:

- provisioning services (e.g. use by other industries and use as drinking water);
- regulating services (such as the climate regulation or the stabilisation of coastal systems);
- cultural services (including recreation and tourism, science and education); and
- supporting services (e.g. maintenance of ecosystem function).

Environmental fate means the processes by which chemicals move and are transformed into the environment.

Environmental value means a quality or physical characteristic of the **associated user** that is conducive to ecological health, public amenity or safety. When determining **environmental value**, the **approval holder** must additionally consider, but not be limited to, relevant **threatened species and communities** and their associated approved Conservation Advices, Recovery Plans and Threat Abatement Plans.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Floodplain means flat land beside a river that is inundated when the river overflows its banks during a flood.

Function means the ecosystem components, processes and benefits or services that characterise the **associated user**, including support for biological diversity or species composition.

GDE means a groundwater dependent ecosystem.

Groundwater extraction means the process of extracting groundwater from an aquifer, including as a by-product of coal seam gas production.

Habitat means the subterranean living and non-living components of where an organism and/or ecological community exists.

High risk chemical means a chemical that is identified as a Persistent Bioaccumulative Toxic chemical, or a chemical which exhibits **toxicity of potential concern**, or is listed as a chemical of concern on the following databases:

- European Union Substance of Very High Concern (EU SVHC).
- US National Toxicology Program (US NTP) Report on Carcinogens or International Agency Research on Cancer (IARC) Monographs.

- European Commission Endocrine Disruptors Strategy - list of Category 1 substances with endocrine disrupting capacity.
- Chemical Substances Control Law of Japan (CSCL) Class I and II Specified Chemical.

Impact/s means any measurable direct or indirect harmful change.

Incident means any event which has the potential to, or does, **impact** on one or more **protected matter/s** other than as authorised by this approval.

Independent means a person/s that does not have any individual, or by employment or family affiliation, conflicting or competing interest/s with the **approval holder**; the **approval holder's** staff, representatives or associated persons; or the action, including any personal, financial, business or employment relationship, other than receiving payment for undertaking the role for which the condition requires an independent person.

Independent audit: means an audit conducted by an independent and **suitably qualified person** as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2019) found at <https://www.environment.gov.au/epbc/publications/independent-audit-report-guidelines-2019>.

Independent suitably qualified water resources expert means a person with at least a postgraduate degree (or equivalent) in a suitable and relevant area (such as hydrology, hydrogeology or ecology) and a minimum of 10 years relevant experience in assessing **GDEs**, including at least one year of experience in Australia, who is **independent** of the **suitably qualified water resources expert**.

Infrastructure has the same meaning as 'project-related infrastructure' in the **NSW approval** and means all **infrastructure** associated with the action.

Instream means anywhere within the stream channel up to bankfull channel edge, which is a stream channel elevation point capable of containing flow events below those that would result in discharge to a **floodplain**.

Koala means the Koala (*Phascolarctos cinereus* (combined populations of Qld, NSW and the ACT)) listed as a threatened species under the **EPBC Act**.

Lepidium aschersonii means *Lepidium aschersonii* (Spiny Pepper-cress) listed as a threatened species under the **EPBC Act**.

Lepidium monoplacoides means *Lepidium monoplacoides* (Winged Pepper-cress) listed as a threatened species under the **EPBC Act**.

Like-for-like credits has the meaning given under the *Threatened Species Conservation Act 1995* (NSW) (now repealed); or the *Biodiversity Conservation Act 2016* (NSW) and *Biodiversity Conservation Regulation 2017* (including the *Biodiversity Conservation Amendment (Controlled Actions) Regulation 2019*).

Limit means a threshold that must not be exceeded.

Low risk chemical means a **chemical** that is not identified as a Persistent Bioaccumulative Toxic chemical and is not listed as a chemical of concern on the following databases:

- European Union Substance of Very High Concern (EU SVHC).
- US National Toxicology Program (US NTP) Report on Carcinogens or International Agency Research on Cancer (IARC) Monographs.
- European Commission Endocrine Disruptors Strategy - list of Category 1 substances with endocrine disrupting capacity.
- Chemical Substances Control Law of Japan (CSCL) Class I and II Specified Chemical.

Maintain/ maintaining / maintained means the level and quality of groundwater and surface water discharge remains within the bounds of natural variability.

Monitoring data means the data required to be recorded under the conditions of this approval.

Minister means the Australian Government Minister administering the **EPBC Act** including any delegate thereof.

Native vegetation means any trees (including any sapling or shrub or any scrub), understorey plants, groundcover, and / or any plants occurring in a wetland, that are of species that were established in Northern New South Wales before European settlement.

No adverse effect/s means not reaching or exceeding an approved or interim **cease-work limit**, as a result of the **development**.

NSW approval means the Independent Planning Commission of NSW's Statement of Reasons and Development Consent, dated 30 September 2020. All documents for the Narrabri Gas Project (SSD-6456) are provided on the NSW Major Projects website at <https://www.planningportal.nsw.gov.au/major-projects/project/10716>. The NSW approval conditions referred to in this notice are the conditions in the Development Consent.

Performance measure/s means the water management performance measures specified in Table 7 of the Development Consent of the **NSW approval**.

Phase/s means each of Phase 1, Phase 2, Phase 3 and Phase 4 as defined in the **NSW approval**.

Pilliga Mouse means the Pilliga Mouse (*Pseudomys pilligaensis*) listed as a threatened species under the **EPBC Act**.

Plan/s means any of the documents required to be prepared, approved by the **Minister**, implemented by the **approval holder** and/or published on the **website** in accordance with these conditions (including those **plans** required by the **NSW approval** and required under the **EPBC Act** conditions).

Project area means the area enclosed by the red boundary line designated as 'Project area' in [Appendix A](#).

Protected matter/s means a matter protected under a controlling provision in Part 3 of the **EPBC Act** for which this approval has effect, including threatened species and communities listed under condition 25.

Regent Honeyeater means the Regent Honeyeater (*Anthochaera phrygia*) listed as a threatened species under the **EPBC Act**.

Retiring/ retirement (of credits) means to change the status of a credit such that the credit can no longer be bought or sold.

Riparian Zone means the area along the bank of a river or a stream, where wholly or partially groundwater-dependent vegetation would grow under undisturbed circumstances.

Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) *Sensitive Ecological Data – Access and Management Policy V1.0* at <https://www.environment.gov.au/system/files/resources/246e674a-feb1-4399-a678-be9f4b6a6800/files/sensitive-ecological-data-access-mgt-policy.pdf>.

Shapefile means location and attribute information of the action provided in an Esri shapefile format. Shapefiles must contain '.shp', '.shx', '.dbf' files and a '.prj' file that specifies the projection/geographic coordinate system used. **Shapefiles** must also include an '.xml' metadata file that describes the **shapefile** for discovery and identification purposes.

South-eastern Long-eared Bat means the South-eastern Long-eared Bat (*Nyctophilus corbeni*) listed as a threatened species under the **EPBC Act**.

Spotted-tail Quoll means the Spotted-tail Quoll (*Dasyurus maculatus maculatus* (SE mainland population)) listed as a threatened species under the **EPBC Act**.

Subterranean GDEs means groundwater dependent ecosystems partially or completely dependent on aquifer ecosystems, including stygofauna.

Suitably qualified water resources expert means a person with at least a degree in a suitable area related to the **associated user** (such as hydrology or hydrogeology) and a minimum of 5 years relevant experience in **water resources** assessment, including at least one year of experience in Australia.

Superb Parrot means the Superb Parrot (*Polytelis swainsonii*) listed as a threatened species under the **EPBC Act**.

Swift Parrot means the Swift Parrot (*Lathamus discolor*) listed as a threatened species under the **EPBC Act**.

Terrestrial GDEs means land-based groundwater dependent ecosystems that are partially or wholly dependent on the subsurface presence of groundwater.

Toxicity of potential concern means acute or chronic toxicity meeting one of more of the following criteria:

- Acute Fish Toxicity: 96h LC50 < 1 mg/L
- Acute Invertebrate Toxicity: 48h EC50 < 1 mg/L
- Acute Algae and other aquatic plant toxicity: 72 or 96 h ErC50 < 1 mg/L
- Chronic Fish Toxicity: NOEC or Ecx < 0.1 mg/L
- Chronic Invertebrate Toxicity: NOEC or Ecx < 0.1 mg/L
- Chronic Algae or other Aquatic Plant Toxicity: NOEC or Ecx < 0.1 mg/L

Trigger value/s means values specified such that, if they are reached or exceeded (either through modelling or monitoring), the **approval holder** is able to implement management responses to ensure that **limits** are not exceeded.

Tylophora linearis means *Tylophora linearis* listed as a threatened species under the EPBC Act.

Water regime means the pattern of flow in a river or stream which can be described in terms of quantity, frequency, duration and seasonal nature of water flows.

Water resource/s means:

- surface water or groundwater; or
- a watercourse, lake, **wetland** or aquifer (whether or not it currently contains water);
- and includes all aspects of the **water resource** (including water, organisms and other components and ecosystems that contribute to the physical state and **environmental value** of the **water resource**) as defined in the *Water Act 2007* (Cth).

Website means a set of related web pages located under a single domain name attributed to the **approval holder** and available to the public.

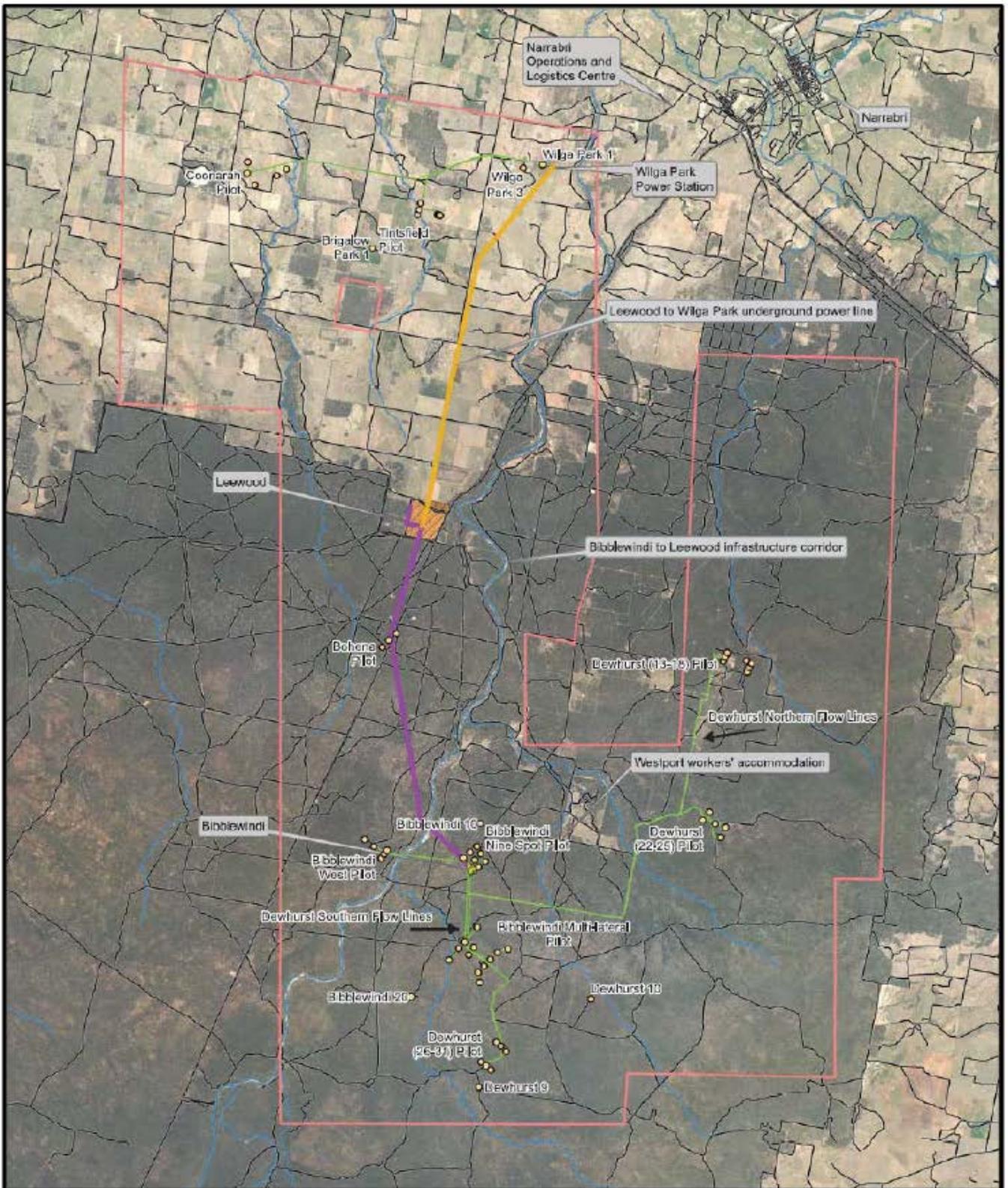
Weeping Myall woodland means the Weeping Myall Woodlands ecological community listed as a threatened ecological community under the **EPBC Act**.

Wetland/s means land intermittently or permanently inundated with water that is usually slow moving or stationary, shallow, can be fresh, brackish or saline, and where the inundation affects the plant and animal communities present and the type and productivity of soil.

APPENDICES

- 1. Appendix A – Location of the action**
- 2. Appendix B – Outcomes for water resource**

Appendix A – location of the action



LEGEND

Project area	Watercourses	Leewood to Wilga Park infrastructure corridor	Existing wells
Leewood	Train line	Biblewindi to Leewood infrastructure corridor	
Biblewindi	Existing flowlines	Roads/tracks	

 Map Projection: Transverse Mercator Horizontal Datum: GDA 1984 Grid: GDA 1984 MGA Zone 55	 	Narrabri Gas Project Environmental Impact Statement Existing infrastructure	Job Number: 21-22463 Revision: A Date: 00 Sep 2016 Figure 2-4
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Appendix B – outcomes for water resources (groundwater and surface water)

The **approval holder** is considered to have achieved and maintained the outcomes listed below for **water resources** if it has achieved and maintained all relevant **performance measures**.

GROUNDWATER	Unconsolidated Hydrogeological Units				
	Outcome	Conditions within unconsolidated hydrogeological units, including water level/pressure and water quality, maintain or improve ecosystem services and access by associated users			
	Associated Users	Water supply bores	Aquatic GDEs	Terrestrial GDEs	Subterranean GDEs
	Sub-outcome	Bore continues to supply water for its intended purpose, or is made good.	No adverse effects on the function and environmental values due to CSG development .	No adverse effects on the function and environmental values due to CSG development .	Habitat is maintained or improved.
	Consolidated Hydrogeological Units				
	Outcome	Conditions within consolidated hydrogeological units, including water level/pressure and water quality, maintain or improve ecosystem services and access by associated users			
	Associated Users	Water supply bores	Aquatic GDEs	Terrestrial GDEs	Subterranean GDEs
	Sub-outcome	Bore continues to supply water for its intended purpose, or is made good.	No adverse effects on the function and environmental values due to CSG development .	No adverse effects on the function and environmental values due to CSG development .	Habitat is maintained or improved.
SURFACE WATER	Surface water features				
	Outcome	Conditions within instream, riparian zone, wetland and floodplain , including water regime , and water quality; maintain or improve ecosystem services .			