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

Permit[1] number: EPPG00770513

Environmental authority takes effect on 05-SEP-2013.

The anniversary date of this environmental authority is the 15th August. An annual return and the payment of the annual fee which is currently $551.00 will be due each year on this day.

Environmental authority holders

Name	Registered address
Ranger Energy Pty Ltd	Level 7 283 George Street SYDNEY NSW 2000
Kestrel Petroleum Pty Ltd	Suite 7 50 Neridah Street CHATSWOOD NSW 2067

Environmentally relevant activity and location details

Environmentally relevant activity	Location
Petroleum	PL46

Additional information for applicants

Environmentally relevant activities

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

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority 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 if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.

Signature	Date
K Burdett	5/9/2013

Kathryn Burdett
Department of Environment and Heritage Protection
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
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Permit and Licence Management
Department of Environment and Heritage Protection
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Department of Environment and Heritage Protection

Permit[1]

Environmental Protection Act 1994

Environmental authority

SCHEDULE A – GENERAL

Authorised Petroleum Activities

(A1) In the carrying out of the petroleum activity(ies), the holder of this environmental authority must not exceed the number and maximum size for each of the specified petroleum activities listed in *Schedule A: Table 1 – Authorised Petroleum Activities* for each petroleum tenure.

Schedule A: Table 1 – Authorised Petroleum Activities

Resource Authority Number	Petroleum Activity	Number of Existing Petroleum activities	Number of Proposed Petroleum activities	Maximum Area and Capacity (where applicable)
	Seismic (kilometres)	291km		0
	Total wells	9	1	1.4Ha
	- Exploration Wells (indicative)	0	0	
	- Appraisal Wells (indicative)	0	0	
	- Development Wells (indicative)	0	0	
	Compressor Stations	0	0	
	Regulated dams > 401 megalitres	0	0	
	Regulated dams < 400 megalitres	0	0	
	Low hazard dams	9	0	4Ha 4ML
	Water treatment Facilities	0	0	
	Brine Encapsulation Facilities	0	0	
	Sewage Treatment Plants	0	0	

Prevent or Minimise Likelihood of Environmental Harm

[1] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation

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)

Conditions of environmental authority

Location: PL46

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Additional advice about the approval

1. This approval pursuant to the *Environmental Protection Act 1994* does not remove the need to obtain any additional approval for this activity which might be required by other State and/or Commonwealth legislation. Other legislation administered by DERM for which a permit may be required includes but is not limited to the:

    - *Aboriginal Cultural Heritage Act 2003*;
    - The contaminated land provisions of the *Environmental Protection Act 1994*;
    - *Nature Conservation Act 1992*;
    - *Forestry Act 1959*;
    - *Water Supply (Safety and Reliability) Act 2008*; and
    - *Water Act 2000*.

    Applicants are advised to check with all relevant statutory authorities and comply with all relevant legislation.

2. This environmental authority consists of the following Schedules

Schedule A	**General**
Schedule B	**Air**
Schedule C	**Water**
Schedule D	**Stormwater**
Schedule E	**Dams**
Schedule F	**Land Environmental Nuisance**
Schedule G	**Noise**
Schedule H	**Waste**
Schedule I	**Monitoring and Reporting**
Schedule J	**Community Issues**
Schedule K	**Definitions**

(A2) This environmental authority does not authorise environmental harm unless a condition contained in this environmental authority explicitly authorises that harm. Where there is no condition, the lack of a condition shall not be construed as authorising harm.

(A3) Any record required to be kept by a condition of this environmental authority must be kept at the licensed place and be available for examination by an authorised person.

(A4) Copies of any record required to be kept by a condition of this environmental authority must be provided to any authorised person or the administering authority on request.

(A5) A copy of the environmental authority must be kept in a location readily accessible to personnel carrying out the activity.

(A6) All complaints received by the holder of this environmental authority relating to operations at the licensed place must be recorded.

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).

Financial Assurance

(A9) The holder of this environmental authority must:

(a) provide to the administering authority financial assurance in the amount and form required from time to time by the administering authority; and
(b) review and maintain the amount of financial assurance based on the maximum disturbance from the proposed and existing petroleum activity(ies).

(A10) The calculation of financial assurance must be in accordance with the Department of Environment and Resource Management's Guideline "Financial assurance for petroleum activities", as amended from time to time.

(A11) The financial assurance is to remain in force until the administering authority is satisfied that no claim is likely to be made on the assurance.

Contingency Plan for Emergency Environmental Incidents

(A12) A Contingency Plan for Emergency Environmental Incidents which has been certified by a suitably qualified person must be developed within 3 months of the date of issue of this authority.

(A13) 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, 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 incidents or emergency events;
(d) response procedures to minimise the extent and duration of environmental harm caused by environmental incidents or emergency events;
(e) communication procedures and lines of communication within and beyond the organisation to be employed in responding to environmental incidents or emergency events;
(f) the resources to be used in response to environmental incidents or emergency events;
(g) procedures to investigate the cause of any incidents, including releases, and where necessary, the remedial actions to be implemented to reduce the likelihood of recurrence of similar events;
(h) a receiving environment monitoring program, to be specifically implemented in the event of a emergency event or incident to examine / assess environmental impacts;
(i) the provision and availability of documented procedures to staff attending any environmental incidents or emergency events to enable them to effectively respond;
(j) training of staff that will be called upon to respond to environmental incidents or emergency events to enable them to effectively respond;
(k) timely and accurate reporting of the circumstance and nature of environmental incidents or emergency events to the administering authority in accordance with conditions of this environmental authority;
(l) procedures for accessing monitoring locations during environmental incidents or emergency events; and
(m) procedures to notify any potentially affected landholder, occupier and / or their nominated representative.

(A14) The holder of this environmental authority must implement the Contingency Plan for Emergency Environmental Incidents.

SCHEDULE B – AIR

(B1) The release of any dust, particulate, aerosol or odour resulting from the activity must not cause an environmental nuisance at any sensitive place.

SCHEDULE C – WATER

(C1) Contaminants must not be directly or indirectly released to any waters except as permitted under this environmental authority.

(C2) No produced water shall be released into the environment.

(C3) The method of water sampling required by this environmental authority must comply with that set out in the most recent version of the Department of Environment and Resource Management's "Monitoring and Sampling Manual 2009 – Environmental Protection (Water) Policy 2009 Version 2 September 2010".

(C4) 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.

Erosion Protection Measures and Sediment Controls

(C5) Erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment from all disturbed areas.

(C6) Prevent any build up of sediment in any stormwater drain.

SCHEDULE D – STORMWATER

(D1) The holder must implement and maintain measures to minimise the likelihood of the release of contaminated stormwater from the place where the activities are carried out to any stormwater drain or any waters.

(D2) The maintenance and cleaning of vehicles and any other equipment or plant must be carried out in areas from where the resultant contaminants are unlikely to be released into any waters, roadside gutter or stormwater drainage system.

(D3) Any spillage of wastes or contaminants that may cause environmental harm must be effectively contained and/or cleaned up as quickly as practicable. Such spillage must not be cleaned up by hosing, or otherwise releasing such waste or contaminants to any stormwater drainage system, roadside gutter or waters.

SCHEDULE E – DAMS

(E1) The dams used for the storage of contaminants must be maintained:
- (a) so as to prevent any release of contaminants through the bed or banks of the pond to any waters (including groundwater);
- (b) so that a freeboard of not less than 0.5 metres is maintained at all times; and
- (c) so as to ensure the stability of the dams' construction.

Assessment of Hazard Category

(E2) The hazard category of any dam must be assessed by a suitably qualified and experienced person in accordance with the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams", as amended from time to time.

(E3) The hazard assessment required under condition (E2) must occur in any of the following situations:
- (a) prior to the design and construction of the dam;
- (b) prior to any change in its purpose or its stored contents;
- (c) for an existing low hazard dam, within 120 business days of **16 August 2011**.

(E4) All certifications must be in the form set out in the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams", as amended from time to time.

(E5) Only low hazard dams are permitted under this authority.

Decommissioning

(E6) The holder of this environmental authority must not abandon any dam but must decommission each dam such that ongoing environmental harm is prevented.

(E7) Well infrastructure and dams must be securely fenced and / or screened to:
- (a) exclude and prevent the entrapment of livestock and wildlife; and
- (b) limit habitats for the introduction or spread of pests..

SCHEDULE F — LAND

Preventing Contaminant Release to Land

(F1) Contaminants must not be directly or indirectly released to land.

Progressive Rehabilitation for Significantly Disturbed Land

(F2) Pipelines trenches must be backfilled immediately after pipe laying and rehabilitated as soon as practicable but not longer than three (3) months after completion.

(F3) 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.

(F4) 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.

(F5) 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 nine (9) months following the completion of any construction or operational works associated with the petroleum activity(ies).

(F6) 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;
  (iv). establish vegetation of floristic species composition found in analogue sites;
(e) undertake rehabilitation in a manner such that any actual and potential acid sulfate soils in or on the site are either not disturbed, or submerged, or are treated to prevent and / or minimise environmental harm.

SCHEDULE G – NOISE

(G1) Noise from activities must not cause an environmental nuisance at any noise sensitive place.

(G2) 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, the holder of this environmental authority must model or calculate any potential noise emissions from the relevant petroleum activity(ies) to ensure that noise emissions will not exceed the noise levels specified in *Schedule G: Table 1 – Noise limits at Sensitive Receptors*.

(G3) 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 G: Table 1 – Noise limits at Sensitive Receptors* in the event of a valid complaint about noise being made to the administering authority.

Schedule G: 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	$L_{Aeq,adj,15\ min}$ Max $L_{pA,\ 15\ mins}$	L_{ABG} + 10 dBA 55 dBA	L_{ABG} + 8 dBA 51 dBA	L_{ABG} + 5 dBA 45 dBA
6:00 pm – 10:00 pm	$L_{Aeq,adj,15\ min}$ Max $L_{pA,\ 15\ mins}$	L_{ABG} + 10 dBA 50 dBA	L_{ABG} + 8 dBA 46 dBA	L_{ABG} + 5 dBA 40 dBA
10:00 pm – 6:00 am	$L_{Aeq,adj,15\ min}$ Max $L_{pA,\ 15\ mins}$	L_{ABG} + 3 dBA 38 dBA	L_{ABG} + 3 dBA 36 dBA	L_{ABG} + 3 dBA 33 dBA
6:00 am – 7:00 am	$L_{Aeq,adj,15\ min}$ Max $L_{pA,\ 15\ mins}$	L_{ABG} + 10 dBA 50 dBA	L_{ABG} + 8 dBA 46 dBA	L_{ABG} + 5 dBA 40 dBA

L_{Aeq} and Max L_{pA} *are to be measured over any 15 minute period*
L_{ABG} is the deemed background noise levels which for the purposes of Schedule G: Table 1 - Noise Limits at Sensitive Receptors are:
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

(G4) If the noise subject to a complaint is tonal or impulsive, the adjustments detailed in *Schedule G: Table 2 – Adjustments to be Added to Noise Levels at Sensitive Receptors* are to be added to the measured noise level(s) to derive $\mathbf{L_{Aeq,\ adj,\ 15\ min}}$.

Schedule G: 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 audible	+ 5 dBA

(G5) Where alternative arrangements are in place with an affected person(s) at a sensitive receptor, the noise limits in *Schedule G: 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.

SCHEDULE H – WASTE

(H1) Any spillage of regulated waste must be cleaned up forthwith.

(H2) Regulated waste must be handled and transferred in a proper and efficient manner to prevent any leakage or spillage of waste.

(H3) All regulated waste removed from the site must be removed 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 facility licensed to accept such waste.

(H4) Except as otherwise provided by the conditions of this authority, all disposal of waste generated in carrying out the environmentally relevant activity must be to a proper and appropriate facility that accepts that waste.

(H5) Where regulated waste is removed from within the boundary of the environmental authority (other than by a release as permitted under another schedule of this environmental authority), the holder of this environmental authority must monitor and record the following:

(a) the date, quantity and type of waste removed; and
(b) name of the waste transporter and/or disposal operator that removed the waste.

SCHEDULE I – MONITORING and REPORTING

General

(I1) The holder of this environmental authority must develop and implement a monitoring program for all monitoring required by the conditions of this environmental authority.

(I2) All monitoring under this environmental authority must be conducted by a suitably qualified person.

(I3) All instruments, equipment and measuring devices used for measuring or monitoring in accordance with any condition of this environmental authority must be calibrated, and operated and maintained effectively in accordance with the manufacturer's specifications.

NOTIFICATION PROCEDURES

(I1) The holder of this environmental authority must telephone the Department of Environment and Resource Management's Pollution Hotline (telephone: 1300 130 372) and any affected landholder, occupier or their nominated representative as soon as reasonably practicable, but within 24 hours after becoming aware of:

- (a) any release of contaminants not in accordance with the conditions of this environmental authority; or
- (b) any event where environmental harm (excluding environmental nuisance) has been caused or may be caused.

(I2) Notwithstanding condition (I1), the holder of this environmental authority must telephone the Department of Environment and Resource Management's Pollution Hotline (telephone: 1300 130 372) 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.

(I3) Subject to condition (I1), the holder of this environmental authority must report spills of contaminants (including but not limited to hydrocarbons) of the following volumes or kind:

- (a) releases of any volume of contaminants to water;
- (b) releases of greater than 200L of hydrocarbons and/or 10,000L of produced water to land; and
- (c) releases of any volumes of contaminants where potential serious or material environmental harm has occurred or may occur.

(I4) The notification of emergencies or incidents as required by conditions (I1), (I2) and (I3) 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.

(I5) Within 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 (I4);
(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.

SCHEDULE J - DEFINITIONS

Note: Where a term is not defined in this environmental authority the definition in the Environmental Protection Act 1994, its regulations and Environmental Protection Policies, or the Acts Interpretation Act 1954, or the Macquarie Dictionary or the Petroleum and Gas (Production and Safety) Act 2004 or its regulations must be used in that order.

"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.

"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 arrangements 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 the pre-disturbance state of a site to be disturbed by petroleum activities, from which benchmark parameters for rehabilitation success can be established.

"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.

"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.

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

"brine dam" means a regulated dam that is designed to receive, contain or evaporate brine.

"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.

"certification or certified by a suitably qualified and experienced person" in relation to a design plan, 'as constructed' drawings or an annual report regarding dams, 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 is being certified and the precise nature of that certification.
- the relevant legislative, regulatory and technical criteria on which the certification has been based;

- the relevant data and facts on which the certification 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 certification has been based using the relevant data and facts, and the relevant criteria.

"certify" or "certification" or "certified" in relation to any matter other than a design plan, 'as constructed' drawings or an annual report regarding dams in this environmental authority means a Statutory Declaration by a suitably qualified person accompanying the written document stating that:

- all relevant material has been considered in the written document; and
- that the content of the written document is accurate and true; and
- that the written document meets the requirements of the relevant conditions of the environmental authority.

"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.

"dam" means a land-based structure or a void that is designed to contains, diverts or controls 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.

"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.

"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).

"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.

"evaporation dam" means a land based structure designed to contain or impound coal seam gas water, the purpose of which is to contain or impound the water, until the water content has been removed by evaporation.

"existing low hazard dam" means [*insert names and locations of existing low hazard dams that are constructed and / or whose construction had substantially commenced on the approval date of this environmental authority*].

"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.

"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.

"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 Resource Management, as amended from time to time...

"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 Resource Management, 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 (e.g. evaporation 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

"limited petroleum activities" mean only the following petroleum activities:

- geophysical surveys (including seismic petroleum activities);
- well sites;
- well pads;

- water pumps and generators associated with well operations;
- sumps;
- flare pits;
- gathering / flow pipelines from a well head to the initial compression facility; and
- supporting access tracks.

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

- the construction of infrastructure for processing or storing petroleum or by-products;
- dams;
- borrow pits;
- ponds used to contain and/or store stimulation fluids;
- compressor stations;
- campsites / workforce accommodation;
- power supplies;
- pipelines which are used to transport gas after the initial compression facility (e.g. trunk pipelines, transmission pipelines or pipelines that require a pipeline licence)
- waste disposal; or
- other supporting infrastructure for the project (e.g. sewage treatment plants).

"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.

"low hazard dam" means any dam in the low hazard category as assessed using the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams", prepared by the Department of Environment and Resource Management, as amended from time to time.

"Max $L_{pZ,\,15\,min}$" means the maximum value of the Z-weighted sound pressure level measured over 15 minutes.

"Max $L_{pA,\,15\,min}$" 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 (5) 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.

"produced water" means groundwater that is necessarily or unavoidably brought to the surface in the process of conventional oil and gas exploration or production and the withdrawal of gas from an underground gas storage facility.

"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 Resource Management , 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

"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 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*.

"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.

"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 section 5 of the *Water Act 2000* and includes the bed and banks and any other element of a river, creek or stream confining or containing water.

"year" means a period of 12 months.

End of Conditions

END OF PERMIT