Department of Environment and Resource Management

Environmental Protection Act 1994

Non – Code Compliant Level 2 Environmental Authority (chapter 5A activities)

DERM Permit[1] Number: PEN202216411

Under section 311H of the *Environmental Protection Act 1994* this permit is issued to:

Principal Holder
Westside CSG A Pty Ltd
Level 8, 300 Queen St
BRISBANE 4000
ACN: 117145516

Joint Holders
Westside CSG D Pty Ltd
Level 8, 300 Queen St
BRISBANE 4000

Mitsui E&P Australia Pty Ltd
Level 22, Exchange Plaza
2 The Esplanade
PERTH WA 6000

in respect to carrying out a Level 2 chapter 5A activity(ies) as per Section 23 of the *Environmental Protection Regulation 2008* on the relevant resource authorities listed below:

Project Name	Resource Authority Type(s) and Number(s)
Dawson Valley Pipeline	**Petroleum Pipeline Licence (PPL) 26**

This environmental authority takes effect from: 23 June 2011

The anniversary date of this environmental authority is 22 June

This environmental authority is subject to the attached schedule of conditions.

A. F. Rahman

23 June 2011
Date

Ahmad Rahman
Delegate of Administering Authority
Department of Environment and Resource Management

[1] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Department of Environment and Resource Management.

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 Conditions

   Schedule B Definitions

SCHEDULE A CONDITIONS

GENERAL

Condition 1 – Work program and development plan

The holder of this environmental authority must submit 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 Department of Employment, Economic Development and Innovation (DEEDI) under 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 DEEDI under the P&G Act for petroleum leases.

Condition 2 – Financial assurance

The holder or proposed holder of this environmental authority must:

(a) calculate a **financial assurance** as required by the administering authority; and

(b) attach a completed Schedule of Disturbance to the original and any amended work program or development plan; and

(c) provide to the administering authority the financial assurance 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) maintain the financial assurance until the administering authority is satisfied that no claim is likely to be made on the assurance.

Condition 2A - Existing petroleum activities

Conditions 3 - 5, 5A-5H, 6 – 10, 16-17 relating to disturbance only apply to petroleum activities which commenced after 22/06/2011 subject to:

(a) the holder of this environmental authority conducting an audit of the existing petroleum activities which commenced before 22/06/2011 against the land disturbance conditions of the previous environmental authority dated 06/06/06; and

(b) the audit report being provided to the administering authority by 22 August 2011.

LAND DISTURBANCE

Condition 3 – Significant disturbance

The holder of this environmental authority must ensure that:

(a) The petroleum activity(ies) does not cause more than 0.1% of the total land area on the relevant petroleum authorities (excluding pipeline licences) that constitute the petroleum project to be significantly disturbed at any one time;

(b) Prior to conducting the petroleum activity(ies) that involve(s) significant disturbance to land, an assessment must be undertaken of the condition, type and ecological value of any vegetation in such areas where the activity is proposed to take place. The assessment must be submitted to the administering authority at any time upon request;

(c) The assessment required by condition 3 (b) 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 (ESA's) and the presence of species classed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992;* and

(d) A record of the assessment required by Conditions 3 (b) and 3 (c) must be kept and submitted to the administering authority upon request.

Condition 4 – Category A, B and C Environmentally Sensitive Areas (ESA)

The holder of this environmental authority must ensure that the petroleum activity(ies):

(a) is not conducted in any Category A, B or C Environmentally Sensitive Area;
(b) is not conducted within the **primary protection zone** of any Category A, B or C Environmentally Sensitive Area; and
(c) does not involve petroleum activities other than **limited petroleum activities** within the **secondary protection zone** of a Category A, B or C Environmentally Sensitive Area.

Condition 5

Limited petroleum activities carried out in the secondary protection zone in accordance with condition 4 (c) must be preferentially located in pre-existing areas of clearing or significant disturbance to the greatest practicable extent and avoid the clearing of mature trees.

Condition 5A

Despite condition 4, limited petroleum activities may be undertaken within the primary protection zone of, or in the following specified Category C Environmentally Sensitive Areas:

(a) 'Of Concern' Regional Ecosystems;
(b) State Forests;
(c) Timber Reserves

provided that it does not overlap with any other Category A, B or C Environmentally Sensitive Area or its associated primary protection zone.

Condition 5B

Where limited petroleum activities are proposed to be undertaken within the primary protection zone of, or in the Category C Environmentally Sensitive Area specified in condition 5A, the holder of this environmental authority must be able to demonstrate that no reasonable or practicable alternative exists and that disturbance to land only be located and carried out in areas according to the following order of preference:

(a) pre-existing cleared areas or significantly disturbed land within the primary protection zone of a Category C Environmentally Sensitive Area;
(b) undisturbed areas within the primary protection zone of a Category C Environmentally Sensitive Area;
(c) pre-existing areas of significant disturbance within a Category C Environmentally Sensitive Area (e.g. areas where significant clearing or thinning has been undertaken within a Regional Ecosystem, and / or areas containing high densities of weed or **pest** species which has inhibited re-colonisation of native regrowth);
(d) areas where clearing of a Category C Environmentally Sensitive Area is unavoidable.

Condition 5C

Notwithstanding conditions 5A and 5B, where limited petroleum activities are proposed to be undertaken within the primary protection zone of, or in a Category C Environmentally Sensitive Area specified in condition 5A, any vegetation clearing must not exceed any of the following areas:

(a) for the life of the project and before any activity commences, if the disturbance relates to an 'Of Concern' Regional Ecosystem, 5% of the **remnant unit** of 'Of Concern' Regional Ecosystem as ground truthed and mapped as per condition 3 of this environmental authority; and
(b) more than 30 m^2 for the construction of a sump; or
(c) more than six (6) metres in width for tracks; or
(d) more than 12 metres in width for flow pipeline construction purposes.

Condition 5D

For each well site within the primary protection zone of, or in a Category C Environmentally Sensitive Area specified in condition 5A, all reasonable and practical measures must be taken to minimize the area cleared which must include but not necessarily be limited to, for each well site, ranked constraints mapping and a risk assessment which considers safety and environmental impacts.

Condition 5E

Details of any significant disturbance to land undertaken within the primary protection zone of, or in a Category C Environmentally Sensitive Area, along with a record of the assessments required by conditions 3 (b) and 3 (c) must be kept and submitted to the administering authority with each annual return.

Condition 5F – Disturbance to Land – Offsets

The environmental authority holder must enter in to an environmental offset agreement with the administering authority where disturbance to land caused by the carrying out of the petroleum activities will have a remaining adverse environmental impact on an environmental value.

Condition 5G

The environmental offset agreement must be entered in to within six (6) months after submitting the record of disturbance required by condition 5E, unless otherwise agreed to by the administering authority.

Condition 5H

The environmental authority holder must implement any environmental offset agreement entered in to in accordance with conditions 5F and 5G as soon as practicable after finalisation.

Condition 6

If the assessments required by conditions 3 (b) and 3 (c) indicate that an ecosystem mapped as 'Of Concern' Regional Ecosystem by the Queensland Herbarium should be in a lower conservation value classification and the holder of this environmental authority wishes to undertake activities as if the ecosystem is of the lower conservation value they must notify the administering authority in writing before any significant disturbance to land takes place.

Condition 7

If, within the 20 business days following the lodgement of the notification under condition 6 the administering authority notifies the holder of this environmental authority, in writing, that the Regional Ecosystem mapping requires further validation, then significant disturbance to land in the mapped Regional Ecosystem is prohibited until the administering authority provides written advice that significant disturbance to land may proceed.

Condition 8 – Clearing vegetation

The holder of this environmental authority, when carrying out a petroleum activity(ies) must avoid, minimise or mitigate (in order of preference) any impacts on areas of vegetation or other areas of ecological value and avoid clearing mature trees.

Condition 9

The holder of this environmental authority, must ensure that clearing of remnant vegetation shall not exceed ten (10) metres in width for the purpose of establishing tracks and 20 metres in width for dual carriageway roads unless otherwise approved by the administering authority in writing.

Condition 10

The holder of this environmental authority must not clear vegetation or place 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 (e.g. potential impacts associated with edge effects or introduced species);
(b) on dispersible soils or highly erodible soils;
(c) on slopes greater than 10% for activities other than pipelines and wells; or
(d) in discharge areas.

Condition 11

Cleared vegetation must be stockpiled in a manner that facilitates respreading or salvaging and does not impede vehicle, stock or wildlife movements.

Condition 12 – Heritage places and archaeological artefacts

The holder of this environmental authority must take all reasonable and practicable measures to avoid impacting upon places of known or potential cultural heritage significance whilst carrying out petroleum activities.

WATER

Condition 13 – River Improvement Areas

All measures must be taken to prevent and/or minimise adverse impacts to, or reversal of, any river improvement works carried out in River Improvement Areas by Queensland's River Improvement Trusts.

Condition 14 – Wild river areas

In a declared Wild River Area, the petroleum activity(ies) must be consistent with the conditions stated in the relevant **Wild River Declaration**.

Condition 15

Where the conditions of this environmental authority conflict with the conditions of the Wild River Declaration, the conditions of the Wild River Declaration will prevail.

Condition 16 - Floodplains

Where the petroleum activity(ies) is carried out on floodplain areas, the holder of this environmental authority must ensure that the petroleum activity(ies) does not:

(a) concentrate flood flows in a way that will or may cause or threaten an adverse environmental impact; or
(b) divert flood flows from natural drainage paths and alter flow distribution; or
(c) increase the local duration of floods; or
(d) increase the risk of detaining flood flows; or
(e) pose an **unacceptable risk** to the safety of persons from flooding; or
(f) pose an unacceptable risk of damage to property from flooding.

Condition 17

In the carrying out of the petroleum activity(ies) the holder of this environmental authority must not clear vegetation or place **fill**, in or within:

(a) 200 metres from any **wetland**, **lake** or **spring**; or
(b) 100 metres of the **high bank** of any other **watercourse**.

Condition 18

The holder of this environmental authority must not excavate or place fill in a way that adversely interferes with the flow of water in a watercourse, wetland or spring, including works that divert the course of flow of the water or works that impound the water.

Condition 19

Despite conditions 17 and 18, pipeline, track and road construction works may be undertaken in a watercourse, wetland or spring where there is no reasonable and practicable alternative (i.e **trenchless methods**) such as the use of horizontal directional drilling methods) for a maximum period of ten (10) **business days**, provided that the works are conducted in accordance with the following order of preference:

(a) conducting work in times of no flow; and
(b) using all reasonable and practicable measures to reduce impacts in times of flow.

Condition 20

The petroleum activity(ies) or works resulting in **significant disturbance** to the **bed and or banks** of a watercourse, lake, wetland or spring must:

(a) be no greater than the minimum area necessary for the purpose of the significant disturbance;
(b) be designed and undertaken by a suitably qualified person taking into account the matters listed in the "Planning Activities" and "Impact Management" sections of the Department of Environment and Resource Management's "Guideline – Activities in a watercourse, lake or spring associated with mining operations" December 2010, as amended from time to time; and

(c) upon cessation of the petroleum activity(ies) or works, commence **rehabilitation** immediately.

Condition 21 – Erosion and sediment control

Erosion protection and sediment control measures must be designed, implemented and maintained to minimise erosion and the release of sediment to waters from the carrying out the petroleum activity(ies).

Condition 22

Sediment control measures must be implemented to minimise any increase in water turbidity due to carrying out the petroleum activity(ies) in the bed and/or banks of a watercourse, lake, wetland, or a spring.

Condition 23

Routine, regular and frequent visual monitoring must be undertaken while carrying out construction work and/or any maintenance of completed works in a watercourse, lake, wetland or spring.

Condition 24

If, due to the petroleum activity(ies), water turbidity increases in the watercourse, lake, wetland or spring outside contained areas, works must cease and the sediment control measures must be rectified to limit turbidity before the petroleum activity(ies) recommences.

Condition 25

The extraction of groundwater as part of the petroleum activity(ies) from underground aquifers must not directly or indirectly cause environmental harm to any watercourse, lake, wetland or spring.

SOILS

Condition 26 – Topsoil management

Except in areas of highly erodible soils, topsoil 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.

PETROLEUM INFRASTRUCTURE AND ACTIVITIES

Condition 27 – Drilling operations

All waste fluids and muds resulting from drilling and exploration activities must be contained in an appropriately constructed dam or containment structure for disposal, remediation or reuse where applicable.

Condition 28

Oil and synthetic based drilling muds are not authorised to be used under this environmental authority.

Condition 29 – Well Stimulation

Stimulation activities must not be conducted on PPL26.

PIPELINES

Condition 30 – Pipeline construction

Outside of an Environmentally Sensitive Area, the pipeline construction corridor must not exceed 30 metres in width.

Condition 30A

Outside of an Environmentally Sensitive Area, turn arounds and work areas must not exceed 50 metres in width.

Condition 31

During construction, pipe must be strung with gaps to allow for fauna movement across the line of the pipe.

Condition 32

Hydrostatic test water must be contained in dams on site, tested and either:

(a) directly reused where appropriate for petroleum activities;

(b) treated so that it meets water quality criteria for the intended reuse; or

(c) disposed of via evaporation.

Condition 33

Measures must be employed to prevent fauna entrapment in pipe sections or within the pipeline trench.

Condition 34

Open trenches and pipes must be checked for fauna prior to backfill and any trapped animals removed.

Condition 35

The pipeline construction corridor must be rehabilitated on completion of laying the pipe, with the exception of the width of an access track, if necessary, to enable vehicular movement along the corridor for pipeline inspection and maintenance.

MANAGEMENT OF CONTAMINANTS

Condition 36 – Contaminant release

Contaminants must not be directly or indirectly released to land except as permitted under this environmental authority

Condition 37

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

Condition 38 – Spill response

A spill response plan must be developed for all pipelines and other plant or equipment under this environmental authority carrying liquids that have the potential to cause environmental harm. The plan must address the following:

(a) monitoring and detection systems;

(b) notification and reporting procedures (internal and external);

(c) call-out procedures and contact lists;

(d) measures required to halt the spill (i.e. control of pumps, valves etc);

(e) spill containment procedures;

(f) procedures to safely recover the spilt material;

(g) impact monitoring programs and procedures;

(h) clean up and rehabilitation procedures;

(i) requirements for the remediation or disposal of contaminated soil;

(j) personnel responsibilities;

(k) equipment requirements, location, storage, maintenance and transport;

(l) communications and logistics; and

(m) incident investigation procedures.

Condition 39

Workforce training must be conducted in spill response and recovery procedures within one month of an employee commencing on the job and annually thereafter and records of this training must be kept and submitted to the administering authority upon request.

Condition 40

As soon as the holder of this environmental authority becomes aware of any release not in accordance with this environmental authority, the release must be stopped, promptly rectified using appropriate equipment and remediation methods and all reasonable actions must be taken to prevent a recurrence of the release.

Condition 41

All explosives, hazardous chemicals, corrosive substances, toxic substances, gases, dangerous goods, flammable and combustible liquids (including petroleum products and associated piping and **infrastructure**) must be stored and handled in accordance with the relevant Australian Standard where such is available.

Condition 42

Notwithstanding the requirements of any Australian Standard, any liquids stored on site that have the potential to cause environmental harm must be stored in, or serviced by, an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land.

Condition 43

Where no relevant Australian Standard is available for the chemical and/or fuel storage activity, the following requirements apply:

(a) storage tanks must be **bunded** so that the capacity and construction of the **bund** is sufficient to contain at least 110 % of a single storage tank or 100 % of the largest storage tank plus 10 % of the second largest storage tank in multiple storage areas; and
(b) drum storages must be bunded so that the capacity and construction of the bund is sufficient to contain at least 25 % of the maximum design storage volume within the bund.

Condition 44

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

Condition 45 – Release of contaminants to the atmosphere

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**.

DAMS

Condition 46– Management of dams

High and significant hazard dams are not permitted on [*insert tenure numbers]*.

Condition 47

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**.

Condition 48

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.

Condition 49

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.

Condition 50

Where the hazard category of a low hazard dam is for the first time assessed as significant or high, the holder of this environmental authority must:

(a) apply to amend this environmental authority to a **level 1 environmental authority**; and

(b) ensure that the dam meets the **hydraulic performance** required of the assessed hazard category within 12 **months** of that assessment.

Condition 51

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.

Condition 52

In the event of early signs of loss of structural or hydraulic integrity of a low hazard dam, the holder of this environmental authority must immediately take action to prevent or minimise any actual or potential environmental harm.

Condition 53 – Access to dams

Any dam constructed as part of the petroleum activities 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.

Condition 54 – Decommissioning dams

Each dam must be decommissioned such that it either:

(a) becomes a **stable** landform that no longer contains **flowable substances**; or

(b) is approved or authorised under relevant legislation for a **beneficial use**; or

(c) becomes a void authorised by the administering authority to remain after decommissioning, or

(d) is compliant with the rehabilitation requirements of the authority; and

(e) 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.

Condition 55 – CSG water

CSG water may be temporarily contained in a dam or other containment vessel on site prior to:

(a) reuse on site for petroleum activities; or

(b) use under the provisions of the *Petroleum and Gas (Production and Safety) Act 2004*; or

(c) use for an approved beneficial use; or

(d) removal from the site for treatment or disposal at an appropriately authorised facility.

NOISE AND VIBRATION

Condition 56

A Noise Management Plan which has been **certified** by a **suitably qualified person** must be developed prior to the commencement of the petroleum activity(ies) authorised under this environmental authority.

Condition 57

The Noise Management Plan must have due regard to the Department of Environment and Resource Management's procedural guide "Coal Seam Gas Industry – Control of Noise from Gasfield Petroleum Activities" (2011), as amended from time to time.

Condition 58

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 E, 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 in to 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 E, 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 61 (j); and
(l) mediation processes to be used in the event that noise complaints are not able to be resolved.

Condition 59

The holder of this environmental authority must implement the Noise Management Plan.

Condition 60

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 E, Table 1 – Noise limits at Sensitive Receptors.

Condition 61

The emission of noise from the petroleum activity(ies) authorised under this environmental authority must not result in levels greater than those specified in Table 1 – Noise limits at Sensitive Receptors in the event of a valid complaint about noise being made to the administering authority.

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	$L_{Aeq,adj,15\ min}$	45 dBA	43 dBA	40 dBA
6:00 pm – 10:00 pm	$L_{Aeq,adj,15\ min}$	40 dBA	38 dBA	35 dBA
10:00 pm – 6:00 am	$L_{Aeq,adj,15\ min}$	28 dBA	28 dBA	28 dBA
	Max $L_{pA,\ 15\ mins}$	55 dBA	55 dBA	55 dBA
6:00 am – 7:00 am	$L_{Aeq,adj,15\ min}$	40 dBA	38 dBA	35 dBA

Notes:

1. *L_{Aeq} and* Max L_{pA} *are to be measured over any 15 minute period*
2. The noise limits in Table 1 have been set based on the following deemed background noise levels *(L_{ABG}):*

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*

3. Reference should also be made to the Coal Seam Gas Procedural Guide – Control of Noise from Gasfield Activities for the determination of the noise limits.

Condition 62

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

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

Condition 63

Where alternative arrangements are in place with an affected person(s) at a sensitive receptor as referred to by condition 61 (j), the noise limits in 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.

Condition 64

Notwithstanding condition 62, emission of any noise below 315 Hz must not cause an environmental nuisance.

Condition 65

Low frequency noise from the petroleum activity(ies) is not considered to be an environmental nuisance under condition 64 if monitoring shows that noise emissions do not exceed the following limits:

(a) 50 dB(Z) measured inside the sensitive receptor; and
(b) the difference between the internal A-weighted and Z-weighted noise levels is no greater than 15 dB.

Condition 66

The method of measurement and reporting of noise levels must comply with the latest edition of the Department of Environment and Resource Management's (Environmental Protection Agency's) Noise Measurement Manual (2000) or the most recent version of *AS1055 Acoustics – Description and measurement of environmental noise*.

Condition 67 – Vibration and Blasting

Blasting activities must not be conducted on PPL26.

WASTE MANAGEMENT

Condition 68 – General waste management

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*.

Condition 69

Waste must not be burned or be allowed to be burned on PPL26.

Condition 70 – Regulated waste

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.

Condition 71

Regulated waste generated in carrying out the petroleum activit(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.

Condition 72

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.

Condition 73

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.

Condition 74 – Sewage

Disposal of sewage effluent must not cause environmental nuisance or material or serious environmental harm.

NOTIFICATION AND MONITORING

Condition 75 – Notification

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.

Condition 76

Notwithstanding condition 75, 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; 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).

Condition 77

Subject to condition 75, the holder of this environmental authority must report spills of contaminants (including but not limited to hydrocarbons, **coal seam gas water** or mixtures of both) of the following volumes or kind:

(a) releases of any volume of contaminants to water;
(b) releases of volumes of contaminants greater than 200L of hydrocarbons, 1000 L of **brine** or 5 000 L of **coal seam gas water** to land;
(c) releases of any volumes of contaminants where potential serious or material environmental harm has occurred or may occur.

Condition 78

The notification of emergencies or incidents as required by conditions 75, 76 and 77 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.

Condition 79

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 78 (a) – 78 (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.

Condition 80

Within ten (10) business days following the initial notification of an emergency or incident or receipt of monitoring results indicating any significant changes in groundwater quality caused by the petroleum activity(ies), then the analysis results indicating these changes, including any proposed actions to mitigate the changes in groundwater quality information must be submitted to the administering authority.

Condition 81

If groundwater contamination caused by the petroleum activity(ies) is encountered, the following must be reported to satisfy requirements under condition 80:

(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.

Condition 82 – Monitoring

The holder of this environmental authority must:

(a) develop a monitoring program that will demonstrate compliance with the conditions of the environmental authority;

(b) document monitoring and inspections carried out under the monitoring program and any actions taken; and

(c) record, compile and keep for a minimum of seven (7) years all monitoring results and data.

COMPLAINTS

Condition 83 - Complaints

The holder of this environmental authority must:

(a) when the administering authority advises the holder of a complaint that the administering authority does not consider to be frivolous, vexatious or based on a mistaken belief alleging nuisance (e.g. caused by dust or noise), investigate the complaint and advise the administering authority of the action proposed or undertaken in relation to the complaint;

(b) if the administering authority is not satisfied with the proposed or completed action, undertake monitoring or other action requested by the administering authority; and

(c) maintain a record of complaints and incidents causing environmental harm and actions taken in response to the complaints or incidents for a minimum of seven (7) years.

REHABILITATION

Condition 84 - Rehabilitation

As soon as practicable after the **end** of petroleum activities that have caused significant disturbance to land, the holder of this environmental authority must:

(a) remediate contaminated land caused by petroleum activities in accordance with the requirements of the *Environmental Protection Act 1994* and this authority; and

(b) undertake works to establish a safe, **stable**, non polluting landform similar to that of surrounding undisturbed areas, including where relevant:

i. backfilling any **voids** and trenches;

ii. neutralising and/or encapsulating any acid producing or potentially acid producing material;

iii. removing or encapsulating in low permeability material saline residues from evaporation ponds;

iv. re-establishing surface drainage lines;

v. minimising the potential for slumping, subsidence or erosion;

vi. reinstating the top layer of the soil profile;

vii. respreading any cleared vegetation; and

viii. establishing vegetation of similar species composition and density of cover to the surrounding undisturbed land.

Condition 85 – Maintenance of land rehabilitation

Monitoring and maintenance of rehabilitated areas must take place to ensure and demonstrate:

(a) the stability of landforms;

(b) that erosion control measures remain effective;

(c) that stormwater runoff and seepage from rehabilitated areas does not negatively affect the environmental values of any waters;

(d) that plants show healthy growth and recruitment is occurring; and

(e) that rehabilitated areas are free of any **declared pest plants.**

Condition 86 – Rehabilitation Success

Rehabilitation can be considered successful when the site can be managed for its designated land use (either similar to that of surrounding undisturbed areas or as otherwise agreed in a written document with the landowner/holder and the administering authority) without any greater management input than for other land in the area being used for a similar purpose and there is evidence that the rehabilitation has been successful for at least three (3) years.

Condition 87 – Decommissioning pipelines

The holder of this environmental authority must decommission inactive buried pipelines by in-situ decommissioning (abandonment in place).

Condition 88

Prior to pipelines and equipment being disconnected they must be drained or vented and cleaned via purging or flushing.

Condition 89

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 pond.

Condition 90 – Infrastructure

All above ground **infrastructure** used for the petroleum activities must be removed prior to surrender of this environmental authority, except where it is to remain under a resource authority pursuant to *Petroleum and Gas (Production and Safety) Act 2004*, or with the written agreement of the administering authority and the post petroleum authority landowner/holder.

Condition 91– Transition of petroleum authority

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 B 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 Interpretations Act 1954*, or the Macquarie Dictionary, or the *Petroleum and Gas (Production and Safety) Act 2004* and its regulations must be used in that order.

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*).

Note: 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 Resource Management; 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 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.

Appropriately 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.

Archaeological artefact means:

(a) any artefact that is evidence of an aspect of Queensland's history, whether it is located in, on or below the surface of land, and not

(b) a thing that is Aboriginal cultural heritage under the *Aboriginal Cultural Heritage Act 2003* or Torres Strait Islander cultural heritage under the *Torres Strait Islander Cultural Heritage Act 2003*.

Archaeological investigation means a physical investigation of the place carried out by a person or persons with recognised qualifications, experience or standing in historical archaeology, mining history, cultural heritage management, or related discipline for the purpose of investigating, recording or conserving archaeological artefacts on the place.

Archaeological place means a place entered in the Queensland heritage register under Part 5 of the *Queensland Heritage Act 1992*.

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:

(a) operations of any kind and all things constructed, erected or installed for that dam; and

(b) any land used for those operations.

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

Australian Standard 2187 means Australian Standard 2187.0:1998 "Explosives—Storage, transport and use, Part 0", Australian Standard 2187.1:1998 "Explosives—Storage, transport and use Part 1" and Australian Standard 2187.2:2006 "Explosives—Storage and use, Part 2" or any updated versions that becomes available from time to time.

Australian Standard 2885 means Australian Standard 2885.0:2008 "Pipelines – Gas and Liquid Petroleum General Requirements", Australian Standard 2885.1:2007 "Pipelines – Gas and Liquid Petroleum Design and Construction" and Australian Standard 2885.3:2001 "Pipelines – Gas and Liquid Petroleum Operation and Maintenance", or any updated versions that becomes available from time to time.

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:

(a) 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:

i. of benefit to that owner in that it adds real value to their business or to the general community,

ii. in accordance with relevant provisions of the *Environmental Protection Act 1994*,

iii. sustainable by virtue of written undertakings given by that owner to maintain that dam, and

iv. the transfer and use have been approved or authorised under any relevant legislation; or

(b) with respect to associated water, see **DERM**'s *Coal Seam Gas Water Management Policy* and *Notice of decision to approve a resource for beneficial use – associated water* which can be accessed on Department of Environment and Resource Management's website at 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 either saline water with a total dissolved solid concentration greater than 40 000 mg/l. or coal seam gas water after it has been concentrated through water treatment processes and/or evaporation.

Bund or bunded 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 bunded 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; or
- a day between the 26th of December through to the 1st of January in the following year.

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" 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*;
- Any wetland shown on the Map of Referable Wetlands available from the Department of Environment and Resource Management's website; or
- Of Concern Regional Ecosystems identified in the database maintained by the Department of Environment and Resource Management called 'RE description database' containing RE numbers and descriptions.

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:

(a) exactly what is being certified and the precise nature of that certification;

(b) the relevant legislative, regulatory and technical criteria on which the certification has been based;

(c) 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

(d) 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.

Clearing means:

(a) in relation to grass, scrub or bush - the removal of vegetation by disturbing root systems and exposing underlying soil (including burning), but does not include—

i the flattening or compaction of vegetation by vehicles if the vegetation remains living; or

ii the slashing or mowing of vegetation to facilitate access tracks; or

iii the clearing of noxious or introduced plant species; and

(b) in relation to trees - cutting down, ringbarking, pushing over, poisoning or destroying in any way.

Construction in relation to a dam includes building a new dam and modifying or lifting an existing dam.

Coal Seam Gas (CSG) water means groundwater that is necessarily or unavoidably brought to the surface in the process of coal seam gas exploration or production. CSG water typically contains significant concentrations of salts, has a high sodium adsorption ratio (SAR) and may contain other

contaminants that have the potential to cause environmental harm if released to land or waters through inappropriate management. CSG water is a waste, as defined under section 13 of the *Environmental Protection Act 1994.*

Cultural heritage significance means aesthetic, architectural, historical, scientific, social or other significance, to the present generation or past or future generations, as assessed against the following criteria:

(a) the place is important in demonstrating the evolution or pattern of Queensland's history;

(b) the place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage;

(c) the place has potential to yield information that will contribute to an understanding of Queensland's history;

(d) the place is important in demonstrating the principal characteristics of a particular class of cultural places;

(e) the place is important because of its aesthetic significance;

(f) the place is important in demonstrating a high degree of creative or technical achievement at a particular period;

(g) the place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;

(h) the place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history.

Dam means a land-based structure (including a **levee,** dyke or bund) or a void that is intended or used to contain, divert or control **flowable substances**, and includes any substances that are thereby contained or controlled by that land-based structure or void and **associated works**. However; a dam does *not* mean a fabricated or manufactured tank or container designed to a recognised standard, nor does a dam mean a land-based structure where that structure is designed to an Australian Standard such as a bund designed for spill containment to AS1940.

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

DERM means Queensland Department of Environment and Resource Management.

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.

Discharge area is an area in the landscape where the net movement of groundwater is out of the aquifer. This may be expressed by waterlogging where groundwater discharges at the soil surface because of seepage or salting because of evaporation.

Dispersible soils are structurally unstable soils that readily break down into their constituent particles in water (e.g. the clay material disintegrates into particles less than 2 microns across within 24 hours when soil crumbs are submerged in distilled water). These soils are also known as sodic soils and have a high percentage of sodium ions (in soluble or exchangeable form).

Ecosystem functioning means the interactions between and within living and non-living 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 activities such as rehabilitation. In other words, it does not refer to the 'completion' of the petroleum activity, 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 means an equivalent person as defined in item 63 of Schedule 2 in the *Environmental Protection Regulation 2008.*

Evaporation pond means a dam specifically designed for the purpose of disposing of a liquid via evaporation.

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

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.

Financial assurance means a security deposit, either cash or a bank guarantee, held by the administering authority to cover the potential costs of preventing or minimising environmental harm from, or rehabilitating areas significantly disturbed by, the petroleum activities.

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

Foreseeable future is 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 in relation to a **dam** as defined means the potential for environmental harm resulting from the collapse or failure of the dam to perform its primary purpose of containing, diverting or controlling flowable substances.

Hazard category means the level of hazard (low, significant or high) assigned to a dam as a result of an assessment against tables and other criteria in the latest version of the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* published by DERM.

Heritage place means any place that may be of **cultural heritage significance,** or any place with potential to contain **archaeological artefacts** that are an important source of information about Queensland's history.

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.

Highly erodible soils means very unstable soils that are generally described as Sodosols with hard-setting, fine sandy loam to silty clay loam surfaces (solodics, solodised solonetz and solonetz) or soils with a dispersible layer located less than 25cm deep or soils less than 25cm deep.

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 in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (Version 1.0, 2008)* published on DERM's website under www.derm.qld.gov.au.

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 water storage dams, roads and tracks, equipment, buildings and other structures built for the purpose and duration of the conduct of the petroleum activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams (e.g. evaporation ponds), 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.

$L_{A90, adj, 15\ mins}$ means the A-weighted sound pressure level exceeded for 90 percent of the measurement time period of 15 minutes, adjusted for noise characteristics including tonality and impulsiveness and measured in the presence of the noise under investigation, using Fast Response.

Level 1 environmental authority means an environmental authority (chapter 5A activities) for a level 1 chapter 5A activity pursuant to section 23 of the *Environmental Protection Regulation 2008.*

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

Levee means a dyke or bund that is designed only to provide for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from unplanned releases from other works of infrastructure, during the progress of those stormwater or flood flows or those unplanned releases; and does not store any significant volume of water or flowable substances at any other times.

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).

Limited regulated waste means any of the following regulated wastes, asbestos, clinical waste or quarantine waste that has been rendered non-infectious, fish processing waste, food processing waste, poultry processing waste, tyres or treatment tank sludge or residue produced in the carrying out of an activity in relation to sewage treatment and water supply activities.

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

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.

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.

Noxious means harmful or injurious to health or physical well being.

'Of concern' regional ecosystem means an 'of concern' regional ecosystem identified in the database maintained by the Department of Environment and Resource Management called 'Regional ecosystem description database' containing regional ecosystem numbers and descriptions. The database is available for inspection on the Department of Environment and Resource Management's website at www.epa.qld.gov.au/nature_conservation/biodiversity/regional_ecosystems/ .

Offensive means causing unreasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

Overland flow water means water, including floodwater, flowing over land, other than in a watercourse or lake:

(a) after having fallen as rain or in any other way; or

(b) after rising to the surface naturally from underground.

Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads, pipelines etc) which is to be left by agreement with the landowner.

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 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*.

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 (Version 1.0, 2008)* published by **DERM** on its website under www.derm.qld.gov.au.

Regulated waste means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 2008* (whether or not it has been treated or immobilised), and includes–

(a) for an element – any chemical compound containing the element; and

(b) anything that has contained the waste.

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

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.

Remnant unit means a continuous polygon of remnant vegetation (as defined by the QLD Herbarium) representative of a single RE type or a single heterogeneous unit.

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.

Restricted stimulation fluids means fluids used for the purpose of stimulation, including fracturing, that contain the following chemicals, unless otherwise provided for under 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.

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 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.

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.

State heritage place means a place entered in the Queensland heritage register under Part 4 of the *Queensland Heritage Act 1992.*

Stimulation means a technique used to increase the permeability of a natural underground reservoir, including for example, hydraulic fracturing / hydrofraccing, fracture acidizing and the use of proppant treatments.

Suitably qualified and experienced person in relation to dams means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, or at the relevant time holds a 'deemed registration' within the meaning of the *Mutual Recognition (Queensland) Act 1992*; and has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

(a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and

(b) a total of five years of suitable experience and demonstrated expertise in the geomechanics of dams with particular emphasis on stability, geology and geochemistry, and

(c) a total of five years of suitable experience and demonstrated expertise each, in three 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.

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.

Thing means a material object without life or consciousness or some entity, object or creature which is not or cannot be specifically designated or precisely described.

Threatening processes are processes, features and actions that can have a detrimental effect upon the health and viability of an area of vegetation. For example, 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. For example, a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation.

Topsoil 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 300mm in depth from the natural surface.

Trenchless methods means construction methods for the installation of pipelines and cables below the ground with minimal excavation. Trenchless methods can include, but not necessarily be limited to:

- moling
- pipe ramming method
- horizontal directional drilling
- utility tunneling, pipe jacking, auger boring
- microtunnelling and pipe jacking
- on-line replacement

Unacceptable risk is when the results of a hazard assessment indicates that there is both a high consequence and a high likelihood of an event occurring such that the risk is classified as "high", "very high" or "extreme".

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, pond, swamp, wetland, spring, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and underground water.

Watercourse is a creek, river or stream

(a) in which water flows intermittently or permanently in a visibly defined channel, whether artificial, artificially improved or natural; and

(b) that has evidence of biological dependence on any water that flows in the creek, river or stream or on the banks or bed.

Wetland means an area shown as a wetland on a 'Map of referable wetlands', a document approved by the chief executive (environment). A map of referable wetlands can be viewed at www.derm.qld.gov.au.

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.