

# Permit

## Environmental Protection Act 1994

### Environmental authority EPPG00828813

*This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.*

#### Environmental authority number: EPPG00828813

**Environmental authority takes effect on** 14 March 2022

The anniversary date of this environmental authority is 15 February each year.

An annual return will be due each year on 01 April.

#### Environmental authority holder(s)

| Name(s)                           | Registered address                                      |
|-----------------------------------|---------------------------------------------------------|
| BRIDGEPORT (COOPER BASIN) PTY LTD | Level 7<br>111 Pacific Highway<br>NORTH SYDNEY NSW 2060 |

#### Environmentally relevant activity and location details

| Environmentally relevant activity/activities              | Location(s) |
|-----------------------------------------------------------|-------------|
| Non-Scheduled - Petroleum Activity - Petroleum Lease (PL) | PL482       |
| Non-Scheduled - Petroleum Activity - Petroleum Lease (PL) | PL483       |
| Non-Scheduled - Petroleum Activity - Petroleum Lease (PL) | PL484       |

#### Additional information for applicants

##### Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

#### Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days)

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website [www.qld.gov.au](http://www.qld.gov.au), using the search term 'duty to notify'.

#### Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

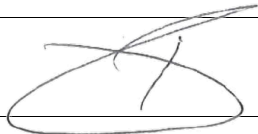
- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority - on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

The anniversary day of this environmental authority is the same day each year as the original take effect date unless you apply to change the anniversary day. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.



Signature

14 March 2022

Date

Tristan Roberts  
Department of Environment and Science  
Delegate of the administering authority  
*Environmental Protection Act 1994*

**Enquiries:**

Energy and Extractive Resources  
GPO Box 2454, BRISBANE QLD 4001  
Phone: (07) 3330 5715  
Email: [EnergyandExtractive@des.qld.gov.au](mailto:EnergyandExtractive@des.qld.gov.au)

**Privacy statement**

Pursuant to section 540 of the EP Act, the Department is required to maintain a register of certain documents and information authorised under the EP Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able to take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the EP Act. There is no general discretion allowing the Department to withhold documents or information required to be kept on the public register. For more information on the Department's public register, search 'public register' at [www.qld.gov.au](http://www.qld.gov.au). For queries about privacy matters please email [privacy@des.qld.gov.au](mailto:privacy@des.qld.gov.au) or telephone 13 74 68.

**Obligations under the *Environmental Protection Act 1994***

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

**Other permits required**

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access state controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

**Obligations under the *Mining and Quarrying Safety and Health Act 1999***

If you are operating a quarry, other than a sand and gravel quarry where there is no crushing capability, you will be required to comply with the *Mining and Quarrying Safety and Health Act 1999*. For more information on your obligations under this legislation contact Mine Safety and Health at <https://www.rshq.qld.gov.au/>, or phone 13 QGOV ( 13 74 68 ) or your local Mines Inspectorate Office.

**Development Approval**

This permit is not a development approval under the *Planning Act 2016*. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. If you are unsure that you have the most current version of the environmental authority relating to this site please visit <https://apps.des.qld.gov.au/env-authorities/> to access all environmental authorities currently approved.

**Conditions of environmental authority**

This environmental authority consists of the following Schedules and Appendices:

|            |                                           |
|------------|-------------------------------------------|
| Schedule A | General Conditions                        |
| Schedule B | Water                                     |
| Schedule C | Dams                                      |
| Schedule D | Land                                      |
| Schedule E | Disturbance to Land                       |
| Schedule F | Environmental Nuisance                    |
| Schedule G | Waste                                     |
| Schedule H | Rehabilitation                            |
| Schedule I | Well Drilling, Completion and Stimulation |
| Schedule J | Community Issues                          |
| Schedule K | Notification Procedures                   |
| Schedule L | Definitions                               |

**SCHEDULE A – GENERAL CONDITIONS****Authorised Activities**

- (A1) This environmental authority authorises petroleum activities which are limited to:
- (a) conventional oil and gas activities, including wells and incidental activities such as well pads, water pumps and generators associated with well operations, sumps for storing drilling muds and flare pits;
  - (b) low hazard dams;
  - (c) dams other than those defined as regulated dams;
  - (d) borrow pits;
  - (e) pipelines associated with production testing (excluding pipelines that require a pipeline license);
  - (f) temporary structures such as accommodation camps;
  - (g) sewage treatment plants if the combined total daily peak design capacity is no more than 21 equivalent persons (EP) or if it is operated as a 'no-release' works with a total daily peak design capacity of at least 21 EP.

**Work program and development plan**

- (A2) The following must be submitted to the administering authority:
- (a) a copy of the initial work program, later work programs and any amendments to work programs when submitted to the administering authority of the *Petroleum and Gas (Production and Safety) Act 2004* (P&G Act) for authorities to prospect; or
  - (b) a copy of the initial development plan, later development plans and any amendments to development plans when submitted to the administering authority of the P&G Act for petroleum leases.

**Financial assurance**

- (A3) Financial assurance must:
- (a) be calculated as required by the administering authority; and
  - (b) be detailed in a completed Schedule of Disturbance that is to be attached to the original and any amended work program or development plan; and
  - (c) be provided to the administering authority in the amount and form required by the administering authority at the time of submission of any original, later or amended work program or development plan; and
  - (d) be maintained until the administering authority is satisfied that no claim is likely to be made on the assurance.

**Contingency Plan for Emergency Environmental Incidents**

- (A4) A Contingency Plan for Emergency Environmental Incidents must be developed and provided to the administering authority prior to the carrying out of the petroleum activity(ies).
- (A5) The Contingency Plan for Emergency Environmental Incidents must include, but not necessarily be limited to:
- (a) a clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity(ies) authorised to be carried out under this environmental authority;

- (b) identification of the types of environmental incidents that may occur, including but not limited to flooding impacts, relevant to the petroleum activity(ies) authorised to be carried out under this environmental authority;
- (c) response procedures to be implemented to prevent or minimise the risk of environmental harm arising from environmental emergency incidents;
- (d) notification and reporting procedures (internal and external);
- (e) call-out procedures and contact lists;
- (f) measures required to halt the spill (i.e. control of pumps, valves etc);
- (g) spill containment procedures;
- (h) procedures to safely recover the spilt material;
- (i) impact monitoring programs and procedures including a receiving environment monitoring program, to be specifically implemented in the event of a release to waters or land to examine / assess environmental impacts. For monitoring of waters, this program must include upstream, downstream and impact site monitoring procedures. For soils monitoring, three replicate samples must be taken at depth intervals of 0-10 cm, 20-30 cm and 50-60 cm at both a reference site and the impact site as a minimum;
- (j) clean up and rehabilitation procedures;
- (k) requirements for the remediation or disposal of contaminated soil;
- (l) personnel responsibilities and training;
- (m) equipment requirements, location, storage, maintenance and transport;
- (n) communications and reporting; and
- (o) incident investigation procedures.

(A6) The Contingency Plan for Emergency Environmental Incidents must be implemented.

### **Maintenance of Measures, Plant and Equipment**

(A7) The holder of the environmental authority must:

- (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;
- (b) maintain such measures, plant and equipment in their proper and effective condition; and
- (c) operate such measures, plant and equipment in a proper and effective manner.

(A8) No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration materially increases, or is likely to increase, the environmental harm caused by the petroleum activity(ies).

### **Monitoring**

- (A9) A monitoring program that will demonstrate compliance with the relevant conditions of the environmental authority must be developed and implemented.
- (A10) All monitoring and inspections carried out under the monitoring program and any actions taken must be documented.
- (A11) Records of all monitoring results and data must be kept for a minimum of seven (7) years.
- (A12) All monitoring under this environmental authority must be conducted by a suitably qualified person.

- (A13) All instruments, equipment and measuring devices used for measuring or monitoring in accordance with any condition of this environmental authority must be calibrated, operated and maintained effectively in accordance with the manufacturer's specifications.
- (A14) All laboratory analyses and tests required to be conducted under this environmental authority must be carried out by a laboratory that has NATA accreditation for such analyses and tests, except as otherwise authorised by the administering authority.

## **SCHEDULE B - WATER**

### **Contaminant Release**

- (B1) Contaminants must not be directly or indirectly released to any waters except as permitted under this environmental authority.

### **Sewage Treatment Works**

- (B2) The construction and operation of sewage treatment works is authorised if:
- (a) the combined total daily peak design capacity is less than 21 equivalent persons; or
  - (b) it is operated as a no-release works.

### **Wild River Areas for PL 484 only**

- (B3) Only limited petroleum activities (other than activities carried out for specified works) may occur in the High Preservation Area (HPA) or the Special Floodplain Management Area (SFMA).
- (B4) With the exception of temporary campsites/workforce accommodation only limited petroleum activities are permitted in the HPA or SFMA. See definition: limited petroleum activities do not include dams (including dams to contain wetting front; aggregation dams; brine dams), or major production infrastructure.
- (B5) Specified works in the HPA's and SFMA's must be co-located to the greatest possible extent.
- (B6) Operationally generated waters must not be released to any surface waters within the SFMA.
- (B7) Contaminants must not be directly or indirectly released to any waters.
- (B8) Contaminants must not be directly or indirectly released to land.
- (B9) Limited petroleum activities and temporary campsites/workforce accommodation in the HPA or SFMA must not increase the natural movement of sediment beyond the work area and must not increase the delivery of sediment to water either during or following construction activities.
- (B10) Limited petroleum activities and temporary campsites/workforce accommodation in the HPA or SFMA must not:
- (a) concentrate flood flows in a way that will or may cause or threaten an adverse impact on wild river natural values; or
  - (b) divert flood flows from natural drainage paths; or
  - (c) increase the local duration of floods; or
  - (d) increase the risk of detaining flood flows.
- (B11) Within the HPA or SFMA, limited petroleum activities and specified works carried out within the bed and banks of a watercourse, wetland, lake or spring must:
- (a) not result in disturbance to the bed and banks of a watercourse, wetland, lake or spring beyond the minimum area necessary for the purpose of the disturbance; and
  - (b) be designed and undertaken by a suitably qualified person taking into account the matters listed in the 'Planning Activities' and 'Impact Management During Activities' sections of the administering authority's 'Guideline—Activities in a watercourse, lake or spring associated with mining operations' December 2010, as amended from time to time.
- (B12) Upon cessation of the works described in condition (B11), rehabilitation must commence immediately.
- (B13) There must be no introduction of weeds or pests in the HPA or SFMA as a result of the activity.
- (B14) Any clearing of vegetation in a wildlife corridor or in a riparian zone in the HPA or SFMA must not be carried out in a way which isolates, fragments or dissects tracts of vegetation resulting in a reduction in

the current level of ecosystem functioning, ecological connectivity (i.e. stepping stone or contiguous bioregional/local corridor networks) and/or results in an increase in threatening processes.

- (B15) Waste must not be disposed of within the SFMA.
- (B16) Rehabilitation of disturbed land in the HPA or SFMA that is caused by the carrying out of the limited petroleum activity(ies) which is not required for the ongoing conduct of the limited petroleum activity(ies) must commence as soon as practicable, but not longer than three (3) months following the completion of any construction or operational works associated with the petroleum activity(ies).
- (B17) Rehabilitated areas in the HPA or SFMA must:
- (a) be a stable landform;
  - (b) exhibit no subsidence or erosion gullies;
  - (c) be re-profiled to a level consistent with surrounding soils;
  - (d) be re-profiled to original contours and established drainage lines;
  - (e) be visually consistent with the surrounding land features;
  - (f) be vegetated with species of the surrounding areas;
  - (g) feature communities that are to the same as those of the adjacent and surrounding areas;
  - (h) be vegetated with flora that is resilient and self-sustaining (demonstrated by reproduction and colonisation);
  - (i) be managed until plan communities are restored to natural functioning; and
  - (j) be free of any declared pest plants.
- (B18) The size of any temporary campsites/workforce accommodation in the HPA or SFMA is limited to 2250m<sup>2</sup> and no more than 30 people accommodated at any time; and all waste products associated with the establishment and operation of a temporary campsite/workforce accommodation are only temporarily stored, and must be physically removed from the special floodplain management area for disposal regularly.
- (B19) Petroleum activities (other than activities carried out for specified works) must not occur within:
- (a) 200 lateral metres of a watercourse, lake or spring that is in the high preservation area or special floodplain management area; or
  - (b) 100 lateral metres of a nominated waterway.
- (B20) For activities carried out for pipelines or flow lines in the HPA or SFMA:
- (a) any interference with overland flow and the potential for any interference with overland flow, must be temporary; and
  - (b) works must be planned in such a way as to minimise the potential for, and duration of, interference with overland flow; and
  - (c) the activities must not interfere with water in a watercourse, lake or spring (other than activities that are of a temporary nature).
- (B21) For activities carried out for pipelines or flow lines in a floodplain management area in the preservation area:
- (a) any interference with overland flow and the potential for any interference with overland flow, must be temporary; and
  - (b) works must be planned in such a way as to minimise the potential for, and duration of, interference with overland flow; and
  - (c) the activities must not interfere with water in a nominated waterway (other than activities that are of a temporary nature).
- (B22) Despite conditions (B3) – (B19):

- (a) This environmental authority does not prohibit seismic activities from being undertaken anywhere within the Cooper Creek Basin Wild River Area; and
  - (b) Temporary campsites/workforce accommodation and infrastructure necessary to support their operation, are not prohibited within the special floodplain management area provided that they comply with conditions (B4) – (B18), and they do not occur within 200 lateral metres of a watercourse, lake or spring in a special floodplain management area.
- (B23) Specified works must not be constructed across a watercourse in a HPA or SFMA, or across a nominated waterway where an alternative watercourse crossing is already in existence and is within a reasonable distance.
- (B24) To remove any doubt, subject to conditions (B3) – (B19) and (B23), the construction of specified works is not prohibited by this declaration anywhere in the wild river area.

## **SCHEDULE C – DAMS**

- (C1) Regulated dams are not permitted under this environmental authority.

### **Management of dams**

- (C2) Low hazard dams must be designed with a floor and sides made of material to contain the wetting front and any entrained contaminants within the bounds of the containment system during its operational life, including any period of decommissioning and rehabilitation.
- (C3) All low hazard dams must be designed and constructed, operated and maintained in accordance with accepted engineering standards currently appropriate for the purpose for which they are intended.
- (C4) The hazard category of each low hazard dam must be determined by a suitably qualified and experienced person:
- (a) prior to its construction; or
  - (b) within 120 business days of the date of grant of this environmental authority for existing low hazard dams; and
  - (c) prior to any change in its purpose or stored contents.
- (C5) Where the hazard category of a low hazard dam is for the first time assessed as significant or high:
- (a) an application to amend this environmental authority to a level 1 environmental authority must be submitted to the administering authority within 30 business days of the assessment; and
  - (b) the dam must meet the hydraulic performance required of the assessed hazard category within 12 months of that assessment.
- (C6) The condition of all dams must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a suitably qualified and experienced person. The methods of monitoring and frequency of monitoring shall be as assessed by the person who conducts the hazard assessment based on the particular circumstances of each dam.
- (C7) In the event of early signs of loss of structural or hydraulic integrity of a low hazard dam, immediate action must be taken to prevent or minimise any actual or potential environmental harm.

### **Access to dams**

- (C8) Any low hazard dam constructed as part of the petroleum activity(ies) must be managed so that either:
- (a) where the quality of the water is likely to result in adverse health affects if contacted or consumed – adequate barriers are provided to limit access to the water by humans, livestock and native fauna; or
  - (b) where the quality of the water will not result in any adverse health affects if contacted or consumed – safe access to the water is provided for livestock and native fauna.

### **Decommissioning dams**

- (C9) Each low hazard dam must be decommissioned such that it either:
- (a) no longer contains flowable substances; and
  - (b) becomes a stable landform; and
  - (c) is compliant with the rehabilitation requirements of this environmental authority; or
  - (d) is agreed by the post petroleum authority landowner/holder to remain after surrender of the environmental authority and meets water quality criteria for the intended use; or
  - (e) is approved or authorised under relevant legislation for a beneficial use; or
  - (f) becomes a void authorised by the administering authority to remain after decommissioning.

## **SCHEDULE D - LAND**

### **Contaminated releases**

- (D1) Contaminants must not be directly or indirectly released to land except as permitted under this environmental authority.

### **Soil Management**

- (D2) Except in areas of highly erodible soils, top soil must be:
- (a) removed from an area prior to other significant disturbance commencing in the area;
  - (b) stockpiled in a manner that will minimise erosion and preserve its biological and chemical integrity; and
  - (c) used only for on-site rehabilitation purposes.
- (D3) Highly erodible soils must not be disturbed as a result of the carrying out of the petroleum activity(ies).

### **Chemical Storage**

- (D4) This environmental authority does not authorise chemical storage in excess of:
- (a) a total quantity of 10 m<sup>3</sup> of:
    - (i) chemicals of class C1 or C2 combustible liquids or dangerous goods class 3 under *AS 1940 The Storage and Handling of Flammable and Combustible Liquids*; or
    - (ii) storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3; or
  - (b) 50 tonnes or more of chemicals of dangerous goods class 6, division 6.1 in containers capable of holding at least 900 kg of the chemicals.
- (D5) Chemicals and fuels on the relevant resource authorities must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.
- (D6) All petroleum product storage's must be designed, constructed and maintained in accordance with AS 1940 - Storage and Handling of Flammable and Combustible Liquids.

### **Extracting Material**

- (D7) Extracting material greater than 5000 tonne a year is not permitted under this environmental authority.

### **Pipelines**

- (D8) Pipeline construction corridor must not exceed 30 metres in width.
- (D9) Turn around and work areas associated with pipeline construction must not exceed 50 metres in width.
- (D10) Pipeline trenches must only be left open for the minimum time practicable.
- (D11) The length of pipeline trench open at any one time must be minimised as far as practicable.
- (D12) Pipelines must be preferentially located alongside existing linear infrastructure.
- (D13) Measures must be employed to prevent fauna entrapment in pipe sections or within the pipeline trench.
- (D14) Open trenches and pipes must be checked for fauna prior to backfill and any trapped animals removed.

**Decommissioning pipelines**

- (D15) Inactive buried pipelines must be decommissioned by in-situ decommissioning (abandonment in place).
- (D16) Prior to pipelines and equipment being disconnected they must be drained or vented and cleaned via purging or flushing.
- (D17) Any water used for purging or flushing the pipelines must be contained in dams on site, tested and either:
  - (a) directly reused where suitable for petroleum activities;
  - (b) treated so that it meets water quality criteria for the intended reuse; or
  - (c) removed from the site for disposal or treatment at an appropriately authorised facility; or
  - (d) disposed of via evaporation in a suitably lined dam.

## SCHEDULE E - DISTURBANCE TO LAND

### Pre-disturbance assessment

- (E1) Prior to conducting petroleum activities that involve significant disturbance to land, an assessment must be undertaken of the condition, type and ecological value of soils and vegetation in such areas where the activity is proposed to take place.
- (E2) The assessment required by condition (E1) must be undertaken by a suitably qualified person and include the carrying out of field validation surveys, observations and mapping of any Category A, B or C Environmentally Sensitive Areas, wetlands and the presence of species classed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992*.
- (E3) The assessment required by condition (E1) must include, but not necessarily be limited to:
- (a) baseline soils quality data and maps for the soil units to be disturbed;
  - (b) identification of the vegetation communities present (including species composition and regional ecosystem type<sup>1</sup> for native vegetation communities) within each area(s) to be disturbed;
  - (c) data representing each vegetation community present within each area(s) to be rehabilitated including:
    - (i) flora species richness and diversity;
    - (ii) structural data including woody stem count densities for dominant species within each stratum; and
    - (iii) percent foliage cover (accounting for seasonal variation and excluding declared pest plants);
  - (d) data regarding habitat features, including but not necessarily limited to:
    - (i) organic litter cover (%); and
    - (ii) trees with hollows  $\geq 10\text{cm}$  diameter (count and number per hectare);
    - (iii) hollow bearing logs (count and number per hectare); and
    - (iv) fallen woody material (total length of logs  $\geq 10\text{ cm}$  diameter per hectare and number of logs  $\geq 10\text{cm}$  diameter per hectare); and
  - (e) a map or series of maps of suitable scale displaying the distributing of vegetation communities.
- (E4) If the assessment required by conditions (E1) to (E3) indicates that that an Environmentally Sensitive Area or wetland is incorrectly identified through State mapping, or is present and not identified by State mapping, the administering authority must be advised in writing before any significant disturbance to land takes place.
- (E5) Following the lodgement of the notification under condition (E4), significant disturbance to land within the relevant area is prohibited until the administering authority provides written advice that significant disturbance to land may proceed.

### Vegetation Clearing

- (E6) When carrying out the petroleum activity(ies), the location of activities must be determined to:
- (a) in order of preference, avoid, minimise or mitigate any impacts on areas of vegetation or other areas of ecological value;
  - (b) minimise disturbance to land that may otherwise result in land degradation;

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<sup>1</sup> Regional ecosystem type should be established using the most current version of the Qld Government's "*Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland*". Assessment of the vegetation communities should be sufficient to establish any inherent variation within a single regional ecosystem type.

- (c) ensure that for land that is to be significantly disturbed by the petroleum activity(ies):
  - (i) the top layer of the soil profile is removed;
  - (ii) soils are stockpiled in a manner that will preserve its biological and chemical properties; and
  - (iii) soils are used for rehabilitation purposes;
- (d) avoid clearing mature trees.
- (E7) Prior to carrying out any petroleum activities, all relevant staff, contractors or agents carrying out those petroleum activities, must be aware of the location of any Category A, B or C Environmentally Sensitive Areas, wetlands and presence of species classed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992* and the requirements of this environmental authority.
- (E8) Despite condition (E6), significant disturbance to land caused by the carrying out of the petroleum activity(ies) must not involve clearing vegetation or placing fill:
  - (a) in a way which significantly isolates, fragments or dissects tracts of vegetation resulting in a reduction in the current level of ecosystem functioning, ecological connectivity (i.e. stepping stone or contiguous bioregional / local corridor networks) and / or results in an increase in threatening processes;
  - (b) on slopes greater than 10 % for the petroleum activity(ies) other than for pipelines and wells; or
  - (c) in discharge areas.
- (E9) Cleared vegetation must be stockpiled in a manner that facilitates respreading or salvaging and does not impede vehicle, stock or wildlife movements.
- (E10) When petroleum activities are undertaken within high value regrowth or remnant vegetation that is other than a Category A, B or C Environmentally Sensitive Area and their associated protection zones, it must be demonstrated that there is no reasonable or practicable alternative and for linear infrastructure, that significant disturbance to land does not exceed the following areas:
  - (a) 18 meters in width for dual carriage way roads;
  - (b) six (6) metres in width for access tracks not associated with a water or gas line; or
  - (c) for pipelines, including provision for a utility corridor and access track:
    - (i) 12 metres width for a single water or gas gathering line; or
    - (ii) 18 metres width for a trench with one water gathering line and one parallel gas gathering pipeline; or
    - (iii) 25 metres width for multiple trenches where there are three (3) parallel gas or water gathering lines; and
    - (iv) seven (7) metres width for any additional trench for a water or gas line.
- (E11) Documentation demonstrating compliance with the requirements of condition (E10) must be prepared before any disturbance to land takes place.

### **Environmentally Sensitive Areas**

- (E12) Petroleum activities must not be carried out within, or in the primary protection zones of Category A, B or C Environmentally Sensitive Areas.
- (E13) Only limited petroleum activities are permitted in the secondary protection zone of Category A, B and C Environmentally Sensitive Areas.
- (E14) Limited petroleum activities carried out within a primary protection zone or secondary protection zone must not be conducted in those areas where there is overlap with another ESA or primary protection zone where low impact or limited petroleum activities are not authorised.

- (E15) Limited petroleum activities carried out within a primary protection zone or secondary protection zone must be located in pre-existing areas of clearing or significant disturbance to the greatest practicable extent and must avoid the clearing of mature trees where possible.
- (E16) For limited petroleum activities carried out within a primary protection zone or a secondary protection zone, vegetation clearing must not exceed any of the following areas:
- (a) 6 metres in width for access tracks not associated with a water or gas line; or
  - (b) for linear infrastructure, including provision for a utility corridor and access track:
    - (i) 12 metres width for a single water or gas gathering line; or
    - (ii) 18 metres width for a trench with one water gathering line and one parallel gas gathering pipeline; or
    - (iii) 25 metres width for multiple trenches where there are three (3) parallel gas or water gathering lines; and
    - (iv) seven (7) metres width for any additional trench for a water or gas line.
- (E17) Despite conditions (E12) - (E16) of this environmental authority, activities specified in Schedule E, Table 1 – *Activities Authorised in Category C ESA* are authorised under this environmental authority.

**Schedule E, Table 1 – Activities Authorised in Category C ESA**

| <b>Tenure</b> | <b>Description of Activity(ies)</b>                                    | <b>Number of Activities</b> | <b>Coordinates (Latitude, Longitude of facility boundary)<br/>GDA 94Location</b> |
|---------------|------------------------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------|
| PL484         | Byrock-2 Production Facility<br>Total disturbance footprint is 2.61 ha | 1                           | 26° 19' 58" latitude<br>143° 20' 31" longitude                                   |

**SCHEDULE F – ENVIRONMENTAL NUISANCE****Release of contaminants to the atmosphere**

- (F1) The release of odour, dust or any other airborne contaminant(s), or light from the petroleum activity(ies) must not cause an environmental nuisance at any sensitive place.
- (F2) Individual or combined fuel burning equipment that is capable of burning at least 500 kg in an hour is not permitted under this environmental authority.

**Noise**

- (F3) A Noise Management Plan must be developed prior to the carrying out of any petroleum activity(ies) authorised under this environmental authority.
- (F4) The Noise Management Plan must include, but not necessarily be limited to:
  - (a) a commitment by the Chief Executive Officer for the holder of this environmental authority, or their delegate, to ensure adequate allocation of staff and resources to the establishment and operation of the Noise Management Plan;
  - (b) definition of roles, responsibilities and authorities within the staffing of the Noise Management Plan;
  - (c) delivery of training to staff and contractors and maintenance of competencies;
  - (d) risk/constraint analysis methods to be undertaken prior to any new operation (e.g. drill site) or installation of new equipment that has the potential to create noise nuisance;
  - (e) procedures and methods to undertake assessments to determine compliance with the noise limits in Schedule F, Table 1 – Noise limits at Sensitive Receptors in the event of a valid complaint being received and when there are no alternative arrangements in place, taking into account any tonal or impulsive noise impacts;
  - (f) procedures for handling noise complaints;
  - (g) community liaison and consultation procedures including but not limited to consultation for when night time petroleum activities (i.e. between 10:00 pm and 6:00 am) are likely to exceed 25 dBA;
  - (h) procedures for managing records associated with all aspects of the Noise Management Plan including standardised forms for recording monitoring results and complaints;
  - (i) details of petroleum activities and measured and/or predicted noise levels of noise sources associated with those activities;
  - (j) reasonable and practicable control or abatement measures (including relocating the activity, altering the hours of operation, or having an alternative arrangement in place with any potentially affected person) that can be undertaken to ensure compliance with the noise limits in Schedule F, Table 1 – Noise limits at Sensitive Receptors;
  - (k) the level of noise at sensitive receptors that would be achieved from implementing the measures detailed under condition (F4) (j); and
  - (l) mediation processes to be used in the event that noise complaints are not able to be resolved.
- (F5) Prior to undertaking petroleum activities that will result in short-term, medium-term or long term noise events that are likely to impact on a sensitive receptor, any potential noise emissions from the relevant petroleum activity(ies) must be modelled or calculated to ensure that noise emissions will not exceed the noise levels specified in Schedule F, Table 1 – Noise limits at Sensitive Receptors.
- (F6) The emission of noise from the petroleum activity(ies) authorised under this environmental authority must not result in levels greater than those specified in Schedule F, Table 1 – Noise limits at Sensitive Receptors in the event of a valid complaint about noise being made to the administering authority.

**Schedule F, Table 1 – Noise Limits at Sensitive Receptors**

| Time Period        | Metric                        | Short Term Noise Event | Medium Term Noise Event | Long Term Noise Event |
|--------------------|-------------------------------|------------------------|-------------------------|-----------------------|
| 7:00 am – 6:00 pm  | L <sub>Aeq,adj,15 min</sub>   | 45 dBA                 | 43 dBA                  | 40 dBA                |
| 6:00 pm – 10:00 pm | L <sub>Aeq,adj,15 min</sub>   | 40 dBA                 | 38 dBA                  | 35 dBA                |
| 10:00 pm – 6:00 am | L <sub>Aeq,adj,15 min</sub>   | 28 dBA                 | 28 dBA                  | 28 dBA                |
|                    | Max L <sub>pA</sub> , 15 mins | 55 dBA                 | 55 dBA                  | 55 dBA                |
| 6:00 am – 7:00 am  | L <sub>Aeq,adj,15 min</sub>   | 40 dBA                 | 38 dBA                  | 35 dBA                |

Notes: The noise limits in Table 1 have been set based on the following deemed background noise levels \*L<sub>ABG</sub>:

|                     |        |
|---------------------|--------|
| 7:00 am - 6:00 pm:  | 35 dBA |
| 6:00 pm – 10:00 pm: | 30 dBA |
| 10:00 pm – 6:00 am: | 25 dBA |
| 6:00 am – 7:00 am:  | 30 dBA |

- (F7) If the noise subject to a complaint is tonal or impulsive, the adjustments detailed in Schedule F, Table 2 – Adjustments to be Added to Noise Levels at Sensitive Receptors are to be added to the measured noise level(s) to derive L<sub>Aeq, adj, 15 min</sub>.

**Schedule F, Table 2 – Adjustments to be Added to Noise Levels at Sensitive Receptors**

| Noise Characteristic                        | Adjustment to Noise |
|---------------------------------------------|---------------------|
| Tonal characteristic is just audible        | + 2 dBA             |
| Tonal characteristic is clearly audible     | + 5 dBA             |
| Impulsive characteristic is just audible    | + 2 dBA             |
| Impulsive characteristic is clearly audibly | + 5 dBA             |

- (F8) Where alternative arrangements are in place with an affected person(s) at a sensitive receptor as referred to by condition (F4) (j), the noise limits in Schedule F, Table 1 – Noise limits at Sensitive Receptors do not apply at that sensitive receptor for the duration for which the alternative arrangements are in place.
- (F9) The method of measurement and reporting of noise levels must comply with the latest edition of the Department of Environment and Heritage Protection's (Environmental Protection Agency's) Noise Measurement Manual (2000) or the most recent version of *AS1055 Acoustics – Description and measurement of environmental noise*.

**Low Frequency Noise**

- (F10) Notwithstanding condition (F6), emission of any low frequency noise must not exceed the following limits in the event of a valid complaint about low frequency noise being made to the administering authority:
- (a) 60 dB(C) measured outside the sensitive receptor; and
  - (b) the difference between the external A-weighted and C-weighted noise levels is no greater than 20 dB; or
  - (c) 50 dB(Z) measured inside the sensitive receptor; and
  - (d) the difference between the internal A-weighted and Z-weighted noise levels is no greater than 15 dB.

**Vibration and Blasting**

- (F11) Blasting activities are not permitted under this environmental authority.

**SCHEDULE G – WASTE****General waste management**

- (G1) All general waste must only be removed from the site and sent to a recycling facility or disposal facility licensed to accept the waste under the *Environmental Protection Act 1994*.

**Regulated waste**

- (G2) All regulated waste must only be removed from the site by a person who holds a current authority to transport such waste under the provisions of the *Environmental Protection Act 1994* and sent to a recycling facility or disposal facility licensed to accept the waste.
- (G3) Regulated waste generated in carrying out the petroleum activity(ies) can be temporarily stored on site awaiting removal provided:
- (a) it is stored in a place and circumstance in which there is minimal risk of causing contamination to land or waters or a fire hazard; and
  - (b) each container of regulated waste stored awaiting movement off site is clearly marked to identify the contents.
- (G4) A record of all regulated waste (excluding trackable waste) must be kept detailing the following information:
- (a) date of pickup of waste;
  - (b) description of waste;
  - (c) quantity of waste;
  - (d) origin of waste; and
  - (e) destination of waste.
- (G5) All waste fluids and muds resulting from drilling and exploration activities must be contained in an appropriately constructed dam or containment structure for off site disposal, remediation or reuse.

**Waste burning**

- (G6) Waste must not be burned or be allowed to be burned under this environmental authority unless it is vegetation and is authorised in writing under the *Forestry Act 1959*.

**Storage**

- (G7) All containment systems for waste liquids stored on site that have the potential to cause environmental harm must be designed to minimise rainfall collection within the system.

## **SCHEDULE H – REHABILITATION**

### **Analogue Site for Rehabilitation Monitoring**

- (H1) Analogue sites for measuring the success of rehabilitation activities on significantly disturbed land must be identified, mapped and surveyed prior to rehabilitation activities commencing.

### **Progressive Rehabilitation for Significantly Disturbed Land**

- (H2) Pipelines trenches must be backfilled immediately after pipe laying and rehabilitated as soon as practicable but not longer than three (3) months after completion.
- (H3) During backfilling of pipeline trenches, soils must be replaced so that the soil horizons are consistent with the soil horizons of the immediately surrounding area.
- (H4) Backfilled and rehabilitated pipeline trenches must:
- (a) be a stable landform;
  - (b) exhibit no subsidence or erosion gullies for the life of the operational pipeline; and
  - (c) be re-profiled to a level consistent with surrounding soils; and
  - (d) be re-profiled to original contours and established drainage lines; and
  - (e) be visually consistent with the surround land features; and
  - (f) be vegetated with groundcover as a minimum to ensure that erosion is minimised; and
  - (g) be free of any declared pest plants.
- (H5) Progressive rehabilitation of significantly disturbed land caused by the carrying out of the petroleum activity(ies) (other than constructing pipelines) which is not required for the ongoing conduct of the petroleum activity(ies) must commence as soon as practicable, but not longer than twelve (12) months following the completion of any construction or operational works associated with the petroleum activity(ies).
- (H6) Progressive rehabilitation of significantly disturbed land caused by the carrying out of the petroleum activity(ies) must be undertaken in accordance with the Schedule of Disturbance as submitted to the administering authority as part of the financial assurance calculations.
- (H7) Progressive rehabilitation of significantly disturbed land caused by the carrying out of the petroleum activity(ies) must:
- (a) remediate any contaminated land (e.g. contaminated soils, decommissioned dams containing salt);
  - (b) reshape all significantly disturbed land to a stable landform;
  - (c) reprofile all significantly disturbed land to original contours;
  - (d) on all significantly disturbed land:
    - (i) re-establish surface drainage lines;
    - (ii) reinstate the top layer of the soil profile;
    - (iii) establish groundcover to ensure that erosion is minimised; and
    - (iv) establishing vegetation of similar species composition and density cover to the analogue site.

### **Final Acceptance Criteria for Significantly Disturbed Land**

- (H8) All significantly disturbed land caused by the carrying out of the petroleum activity(ies) must be rehabilitated to meet the following final acceptance criteria:

- (a) For all land use(s):
- (i) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class;
  - (ii) the landform is safe for humans and fauna;
  - (iii) the landform is stable with no subsidence or erosion gullies for at least three (3) years;
  - (iv) all significantly disturbed land is reinstated so that the distribution of vegetation communities represents that of the analogue site;
  - (v) the water quality of any residual void or water bodies constructed by the petroleum activity(ies) meets criteria for subsequent uses and does not have potential to cause environmental harm;
  - (vi) there is no ongoing contamination to waters;
  - (vii) the rehabilitated land is free of any declared pest plants;
  - (viii) there is no ongoing contamination to groundwater from dams (demonstrated via groundwater monitoring and leak detection monitoring systems); and
  - (ix) the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the petroleum activity(ies).
- (b) Additional requirements for sites that are being reinstated to native ecosystems:
- (i) each vegetation community must be re-established so that the following rehabilitation parameters are maintained for at least three (3) years:
  - (ii) the rehabilitated site shows distinct and progressive re-establishment of the various strata which characterise the vegetation community in the analogue site;
  - (iii) all dominant species within each strata are re-established at densities equivalent to that of the analogue site;
  - (iv) notwithstanding (H8) (b)(i) and (H8) (b)(ii), a minimum of 70% species richness and species diversity is observed when compared to the relevant analogue site;
  - (v) a minimum of 50% foliage cover is observed when compared to the relevant analogue site;
  - (vi) each vegetation community must be rehabilitated and maintained until it can be demonstrated that it is resilient and self-sustaining (demonstrated by reproduction and colonisation); and
  - (vii) percent organic litter cover, count and density of hollow bearing logs and nest boxes (as replacement for trees with hollows  $\geq 10\text{cm}$  diameter) and fallen woody material (total length of logs  $\geq 10\text{ cm}$  diameter per hectare and number of logs  $\geq 10\text{cm}$  per hectare) have been installed at numbers and densities no lower than the analogue site.

### Rehabilitation Monitoring Program

- (H9) A Rehabilitation Monitoring Program must be developed and provided to the administering authority prior to the carrying out of the petroleum activity(ies).
- (H10) The Rehabilitation Monitoring Program must include, but not necessarily be limited to:
- (a) methods to measure subsidence and erosion rates at rehabilitated buried transmission pipeline corridors and buried flow lines;
  - (b) monitoring of indicators identified in the Rehabilitation Plan at analogue sites to measure progressive and final rehabilitation success relevant to the final land use(s); and
  - (c) frequency and seasonality of monitoring analogue sites and rehabilitated areas to assess rehabilitation success; and

- (d) identification of the experimental design for analysing analogue and rehabilitated site data including statistical methods of analyses.

(H11) The Rehabilitation Monitoring Program must be implemented.

#### **Monitoring of Progressive Rehabilitation**

(H12) Regular maintenance and at least yearly monitoring of rehabilitated areas must take place to measure compliance with condition (H4) and (H7).

#### **Monitoring of Final Rehabilitation Success**

(H13) Final acceptance criteria are deemed to be met when monitoring of rehabilitated areas demonstrate compliance with the requirements of condition (H8) for three (3) consecutive years.

#### **Transition of Petroleum Authority**

(H14) The holder of this environmental authority must take responsibility for the rehabilitation of any disturbance to land undertaken as part of a petroleum activity on a petroleum authority that has been transitioned (all or in part) due to the grant of a new resource authority over that land which now forms part of the current project.

**SCHEDULE I – WELL DRILLING, COMPLETION AND STIMULATION**

- (I1) Oil based drilling muds must not be used in the carrying out of the petroleum activity(ies).
- (I2) Synthetic based drilling muds must not be used in the carrying out of the petroleum activity(ies).
- (I3) Stimulation activities are not permitted under this environmental authority.

**SCHEDULE J – COMMUNITY ISSUES**

- (J1) A record of all valid complaints and incidents causing environmental harm, and actions taken in response to the valid complaint or incident must be kept.
- (J2) The following details for all valid complaints received must be recorded:
- (a) name, address and contact number for valid complainant;
  - (b) time and date of valid complaint;
  - (c) reasons for the complaint as stated by the valid complainant;
  - (d) investigations undertaken in response to the valid complaint;
  - (e) conclusions formed;
  - (f) actions taken to resolve the valid complaint;
  - (g) any abatement measures implemented to mitigate the cause of the valid complaint; and
  - (h) name and contact details of the person responsible for resolving the valid complaint.

## **SCHEDULE K – NOTIFICATION PROCEDURES**

- (K1) The Department of Environment and Heritage Protection's Pollution Hotline (telephone: 1300 130 372) and any affected landholder, occupier or their nominated representative must be telephoned as soon as reasonably practicable, but within 24 hours after becoming aware of:
- (a) a release of contaminants as provided for in condition (K3) ; or
  - (b) any event where environmental harm (excluding environmental nuisance) has been caused or may be caused.
- (K2) Notwithstanding condition (K1) , the Department of Environment and Heritage Protection's Pollution Hotline (telephone: 1300 130 372) must be telephoned as soon as reasonably practicable, but within 24 hours after becoming aware of:
- (a) any non-compliance with any condition of this environmental authority other than in relation to a release of contaminants; or
  - (b) a potential or actual loss of structural or hydraulic integrity of a dam; or
  - (c) any incident where there is a potential or actual loss of well integrity (e.g. when the annulus pressure during stimulation increases by more than 3.5 MPa from the pressure immediately preceding stimulation).
- (K3) Subject to condition (K1) , spills of contaminants (including but not limited to hydrocarbons, coal seam gas water or any mixtures) of the following volumes or kind must be reported:
- (a) releases of any volume of contaminants to water;
  - (b) releases of volumes of contaminants to land greater than:
    - (i) 200L of hydrocarbons; or
    - (ii) 1000 L of brine; or
    - (iii) 5 000 L of coal seam gas water;
  - (c) any other release not authorised under this environmental authority which has caused or has the potential to cause serious or material environmental harm.
- (K4) The notification of emergencies or incidents as required by conditions (K1) and (K3) must include but not be limited to the following information:
- (a) the environmental authority number and name of the holder;
  - (b) the tenure type and number where the emergency or incident occurred;
  - (c) the name and telephone number of the designated contact person;
  - (d) the location of the emergency or incident (GDA94);
  - (e) the date and time that the emergency or incident occurred;
  - (f) the date and time the holder of this environmental authority became aware of the emergency or incident;
  - (g) details of the nature of the event and the circumstances in which it occurred;
  - (h) the estimated quantity and type of any contaminants involved in the incident;
  - (i) the actual or potential suspected cause of the emergency or incident;
  - (j) a description of the land use at the site of the emergency or incident (e.g. grazing, pasture, forest etc) and/or the name of any relevant waters and other environmentally sensitive features;
  - (k) a description of the possible impacts from the emergency or incident;
  - (l) a description of whether stock and/or wildlife were actually or potentially exposed to any contaminants released and measures taken to prevent access for the duration of the emergency or incident;

- (m) any sampling conducted or proposed, relevant to the emergency or incident;
  - (n) landholder details and details of landholder consultation;
  - (o) immediate actions taken to control the impacts of the emergency or incident and how environmental harm was mitigated at the time of the emergency or incident; and
  - (p) whether further examination/root cause analysis is required and if so, the expected date by when this examination will be completed and reported to the administering authority.
- (K5) Within ten (10) business days following the initial notification unless a longer time is agreed to by the administering authority, a written report must be provided to the administering authority, including the following (where relevant to the emergency or incident):
- (a) the information required by condition (K4) (a) – (K4) (p);
  - (b) the root cause of the emergency or incident;
  - (c) the confirmed quantities and types of any contaminants involved in the incident;
  - (d) results and interpretation of any analysis of samples taken at the time of the emergency or incident (including the analysis results of any impact monitoring);
  - (e) a final assessment of the impacts from the emergency or incident including any actual or potential environmental harm that has occurred or may occur in the longer term as a result of the release;
  - (f) the success or otherwise of actions taken at the time of the incident to prevent or minimise environmental harm;
  - (g) results and current status of landholder consultation, including commitment to resolve any outstanding issues/concerns; and
  - (h) actions and/or procedural changes to prevent a recurrence of the emergency or incident.
- (K6) If groundwater contamination caused by the petroleum activity(ies) is encountered, the following must be reported to the administering authority within ten (10) business days following the initial notification of results indicating significant change:
- (a) the level of environmental harm caused as a result of such contamination to soils and groundwater;
  - (b) the conduct of a geodetic survey of all monitoring bores to determine the relative water surface elevations of each bore and reported in metres relative to the AHD; and
  - (c) the determination of groundwater flow direction, groundwater flow rate and hydraulic conductivity.

**SCHEDULE L – DEFINITIONS**

**“accepted engineering standards”**, in relation to dams, means those standards of design, construction, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments and relevant Australian and New Zealand Standards.

**“acid sulfate soils”** means soil or sediment containing highly acidic soil horizons or layers affected by the oxidation of iron sulfides (*actual acid sulfate soils*) and / or soil or sediment containing iron sulfides or other sulfidic material that has not been exposed to air and oxidised (*potential acid sulfate soils*). The term acid sulfate soil generally includes both actual and potential acid sulfate soils. Actual and potential acid sulfate soils are often found in the same soil profile, with actual acid sulfate soils generally overlying potential acid sulfate soil horizons.

**“administering authority”** means:

- (a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 of the *Environmental Protection Act 1994* – the local government; or
- (b) for all other matters – the Chief Executive of the Department of Environment and Heritage Protection; or
- (c) another State Government Department, Authority, Storage Operator, Board or Trust, whose role is to administer provisions under other enacted legislation.

**“AHD”** means Australian Height Datum and is the datum used for the determination of elevations in Australia. The determination uses a national network of benchmarks and tide gauges and sets mean sea level at zero elevation.

**“alternative arrangement”** means a written agreement between the holder of this environmental authority and an affected or potentially affected person at a sensitive receptor for a defined noise nuisance impact and may include an agreed period of time for which the arrangement is in place. An agreement for alternative arrangement may include, but not necessarily be limited to a range of noise abatement measures to be installed at a sensitive receptor and / or provision of alternative accommodation for the duration of the defined noise nuisance impact.

**“analogue site”** means an area of land which contains values and characteristics representative of an area to be rehabilitated prior to disturbance. Such values must encompass land use, topographic, soil, vegetation and other ecological characteristics. Analogue sites can be the pre-disturbed site of interest where significant surveying effort has been undertaken to establish benchmark parameters such as that ground truthing assessment required under the Land Schedule of this environmental authority.

**“analytes”** means a chemical parameter determined by either physical measurement in the field or by laboratory analysis.

**“annual exceedance probability or AEP”** is the probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.

**“appraisal well”** means a petroleum well to test the potential of one (1) or more natural underground reservoirs for producing or storing petroleum. For clarity, an appraisal well does not include an exploration well.

**“assessed or assess”** by a suitably qualified and experienced person in relation to a hazard assessment of a dam means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:

- (a) what has been assessed and the precise nature of that assessment;
- (b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- (c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

**“associated works”** in relation to a dam, means:

- any kind and all things associated with the construction and operation of a dam; and
- any land used for those operations.

**“Australian Standard 1055”** means Australian Standard 1055.1:1997 “Description and Measurement of Environmental Noise – General procedures”.

**“authorised person”** means a person holding office as an authorised person under an appointment under the *Environmental Protection Act 1994* by the chief executive or chief executive officer of a local government.

**“background noise level”** means the sound pressure level, measured in the absence of the noise under investigation, as the  $L_{A90,T}$  being the A-weighted sound pressure level exceeded for 90 percent of the measurement time period T of not less than 15 minutes, using Fast response.

**“bed and banks”** for a watercourse or wetland means land over which the water of the watercourse or wetland normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed or banks that is from time to time covered by floodwater.

**“beneficial use”** means

- with respect to dams, that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:
  - of benefit to that owner in that it adds real value to their business or to the general community,
  - in accordance with relevant provisions of the *Environmental Protection Act 1994*,
  - sustainable by virtue of written undertakings given by that owner to maintain that dam, and
  - the transfer and use have been approved or authorised under any relevant legislation. Or
- with respect to coal seam gas water, refer to the Department of Environment and Heritage Protection’s “Operational Policy - Management of water produced in association with petroleum activities” and “Notice of decision to approve a resource for beneficial use – CSG water” as amended from time to time which can be accessed on the Department of Environment and Heritage Protection’s website at [www.derm.qld.gov.au](http://www.derm.qld.gov.au).

**“bore”** means a water observation bore or a water supply bore that is either sub-artesian or artesian.

**“brine”** means saline water with a total dissolved solid concentration greater than 40 000 mg/l.

**“bund or banded”** in relation to spill containment systems for fabricated or manufactured tanks or containers designed to a recognised standard means an embankment or wall of brick, stone, concrete or other impervious material which may form part or all of the perimeter of a compound and provides a barrier to retain liquid. Since the bund is the main part of a spill containment system, the whole system (or banded area) is sometimes colloquially referred to within industry as the bund. The bund is designed to contain spillages and leaks from liquids used, stored or processed above ground and to facilitate clean-up operations. As well as being used to prevent pollution of the receiving environment, bunds are also used for fire protection, product recovery and process isolation.

**“business day”** has the meaning in the *Acts Interpretation Act 1954* and means a day that is not—

- a Saturday or Sunday; or
- a public holiday, special holiday or bank holiday in the place in which any relevant act is to be or may be done.

**“BTEX”** means benzene, toluene, ethylbenzene, ortho-xylene, para-xylene, meta-xylene and total xylene.

**“Category A Environmentally Sensitive Area”** means any area listed in Section 25 of the *Environmental Protection Regulation 2008*.

**“Category B Environmentally Sensitive Area”** means any area listed in Section 26 of the *Environmental Protection Regulation 2008*.

**“Category C Environmentally Sensitive Area”** means any of the following areas:

- Nature Refuges as defined under the *Nature Conservation Act 1992*;

- Koala Habitat Areas as defined under the *Nature Conservation (Koala) Conservation Plan 2006*;
- State Forests or Timber Reserves as defined under the *Forestry Act 1959*;
- Declared catchment areas under the *Water Act 2000*;
- Resources reserves under the *Nature Conservation Act 1992*;
- An area identified as “Essential Habitat” or “Essential Regrowth Habitat” under the *Vegetation Management Act 1999* for a species of wildlife listed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992*; or
- Of Concern Regional Ecosystems identified in the database maintained by the Department of Environment and Heritage Protection called ‘RE description database’ containing Regional Ecosystem numbers and descriptions.

“**clearing**” for vegetation means removing, cutting down, ringbarking, pushing over, poisoning or destroying in any way including by burning, flooding or draining; but does not include destroying standing vegetation by stock, or lopping a tree.

“**coal seam gas water**” means underground water brought to the surface of the earth, or otherwise interfered with, in connection with exploring for or producing coal seam gas. CSG water is a waste, as defined under s13 of the EP Act.

“**coal seam gas water concentrate**” means the concentrated saline water waste stream from a water treatment process that does not exceed a total dissolved solid concentration of 40 000 mg/L.

“**coal seam gas water evaporation dam**” is defined as a impoundment, enclosure or structure that is designed to be used to hold coal seam gas water for evaporation.

“**construction**” in relation to a dam includes building a new dam and modifying or lifting an existing dam but does not include investigations and testing necessary for the purposes of preparing a design plan.

“**contaminants**” are chemicals or pollutants that are not naturally found in the area, and/or chemicals or pollutants at levels above those found naturally in the area.

“**dam**” means a land-based structure or a void that is designed to contain, divert or control flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works. A dam does *not* mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

“**DERM**” means Queensland Department of Environment and Heritage Protection.

“**declared pest plants**” are listed in Schedule 2 of the *Land Protection (Pest and Stock Route Management) Regulation 2003*.

“**design plan**” is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and certifications, together with the planned decommissioning and rehabilitation works and outcomes. A design plan may include ‘as constructed’ drawings.

“**development well**” means a petroleum well which produces or stores petroleum. For clarity, a development well does not include an appraisal well.

“**discharge area**” means:

- that part of the land surface where groundwater discharge produces a net movement of water out of the groundwater; and
- identified by an assessment process consistent with the document “Salinity Management Handbook” Queensland Department of Natural Resources, 1997, as amended from time to time; or
- identified by an approved salinity hazard map held by the Department of Environment and Heritage Protection.

**“document”** has the meaning in the *Acts Interpretation Act 1954* and means:

- any paper or other material on which there is writing; and
- any paper or other material on which there are marks; and
- figures, symbols or perforations having a meaning for a person qualified to interpret them; and
- any disc, tape or other article or any material from which sounds, images, writings or messages are capable of being produced or reproduced (with or without the aid of another article or device).

**“ecosystem functioning”** means the interactions between and within living and nonliving components of an ecosystem and generally correlates with the size, shape and location of an area of vegetation.

**“end”** means the stopping of the particular activity that has caused a significant disturbance in a particular area. It refers to, among other things, the end of a seismic survey or the end of a drilling operation. It does not refer to the end of all related petroleum activities such as rehabilitation. In other words, it does not refer to the ‘completion’ of the petroleum activity(ies), the time at which the petroleum authority ends or the time that the land in question ceases to be part of an authority.

**“equivalent person or EP”** means an equivalent person under volume 1, section 2 of the “Guidelines for Planning and Design of Sewerage Schemes”, October 1991, published by the Water Resources Commission, Department of Primary Industries, Fisheries and Forestry.

**“exploration well”** means a petroleum well that is drilled to:

- explore for the presence of petroleum or natural underground reservoirs suitable for storing petroleum; or
- obtain stratigraphic information for the purpose of exploring for petroleum.

For clarity, an exploration well does not include an appraisal or development well.

**“exploring for petroleum”** means carrying out an activity for the purpose of finding petroleum or natural underground reservoirs as per section 14 of the *Petroleum and Gas (Production and Safety) Act 2004* for example including:

- conducting a geochemical, geological or geophysical survey;
- drilling a well;
- carrying out testing in relation to a well;
- taking a sample for chemical or other analysis.

**“fill”** means any kind of material in solid form (whether or not naturally occurring) capable of being deposited at a place but does not include material that forms a part of, or is associated with, a structure constructed in a watercourse, wetland or spring including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion prevention structure or fence.

**“floodplain”** has the meaning in the *Water Act 2000* and means an area of reasonably flat land adjacent to a watercourse that—

- is covered from time to time by floodwater overflowing from the watercourse; and
- does not, other than in an upper valley reach, confine floodwater to generally follow the path of the watercourse; and
- has finer sediment deposits than the sediment deposits of any bench, bar or in-stream island in the watercourse.

**“flowable substance”** means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

**“foliage cover”** means the proportion of the ground, which would be shaded if sunshine came from directly overhead and is defined for each stratum. It includes branches and leaves and is similar to the crown type of Walker and Hopkins (1990) but is applied to a stratum or plot rather than an individual crown.

**“foreseeable future”** means the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptably low probability of failure before that time.

**“hazard category”** means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in “Manual for Assessing Hazard Categories and Hydraulic Performance of Dams”, prepared by the Department of Environment and Heritage Protection, as amended from time to time.

**“high bank”** means the defining terrace or bank or, if no bank is present, the point on the active floodplain, which confines the average annual peak flows in a watercourse.

**“high value regrowth”** vegetation means

- any of the following:
  - an endangered regional ecosystem;
  - an of concern regional ecosystem;
  - a least concern regional ecosystem; and
- have not been cleared since 31 December 1989; and
- is shown on a regrowth vegetation map.

**“hydraulic performance”** means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category “Manual for Assessing Hazard Categories and Hydraulic Performance of Dams”, prepared by the Department of Environment and Heritage Protection, as amended from time to time..

**“impulsive noise”** means sound characterised by brief excursions of sound pressure (acoustic impulses) that significantly exceed the background sound pressure. The duration of a single impulsive sound is usually less than one second.

**“infrastructure”** means plant or works including for example, communication systems, compressors, powerlines, pumping stations, reservoirs, roads and tracks, water storage dams, evaporation or storage ponds and tanks, equipment, buildings and other structures built for the purpose and duration of the conduct of the petroleum activity(ies) including temporary structures or structures of an industrial or technical nature, including, for example, mobile and temporary camps.

Infrastructure does not include other facilities required for the long term management of the impact of those petroleum activities or the protection of potential resources. Such other facilities include dams other than water storage dams, pipelines and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

**“ $L_{Aeq, adj, 15 mins}$ ”** means the A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character, that within any 15 minute period has the same square sound pressure as a sound level that varies with time.

**“ $L_{A 90, adj, 15 mins}$ ”** means the A-weighted sound pressure level, adjusted for tonal character, that is equal to or exceeded for 90% of any 15 minutes sample period equal, using Fast response

**“lake”** means:

- a lagoon, swamp or other natural collection of water, whether permanent or intermittent; and
- the bed and banks and any other element confining or containing the water.

**“landholders’ active groundwater bores”** for the purposes of stimulation baseline and impact monitoring in this environmental authority means bores that are able to continue to provide a reasonable yield of water in terms of quantity for the bores authorised purpose or use. This term does not include monitoring bores owned by the administering authority of the *Water Act 2000*.

**“leachate”** means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of on site which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

**“limited petroleum activities”** mean only the following petroleum activities:

- well sites not exceeding 1 hectare disturbance and multi-well sites not exceeding 1.5 hectare disturbance. Well sites may include the following infrastructure:
  - well pads;
  - water pumps and generators associated with well operations;
  - sumps for storing drilling muds;
  - flare pits;
  - ponds used to contain and / or store stimulation fluid;
- geophysical surveys (including seismic petroleum activities);
- ecological geological surveys (including seismic petroleum activities);
- gathering / flow pipelines from a well head to the initial compression facility;
- supporting access tracks; and
- communication and power lines that are necessary for the undertaking of petroleum activities and that are located within well sites, well pads and pipeline right of ways without increasing the disturbance area of petroleum activities.

For clarity, limited petroleum activities exclude and exclusions are not necessarily limited to:

- the construction of infrastructure for processing or storing petroleum or by-products;
- low hazard dams (that do not meet the limitations prescribed above);
- regulated dams;
- borrow pits;
- compressor stations;
- campsites / workforce accommodation;
- pipelines which are used to transport gas after the initial compression facility (e.g. trunk pipelines, transmission pipelines or pipelines that require a pipeline license);
- waste disposal; or
- other supporting infrastructure for the project (e.g. sewage treatment plants).

**“linear infrastructure”** means powerlines, pipelines, roads and access tracks.

**“long term noise event”** is a noise exposure, when perceived at a sensitive receptor, persists for a period of greater than five (5) days, even when there are respite periods when the noise is inaudible within those five (5) days.

**“lopping”** a tree, means cutting or pruning its branches, but does not include—

- removing its trunk; and
- cutting or pruning its branches so severely that it is likely to die.

**“low hazard dam”** means any dam that is not classified as high or significant as assessed using the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams", prepared by the Department of Environment and Heritage Protection, as amended from time to time.

**“low impact petroleum activities”** means limited petroleum activities which do not result in the clearing of native vegetation, cause disruption to soil profiles through earthworks or excavation or result in significant disturbance to land. Examples of such activities include but are not necessarily limited to soil surveys, topographic surveys, cadastral surveys and ecological surveys and traversing land by car or foot via existing access tracks or routes or in such a way that does not result in permanent damage to vegetation.

**“Max  $L_{pA, 15 \text{ min}}$ ”** means the absolute maximum instantaneous A-weighted sound pressure level, measured over 15 minutes.

**“medium term noise event”** is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than five (5) days and does not re-occur for a period of at least four (4) weeks. Re-occurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a difference source or source location.

**“month”** has the meaning in the Acts Interpretation Act 1954 and means a calendar month and is a period starting at the beginning of any day of one (1) of the 12 named months and ending—

- immediately before the beginning of the corresponding day of the next named month; or
- if there is no such corresponding day—at the end of the next named month.

**“NATA accreditation”** means accreditation by the National Association of Testing Authorities Australia.

**“oil-based drilling mud”** means mud where the base fluid is a petroleum product such as diesel fuel.

**“operationally generated waters”** means any water that is produced as a result of the petroleum and gas activity, including water that is extracted from below the ground. It does not include natural runoff as a result of rainfall; it does include rainfall that has been caught in an artificial impoundment.

**“pest”** means species:

- declared under the *Land Protection (Pest and Stock route Management) Act 2002*;
- declared under Local Government model local laws; and
- which may become invasive in the future.

**“petroleum activity(ies)”** means:

- (a) activities that, under the *Petroleum Act 1923*, are authorised activities for a 1923 Act petroleum tenure under that Act; or
- (b) activities that, under the *Petroleum and Gas (Production and Safety) Act 2004*, are authorised activities for a petroleum authority under that Act; or
- (c) exploring for, exploiting or conveying petroleum resources under a licence, permit, pipeline licence, primary licence, secondary licence or special prospecting authority granted under the *Petroleum (Submerged Lands) Act 1982*; or
- (d) rehabilitating or remediating environmental harm because of an activity mentioned in paragraphs (a) to (c);
- (e) actions taken to prevent environmental harm because of activities mentioned in paragraphs (a) to (d);
- (f) activities required under a condition of an environmental authority for activities mentioned in paragraphs (a) to (e); or
- (g) activities required under a condition of an environmental authority mentioned in paragraphs (a) to (e) that has ended or ceased to have effect, if the condition-
  - (i) continues to apply after the authority has ended or ceased to have effect, and
  - (ii) has not been complied with.

**“petroleum authority”** is:

- (a) a 1923 Act petroleum tenure granted under the *Petroleum Act 1923*; or
- (b) a resource authority granted under the *Petroleum and Gas (Production and Safety) Act 2004*; or
- (c) a licence, permit, pipeline licence, primary licence, secondary licence or special prospecting authority granted under the *Petroleum (Submerged Lands) Act 1982*.

**“populated area”** includes towns and cities which have a populated of 200 or more people and with a minimum density of 40 people / km<sup>2</sup>.

**“primary protection zone”** means an area within a 200 metre buffer from the boundary of any Category A, B or C Environmentally Sensitive Area.

**“regulated dam”** means any dam in the significant or high hazard category as assessed using the “Manual for Assessing Hazard Categories and Hydraulic Performance of Dams”, prepared by the Department of Environment and Heritage Protection, as amended from time to time.

**“rehabilitation”** means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

**“regrowth vegetation map”** means a map certified by the chief executive as the regrowth vegetation map for the State and showing for the State:

- areas of regrowth vegetation, identified on the map as high-value regrowth vegetation, that—
  - are any of the following:
    - (i) an endangered regional ecosystem;
    - (ii) an of concern regional ecosystem;
    - (iii) a least concern regional ecosystem; and
  - have not been cleared since 31 December 1989; and
- particular watercourses in the Burdekin, Mackay Whitsunday and Wet Tropics catchments, identified on the map as regrowth watercourses; and
- areas the chief executive decides under section 20AI to show on the map as high value regrowth vegetation.

**“remnant vegetation”** means vegetation, part of which forms the predominant canopy of the vegetation—

- covering more than 50 % of the undisturbed predominant canopy; and
- averaging more than 70 % of the vegetation’s undisturbed height; and
- composed of species characteristic of the vegetation’s undisturbed predominant canopy cover.

**“release”** of a contaminant into the environment includes:

- (a) to deposit, discharge, emit or disturb the contaminant; and
- (b) to cause or allow the contaminant to be deposited, discharged, emitted or disturbed; and
- (c) to allow the contaminant to escape; and
- (d) to fail to prevent the contaminant from escaping.

**“reporting limit”** means the lowest concentration that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes, the reporting limit is selected as the lowest non-zero standard in the calibration curve. Results that fall below the reporting limit will be reported as “less than” the value of the reporting limit. The reporting limit is also referred to as the practical quantisation limit or the limit of quantisation.

**“restricted stimulation fluids”** means fluids used for the purpose of stimulation, including fracturing, that contain the following chemicals in more than the maximum amounts prescribed under section 81B of the *Environmental Protection Regulation 2008*:

- petroleum hydrocarbons containing benzene, ethylbenzene, toluene or xylene; or
- chemicals that produce, or are likely to produce, benzene, ethylbenzene, toluene or xylene as the chemical breaks down in the environment.

The amount of any chemical is not measured in relation to water included in the restricted stimulation fluid.

**“secondary protection zone”** in relation to a Category A Environmentally Sensitive Area means an area within an 800 metre buffer from the boundary of a primary protection zone.

**“secondary protection zone”** in relation to a Category B or C Environmentally Sensitive Area means a area within a 300 metre buffer from the boundary of a primary protection zone.

**“sensitive place”** means:

- a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel; or
- a library, childcare centre, kindergarten, school, university or other educational institution;
- a medical centre, surgery or hospital; or
- a protected area; or
- a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment; or
- a work place used as an office or for business or commercial purposes, which is not part of the petroleum activity(ies) and does not include employees accommodation or public roads.

**“sensitive receptor”** means an area or place where noise (including low frequency, vibration and blasting) is measured to investigate whether nuisance impacts are occurring and includes:

- a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel; or
- a library, childcare centre, kindergarten, school, university or other educational institution;
- a medical centre, surgery or hospital; or
- a protected area; or
- a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment; or
- a work place used as an office or for business or commercial purposes, which is not part of the petroleum activity(ies) and does not include employees accommodation or public roads.

**“short term noise event”** is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than eight hours and does not re-occur for a period of at least seven (7) days. Re-occurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a different source or source location.

**“significantly disturbed land or significant disturbance to land or significant disturbance”** means disturbance to land as defined in section 28 of the *Environmental Protection Regulation 2008*.

**“site”** means the area within the petroleum authority or authorities to which this environmental authority relates.

**“species richness”** means the number of different species in a given area.

**“species diversity”** means the diversity within an ecological community that incorporates both species richness and the evenness of species' abundances.

**“spring”** means the land to which water rises naturally from below the ground and the land over which the water then flows.

**“stable”** in relation to land, means landform dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (trafficability), erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.

**“stimulation”** means a technique used to increase the permeability of a natural underground reservoir, using processes that change the formation pressure and /or involve the addition of chemicals. For the purposes of the environmental authority, stimulation includes hydraulic fracturing / hydrofracking, fracture acidizing and the use of proppant treatments. For the purposes of the environmental authority, stimulation activities do not include mechanical processes alone such as underbalanced drilling and/or perforating, under-reaming, well deepening, perforation, sand or gravel packing, well washing and formation opening using existing surface, formation, and/or council water with no added chemicals, mechanical cleaning or cavitations.

**“stimulation fluid”** means the fluid injected into an aquifer to increase the permeability of a natural underground reservoir.

**“stimulation impact zone”** means a 100 metre maximum radial distance from the stimulation target location within a gas producing formation.

**“suitably qualified person”** means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

**“suitably qualified and experienced person” in relation to a hazard assessment of a dam**, means that a statutory declaration has been made by that person and, when taken together with any attached

or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:

- exactly what has been assessed and the precise nature of that assessment;
- the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

**“suitably qualified and experienced person” in relation to dams** means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 1988, or registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, or holds equivalent professional qualifications to the satisfaction of the administering authority for the *Environmental Protection Act 1994*, and the administering authority for the *Environmental Protection Act 1994* is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

- knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and
- a total of five (5) years of suitable experience and demonstrated expertise in the geomechanics of dams with particular emphasis on stability, geology and geochemistry, and
- a total of five (5) years of suitable experience and demonstrated expertise each, in three (3) of the following categories:
  - investigation and design of dams.
  - construction, operation and maintenance of dams.
  - hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology.
  - hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes.
  - hydrogeology with particular reference to seepage, groundwater.
  - solute transport processes and monitoring thereof.
  - dam safety.

**“synthetic based drilling mud”** means a mud where the base fluid is a synthetic oil, consisting of chemical compounds which are artificially made or synthesized by chemically modifying petroleum components or other raw materials rather than the whole crude oil.

**“threatening processes”** means processes, features and actions that can have a detrimental effect upon the health and viability of an area of vegetation (e.g. altered hydrology, land use practices, invasion by pest and weed species, land degradation, edge effects and fragmentation).

**“tolerable limits”** means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values (e.g. a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing damage and limiting infiltration and percolation).

**“top soil”** means the surface (top) layer of a soil profile, which is more fertile, darker in colour, better structured and supports greater biological activity than underlying layers. The surface layer may vary in depth depending on soil forming factors, including parent material, location and slope, but generally is not greater than about 300 mm in depth from the natural surface.

**“transmissivity”** means the rate of flow of water through a vertical strip of aquifer which is one unit wide and which extends the full saturated depth of the aquifer.

**“valid complaint”** means a complaint the administering authority considers is not frivolous, nor vexatious, nor based on mistaken belief.

**“void”** means any man-made, open excavation in the ground (includes borrow pits, drill sumps, frac pits, flare pits, cavitation pits and trenches).

**“waters”** includes all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, spring, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and underground water.

**“watercourse”** has the meaning provided in Schedule 12 of the Environmental Protection Regulation 2008 and is a river, creek or stream in which water flows permanently or intermittently in a natural channel, whether artificially improved or not, or in an artificial channel that has changed the course of the watercourse. A watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

**“well infrastructure”** means infrastructure required for the construction, completion and operation of a well including but not limited to cellar pits, dams and drill sumps.

**“well site”** means a maximum area of land disturbance for the purposes of constructing, installing and operating an exploration, appraisal or development well or such wells as part of a multi-well arrangement and includes well lease infrastructure.

**“wetland”** means a wetland as defined under the Queensland Wetlands Program and are areas of permanent or periodic / intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six (6) metres. To be classified as a wetland, the area must have one or more of the following attributes:

- at least periodically, the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

For the purposes of Chapter 5A activities, wetlands do not include springs and watercourse and those wetlands that are defined in the document entitled *“Wetland Mapping and Classification Methodology”* (Department of Environment and Heritage Protection, 2005) as:

- H2M1 Riverine or ex-riverine (lacustrine) water bodies associated with dams and weirs located in a channel;
- H2M3p Ponded pastures;
- H2M5 Palustrine / lacustrine water bodies where ecological character has changed due to gross mechanical disturbance (e.g. cropping);
- H2M6 Palustrine / lacustrine water bodies that have been converted, completely or mostly, to a ring tank or other controlled storage;
- H2M7 Riverine water bodies that have been converted mostly to canals or irrigation channels;
- H3C1 Artificial stand-alone water storages not within a natural water body or channel; or

- H3C2 Artificial Channel drain / canal –bore drains, swales, bores and irrigation channel overflows / ponding.

**“Wild river declaration”** is a statutory instrument under the *Wild Rivers Act 2005*. A declaration lists the relevant natural values to be preserved and delineates certain parts of the wild river area and the different constraints that may apply in these areas. With reference to environmental authorities for petroleum, each declaration also specifies conditions to be included in a new [environmental] authority if the activity is to be located within the wild river area.

**“year”** means a period of 12 months.

**END OF ENVIRONMENTAL AUTHORITY**