Permit

Environmental Protection Act 1994

Environmental authority EPPG00783713

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

Environmental authority number: EPPG00783713

Environmental authority takes effect on 11 December 2024. This is the take effect date.

The anniversary date of this environmental authority is the same day each year as the take effect date. The payment of the annual fee will be due each year on this day.

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

Environmental authority holder(s)

Name(s)	Registered address
Westside CSG D Pty Ltd	Level 17 300 Queen Street BRISBANE CITY QLD 4000
Westside CSG A Pty Ltd	Level 17 300 Queen Street BRISBANE CITY QLD 4000
Mitsui E&P Australia Pty Limited	Level 11, Exchange Tower, 2 The Esplanade PERTH WA 6000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 06: A petroleum activity carried out on a site containing a high hazard dam or a significant hazard dam	PL94

Environmentally relevant activity/activities	Location(s)
Schedule 3 08: A petroleum or GHG storage activity, other than items 1 to 7, that includes an activity from Schedule 2 with an AES	PL94
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-ii) 21 to 100EP otherwise	PL94
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	PL94

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

- the presence of, or happening of an event involving, a hazardous contaminant on the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- if the land is contaminated land – a change in the condition of the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the land (notice must be given within 20 business days).

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term ‘duty to notify’.

Take effect

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

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority – on the nominated day; or

b) if the authority states a day or an event for it to take effect – on the stated day or when the stated event happens; or

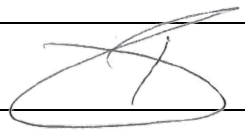
c) otherwise – on the day the authority is issued.

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

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

The anniversary day of this environmental authority is the same day each year as the effective date. The payment of the annual fee will be due each year on this day.

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

	11 December 2024
Signature	Date

Tristan Roberts
Department of the Environment, Tourism, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Energy and Extractive Resources Business Centre
GPO Box 2454, Brisbane QLD 4001
Phone: (07) 3330 5715
Email: EnergyandExtractive@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

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

Conditions of environmental authority

Schedule A - General	
Condition number	**Condition**
Authorised Resource Activities	
(A1)	This environmental authority authorises the carrying out of the following resource activities: a) the petroleum activities and specified relevant activities listed in *Schedule A, General, Table 1—Authorised Resource Activities* to the extent they are carried out in accordance with the activity's corresponding scale or intensity or both (where applicable); and b) incidental activities that are not otherwise specified relevant activities.
(A2)	The authorised resource activities are authorised subject to the conditions of this environmental authority.
(A3)	This environmental authority does not authorise a relevant act to occur in carrying out an authorised resource activity unless a condition expressly authorises that relevant act to occur. Where there is no condition, the lack of a condition must not be construed as authorising the relevant act.

Schedule A, General, Table 1 – Authorised Resource Activities

Authorised Resource Activities	**Scale**		**Intensity**
	Maximum size	**Location**	
Petroleum activities			
Coal seam gas exploration and production	518ha	Within project area	600 wells
Specified relevant activities			
Stimulation activities	N/A	Within project area	600 wells
Operating fuel burning equipment (permanent, in isolation or combined in operation, or interconnected) that is capable of burning more than 500kg of fuel in an hour	15 ha across 7 compressor stations	Within project area	4200kg/hour (total)
Sewage treatment works, other than no-release works, where treated effluent is discharged from the works to an infiltration trench of through an irrigation scheme of	100 EP per facility	Within project area	1 facility 1.25KL/day

Waste disposal onsite—operating a facility for disposing of greater than 50t of non-regulated waste in a year (mix-bury-cover where the drill muds do not have any substances that would make it a regulated waste)	Combined disposal capacity for waste less than 10000t/year	Within project area	600 waste disposal locations
Water treatment facility	7.43ha	Within project area	1 water treatment facility Less than 5ML/ day
Regulated Dam	2.73ha	Within project area	1 dam

Monitoring Standards	
(A4)	All monitoring must be undertaken by a suitably qualified person.
(A5)	If requested by the administering authority in relation to investigating a complaint, monitoring must be commenced within 10 business days.
(A6)	All laboratory analyses and tests must be undertaken by a laboratory that has NATA accreditation for such analyses and tests.
(A7)	Notwithstanding condition (A6), where there are no NATA accredited laboratories for a specific analyte or substance, then duplicate samples must be sent to at least two separate laboratories for independent testing or evaluation.
(A8)	Monitoring and sampling must be carried out in accordance with the requirements of the following documents (as relevant to the sampling being undertaken), as amended from time to time: a) for waters and aquatic environments, *the Queensland Government's Monitoring and Sampling Manual 2009 – Environmental Protection (Water and Wetland Biodiversity) Policy 2019* b) for groundwater, *Groundwater Sampling and Analysis – A Field Guide* (2009:27 GeoCat #6890.1) c) for noise, the *Environmental Protection Regulation 2019* d) for air, the *Queensland Air Quality Sampling Manual and/or Australian Standard 4323.1:1995 Stationary source emissions method 1: Selection of sampling positions*, as appropriate for the relevant measurement e) for soil, the *Guidelines for Surveying Soil and Land Resources, 2nd edition* (McKenzie et al. 2008), and/or the *Australian Soil and Land Survey Handbook, 3rd edition* (National Committee on Soil and Terrain, 2009); and

	f) for dust, Australian Standard AS3580.
Notification	
(A9)	In addition to the requirements under Chapter 7, Part 1, Division 2 of the *Environmental Protection Act 1994*, the administering authority must be notified through the Pollution Hotline and in writing, as soon as possible, but within 48 hours of becoming aware of any of the following events: a) any unauthorised significant disturbance to land b) potential or actual loss of structural or hydraulic integrity of a dam c) when the level of the contents of any regulated dam reaches the mandatory reporting level d) when a regulated dam will not have available storage to meet the design storage allowance (DSA) on 1 November of any year e) potential or actual loss of well integrity f) unauthorised releases of any volume of prescribed contaminants to waters g) unauthorised releases of volumes of contaminants, in any mixture, to land greater than: i. 200 L of hydrocarbons or ii. 200 L of stimulation additives or iii. 500 L of stimulation fluids or iv. 1 000 L of brine or v. 5 000 L of untreated coal seam gas water or vi. 5 000 L of raw sewage or vii. 10 000 L of treated sewage effluent. h) the use of restricted stimulation fluids i) groundwater monitoring results from a landholder's active groundwater bore monitored under the stimulation impact monitoring program which is a 10 percent or greater increase from a previous baseline value for that bore and which renders the water unfit for its intended use; and j) monitoring results where two out of any five consecutive samples do not comply with the relevant limits in the environmental authority.
Contingency Plan for Emergency Events and Environmental Incidents	
(A10)	Authorised resource activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents which include, but are not necessarily limited to: a) a clear definition of what constitutes an environmental emergency incident or near miss for the authorised resource activities b) consideration of the risks caused by the authorised resource activities including the impact of flooding and other natural events on the authorised resource activities c) response procedures to be implemented to prevent or minimise the risks of environmental harm occurring

	d) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused e) procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land f) training of staff to enable them to effectively respond; and g) procedures to notify the administering authority, local government and any potentially impacted landholder.
Maintenance of plant and equipment	
(A11)	All plant and equipment must be maintained and operated in their proper and effective condition.
(A12)	The following infrastructure must be signed with a unique reference name or number in such a way that it is clearly observable: a) regulated dams and low consequence dams b) exploration, appraisal and development wells c) water treatment facilities d) brine encapsulation facilities e) landfill cells f) sewage treatment facilities g) specifically authorised discharge points to air and waters h) any chemical storage facility associated with the environmentally relevant activity of chemical storage i) field compressor stations j) central compressor stations k) gas processing facilities; and l) pipeline compressor stations.
(A13)	Measures to prevent fauna being harmed from entrapment must be implemented during the construction and operation of well infrastructure, dams and pipeline trenches.
Underground Gas Storage	
(A14)	Testing, evaluating, developing and using natural underground reservoirs for petroleum storage or to store prescribed storage gases is not authorised under this environmental authority.

Erosion and sediment control	
(A15)	For activities involving significant disturbance to land, control measures that are commensurate to the site-specific risk of erosion, and risk of sediment release to waters must be implemented to: a) allow stormwater to pass through the site in a controlled manner and at non-erosive flow velocities b) minimise soil erosion resulting from wind, rain, and flowing water c) minimise the duration that disturbed soils are exposed to the erosive forces of wind, rain, and flowing water d) minimise work-related soil erosion and sediment runoff; and e) minimise negative impacts to land or properties adjacent to the activities (including roads).
Complaints	
(A16)	Authorised resource activities must not cause environmental nuisance at a sensitive place, other than where an alternative arrangement is in place.
Documentation	
(A17)	A certification must be prepared by a suitably qualified person within 30 business days of completing every plan, procedure, program and report required to be developed under this environmental authority, which demonstrates that: a) relevant material, including current published guidelines (where available) have been considered in the written document b) the content of the written document is accurate and true; and c) the document meets the requirements of the relevant conditions of the environmental authority.
(A18)	All plans, procedures, programs, reports and methodologies required under this environmental authority must be written and implemented.
(A19)	All documents required to be developed under this environmental authority must be kept for five years.
(A20)	All documents required to be prepared, held or kept under this environmental authority must be provided to the administering authority upon written request within the requested timeframe.
(A21)	A record of all complaints must be kept including the date, complainant's details, source, reason for the complaint, description of investigations and actions undertaken in resolving the complaint.

Schedule B – Waste Management	
Condition number	**Condition**
General	
(B1)	Measures must be implemented so that waste is managed in accordance with the waste and resource management hierarchy and the waste and resource management principles.
(B2)	Waste, including waste fluids, but excluding waste used in closed-loop systems, must be transported off-site for lawful re-use, remediation, recycling or disposal, unless the waste is specifically authorised by conditions (B4) to (B14) to be disposed of or used on site.
(B3)	Waste fluids, other than flare precipitant stored in flare pits, or residual drilling material or drilling fluids stored in sumps, must be contained in either: a) an above ground container; or b) a structure which contains the wetting front.
(B4)	Green waste may be used on-site for either rehabilitation or sediment and erosion control, or both.
(B5)	Vegetation waste may be burned if it relates to a state forest, timber reserve or forest entitlement area administered by the *Forestry Act 1959* and a permit has been obtained under the *Fire and Rescue Service Act 1990*.
Pipeline Wastewater	
(B6)	Pipeline wastewater, may be released to land provided that it: a) can be demonstrated it meets the acceptable standards for release to land; and b) is released in a way that does not result in visible scouring or erosion or pooling or run-off or vegetation die-off.
Authorised uses of produced water for authorised resource activities	
(B7)	Produced water may be re-used in: a) drilling and well hole activities; or b) stimulation activities.
(B8)	Produced water may be used for dust suppression provided the following criteria are met: a) the amount applied does not exceed the amount required to effectively suppress dust; and b) the application: i. does not cause on-site ponding or runoff ii. is not applied outside the area being suppressed iii. does not harm vegetation surrounding the area being dust suppressed; and

	iv. does not cause visible salting.
(B9)	Produced water may be used for construction purposes provided the use: a) does not result in negative impacts on the composition and structure of soil or subsoils b) is not directly or indirectly released to waters c) does not result in runoff from the construction site; and d) does not harm vegetation surrounding the construction site.
(B10)	If there is any indication that any of the circumstances in condition (B8(b)(i)) to (B8(b)(iv)) or (B9(a)) to (B9(d)) is occurring the use must cease immediately and the affected area must be remediated without delay.
Sewage treatment	
(B11)	Treated sewage effluent or greywater can be released to land provided it: a) meets or exceeds secondary treated class B standards for a treatment system with a daily peak design capacity of between 150 EP and 1500 EP or b) meets or exceeds secondary treated class C standards for a treatment system with a daily peak design capacity of less than 150 EP.
(B12)	The release of treated sewage effluent or greywater authorised in condition (B11) must: a) be to a fenced and signed contaminant release area(s) b) not result in pooling or run-off or aerosols or spray drift or vegetation die-off c) be to a contaminant release area(s) that is kept vegetated with groundcover, that is: i. not a declared pest species; ii. kept in a viable state for transpiration and nutrient uptake; and iii. grazed or harvested and removed from the contaminant release area as needed, but not less than every three months.
Residual drilling material	
(B13)	If sumps are used to store residual drilling material or drilling fluids, they must only be used for the duration of drilling activities.
(B14)	Residual drilling material can only be disposed of on-site: a) by mix-bury-cover method if the residual drilling material meets the approved quality criteria or b) if it is certified by a suitably qualified third party as being of acceptable quality for disposal to land by the proposed method and that environmental harm will not result from the proposed disposal.
(B15)	Records must be kept to demonstrate compliance with condition (B13) and (B14).

Schedule C – Protecting Acoustic Values

Condition number	Condition
General	
(C1)	Notwithstanding condition (A16), emission of noise from the authorised resource activities at levels less than those specified in *Schedule C, Protecting Acoustic Values, Table 1—Noise nuisance limits* are not considered to be environmental nuisance.

Schedule C, Protecting Acoustic Values, Table 1—Noise nuisance limits

Time period	Metric	Short term noise event	Medium term noise event	Long term noise event
7:00am—6:00pm	$L_{Aeq,adj,15\ mins}$	45 dBA	43 dBA	40 dBA
6:00pm—10:00pm	$L_{Aeq,adj,15\ mins}$	40 dBA	38 dBA	35 dBA
10:00pm—6:00am	$L_{Aeq,adj,15\ mins}$	28 dBA	28 dBA	28 dBA
	Max $L_{Aeq,adj,15\ mins}$	55 dBA	55 dBA	55 dBA
6:00am—7:00am	$L_{Aeq,adj,15\ mins}$	40 dBA	38 dBA	35 dBA

The noise limits in Table 1 have been set based on the following deemed background noise levels (LABG):

7:00am—6:00 pm: 35 dBA

6:00pm—10:00 pm: 30 dBA

10:00pm—6:00 am: 25 dBA

6:00am—7:00 am: 30 dBA

(C2) If the noise subject to a valid complaint is tonal or impulsive, the adjustments detailed in *Schedule C, Protecting Acoustic Values, Table 2—Adjustments to be added to noise levels at sensitive receptors* are to be added to the measured noise level(s) to derive $L_{Aeq,adj,15\ min}$.

Schedule C, Protecting Acoustic Values, 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 detectable	+ 2 to + 5 dBA

(C3) Notwithstanding condition (C1), emission of any low frequency noise must not exceed either (C3(a)) and (C3(b)), or (C3(c)) and (C3(d)) in the event of a valid complaint about low frequency noise being made to the administering authority:

a) 60 dB(C) measured outside the sensitive receptor; and

	b) the difference between the external A-weighted and C-weighted noise levels is no greater than 20 dB; or c) 50 dB(Z) measured inside the sensitive receptor; and d) the difference between the internal A-weighted and Z-weighted (Max LpZ, 15 min) noise levels is no greater than 15 dB.
(C4)	A Blast Management Plan must be developed for each blasting activity in accordance with Australian Standard 2187.
(C5)	Blasting operations must be designed to not exceed an airblast overpressure level of 120 dB (linear peak) at any time, when measured at or extrapolated to any sensitive place.
(C6)	Blasting operations must be designed to not exceed a ground-borne vibration peak particle velocity of 10mm/s at any time, when measured at or extrapolated to any sensitive place.

Schedule D – Protecting Air Values	
Condition number	**Condition**
Fuel burning or combustion equipment – authorised point sources	
(D1)	As of 22 January 2015, unless venting is authorised under the *Petroleum and Gas (Production and Safety) Act 2004* or the *Petroleum Act 1923*, waste gas from all new or refurbished flares must be flared in a manner that complies with all of (D1(a)) and (D1(b)) and (D1(c)), or with (D1(d)): a) an automatic ignition system is used b) a flame is visible at all times while the waste gas is being flared c) there are no visible smoke emissions other than for a total period of no more than 5 minutes in any 2 hours; or d) it uses an enclosed flare.
(D2)	Contaminant releases to air emitted from fuel burning and combustion equipment point sources that are capable of burning at least 500 kg in an hour must be directed vertically upwards without any impedance or hindrance.
(D3)	The holder of this environmental authority must maintain a register of fuel burning and combustion equipment that is capable of burning at least 500 kg of fuel in an hour that must include, as a minimum, the following information for each piece of equipment: a) fuel burning or combustion equipment name and location b) stack emission height (metres) c) minimum efflux velocity (m/s) d) mass emission rates (g/s); and e) contaminant concentrations (mg/Nm^3 @ x %O_2 dry gas at 0°Celsius and 1 atmosphere).
(D4)	The holder of this environmental authority must ensure that the information contained in the register of fuel burning and combustion equipment is always current and complete.
(D5)	All entries in the register of fuel burning and combustion equipment must be certified by the chief executive officer for the tenure holder, or their delegate, as being accurate and correct.
(D6)	The operation of fuel burning or combustion facilities must not result in ground level concentrations of contaminants exceeding the maximum limit specified in *Schedule D, Protecting Air Values, Table 1—Maximum Ground Level Concentration Criteria.*

<table>
<tr><td></td><td>

Schedule D, Protecting Air Values, Table 1—Maximum Ground Level Concentration Criteria

<table>
<tr><th>Contaminant</th><th>Concentration at 0°Celsius</th><th>Units</th><th>Averaging time</th></tr>
<tr><td>NOx as Nitrogen Dioxide</td><td>250</td><td>µg/m^3</td><td>1 hour</td></tr>
<tr><td>NOx as Nitrogen Dioxide</td><td>33</td><td>µg/m^3</td><td>1 year</td></tr>
<tr><td>Carbon Monoxide</td><td>11</td><td>mg/m^3</td><td>8 hours</td></tr>
</table>

</td></tr>
<tr><td>(D7)</td><td>An Air receiving environment monitoring program (AREMP) must be developed to demonstrate compliance with the limits in Schedule D, Protecting Air Values, Table 1 – Maximum Ground Level Concentration Criteria.</td></tr>
<tr><td>(D8)</td><td>The AREMP must include, but not necessarily be limited to:
a) the delineation of the relevant air shed(s)
b) the identification of background reference sites and impact monitoring sites within the relevant air shed(s), including sensitive places
c) a monitoring program to be carried out annually that:
a. includes background reference and impact monitoring sites
b. includes an assessment of meteorological conditions (wind speed and direction)
c. is sufficient to determine compliance with the limits listed in Schedule D, Protecting Air Values, Table 1 – Maximum Ground Level Concentration Criteria.
d. identifies the effects of the authorised contaminants released to air in the relevant air shed(s)
e. is representative of when the fuel burning or combustion facilities are operating under maximum operating conditions for the annual period
d) an assessment of the condition of each fuel burning or combustion facility; and
e) and a description of other significant point sources in the air shed and surrounding land use including sensitive places.</td></tr>
<tr><td>(D9)</td><td>An AREMP report must be written annually which includes the information required by condition (D8) and an assessment of the extent to which monitoring data for ground level concentrations complies with the air contaminant limits listed in Schedule D, Protecting Air Values, Table 1 – Maximum Ground Level Concentration Criteria.</td></tr>
<tr><td>(D10)</td><td>Where monitoring data indicates that ground level concentrations listed in Schedule D, Protecting Air Values, Table 1 – Maximum Ground Level Concentration Criteria have not been met, the AREMP report required by condition (D9) must also include an assessment of:
a) the extent to which the values of the air environment in the relevant air shed(s) are being protected
b) an assessment of whether contaminant releases to the air environment are consistent with the air management hierarchy in the Environmental Protection (Air) Policy 2019, and</td></tr>
</table>

	c) any corrective actions that have been implemented or proposed to be implemented to become consistent with the air management hierarchy and achieve compliance with *Schedule D, Protecting Air Values, Table 1 – Maximum Ground Level Concentration Criteria.*
(D11)	A statement of compliance prepared by a suitably qualified person must accompany each AREMP report required by condition (D9) and if applicable, condition (D10) stating: a) whether the AREMP as most recently implemented complies with the requirements of conditions (A4) condition (A8(d)), (D7) and (D8) b) that, to the best of the suitably qualified person's knowledge, the assessment required by condition (D9) and if applicable, condition (D10) is true, correct and complete, and c) that, to the best of the suitably qualified person's knowledge, all information provided as part of the statement of compliance, including attachments, is true, correct and complete.
(D12)	Where condition (D10) applies, the documents required by conditions (D9), (D10) and (D11) must be given to the administering authority within 5 business days after the AREMP report is written.

Schedule E – Protecting Land Values	
Condition number	**Condition**
General	
(E1)	Contaminants must not be directly or indirectly released to land except for those releases authorised by conditions (B4) to (B14).
Topsoil Management	
(E2)	Topsoil must be managed in a manner that preserves its biological and chemical properties.
Land Management	
(E3)	Land that has been significantly disturbed by the authorised resource activities must be managed to ensure that mass movement, gully erosion, rill erosion, sheet erosion and tunnel erosion do not occur on that land.
Chemical Storage	
(E4)	Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards, where such a standard is applicable.
Pipeline operation and maintenance	
(E5)	Pipeline operation and maintenance must be in accordance, to the greatest practicable extent, with the relevant section of the *APIA Code of Environmental Practice: Onshore Pipelines (2009).*
Pipeline reinstatement and revegetation	
(E6)	Pipeline trenches must be backfilled and topsoils reinstated within three months after pipe laying.
(E7)	Reinstatement and revegetation of the pipeline right of way must commence within 6 months after cessation of authorised resource activities for the purpose of pipeline construction.

(E8)	Backfilled, reinstated and revegetated pipeline trenches and right of ways must be: a) a stable landform b) re-profiled to a level consistent with surrounding soils c) re-profiled to original contours and established drainage lines; and d) vegetated with groundcover which is not a declared pest species, and which is established and growing.

Schedule F – Protecting Biodiversity Values	
Condition number	**Condition**
Confirming Biodiversity Values	
(F1)	Prior to undertaking activities that will result in significant disturbance to land in areas of native vegetation, confirmation of on-the-ground biodiversity values at that location must be undertaken by a suitably qualified person.
(F2)	A suitably qualified person must develop and certify a methodology so that condition (F1) can be complied with and which is appropriate to confirm on-the-ground biodiversity values.
(F3)	Except for condition (F10), where mapped biodiversity values differ from those confirmed under conditions (F1) and (F2), the authorised resource activities may proceed in accordance with the conditions of the environmental authority based on the confirmed on-the-ground biodiversity value.
Planning for land disturbance	
(F4)	The location of the authorised resource activities must be selected in accordance with the following site planning principles: a) maximise the use of areas of pre-existing disturbance b) in order of preference, avoid, minimise or mitigate any impacts, including cumulative impacts, on areas of native vegetation or other areas of ecological value c) minimise disturbance to land that may result in land degradation d) in order of preference, avoid then minimise isolation, fragmentation, edge effects or dissection of tracts of native vegetation; and e) in order of preference, avoid then minimise clearing of native mature trees.
Planning for land disturbance – linear infrastructure	
(F5)	Linear infrastructure construction corridors must: a) maximise co-location b) be minimised in width to the greatest practicable extent; and c) for linear infrastructure that is an essential petroleum activity authorised in an Environmentally Sensitive Area or its protection zone, be no greater than 40 metres or as stated in (F7).
Authorised disturbance to Environmentally Sensitive Areas	
(F6)	Where authorised resource activities are authorised to be carried out in Environmentally Sensitive Areas or their protection zones, the authorised resource activities must be carried out

in accordance with *Schedule F, Protecting Biodiversity Values, Table 1—Authorised resource activities in Environmentally Sensitive Areas and their protection zones.*

Schedule F, Protecting Biodiversity Values, Table 1—Authorised resource activities in Environmentally Sensitive Areas and their protection zones

Environmentally Sensitive Area	Within the Environmentally Sensitive Area	Primary protection zone of the Environmentally Sensitive Area	Secondary protection zone of the Environmentally
Category A Environmentally Sensitive Areas	No authorised resource activities permitted.	Only low impact petroleum activities permitted.	Only essential petroleum activities permitted.
Category B Environmentally Sensitive Areas that are other than 'endangered' regional ecosystems	Only low impact petroleum activities permitted.	Only low impact petroleum activities permitted.	Only essential petroleum activities permitted.
Category B Environmentally Sensitive Areas that are 'endangered' regional ecosystems	Only low impact petroleum activities permitted.	Only essential petroleum activities permitted.	Only essential petroleum activities permitted.
Category C Environmentally Sensitive Areas that are 'nature refuges'	Only low impact petroleum activities permitted.	Only low impact petroleum activities permitted.	
Category C environmentally sensitive areas that are on the 'essential habitat map' or are 'of concern' regional ecosystems.	Only low impact petroleum activities permitted.	Only essential petroleum activities permitted	
Category C environmentally sensitive areas that are 'protected wildlife habitat'	Only essential petroleum activities permitted	Only essential petroleum activities permitted	

	Category C environmentally sensitive areas that are 'resource reserves'.	Only essential petroleum activities permitted.	Only essential petroleum activities permitted.	
	Category C environmentally sensitive areas that are 'state forests' or 'timber reserves'.	Only essential petroleum activities permitted.	Authorised petroleum activities permitted.	
(F7)	Despite condition (F6) of this environmental authority, the infrastructure (and associated activities necessary for construction, operation and maintenance purposes) listed below are permitted within the secondary protection zone of Category B Environmentally Sensitive Areas and within a Category C Environmentally Sensitive Area at the locations specified in *Schedule F, Protecting Biodiversity Values, Table 2 – Authorised Resource Activity(ies) Disturbance*			

Schedule F, Protecting Biodiversity Values, Table 2—Authorised Resource Activity(ies) Disturbance

Tenure	Description of Infrastructure	Number	Centre Point of Disturbance	Disturbance	Right of Way Width
PL94	Nipan Booster Compressor Station	1	Easting 197302 Northing 7261480 (MGA94 Map Zone 56J)	Cat B ESA 0.36 hectares	N/A
	Nipan Tank Farm	1			
	Nipan Telemetry Tower	1			
	MEWL Trunk Line	1	24° 41' 25.1" S 150° 00' 06.7" E	Cat C ESA 0.5 hectares	20 metres
	Meridian Trunkline Phase 2 (MTL2)	1	24.7195396° S 150.0121350° E	Cat B ESA – 0.14 hectares, comprising: • Endangered RE 11.4.3 – 0.11 hectares • Endangered RE 11.3.1 – 0.03 hectares	13.5 metres
				Cat C ESA – Essential Habitat 0.11 hectares	

	Moura Central Processing Plant to Hillview Processing Plant (MCHV) gathering line	1	804118.9° E 7274695° S	Cat B ESA – 0.36 hectares, comprising: • Endangered RE 11.4.8 – 0.27 hectares • Endangered RE 11.4.9 – 0.09 hectares	13.5 metres
				Cat C ESA – Essential Habitat 0.27 hectares	

(F8)	A report must be prepared for each annual return period for all authorised resource activities that involved clearing of any Environmentally Sensitive Area or protection zone which includes: a) records able to demonstrate compliance with conditions (F4), (F5) and (F6) b) a description of the works c) a description of the area and its pre-disturbance values (which may include maps or photographs, but must include GPS coordinates for the works); and d) based on the extent of Environmentally Sensitive Areas and primary protection zones on the relevant resource authority(ies), the proportion of native vegetation cleared per Environmentally Sensitive Area and primary protection zone, including regional ecosystem type, over the annual return period.
Impacts to Matters of State Environmental Significance	
(F9)	Authorised resource activities are not permitted within areas containing matters of State environmental significance, unless the activity is authorised in condition (F10) of this environmental authority.
(F10)	Despite condition (F9) of this environmental authority, low impact petroleum activities are authorised to occur within all types of matters of State environmental significance.
(F11)	Significant residual impacts to prescribed environmental matters are not authorised under this environmental authority or the *Environmental Offsets Act 2014*.

Schedule E – Protecting Water Values	
Condition number	**Condition**
Authorised activities in watercourses, wetlands and springs	
(G1)	The extraction of groundwater as part of the petroleum activity(ies) from underground aquifers must not directly or indirectly cause environmental harm to a wetland
(G2)	Petroleum activities must not occur in or within 200m of a: a) Wetland of high ecological significance b) Great Artesian Basin Spring c) Subterranean cave groundwater dependent ecosystem
(G3)	Only construction or maintenance of linear infrastructure is permitted in or within any wetland of other environmental value or in a watercourse.
(G4)	The construction or maintenance of linear infrastructure in a wetland or other environmental value must not result in the: a) Clearing of riparian vegetation outside of the minimum rea practicable to carry out the works; or b) Ingress of saline water into freshwater aquifers; or c) Draining or filling of the wetland beyond the minimum area practicable to carry out the works.
(G5)	After the construction or maintenance works for linear infrastructure in a wetland of other environmental value are completed, the linear infrastructure must not: a) drain or fill the wetland b) prohibit the flow of surface water in or out of the wetland c) lower or raise the water table and hydrostatic pressure outside the bounds of natural variability that existed before the activities commenced d) result in ongoing negative impacts to water quality e) result in bank instability; or f) result in fauna ceasing to use adjacent areas for habitat, feeding, roosting or nesting.
(G6)	The construction or maintenance of linear infrastructure activities in a watercourse must be conducted in the following preferential order: a) firstly, in times where there is no water present b) secondly, in times of no flow c) thirdly, in times of flow, providing a bankfull situation is not expected and that flow is maintained.

<table>
<tr><td>(G7)</td><td>The construction or maintenance of linear infrastructure authorised under condition (G3) must comply with the water quality limits as specified in Schedule G, Protecting water values, Table 1 – Release limits for construction or maintenance of linear infrastructure.

Schedule G, Protecting water values Table 1 – Release limits for construction or maintenance of linear infrastructure.
<table>
<tr><th>Water quality parameters</th><th>Units</th><th>Water quality limits</th></tr>
<tr><td rowspan="2">Turbidity</td><td rowspan="2">Nephelometric Turbidity Units (NTU)</td><td>For a wetland of other environmental value, if background water turbidity is above 45 NTU, no greater than 25% above background water turbidity measured within a 50m radius of the construction or maintenance activity.
For a watercourse, if background water turbidity is above 45 NTU, no greater than 25% above background water turbidity measured within 50m downstream of the construction or maintenance activity.</td></tr>
<tr><td>For a wetland of other environmental value, if background water turbidity is equal to, or below 45 NTU, a turbidity limit of no greater than 55 NTU applies, measured within a 50m radius of the construction or maintenance activity.
For a watercourse, if background water turbidity is equal to, or below 45 NTU, a turbidity limit of no greater than 55 NTU applies, measured within 50m downstream of the construction or maintenance activity.</td></tr>
<tr><td>Hydrocarbons</td><td>-</td><td>For a wetland of other environmental value, or watercourse, no visible sheen or slick</td></tr>
</table></td></tr>
<tr><td>(G8)</td><td>Routine, regular and frequent visual monitoring must be undertaken while carrying out linear infrastructure work and any maintenance of completed works in a watercourse, wetland, lake or spring.</td></tr>
<tr><td>(G9)</td><td>If, due to linear infrastructure works, water turbidity increases in a watercourse, wetland, lake or spring outside contained areas, works must cease and the sediment control measures must be rectified to limit turbidity before the works recommence.</td></tr>
<tr><td colspan="2">Authorised activities in floodplains</td></tr>
<tr><td>(G10)</td><td>Authorised resource activity(ies) on floodplains must be carried out in a way that does not:
a) concentrate flood flows in a way that will or may cause or threaten a negative environmental impact; or
b) divert flood flows from natural drainage paths and alter flow distribution; or</td></tr>
</table>

	c) increase the local duration of floods; or d) increase the risk of detaining flood flows.
Authorised impacts to groundwater	
(G11)	The extraction of groundwater as part of the authorised resource activity(ies) from underground aquifers must not directly or indirectly cause environmental harm to a wetland.
Groundwater Impact Monitoring Program	
(G12)	A Groundwater Monitoring Program must be developed and implemented which is able to detect any changes to groundwater quality as a result of storing contaminants in a containment facility(ies) (e.g. surface dams, monocells).
(G13)	The Groundwater Monitoring Program must be developed and implemented by a suitably qualified person in the fields of hydrogeology, groundwater sampling design and groundwater monitoring program design.
(G14)	The Groundwater Monitoring Program, must include, but not necessarily be limited to: a) locations of monitoring sites, monitoring methodology and trigger values for detecting impacts on groundwater quality b) as a minimum, sampling of the parameters and at the frequency listed in Schedule G, Protecting Water Values, Table 2 – Groundwater Monitoring Parameters and Monitoring Frequency c) procedures to establish background groundwater quality d) sampling of groundwater in accordance with the requirements for baseline bore, well and stimulation impact monitoring as per conditions (I14) to (I16); and e) a sufficient number of monitoring sites to provide information on the following: i. seepage to groundwater and surrounding soils from any regulated dam and its effect on groundwater and soils and ii. background monitoring sites (i.e. groundwater quality in representative bores that have not been affected by the authorised resource activity(ies) authorised under this environmental authority) iii. 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 iv. the determination of groundwater flow direction, groundwater flow rate and hydraulic conductivity; and v. a rationale containing details on the program purpose, program conceptualisation and verification of assumptions.

<table>
<tr><td>(G15)</td><td>All groundwater monitoring bores must be installed according to the standards outlined in the National Water Commission's Minimum Construction Requirements for Water Bores in Australia 2012, the Department of Natural Resources and Mines' Minimum standards for the construction and reconditioning of water bores that intersect the sediments of artesian basins in Queensland 2014 or Code of Practice for constructing and abandoning coal seam gas wells and associated bored in Queensland 2013 as amended from time to time.</td></tr>
<tr><td>(G16)</td><td>Groundwater monitoring bores must be constructed by, or under the supervision of a licensed Queensland water bore driller who has the correct endorsements on their licence for the type of activity being performed.</td></tr>
<tr><td>(G17)</td><td>Groundwater samples must be monitored for the water quality parameters at the minimum frequencies specified in Schedule G, Protecting Water Values, Table 2 – Groundwater Monitoring Parameters and Monitoring Frequency.

Schedule G, Protecting Water Values, Table 2 – Groundwater Monitoring Parameters and Monitoring Frequency
<table>
<tr><th>Groundwater Parameter</th><th>Monitoring frequency</th></tr>
<tr><td>Water level [m]</td><td>Quarterly</td></tr>
<tr><td>Groundwater pressure in geological strata [kPa]</td><td>Biannually</td></tr>
<tr><td>pH</td><td>Biannually</td></tr>
<tr><td>Electrical conductivity [µS/m]</td><td>Biannually</td></tr>
<tr><td>Total dissolved solids [mg/L]</td><td>Biannually</td></tr>
<tr><td>Temperature [ºC]</td><td>Biannually</td></tr>
<tr><td>Dissolved oxygen [mg/L]</td><td>Biannually</td></tr>
<tr><td>Alkalinity (bicarbonate, carbonate, hydroxide and total as $CaCO_3$)</td><td>Biannually</td></tr>
<tr><td>Sodium adsorption ratio (SAR)</td><td>Biannually</td></tr>
<tr><td>Anions (bicarbonate, carbonate, hydroxide, chloride, sulphate) [mg/L]</td><td>Biannually</td></tr>
<tr><td>Cations (aluminium, calcium, magnesium, potassium, sodium) [mg/L]</td><td>Biannually</td></tr>
<tr><td>Silica [mg/L]</td><td>Biannually</td></tr>
<tr><td>Dissolved and total metals (including but not necessarily being limited to: aluminium, arsenic, barium, borate (boron), cadmium, chromium III, copper, iron, fluoride, lead, manganese, mercury, nickel, selenium, silver, strontium, tin and zinc) [µg/L]</td><td>Biannually</td></tr>
<tr><td>Total phosphorus as phosphorus [mg/L]</td><td></td></tr>
<tr><td>Ammonia, nitrate and nitrite as nitrogen [mg/L]</td><td>Biannually</td></tr>
<tr><td>Total petroleum hydrocarbons [mg/L]</td><td>Biannually</td></tr>
<tr><td>BTEX (as benzene, toluene, ethylbenzene, ortho-xylene, para-xylene, meta-xylene and total xylene) [µg/L]</td><td>Biannually</td></tr>
<tr><td>Polycyclic aromatic hydrocarbons (including but not necessarily being limited to: naphthalene, phenanthrene, benzo[a]pyrene) [ug/L]</td><td>Biannually</td></tr>
<tr><td>Gross alpha + gross beta or radionuclides by gamma spectroscopy [Bq/L]</td><td>Biannually</td></tr>
</table></td></tr>
</table>

Schedule H – Rehabilitation	
Condition number	**Condition**
Rehabilitation planning	
(H1)	A Rehabilitation Plan must be developed by a suitably qualified person and must include the: a) rehabilitation goals; and b) procedures to be undertaken for rehabilitation that will: i. achieve the requirements of conditions (H2) to (H6), inclusive; and ii. provide for appropriate monitoring and maintenance.
Transitional rehabilitation	
(H2)	Significantly disturbed areas that are no longer required for the on-going authorised resource activities, must be rehabilitated within 12 months (unless an exceptional circumstance in the area to be rehabilitated (e.g. a flood event) prevents this timeframe being met) and be maintained to meet the following acceptance criteria: a) contaminated land resulting from authorised resource activities is remediated and rehabilitated b) the areas are: i. non-polluting ii. a stable landform iii. re-profiled to contours consistent with the surrounding landform c) surface drainage lines are re-established d) topsoil is reinstated; and e) either: i. groundcover, that is not a declared pest species, is growing; or ii. an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained.
Final rehabilitation acceptance criteria	
(H3)	All significantly disturbed areas caused by authorised resource activities which are not being or intended to be utilised by the landholder or overlapping tenure holder, must be rehabilitated to meet the following final acceptance criteria measured either against the highest ecological value adjacent land use or the pre-disturbed land use: a) greater than or equal to 70 percent of native ground cover species richness b) greater than or equal to the total per cent of ground cover c) less than or equal to the per cent species richness of declared plant pest species; and d) where the adjacent land use contains, or the pre-clearing land use contained, one or more regional ecosystem(s), then at least one regional ecosystem(s) from the same

	broad vegetation group, and with the equivalent biodiversity status or a biodiversity status with a higher conservation value as any of the regional ecosystem(s) in either the adjacent land or pre-disturbed land, must be present.
Final rehabilitation acceptance criteria in Environmentally Sensitive Areas	
(H4)	Where significant disturbance to land has occurred in an Environmentally Sensitive Area, the following final rehabilitation criteria as measured against the pre-disturbance biodiversity values assessment (required by conditions (F1) and (F2) must be met: a) greater than or equal to 70 percent of native ground cover species richness b) greater than or equal to the total per cent ground cover c) less than or equal to the per cent species richness of declared plant pest species d) greater than or equal to 50 percent of organic litter cover e) greater than or equal to 50 percent of total density of coarse woody material; and f) all predominant species in the ecologically dominant layer, that define the pre-disturbance regional ecosystem(s) are present.
Continuing conditions	
(H5)	Conditions (H2), (H3) and (H4) continue to apply after this environmental authority has ended or ceased to have effect.
Remaining dams	
(H6)	Where there is a dam (including a low consequence dam) that is being or intended to be utilised by the landholder or overlapping tenure holder, the dam must be decommissioned to no longer accept inflow from the authorised resource activity(ies) and the contained water must be of a quality suitable for the intended on-going uses(s) by the landholder or overlapping tenure holder.

Schedule I – Well Construction, Maintenance and Stimulation Activities	
Condition number	**Condition**
Drilling activities	
(I1)	Oil based or synthetic based drilling muds must not be used in the carrying out of the authorised resource activity(ies).
(I2)	Drilling activities must not result in the connection of the target gas producing formation and another aquifer.
(I3)	Practices and procedures must be in place to detect, as soon as practicable, any fractures that have or may result in the connection of a target formation and another aquifer as a result of drilling activities.
Stimulation activities	
(I4)	Polycyclic aromatic hydrocarbons or products that contain polycyclic aromatic hydrocarbons must not be used in stimulation fluids in concentrations above the reporting limit.
(I5)	Stimulation activities must not negatively affect water quality, other than that within the stimulation impact zone of the target gas producing formation.
(I6)	Stimulation activities must not cause the connection of the target gas producing formation and another aquifer.
(I7)	The internal and external mechanical integrity of the well system prior to and during stimulation must be ensured such that there is: a) no significant leakage in the casing, tubing, or packer; and b) there is no significant fluid movement into another aquifer through vertical channels adjacent to the well bore hole.
(I8)	Practices and procedures must be in place to detect, as soon as practicable, any fractures that cause the connection of a target gas producing formation and another aquifer.

Stimulation Risk Assessment	
(I9)	Prior to undertaking stimulation activities, a risk assessment must be developed and implemented to ensure that stimulation activities are managed to prevent environmental harm.
(I10)	The stimulation risk assessment must be carried out for every well to be stimulated prior to stimulation being carried out at that well and address issues at a relevant geospatial scale such that changes to features and attributes are adequately described and must include, but not necessarily be limited to: a) a process description of the stimulation activity to be applied, including equipment and a comparison to best international practice b) provide details of where, when and how often stimulation is to be undertaken on the tenures covered by this environmental authority c) a geological model of the field to be stimulated including geological names, descriptions and depths of the target gas producing formation(s) d) naturally occurring geological faults e) seismic history of the region (e.g. earth tremors, earthquakes) f) proximity of overlying and underlying aquifers g) description of the depths that aquifers with environmental values occur, both above and below the target gas producing formation h) identification and proximity of landholder's active groundwater bores in the area where stimulation activities are to be carried out i) the environmental values of groundwater in the area j) an assessment of the appropriate limits of reporting for all water quality indicators relevant to stimulation monitoring in order to accurately assess the risks to environmental values of groundwater k) description of overlying and underlying formations in respect of porosity, permeability, hydraulic conductivity, faulting and fracture propensity l) consideration of barriers or known direct connections between the target gas producing formation and the overlying and underlying aquifers m) a description of the well mechanical integrity testing program n) process control and assessment techniques to be applied for determining extent of stimulation activities (e.g. microseismic measurements, modelling etc.) o) practices and procedures to ensure that the stimulation activities are designed to be contained within the target gas producing formation p) groundwater transmissivity, flow rate, hydraulic conductivity and direction(s) of flow

	q) a description of the chemical compounds used in stimulation activities (including estimated total mass, estimated composition, chemical abstract service numbers and properties), their mixtures and the resultant compounds that are formed after stimulation r) a mass balance estimating the concentrations and absolute masses of chemical compounds that will be reacted, returned to the surface or left in the target gas producing formation subsequent to stimulation s) an environmental hazard assessment of the chemicals used including their mixtures and the resultant chemicals that are formed after stimulation including: i. toxicological and ecotoxicological information of chemical compounds used ii. information on the persistence and bioaccumulation potential of the chemical compounds used; and iii. identification of the chemicals of potential concern in stimulation fluids derived from the risk assessment. t) an environmental hazard assessment of use, formation of, and detection of polycyclic aromatic hydrocarbons in stimulation activities u) identification and an environmental hazard assessment of using radioactive tracer beads in stimulation activities v) an environmental hazard assessment of leaving chemical compounds in stimulation fluids in the target gas producing formation for extended periods subsequent to stimulation w) human health exposure pathways to operators and the regional population x) risk characterisation of environmental impacts based on the environmental hazard assessment y) potential impacts to landholder bores as a result of stimulation activities z) an assessment of cumulative underground impacts, spatially and temporally of the stimulation activities to be carried out on the tenures covered by this environmental authority; and aa) potential environmental or health impacts which may result from stimulation activities including but not limited to water quality, air quality (including suppression of dust and other airborne contaminants), noise and vibration.
(I11)	A summary of each stimulation risk assessment must be submitted to the administering authority upon request. Water quality baseline monitoring
(I12)	Prior to undertaking any stimulation activity, a baseline bore assessment must be undertaken of the water quality of:

	a) all landholder's active groundwater bores (subject to access being permitted by the landholder) that are spatially located within a two (2) kilometre horizontal radius from the location of the stimulation initiation point within the target gas producing formation and b) all landholders' active groundwater bores (subject to access being permitted by the landholder) in any aquifer that is within 200 metre above or below the target gas producing formation and is spatially located with a two (2) kilometre radius from the location of the stimulation initiation point; and c) any other bore that could potentially be adversely impacted by the stimulation activities in accordance with the findings of the risk assessment required by conditions (I9) and (I10).
(I13)	Prior to undertaking stimulation activities at a well, there must be sufficient water quality data to accurately represent the water quality in the well to be stimulated. The data must include as a minimum the results of analyses for the parameters in condition (I14).
(I14)	Baseline bore and well assessments must include relevant analytes and physico-chemical parameters to be monitored in order to establish baseline water quality and must include, but not necessarily be limited to: a) pH b) electrical conductivity [µS/m] c) turbidity [NTU] d) total dissolved solids [mg/L] e) temperature [ºC] f) dissolved oxygen [mg/L] g) dissolved gases (methane, chlorine, carbon dioxide, hydrogen sulfide) [mg/L] h) alkalinity (bicarbonate, carbonate, hydroxide and total as $CaCO_3$) [mg/L] i) sodium adsorption ratio (SAR) j) anions (bicarbonate, carbonate, hydroxide, chloride, sulphate) [mg/L] k) cations (aluminium, calcium, magnesium, potassium, sodium) [mg/L] l) dissolved and total metals and metalloids (including but not necessarily being limited to: aluminium, arsenic, barium, borate (boron), cadmium, total chromium, copper, iron, fluoride, lead, manganese, mercury, nickel, selenium, silver, strontium, tin and zinc) [µg/L] m) total petroleum hydrocarbons [µg/L] n) BTEX (as benzene, toluene, ethylbenzene, ortho-xylene, para- and meta-xylene, and total xylene) [µg/L]

	o) polycyclic aromatic hydrocarbons (including but not necessarily being limited to: naphthalene, phenanthrene, benzo[a]pyrene) [µg/L] p) sodium hypochlorite [mg/L] q) sodium hydroxide [mg/L] r) formaldehyde [mg/L] s) ethanol [mg/L] and t) gross alpha + gross beta or radionuclides by gamma spectroscopy [Bq/L].
Stimulation Impact Monitoring Program	
(I15)	A Stimulation Impact Monitoring Program must be developed prior to the carrying out of stimulation activities which must be able to detect adverse impacts to water quality from stimulation activities and must consider the findings of the risk assessment required by conditions (I9) and (I10) that relate to stimulation activities and must include, as a minimum, monitoring of: a) the stimulation fluids to be used in stimulation activities at sufficient frequency and which sufficiently represents the quantity and quality of the fluids used b) flow back waters from stimulation activities at sufficient frequency and which sufficiently represents the quality of that flow back water c) flow back waters from stimulation activities at sufficient frequency and accuracy to demonstrate that 150 percent of the volume used in stimulation activities has been extracted from the stimulated well and d) all bores in accordance with condition (I12).
(I16)	The Stimulation Impact Monitoring Program must provide for monitoring of: a) analytes and physico-chemical parameters relevant to baseline bore and well assessments to enable data referencing and comparison including, but not necessarily being limited to the analytes and physico-chemical parameters in condition (I14) and b) any other analyte or physico-chemical parameters that will enable detection of adverse water quality impacts and the inter-connection with a non-target aquifer as a result of stimulation activities including chemical compounds that are actually or potentially formed by chemical reactions with each other or coal seam materials during stimulation activities.
(I17)	The Stimulation Impact Monitoring Program must provide for monitoring of the bores in condition (I15(d)) at the following minimum frequency: a) monthly for the first six (6) months subsequent to stimulation activities being undertaken then b) annually for the first five (5) years subsequent to stimulation being undertaken or until analytes and physico-chemical parameters listed in conditions (I14(a)) to (I14(t))

	inclusive, are not detected in concentrations above baseline bore monitoring data on two (2) consecutive monitoring occasions.
(I18)	The results of the Stimulation Impact Monitoring Program must be made available to any potentially affected landholder upon request by that landholder.

Schedule J – Structures	
Condition number	**Condition**
Assessment of consequence category	
(J1)	The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* at the following times: a) prior to the design and construction of the structure, if it is not an existing structure or b) if it is an existing structure, prior to the adoption of this schedule or c) prior to any change in its purpose or the nature of its stored contents.
(J2)	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
(J3)	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).*
Low consequence dams	
(J4)	Where a dam is assessed as low consequence, it must be: a) constructed, operated and maintained in accordance with accepted engineering standards currently appropriate for the purpose for which the dam is intended to be used and b) designed with a floor and sides made of material that will contain the wetting front and any entrained contaminants within the bounds of the containment system during both its operational life and including any period of decommissioning and rehabilitation.
(J5)	Where the consequence category of a low consequence dam is for the first time assessed as significant or high, the holder of this environmental authority must ensure that the dam meets the hydraulic performance required of the assessed consequence category within 12 months of that assessment.
(J6)	In the event of early signs of loss of structural or hydrological integrity of a low consequence dam, the holder of this environmental authority must: a) take immediate action to prevent or minimise any actual or potential environmental harm and b) within 20 business days of that event, report in writing to the administering authority any findings and actions taken.
Monitoring of low consequence dams	

(J7)	The condition of all low consequence 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 consequence assessment based on the particular circumstances of each dam.
Design and construction of a regulated structure	
(J8)	Conditions (J9) to (J10) inclusive do not apply to existing structures
(J9)	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.
(J10)	Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority that has been certified by a suitably qualified and experienced person for the design and design plan, and the associated operating procedures are in compliance with the relevant condition of this environmental authority.
(J11)	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, and must be recorded in the Register of Regulated Structures.
(J12)	Regulated structures must: a) be designed and constructed in accordance with and conform to the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635) b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: i. floodwaters from entering the regulated dam from any watercourse or drainage line and ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line. c) have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.
(J13)	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

	a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure b) construction of the regulated structure is in accordance with the design plan.
Aggregation dams	
(J14)	All aggregation dams must: a) be designed with a floor and sides of material that will 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; and b) have a system that will detect any passage of the wetting front or entrained contaminants through the floor or sides of the dam.
Brine dams	
(J15)	All brine dams must: a) be designed with a floor and sides of material that will 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 and b) have a system that will detect any passage of the wetting front or entrained contaminants through the floor or sides of the dam; and c) have a system for the collection and proper disposal of any contaminants that move beyond the bounds of the containment system.
Operation of a regulated structure	
(J16)	Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority; i. one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition (J10), and ii. a set of 'as constructed' drawings and specifications, and iii. certification of those 'as constructed drawings and specifications' in accordance with condition (J13), and iv. where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan v. the requirements of this environmental authority relating to the construction of the regulated structure have been met vi. the holder has entered the details required under this environmental authority, into a Register of Regulated Structures and vii. there is a current operational plan for the regulated structures.

(J17)	For existing structures that are regulated structures: a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within 12 months of the commencement of this condition a copy of the certified system design plan including that structure and b) there must be a current operational plan for the existing structures.
(J18)	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
Mandatory Reporting Level	
(J19)	Conditions (J20) to (J23) inclusive only apply to regulated structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
(J20)	The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
(J21)	The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
(J22)	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
(J23)	The holder must record any changes to the MRL in the Register of Regulated Structures
Design storage allowance	
(J24)	The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.
(J25)	By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the DSA volume for the dam (or network of linked containment systems).

(J26)	The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.
(J27)	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
Annual inspection report	
(J28)	Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
(J29)	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
(J30)	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).*
(J31)	The holder must: a) Within 20 business days of receipt of the annual inspection report, provide to the administering authority: i. the recommendations section of the annual inspection report and ii. if applicable, any actions being taken in response to those recommendations and b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.
Transfer arrangements	
(J32)	The holder must provide a copy of any reports, documentation and certifications prepared under this environmental authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.
Register of Regulated Structures	
(J33)	A Register of Regulated Structures must be established and maintained by the holder for each regulated dam.

(J34)	The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.
(J35)	The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with conditions (J16) and (J17) has been achieved.
(J36)	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
(J37)	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this environmental authority, or their delegate, as being accurate and correct.
(J38)	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.
Transitional arrangements	
(J39)	All existing aggregation dams must meet the requirements of condition (J14) by 1 October 2011.
(J40)	All existing brine dams must meet the requirements of condition (J15) by 1 October 2011.
(J41)	All existing coal seam gas evaporation dams must meet the requirements of conditions (J14) or (J15), relevant to its intended use, by 1 October 2011.
Regulated dam water quality monitoring	
(J42)	The holder of this environmental authority must monitor the quality of water in all regulated dams on the relevant resource authority(ies) in the month of October every year.
(J43)	The monitoring of regulated dam water must include sufficient analytes and physico-chemical parameters to characterise water quality in the dam and must include, but not necessarily be limited to: a) pH b) electrical conductivity [µS/m] c) turbidity [NTU] d) total dissolved solids [mg/L] e) temperature [ºC]

	f) dissolved oxygen [mg/L] g) alkalinity (bicarbonate, carbonate, hydroxide and total as $CaCO_3$) [mg/L] h) sodium adsorption ratio (SAR) i) anions (bicarbonate, carbonate, hydroxide, chloride, sulphate) [mg/L] j) cations (aluminium, calcium, magnesium, potassium, sodium) [mg/L] k) silica [mg/L] l) dissolved and total metals and metalloids (including but not necessarily being limited to: aluminium, arsenic, barium, borate (boron), cadmium, total chromium, copper, iron, fluoride, lead, manganese, mercury, nickel, selenium, silver, strontium, tin and zinc) [µg/L] m) total phosphorus [mg/L] n) ammonia, nitrate, nitrite as nitrogen [mg/L] o) total petroleum hydrocarbons [µg/L] p) BTEX (as benzene, toluene, ethylbenzene, ortho-xylene, para- and meta-xylene, and total xylene) [µg/L] q) polycyclic aromatic hydrocarbons (including but not necessarily being limited to: naphthalene, phenanthrene, benzo[a]pyrene) [µg/L] r) chlorophyll a [µg/L] and s) total cyanobacteria biovolume [cells/mg/L] and t) gross alpha + gross beta or radionuclides by gamma spectroscopy [Bq/L].
(J44)	Water quality samples of regulated dams must be taken from at least three (3) different dam profile depths for each sampling event and be taken as far as practicable from the edge of the regulated dam.

Schedule K - Definitions

Key terms and/or phrases used in this document are defined in this section. Where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

acceptable standards for release to land	means wastewater of the following quality as determined by monitoring results or by characterisation: a) electrical conductivity (EC) not exceeding 3000µS/cm b) sodium adsorption ratio (SAR) not exceeding 8 c) pH between 6.0 and 9.0 d) heavy metals (measured as total) meets the respective short term trigger value in section 4.2.6, Table 4.2.10—Heavy metals and metalloids in Australian and New Zealand Guidelines for Fresh and Marine Water Quality e) does not contain biocides.
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.
adjacent land use(s)	means the ecosystem function adjacent to an area of significant disturbance, or where there is no ecosystem function, the use of the land. An adjacent land use does not include an adjacent area that shows evidence of edge effect.
administering authority	means: (a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 of the *Environmental Protection Act 1994*—the local government; or (b) for all other matters—the Chief Executive of the Department of Environment and Heritage Protection; or (c) another State Government Department, Authority, Storage Operator, Board or Trust, whose role is to administer provisions under other enacted legislation.
aggregation dam	means a regulated dam that receives and contains coal seam gas water or coal seam gas concentrate. The primary purpose of the dam must not be to evaporate the water even though this will naturally occur.

alternative arrangement	means a written agreement about the way in which a particular environmental nuisance impact will be dealt with at a sensitive place, and may include an agreed period of time for which the arrangement is in place. An alternative arrangement may include, but is not limited to, a range of nuisance abatement measures to be installed at the sensitive place, or provision of alternative accommodation for the duration of the relevant nuisance impact.
analogue site(s)	means an area of land which contains values and characteristics representative of an area to be rehabilitated prior to disturbance. Such values must encompass land use, topographic, soil, vegetation, vegetation community attributes and other ecological characteristics. Analogue sites can be the pre-disturbed site of interest where significant surveying effort has been undertaken to establish benchmark parameters.
analyte	means a chemical parameter determined by either physical measurement in the field or by laboratory analysis.
annual inspection report	means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan) a) against recommendations contained in previous annual inspections reports b) against recognised dam safety deficiency indicators c) for changes in circumstances potentially leading to a change in consequence category d) for conformance with the conditions of this authority e) for conformance with the 'as constructed' drawings f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems) g) for evidence of conformance with the current operational plan.
annual return period	means the 12 month period from 1 January to 31 December in a calendar year.
appraisal well	means a petroleum well to test the potential of one (1) or more natural underground reservoirs for producing or storing petroleum. For clarity, an appraisal well does not include an exploration well.

approved quality criteria

for the purposes of residual drilling materials, means the residual drilling material meet the following quality standards:

Part A In all cases:

Parameter	Maximum concentration
pH	6–10.5 (range)
Electrical Conductivity	20dS/m (20,000µS/cm)
Chloride*	8000mg/L

*Chloride analysis is only required if an additive containing chloride was used in the drilling process.

The limits in Part A must be measured in the clarified filtrate of oversaturated solids prior to mixing.

Part B If any of the following metals are a component of the drilling fluids, then for that metal:

Parameter	Maximum concentration
Arsenic	20mg/kg
Selenium	5mg/kg
Boron	100mg/kg
Cadmium	3mg/kg
Chromium (total)	400mg/kg
Copper	100mg/kg
Lead	600mg/kg

The limits in Part B and Part C refer to the post soil/by-product mix.

Part C If a hydrocarbon sheen is visible, the following hydrocarbon fractions:

TPH	Maximum concentration
C6-C10	170mg/kg
C10-C16	150mg/kg
C16-C34	1300mg/kg
C34-C40	5600mg/kg
Total Polycyclic Aromatic Hydrocarbons (PAHs)	20mg/kg
Phenols (halogenated)	1mg/kg
Phenols (non-halogenated)	60mg/kg

	Monocyclic aromatic hydrocarbons *(Total sum of benzene, toluene, ethyl benzene, xylenes (includes ortho, para and meta xylenes) and styrene)*	7mg/kg
	Benzene	1mg/kg
areas of pre-existing disturbance	means areas where environmental values have been negatively impacted as a result of anthropogenic activity and these impacts are still evident. Areas of pre-disturbance may include areas where legal clearing, logging, timber harvesting, or grazing activities have previously occurred, where high densities of weed or pest species are present which have inhibited re-colonisation of native regrowth, or where there is existing infrastructure (regardless of whether the infrastructure is associated with the authorised resource activities). The term 'areas of pre-disturbance' does not include areas that have been impacted by wildfire/s, controlled burning, flood or natural vegetation die-back.	
associated water	means underground water taken or interfered with, if the taking or interference happens during the course of, or results from, the carrying out of another authorised activity under a resource authority, such as a resource well, and includes waters also known as produced formation water. The term includes all contaminants suspended or dissolved within the water.	
assessed or assessment	by a suitably qualified and experienced person in relation to a consequence 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 of the assessment: a) exactly what has been assessed and the precise nature of that determination 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.	
Australian Height Datum or AHD	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.	

Australian Standard AS3580	means any of the following publications: • *AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter—Gravimetric method* • *AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet— Gravimetric method* • *AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter— PM10 low volume sampler—Gravimetric sampler.*
authorised resource activities	for this environmental authority means the resource activities authorised to be carried out under condition (A1).
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 (or LA 90, adj, 15 mins), 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.
being or intended to be utilised by the landholder or overlapping tenure holder	for significantly disturbed land, means there is a written agreement (e.g. land and compensation agreement) between the landholder or the overlapping tenure holder and the holder of the environmental authority identifying that the landholder or the overlapping tenure holder has a preferred use of the land such that rehabilitation standards for revegetation by the holder of the environmental authority are not required. For dams, means there is a written agreement (e.g. land and compensation agreement) between the landholder or the overlapping tenure holder and the holder of the environmental authority identifying that the landholder or the overlapping tenure holder has a preferred use for the dam such that rehabilitation standards for revegetation by the holder of the environmental authority are not required.
biodiversity values	for the purposes of this environmental authority, means Environmentally Sensitive Areas, areas containing matters of State environmental significance and wetlands.

bore	means a water observation bore or a water supply bore that is either sub-artesian or artesian.
brine dam	means a regulated dam that is designed to receive, contain or evaporate brine.
BTEX	means benzene, toluene, ethylbenzene, ortho-xylene, para-xylene, meta-xylene and total xylene.
Category A Environmentally Sensitive Area	means any area listed in Schedule 19, Part 1, section 1 of the *Environmental Protection Regulation 2019.*
Category B Environmentally Sensitive Area	means any area listed in Schedule 19, Part 1, section 2 of the *Environmental Protection Regulation 2019.*
Category C Environmentally Sensitive Area	means any of the following areas: • nature refuges as defined in the conservation agreement for that refuge under the *Nature Conservation Act 1992* • state forests or timber reserves as defined under the *Forestry Act 1959* • Resources Reserve under the *Nature Conservation Act 1992* • an area validated from ground-truthing surveys as 'essential habitat' on the Queensland Government Essential Habitat Map in accordance with section 20AC of the *Vegetation Management Act 1999* for a species of wildlife listed as critically endangered, endangered or vulnerable under the *Nature Conservation Act 1992* • An area validated from ground-truthing surveys as 'protected wildlife habitat' that is category A, B or C on the Regulated Vegetation Management Map, in accordance with section 20A of the *Vegetation Management Act 1992*, for a species of wildlife listed as critically endangered, endangered or vulnerable under the *Nature Conservation Act 1992* • 'of concern regional ecosystems' that are remnant vegetation and identified in the database called 'RE description database' containing regional ecosystem numbers and descriptions.

certify, certified or certification	in relation to any matter other than a design plan, 'as constructed' drawings or an annual report regarding dams means, a Statutory Declaration by a suitably qualified person or suitably qualified third party accompanying the written document stating: • the person's qualifications and experience relevant to the function • that the person has not knowingly included false, misleading or incomplete information in the document • that the person has not knowingly failed to reveal any relevant information or document to the administering authority • that the document addresses the relevant matters for the function and is factually correct and • that the opinions expressed in the document are honestly and reasonably held.
clearing	has the meaning in the dictionary of the Vegetation Management Act 2000 and for vegetation— a) means remove, cut down, ringbark, push over, poison or destroy in any way including by burning, flooding or draining but b) does not include destroying standing vegetation by stock, or lopping a tree.
closed-loop system	means using waste on site in a way that does not release waste or contaminants in the waste to the environment.
coal seam gas evaporation dam	is defined as a impoundment, enclosure or structure that is designed to be used to hold coal seam gas water for evaporation.
coal seam gas water	means underground water brought to the surface of the earth, or moved underground in connection with exploring for, or producing coal seam gas.
consequence 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 the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).
construction or constructed	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 purpose of preparing a design plan.

control measure	has the meaning in section 32 of the Environmental Protection Regulation 2019 and means a device, equipment, structure, or management strategy used to prevent or control the release of a contaminant or waste to the environment.
daily peak design capacity	for sewage treatment works, has the meaning in Schedule 2, section 63(4) of the Environmental Protection Regulation 2019 as the higher equivalent person (EP) for the works calculated using each of the formulae found in the definition for EP.
dam	means a land-based structure or a void that 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.
design or design plan	is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.
design storage allowance or DSA	means an available volume, estimated in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635), published by the administering authority, as amended from time to time, that must be provided in a dam to an annual exceedance probability specified in that Manual.
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).
ecologically dominant layer	has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means the layer making the greatest contribution to the overall biomass of the site and the vegetation community (NLWRA 2001). This is also referred to as the ecologically dominant stratum or the predominant canopy in woody ecosystems.

ecosystem function	means the interactions between and within living and nonliving components of an ecosystem and generally correlates with the size, shape and location of the vegetation community.
enclosed flare	means a device where the residual gas is burned in a cylindrical or rectilinear enclosure that includes a burning system and a damper where air for the combustion reaction is admitted.
environmental harm	has the meaning in section 14 of the *Environmental Protection Act 1994* and means any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance. Environmental harm may be caused by an activity— a) whether the harm is a direct or indirect result of the activity or b) whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors.
environmental nuisance	has the meaning in section 15 of the *Environmental Protection Act 1994* and means unreasonable interference or likely interference with an environmental value caused by— a) aerosols, fumes, light, noise, odour, particles or smoke or b) an unhealthy, offensive or unsightly condition because of contamination or c) another way prescribed by regulation.
Environmentally Sensitive Area or ESA	means a Category A, B or C Environmentally Sensitive Area.
equivalent person or EP	has the meaning under section 3 of the *Planning Guidelines For Water Supply and Sewerage, 2005*, published by the Queensland Government. It is calculated in accordance with Schedule 2, Section 63 of the Environmental Protection Regulation 2019 where: • EP = V/200 where V is the volume, in litres, of the average dry weather flow of sewage that can be treated at the works in a day or • EP = M/2.5 where M is the mass, in grams, of phosphorus in the influent that the works are designed to treat as the inlet load in a day.

essential petroleum activity	means activities that are essential to bringing the resource to the surface and are only the following: • low impact petroleum activities • geophysical, geotechnical, geological, topographic and cadastral surveys (including seismic, sample /test / geotechnical pits, core holes) • single well sites not exceeding 1 hectare disturbance and multi-well sites not exceeding 1.5 hectare disturbance • well sites with monitoring equipment (including monitoring bores): o for single well sites, not exceeding 1.25 hectares disturbance o for multi-well sites, not exceeding 1.75 hectares disturbance. • well sites with monitoring equipment (including monitoring bores) and tanks (minimum 1 ML) for above ground fluid storage: o for single well sites, not exceeding 1.5 hectares disturbance o or multi-well sites, not exceeding 2.0 hectares disturbance. • associated infrastructure located on a well site necessary for the construction and operations of wells: o water pumps and generators o flare pits o chemical / fuel storages o sumps for residual drilling material and drilling fluids o tanks, or dams which are not significant or high consequence dams to contain wastewater (e.g. stimulation flow back waters, produced water) o pipe laydown areas o soil and vegetation stockpile areas o a temporary camp associated with a drilling rig that may involve sewage treatment works that are no release works o temporary administration sites and warehouses o dust suppression activities using water that meets the quality and operational standards approved under the environmental authority.

	• communication and power lines that are necessary for the undertaking of petroleum activities and that are located within well sites, well pads and pipeline right of ways without increasing the disturbance area of petroleum activities • supporting access tracks • gathering / flow pipelines from a wellhead to the initial compression facility activities necessary to achieve compliance with the conditions of the environmental authority in relation to another essential petroleum activity (e.g. sediment and erosion control measures, rehabilitation).
existing structure	means the Dawson Dam and Nipan Dam.
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.
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.
flare pit	has the meaning in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635),* and means the containment area where any hydrocarbon that is discovered in an over-pressured reservoir during a drilling operation is diverted to, and combusted, The flare pit is only used during the drilling and work over process on a petroleum well.
flare precipitant	means waste fluids which result from the operation of a flare.
floodplain	has the meaning in the Water Act 2000 and means an area of reasonably flat land adjacent to a watercourse that— • is covered from time to time by floodwater overflowing from the watercourse and

	• does not, other than in an upper valley reach, confine floodwater to generally follow the path of the watercourse and • has finer sediment deposits than the sediment deposits of any bench, bar or in-stream island of the watercourse.
flowable substance	means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.
green waste	means waste that is grass cuttings, trees, bushes, shrubs, material lopped from trees, untreated timber or other waste that is similar in nature but does not include declared pest species.
greywater	means wastewater generated from domestic activities such as laundry, dishwashing, and bathing. Greywater does not include sewage.
growing	means to increase by natural development, as any living organism or part thereof by assimilation of nutriment; increase in size or substance.
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.
holder	means any person who is the holder of, or is acting under, this environmental authority.
hydraulic integrity	refers to the capacity of a dam to contain or safely pass flowable substances based on its design.
hydraulic performance	means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (annual exceedance probability) of performance failure specified for the relevant consequence category Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635), prepared by the Department of Environment and Resource Management, as amended from time to time.
impulsive	for 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.

incidental activity	for this environmental authority means an activity that is reasonably necessary for carrying out a petroleum activity.
LA 90, adj, 15 mins	means the A-weighted sound pressure level, adjusted for tonal character that is equal to or exceeded for 90 percent of any 15 minutes sample period equal, using Fast response.
LAeq,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.
lake	means: • a lagoon, swamp or other natural collection of water, whether permanent or intermittent and • the bed and banks and any other element confining or containing the water.
land	means the solid substance of the earth's surface.
land degradation	has the meaning in the Vegetation Management Act 1999 and means the following: • soil erosion • rising water tables • the expression of salinity • mass movement by gravity of soil or rock • stream bank instability • a process that results in declining water quality.
landholder's active groundwater bore	means bores that are able to continue to provide a reasonable yield of water in terms of quantity for the bores authorised purpose or use. This term does not include monitoring bores owned by the administering authority of the Water Act 2000.
linear infrastructure	means powerlines, pipelines, flowlines, roads and access tracks.

liquid	means a substance which is flowing and offers no permanent resistance to changes of shape.
long term noise event	means 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 consequence dam	means any dam that is not classified as high or significant as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (635),* published by the administering authority, as amended from time to time.
low impact petroleum activity	means authorised resource activities which do not result in the clearing of native vegetation, cause disruption to soil profiles through earthworks or excavation or result in significant disturbance to land which cannot be rehabilitated immediately using hand tools after the activity is completed. Examples of such activities include but are not necessarily limited to soil surveys (excluding test pits), topographic surveys, cadastral surveys and ecological surveys, may include installation of monitoring equipment provided that it is within the meaning of low impact and traversing land by car or foot via existing access tracks or routes or in such a way that does not result in permanent damage to vegetation.
Mandatory Reporting Level or MRL	means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.
matters of State environmental significance	has the meaning in Schedule 2 of the *Environmental Offsets Regulation 2014*.
maximum extent of impacts	means the total maximum, unabated, impact to a matter of State environmental significance that could occur over the whole of project life.
Max LpZ, 15 min	means the maximum value of the Z-weighted sound pressure level measured over 15 minutes.

medium term noise event	is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than five (5) days and does not re-occur for a period of at least four (4) weeks. Re-occurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a difference source or source location.
method or methodology	means the science of method, especially dealing with the logical principles underlying the organisation of the various special sciences, and the conduct of scientific inquiry.
mix-bury-cover method	means the stabilisation of residual drilling solids in the bottom of a sump by mixing with subsoil and which occurs in accordance with the following methodology: • the base of the subsoil and residual solid mixture must be separated from the groundwater table by at least one metre of a continuous layer of impermeable subsoil material (kw=10– 8m/s) or subsoil with a clay content of greater than 20 percent and • the residual solids is mixed with subsoil in the sump and cover and • the subsoil and residual solids is mixed at least three parts subsoil to one part waste (v/v) and • a minimum of one metre of clean subsoil must be placed over the subsoil and residual solids mixture and • topsoil is replaced.
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.
petroleum activity	for this environmental authority means an authorised resource activity listed under the heading “Petroleum activities” in Schedule A, General, Table 1—Authorised Resource Activities.

petroleum well	has the meaning in Schedule 2 of the Petroleum and Gas (Safety and Production) Act 2004.
pipeline wastewater	means hydrostatic testing water, flush water or water from low point drains.
pre-disturbed land use	means the function or use of the land as documented prior to significant disturbance occurring at that location.
predominant species	has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a species that contributes most to the overall above-ground biomass of a particular stratum.
prescribed contaminant	has the meaning in section 440ZD of the *Environmental Protection Act 1994* and means: a) earth or b) a contaminant prescribed under section 440ZF.
primary protection zone	means an area within 200 metres from the boundary of any Category A, B or C Environmentally Sensitive Area.
produced water	has the meaning in Section 15A of the Petroleum and Gas (Production and Safety) Act 2004 and means coal seam gas water or associated water for a petroleum tenure.
Prohibited and restricted pest species	means any pest that is: a) a plant or animal, other than a native species of plant or animal, that is (i) invasive biosecurity matter under the Biosecurity Act 2014 (Qld); or *Notes—* *1 See the Biosecurity Act 2014, schedule 1, part 3 or 4 or schedule 2, part 2; and* *2 See the note to the Biosecurity Act 2014, schedules 1 and 2.* (ii) controlled biosecurity matter or regulated biosecurity matter under the Biosecurity Act 2014 (Qld) (iii) tramp ants listed in schedule 1 and schedule 2 of the Biosecurity Act 2014 (Qld)

	a pest declared under a local law by the local government for the Land to be a pest because the pest is causing, or has the potential to cause, an adverse environmental, economic or social impact in all or part of the local government area.
project area	for this environmental authority, means the area located within the boundaries of Petroleum Lease (PL) 94.
protection zone	means the primary protection zone of any Category A, B or C Environmentally Sensitive Area or the secondary protection zone of any Category A or B Environmentally Sensitive Area.
regional ecosystem	has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil. Regional ecosystems of Queensland were originally described in Sattler and Williams (1999). The Regional Ecosystem Description Database (Queensland Herbarium 2013) is maintained by Queensland Herbarium and contains the current descriptions of regional ecosystems.
Register of Regulated Structures	includes: a) date of entry in the register b) name of the dam, its purpose and intended/actual contents c) the consequence category of the dam as assessed using the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635) d) dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam e) name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings f) for the regulated dam: i. the dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam ii. coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area iii. dam crest volume (megalitres) iv. spillway crest level (metres AHD). v. maximum operating level (metres AHD) vi. storage rating table of stored volume versus level (metres AHD) vii. design storage allowance (megalitres) and associated level of the dam (metres AHD) viii. mandatory reporting level (metres AHD) g) the design plan title and reference relevant to the dam

	h) the date construction was certified as compliant with the design plan i) the name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan j) details of the composition and construction of any liner k) The system for the detection of any leakage through the floor and sides of the dam l) dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year m) dates when recommendations and actions arising from the annual inspection were provided to the administering authority n) dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.
regulated dam	means any dam in the significant or high consequence category as assessed using the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635), published by the administering authority, as amended from time to time.
regulated structure	includes land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.
rehabilitation or rehabilitated	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
reinstate or reinstatement	for pipelines, means the process of bulk earth works and structural replacement of pre-existing conditions of a site (i.e. soil surface typography, watercourses, culverts, fences and gates and other landscape(d) features) and is detailed in the Australian Pipeline Industry Association (APIA) Code of Environmental Practice: Onshore Pipelines (2013).
reporting limit	means the lowest concentration that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes, the reporting limit is selected as the lowest non-zero standard in the calibration curve. Results that fall below the reporting limit will be reported as “less than” the value of the reporting limit. The reporting limit is also referred to as the practical quantitation limit or the limit of quantitation. For polycyclic aromatic hydrocarbons, the reporting limit must be based on super-ultra trace methods and, depending on the specific polycyclic aromatic hydrocarbon, will range between 0.005 ug/L–0.02 ug/L.

residual drilling material	means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.
restoration	means the replacement of structural habitat complexity, ecosystem processes, services and function from a disturbed or degraded site to that of a pre-determined or analogue site. For the purposes of pipelines, restoration applies to final rehabilitation after pipeline decommissioning.
Restricted stimulation fluid	has the meaning in section 206 of the *Environmental Protection Act 1994* and means fluids used for the purpose of stimulation, including fracturing, that contain the following chemicals in more than the maximum amount prescribed under a regulation— a) petroleum hydrocarbons containing benzene, ethylbenzene, toluene or xylene b) chemicals that produce, or are likely to produce, benzene, ethylbenzene, toluene or xylene as the chemical breaks down in the environment.
revegetation, revegetating or revegetate	means to actively re-establish vegetation through seeding or planting techniques in accordance with site specific management plans.
secondary protection zone	in relation to a Category A or Category B Environmentally Sensitive Area means an area within 100 metres from the boundary of the primary protection zone.
secondary treated class B standards	means treated sewage effluent or greywater which meets the following standards: • total phosphorous as P, maximum 20mg/L • total nitrogen as N, maximum 30mg/L • 5-day biochemical oxygen demand (inhibited) (e.g. release pipe from sewage treatment plant), maximum 20mg/L • suspended solids, maximum 30mg/L • pH, range 6.0 to 8.5 • e-coli, 80th percentile based on at least 5 samples with not less than 30 minutes between samples, 1000cfu per 100mL, maximum 10 000cfu per 100mL.
secondary treated class C standards	means treated sewage effluent or greywater which meets the following standards: • total phosphorous as P, maximum 20mg/L • total nitrogen as N, maximum 30mg/L

	• 5-day biochemical oxygen demand (inhibited) (e.g. Release pipe from sewage treatment plant), maximum 20mg/L • suspended solids, maximum 30mg/L • pH, range 6.0 to 8.5 • e-Coli, 80th percentile based on at least 5 samples with not less than 30 minutes between samples, 10 000cfu per 100mL, maximum 100 000cfu per 100mL.
sensitive place	means: • a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel) • a library, childcare centre, kindergarten, school, university or other educational institution • a medical centre, surgery or hospital • a protected area • 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 • a work place used as an office or for business or commercial purposes, which is not part of the authorised resource activity(ies) and does not include employees accommodation or public roads • for noise, a place defined as a sensitive receptor for the purposes of the *Environmental Protection (Noise) Policy 2019.*
sensitive receptor	is defined in Schedule 2 of the *Environmental Protection (Noise) Policy 2019*, and means an area or place where noise is measured.
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 or significant disturbance or significant disturbance to land or areas	means Land is significantly disturbed if– a) it is contaminated land; or b) it has been disturbed and human intervention is needed to rehabilitate it– (i) to a condition required under the relevant environmental authority; or

	(ii) if the environmental authority does not require the land to be rehabilitated to a particular condition–to the condition it was in immediately before the disturbance. Without limiting subsection (1)(b), land requires human intervention to rehabilitate it if– a) the disturbance has made the land more susceptible to erosion; or b) the land use capability or suitability of the land is diminished; or c) the quality of water in a watercourse downstream of the land has been significantly reduced.
significant residual impact	has the meaning in section 8 Environmental Offsets Act 2014 and includes impacts specified as a significant residual impact in Schedule F, Protecting Biodiversity Values, Table 3—Matters of State Environmental Significance.
species richness	means the number of different species in a given area.
specified relevant activity	for this environmental authority means an activity that: a) but for being carried out as a resource activity, would otherwise be a prescribed ERA b) stimulation activities c) point source discharge of treated produced water to surface waters d) storing waste that is not regulated waste (including coal seam gas water) in a regulated dam e) storing coal seam gas water that is not regulated waste in a low consequence dam; or f) borrow pits or quarries that extract more than 5000 tonnes of material in the project area.
spring	means the land to which water rises naturally from below the ground and the land over which the water then flows.
stable	means the rehabilitation and restoration of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.
stimulation	means a technique used to increase the permeability of natural underground reservoir that is undertaken above the formation pressure and involves the addition of chemicals.

	It includes hydraulic fracturing / hydrofraccing, fracture acidizing and the use of proppant treatments. Explanatory note: This definition is restricted from that in the Petroleum and Gas (Production and Safety) Act 2004 in order to only capture the types of stimulation activities that pose a risk to environmental values of water quality in aquifers.
stimulation fluid	means the fluid injected underground to increase permeability. For clarity, the term stimulation fluid only applies to fluid injected down well post-perforation.
stimulation impact zone	means a 100m maximum radial distance from the stimulation target location within a gas producing formation.
structure	means a dam or levee.
suitably qualified and experienced person	in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 2002, and has demonstrated competency and relevant experience: • for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design. • for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments. Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.
suitably qualified person	means a person who has professional qualifications, training or skills or experience relevant to the nominated subject matters and can give authoritative assessment, advice and analysis about performance relevant to the subject matters using relevant protocols, standards, methods or literature.
suitably qualified third party	means a person who: a) has qualifications and experience relevant to performing the function including but not limited to: i. a bachelor's degree in science or engineering and ii. 3 years' experience in undertaking soil contamination assessments and b) is a member of at least one organisation prescribed in Schedule 14 of the *Environmental Protection Regulation 2019*; and

	c) not be an employee of, nor have a financial interest or any involvement which would lead to a conflict of interest with the holder(s) of the environmental authority.
sump	means a pit in which waste residual drilling material or drilling fluids are stored only for the duration of drilling activities.
synthetic based drilling mud	means a mud where the base fluid is a synthetic oil, consisting of chemical compounds which are artificially made or synthesised by chemically modifying petroleum components or other raw materials rather than the whole crude oil.
system design plan	means a plan that manages an integrated containment system that shares the required design storage allowance and/or extreme storm storage volume across the integrated containment system.
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 300 millimetres in depth from the natural surface.
total density of course woody material	means the total length of logs on the ground greater than or equal to 10 centimetres diameter per hectare and number of logs on the ground greater than or equal to 10 centimetres diameter per hectare.
transmissivity	means the rate of flow of water through a vertical strip of aquifer which is one unit wide and which extends the full saturated depth of the aquifer.
trenchless methods	means construction methods for the installation of pipelines and cablesbelow 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.

valid complaint	means all complaints unless considered by the administering authority to be frivolous, vexatious or based on mistaken belief.
underground gas storage	means evaluating, developing and using natural underground reservoirs for petroleum storage or to store prescribed storage gases, including, for example, to store petroleum or prescribed storage gases for others.
void	means any constructed, open excavation in the ground.
waste and resource management hierarchy	has the meaning provided in section 9 of the Waste Reduction and Recycling Act 2011 and is the following precepts, listed in the preferred order in which waste and resource management options should be considered— a) AVOID unnecessary resource consumption b) REDUCE waste generation and disposal c) RE-USE waste resources without further manufacturing d) RECYCLE waste resources to make the same or different products e) RECOVER waste resources, including the recovery of energy f) TREAT waste before disposal, including reducing the hazardous nature of waste g) DISPOSE of waste only if there is no viable alternative.
waste and resource management principles	has the meaning provided in section 4(2)(b) of the Waste Reduction and Recycling Act 2011 and means the: a) polluter pays principle b) user pays principle c) proximity principle d) product stewardship principle.
waste fluids	has the meaning in section 13 of the *Environmental Protection Act 1994* in conjunction with the common meaning of "fluid" which is "a substance which is capable of flowing and offers no permanent resistance to changes of shape". Accordingly, to be a waste fluid, the waste must be a substance which is capable of flowing and offers no permanent resistance to changes of shape.
watercourse	has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means 1) a river, creek or stream in which water flows permanently or intermittently— a. in a natural channel, whether artificially improved or not or b. in an artificial channel that has changed the course of the watercourse.

	2) Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.
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.
wellhead	Means the casing head, and includes any casing hanger or spool, or tubing hanger, and any flow control equipment up to and including the wing valves.
well integrity	the ability of a well to contain the substances flowing through it.
wetland	for the purpose of this environmental authority, wetland means: an area shown as a wetland on the map of Queensland Wetland Environmental Values. *Note: The Environmental Protection (Water and Wetland Biodiversity) Policy 2019 Schedule 2, Map of Queensland Wetland Environmental Values means the document 'Map of Queensland Wetland Environmental Values' made by the Chief Executive and published on the website.* *Environmental values in section 8 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 apply to wetland areas on the map, which are categorised as wetlands of high or general ecological significance.*

END OF ENVIRONMENTAL AUTHORITY