Permit

Environmental Protection Act 1994

Environmental authority EPPG00651913

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

Environmental authority number: EPPG00651913

Environmental authority takes effect on 23 October 2020

Environmental authority holder(s)

Name(s)	Registered address
BEACONSFIELD ENERGY DEVELOPMENT PTY LTD	Level 4 235 Edward Street BRISBANE CITY QLD 4000
CAPRICORN ENERGY PTY LTD	Suite 1 Level 6 167 Eagle St BRISBANE CITY QLD 4000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 08: a petroleum activity or GHG storage activity, other than an activity mentioned in any of items 1 to 7, that includes 1 or more activities mentioned in schedule 2 for which an AES is stated	ATP2019
Schedule 3 06: A petroleum activity carried out on a site containing a high hazard dam or a significant hazard dam	
Schedule 3 07: A petroleum activity involving injection of a waste fluid into a natural underground reservoir or aquifer	
Ancillary 08 - Chemical Storage 1: storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 under subsection (1)(a)	
Ancillary 64 1 (a) - Water treatment. Desalinating, in a	

day, the following quantity of water, allowing the release of waste only to seawater - 0.5ML to 5M	

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, 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 *Sustainable Planning Act 2009* 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.

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.

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

Date issued: 23 October 2020

Enquiries:
Petroleum and Gas Unit
Department of Environment and Science

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Obligations under the *Environmental Protection Act 1994*

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

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

Conditions of environmental authority

<table>
<tr><th colspan="2">Schedule A – Authorised activities</th></tr>
<tr><th>Condition number</th><th>Condition</th></tr>
<tr><td>A 1</td><td>The environmental authority authorises the carrying out of the following resource activities:
(a) The petroleum activities and specified relevant activities listed in Schedule A, Table 1 – Authorised petroleum activities and specified relevant activities to the extent they are carried out in accordance with the activity's corresponding scale or intensity or both (where applicable); and
(b) Essential petroleum activities and incidental activities that are not otherwise specified relevant activities</td></tr>
<tr><td>A 2</td><td>The authorised resource activities are authorised subject to the conditions of this environmental authority.</td></tr>
<tr><td>A 3</td><td>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, Table 1 – Authorised petroleum activities and specific relevant activities
<table>
<tr><th rowspan="2">Authorised Petroleum Activity</th><th colspan="2">Scale</th><th rowspan="2">Intensity</th></tr>
<tr><th>Maximum size</th><th>Location</th></tr>
<tr><td>A petroleum activity involving injection of a waste fluid into a natural underground reservoir or aquifer</td><td>2ML/day</td><td>Within Project area</td><td>3 injection wells</td></tr>
<tr><td>Water treatment activities – desalinating in a day 0.5ML to 5ML of water in a day in a way that allows waste to be released into the environment</td><td>3.5 ML/day</td><td>Within project area</td><td>1 water treatment plant</td></tr>
<tr><td>Regulated waste storage—high hazard dam or significant dam</td><td>357ML</td><td>Within project area</td><td>8.1 hectares -1 dam - Glenaras Pond</td></tr>
<tr><td>Chemical Storage</td><td>>50t of chemicals of dangerous goods class 1 or class 2,</td><td>Within project area</td><td>2 facilities</td></tr>
</table></td></tr>
</table>

		division 2.3 in containers of at least 10m3			
A 4 (S)	The following types of petroleum activities are not authorised: (a) processing or storing petroleum or petroleum by-products that are not necessarily associated with well operations (b) extracting earthen materials (other than drilling waste rock) of more than 100,000t/year (c) extracting by dredging of more than 1000t/year of material from the bed of naturally occurring surface waters (d) drilling wells with fluids that are oil-based or synthetic oil-based (e) carrying out stimulation activities using stimulation fluid that contains chemical additives where polycyclic aromatic hydrocarbons are in concentrations above the reporting limit.				
A 5 (S)	Only low impact petroleum activities can be undertaken within Category B Environmentally Sensitive Areas (ESAs) or Category C ESAs other than state forests or timber reserves; or within the primary protection zone of Category A ESAs ***Explanatory note:*** *Category A ESAs are excised from DAA, WMA and ATP tenure types and therefore petroleum activities cannot occur in these areas.*				
A 6 (S)	Only essential petroleum activities can be undertaken in: (a) the primary protection zone of Category B ESAs or Category C ESAs other than state forests or timber reserves (b) the secondary protection zone of Category A ESAs or Category B ESAs (c) Category C ESAs that are state forests or timber reserves.				
A 7 (S)	Essential petroleum activities carried out in a primary protection zone must: (a) be located in areas of pre-existing disturbance; and (b) not negatively impact the ESA.				
A 8	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) sewage treatment facilities (e) any chemical storage facility associated with the environmentally relevant activity of chemical storage				
Schedule B – Protecting environmental values					
Condition number	**Condition**				
B 1 (S)	Petroleum activities must not cause environmental nuisance from dust, odour, light, smoke or noise at a sensitive place, other than where an alternative arrangement is in place.				

B 2	Contaminants must not be directly or indirectly released to land or air except for those releases authorised by conditions (C 9), (C 19), (C 59), (C 61), (C 62), (C 63), (C 64), (C 65), (C 66), (C 67), (C 68), (C 70) or (C 71).
B 3 (S)	(a) Only low impact petroleum activities are permitted in a designated precinct of a Strategic Environmental Area. (b) Only essential petroleum activities are permitted within all other areas of a Strategic Environmental Area not identified in condition (a).
Site planning	
B 4 (S)	Prior to carrying out petroleum activities, the location of petroleum activities must be selected to: (a) firstly avoid, then minimise, then mitigate any negative impacts on areas of vegetation or other areas of ecological value (b) minimise disturbance to land that may otherwise result in land degradation (c) minimise isolation, fragmentation or dissection of tracts of vegetation that would lead to a reduction in the current level of ecosystem functioning or ecological connectivity (d) minimise clearing of mature or hollow bearing trees.
B 5 (S)	Records must be kept to demonstrate compliance with standard condition (B 4).
B 6 (S)	Prior to any significant disturbance to land: (a) an ecological assessment of areas with native vegetation that are to be significantly disturbed, must be conducted in accordance with the Queensland Government's *Biocondition, a Condition Assessment Framework for Terrestrial Biodiversity in Queensland, Assessment Manual*; and (b) an assessment of the impacts that will occur as a result of significant disturbance to land must be undertaken.
Schedule C – Operating standards	
Condition number	**Condition**
Documentation	
C 1 (S)	All plans, procedures and reports must: (a) be certified by a suitably qualified person (b) be kept on record for a minimum of 5 years.
C 2	All plans, procedures, programs, reports and methodologies required under this environmental authority must be written and implemented.
Plant and equipment	
C 3 (S)	All plant and equipment reasonably necessary to ensure compliance with the standard conditions must be installed.
C 4 (S)	All plant and equipment must be maintained and operated in their proper and effective condition.

C 5 (S)	Measures to prevent fauna entrapment must be implemented during the construction and operation of well infrastructure and dams.
Contingency procedures for emergency environmental incidents	
C 6	Petroleum 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 petroleum activity. (b) consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity. (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. (g) procedures to notify the administering authority, local government and any potentially impacted landholder
Activities in wetlands, lakes, springs and watercourses	
C 7 (S)	Petroleum activities that require earthworks, vegetation clearing and/or placing fill, other than that associated with the construction of linear infrastructure, are not permitted in or within: (a) 200 metres of any wetland, lake or spring; or (b) 100 metres of the outer bank of any other watercourse.
C 8 (S)	The construction and/or maintenance of linear infrastructure that will result in significant disturbance to a wetland, lake, spring or watercourse must be conducted in accordance with the following order of preference. Conducting works: 1. firstly, in times where there is no water present 2. secondly, in times of no flow 3. thirdly, in times of flow, but in a way that does not impede low flow.
C 9 (S)	Petroleum activities must not result in water turbidity increases of more than 10% in high ecological value waters outside contained construction or maintenance areas.
C 10 (S)	The construction and/or maintenance of linear infrastructure that will result in significant disturbance to a lake, spring or watercourse must be designed and undertaken by a suitably qualified person in accordance with the guideline *Activities in a watercourse, lake or spring associated with a resource activity or mining operations.*
C 11 (S)	The construction and/or maintenance of linear infrastructure that will result in significant disturbance to a wetland must be designed and undertaken by a suitably qualified person taking into consideration sections 5 and 6 of the guideline *Activities in a watercourse, lake or spring*

	associated with a resource activity or mining operations.
Erosion and sediment control	
C12	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).
Chemical storage	
C 13 (S)	Chemicals and fuels on the relevant tenures must be stored in, or serviced by, an effective containment system that meets Australian Standards, where such a standard is relevant.
Structures that are dams or levees	
C 14 (S)	Other than for flare pits and sumps used to store residual drilling material and drilling fluids, the hazard category of any dam or levee to be used in carrying out petroleum activities must be assessed in accordance with the Queensland Government *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures.*
C 15 (S)	Low consequence dams 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.
C 16 (S)	All low consequence dams must be monitored for early signs of loss of structural or hydraulic integrity as specified in the initial hazard assessment.
C 17	When no longer required all low consequence dams must be decommissioned to no longer accept inflow from the petroleum activities and be either: (a) rehabilitated to achieve compliance with conditions C 74 and C 75; or (b) be left in-situ for a use by the landholder provided that: (a) it no longer contains contaminants that will migrate into the environment; and (b) it contains water of a quality that is demonstrated to be suitable for its intended use(s); and (c) the holder of the environmental authority and the landholder agree in writing that the; (i) dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and

	(ii) landholder is responsible for the dam, on and from an agreed date.
Consequence dam assessment	
C 18	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 (ESR/2016/1933) at the following times: (a) prior to the design and construction of the structure, if it is not an existing structure; or (b) prior to any change in its purpose or the nature of its stored contents.
C 19	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.
C 20	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 (ESR/2016/1933).
Design and construction of a regulated structure	
C 21	Conditions C22 to C26 inclusive do not apply to existing structures.
C 22	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 (ESR/2016/19338).
C 23	Construction of a regulated structure is prohibited unless: a) the holder has submitted a consequence category assessment report and certification to the administering authority; and b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.
C 24	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 (ESR/2016/19338), and must be recorded in the Register of Regulated Structures.
C 25	Regulated structures must: a) be designed and constructed in compliance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/19338); 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) ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
C 26	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.
Notification of affected persons	
C 27	All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure a) for existing structures that are regulated structures, within 10 business days of this condition taking effect; b) prior to the operation of the new regulated structure; and c) if the emergency action plan is amended, within 5 business days of it being amended.
Operation of a regulated structure	
C 28	Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following: a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition C 23; b) a set of 'as constructed' drawings and specifications; c) certification of the 'as constructed drawings and specifications' in accordance with condition C 26; d) 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; e) the requirements of this authority relating to the construction of the regulated structure have been met; f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and g) there is a current operational plan for the regulated structure.
C 29	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.
C 30	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
C 31	Conditions C 32 to C 35 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
C 32	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.
C 33	The holder must, as soon as practicable but 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.
C 34	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.

C 35	The holder must record any changes to the MRL in the Register of Regulated Structures Design storage allowance
C 36	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.
C 37	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 Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
C 38	The holder must, as soon as practicable but 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.
C 39	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	
C 40	Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
C 41	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 a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.
C 42	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 (ESR/2016/193310).
C 43	The holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority: a) The recommendations section of the annual inspection report; and b) If applicable, any actions being taken in response to those recommendations; and c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days11 of receipt of the request. Transfer arrangements – Resource activity only
C 44	The holder must provide a copy of any reports, documentation and certifications prepared under this 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.
Decommissioning and rehabilitation	
C 45	Regulated structures must not be abandoned but be either:

	a) decommissioned and rehabilitated to achieve compliance with condition (X29); or b) be left in-situ for a use by the landholder provided that: (i) it no longer contains contaminants that will migrate into the environment; and (ii) it contains water of a quality that is demonstrated to be suitable for its intended use(s); and c) the holder of the environmental authority and the landholder agree in writing that the; (i) dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and (ii) ii) landholder is responsible for the dam, on and from an agreed date.
C 46	Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, stable, non-polluting landform.
Register of Regulated Structures	
C 47	A Register of Regulated Structures must be established and maintained by the holder for each regulated structure:
C 48	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.
C 49	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.
C 50	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
C 51	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
C 52	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	
C 53	All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of dams must be assessed and certified in accordance with the Manual within 6 months of amendment of the authority adopting this schedule.
C 54	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Table 1 (Transitional hydraulic performance requirements for existing structures), depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.
C 55	Table 1 ceases to apply for a structure once any of the following events has occurred: a) it has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or b) it has been decommissioned; or c) c) it has been certified as no longer being assessed as a regulated structure.

C 56

Certification of the transitional assessment required by X36 and X37 (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.

Schedule X – Table 1 (transitional hydraulic performance requirements for existing structures)

Transition period required for existing structures to achieve the requirements of the *manual for Assessing consequence Categories and Hydraulic Performance of Dams*			
Compliance with criteria	**High consequence**	**Significant consequence**	**Low consequence**
>90% and a history of a good compliance performance in the last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
>70%-≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases	No transitional conditions apply. Review consequence assessment every 7 years.
>50-≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review consequence assessment every 7 years.
≤50%	Within 5 years or as per compliance requirements (e.g. TEP timing).	Within 5 years or as per compliance requirements (e.g. TEP timing).	Review consequence assessment every 5 years.
Regulated levee designed to prevent the ingress of clean food water <100% compliant	Within 5 years unless otherwise agreed with the administering authority		

Blasting

C 57 (S)

A Blast Management Plan must be developed for each blasting activity in accordance with

	Australian Standard 2187.
C 58 (S)	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.
C 59 (S)	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.
Waste management	
C 60 (S)	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.
C 61 (S)	Waste, including waste fluids but excluding waste gas, must be transported off-site for lawful re-use, remediation, recycling or disposal unless the waste is specifically authorised under this environmental authority to be disposed of or used on-site.
C 62 (S)	Sumps may be used for residual drilling material and drilling fluids only for the duration of drilling activities.
C 63 (S)	Green waste may be used on-site for rehabilitation and/or sediment and erosion control purposes.
Treated sewage effluent	
C 64 (S)	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; and (c) is released within fenced and signed contaminant release area(s) and does not result in pooling or run-off or aerosols or spray drift or vegetation die-off.
Produced water	
C 65 (S)	Produced water and stimulation flow-back water may be reused in: (a) drilling and well hole activities; or (b) stimulation activities where its use will not result in negative effects on waters beyond the stimulation impact zone.
C 66 (S)	Produced water may be used for dust suppression and construction activities provided that it does not result in adverse effects on the composition and structure of soil or subsoils and can be demonstrated to meet the following standards: (a) pH between 6–9 (b) electrical conductivity (EC) not exceeding 3000µS/cm (c) sodium adsorption ratio (SAR) not exceeding 8 (d) bicarbonate ion concentration not exceeding 100mg/L.
C 67 (S)	Produced water used by an owner or occupier for domestic purposes or stock purposes in accordance with section 186 of the *Petroleum and Gas (Production and Safety) Act 2004* or section 86 of the *Petroleum Act 1923* must meet the irrigation or livestock watering criteria as relevant to those purposes in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)*.

Residual drilling material	
C 68 (S)	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.
C 69 (S)	Records must be kept of drilling fluids and all additives used in drilling activities.
Venting and well flaring	
C 70 (S)	Unless venting is authorised under section 72 of the *Petroleum and Gas (Production and Safety) Act 2004* or section 74M of the *Petroleum Act 1923*, waste gas from production testing must be flared in a manner such that: (a) an automatic ignition system is used; and (b) a flame is visible at all times while the waste gas is being flared; and (c) there is 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. ***Explanatory note:*** *If an enclosed flare is used, the requirements in relation to the ignition system, flame and smoke do not apply.*
Stimulation	
C 71 (S)	The petroleum activities must not involve well stimulation activities at a well located within 2 kilometres laterally of a landholder's active groundwater bore and sourced from a formation within 200 metres vertically of the stimulation impact zone.
C 72 (S)	Prior to undertaking well stimulation activities, written stimulation management procedures must be developed. ***Explanatory note:*** *The stimulation management procedures may incorporate other documents by reference.*
C 73 (S)	Stimulation activities must not result in: (a) negative impacts to groundwater quality beyond the stimulation impact zone; or (b) negative impacts to water quality in landholder's active groundwater bore(s) which tap into the target formation; or (c) interconnectivity between the target formation and another aquifer.
Rehabilitation	
C 74 (S)	Significantly disturbed areas that are no longer required for the ongoing conduct of the petroleum activities must be progressively rehabilitated within 6 months (unless an exceptional circumstance in the area to be rehabilitated (e.g. a flood event) prevents this timeframe being met) so that: (a) the areas are reshaped to a stable landform (b) the areas are re-profiled to contours consistent with the surrounding landform

	(c) surface drainage lines are re-established (d) top soil is reinstated.
C 75 (S)	All significantly disturbed land caused by the carrying out of the petroleum activity (ies) must be rehabilitated to meet standard condition (C 74) and the following final acceptance criteria: (a) any contaminated land (e.g. contaminated soils, decommissioned dams containing salt) is remediated and rehabilitated (b) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the *Instructions for the treatment and management of acid sulfate soils* (2001) (c) for land that is not being cultivated by the landholder: i. groundcover, that is not a declared pest species is established and self-sustaining ii. vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining (d) for land that is to be cultivated by the landholder, cover crop is reinstated, unless the landholder will be preparing the site for cropping within 3 months of petroleum activities being completed.
C 76 (S)	Monitoring of performance indicators must be carried out on rehabilitation activities until final acceptance criteria in standard condition (C 75) have been met for the rehabilitated area.
Schedule D – Monitoring and reporting conditions	
Condition number	**Condition**
Monitoring	
D1 (S)	All monitoring must be undertaken by a suitably qualified person.
D 2 (S)	If requested by the administering authority in relation to investigating a valid complaint, monitoring must be undertaken within 10 business days.
D 3 (S)	All laboratory analyses and tests must be undertaken by a laboratory that has NATA accreditation for such analyses and tests, except as otherwise authorised in writing by the administering authority.
D 4 (S)	Notwithstanding standard condition (D 3), where there are no NATA accredited laboratories available to test for a specific analyte or substance, then duplicate samples must be sent to separate laboratories for independent testing or evaluation.
Rehabilitation reporting for relinquishment of part of an authority to prospect area under the *Petroleum and Gas (Production and Safety) Act 2004*	
D 5 (S)	Prior to relinquishing all or part of an authority to prospect area, a rehabilitation report must be prepared which specifically relates to the area to be relinquished and which: (a) reports on the condition of the area to be relinquished against the requirements of standard conditions (C 74) and (C 75); and (b) includes the results of all rehabilitation monitoring undertaken in the area to be

	relinquished in accordance with standard condition (C 76).
D 6 (S)	The report required under standard condition (D 5) must be submitted to the administering authority at least 20 business days prior to the relinquishment notice being lodged with the administering authority for the *Petroleum and Gas (Production and Safety) Act 2004*.
Sampling	
D 7	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 Geo Cat #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). (f) For dust, Australian Standard AS3580
Notification	
D 8	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 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. 1 000 L of brine; or iii. 5 000 L of untreated coal seam gas water; or (h) monitoring results where two out of any five consecutive samples do not comply with the relevant limits in the environmental authority.
Reporting	
D 9 (S)	The annual return must include an Update Report detailing activities during the annual return period, demonstrating:

	(a) significant disturbance during the period (b) rehabilitation undertaken (c) a list of all valid complaints relating to environmental issues made including the date, source, reason for the complaint and a description of investigations undertaken in resolving the complaint (d) the results of all monitoring undertaken.
Schedule E – CSG Water Injection Trial	
Condition number	**Condition**
E 1	The holder of this environmental authority must implement the 'Injection Management Plan, Glenaras Aquifer Injection Management Plan - Hutton Sandstone April 2020 as amended from time to time'.
CSG Water Injection Trial	
E 2	The only fluids authorised to be injected into an aquifer(s) during the trial period are those fluid types to be injected into the aquifer formations and locations listed in Schedule E Table 1 – Details of authorised fluid injection.

Schedule E, Table 1 – Details of authorised fluid injection

Well location (Lat & long or Map Ref)		Well Number/Reference	Target Formation	Fluid Type	Water Quality Impact Zone	Hydraulic Impact Zone
-23.08972	144.73188	Glenaras 6	Hutton Sandstone	Treated CSG Water	111m from the injection bore	80km from the injection bore
-23.08574	144.727177	Glenaras 2	Hutton Sandstone			
-23.08757	144.72938	Glenaras 4	Hutton Sandstone			

Note: The water quality impact zone and hydraulic impact zone area shall be described as a polygon with boundary references specified in grid references to GDA94.

E 3	Injection must cease immediately upon becoming aware that environmental harm is caused or threatened to be caused as a result of the injection activities.
E 4	The injection trial is limited to a maximum period of 18 months, commencing from the first date of injection into the target formation identified in Schedule E, Table 1
E 5	The holder of this environmental authority must notify the administering authority of the commencement date of the trial within seven (7) days of its commencement.
E 6	Injection wells must be constructed according to the current standards applicable to drilling activities under the Water Act 2000 or the Petroleum and Gas (Production and Safety) Act 2004.

<table>
<tr><td>E 7</td><td>The internal and external mechanical integrity of the well system prior to and during injection activities 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.</td></tr>
<tr><td>E 8</td><td>For fluid injection, the injection operation must not exceed 5,047Pa wellhead pressure which is 90% of the formation fracture pressure.</td></tr>
<tr><td colspan="2">Fluid Injection Quality</td></tr>
<tr><td>E 9</td><td>Fluid used in the well injection trial must comply with the contaminant limits prescribed in Schedule E, Table 2 – Specific Contaminant Limits for Injection Fluid.
Schedule E, Table 2 – Specific contaminant limits for injection fluid
<table>
<tr><th>Contaminants/Parameters of concern: release limits (µg/L)</th><th>Contaminant limits in injection fluids (measured as a daily average at the plant export analyser)</th></tr>
<tr><td>Dissolved oxygen</td><td>Maximum 500ppb</td></tr>
<tr><td>Total dissolved solids (TDS)</td><td>Mean TDS shall not exceed 698mg/L which is the 95%ile of the target formation TDS measured at the site</td></tr>
<tr><td>pH units</td><td>6.5-8.5</td></tr>
<tr><td>Electrical Conductivity (µS/cm)</td><td>Mean electrical conductivity shall not exceed 1999 µS/cm which is the 95%ile of the target formation electrical conductivity measured at the site</td></tr>
</table></td></tr>
<tr><td colspan="2">Injection Management Plan</td></tr>
<tr><td>E 10</td><td>The ‘Injection Management Plan, Glenaras Aquifer Injection Management Plan - Hutton Sandstone April 2020’, as amended from time to time, must include but not necessarily be limited to:
a) a comprehensive baseline study and justification
b) details of naturally occurring geological faults
c) description of overlying and underlying formations in respect of porosity, permeability, hydraulic conductivity, faulting and fracture propensity
d) a quality control and assurance program;
e) injection fluid characteristics, including:
i. estimated volumes and rates of water to be produced and injected;
ii. a description of the physical and chemical components and their concentrations of the water to be injected;
f) target aquifer characteristics, including:
i. the pre-existing state of the aquifer including, faults or geological features that exist in the target and adjacent aquifers to the outer extent of the water quality impact zone and the hydraulic impact zone and a history of seismic events within the water quality impact zone and the hydraulic impact zone;</td></tr>
</table>

	ii. physical characteristics including, storage characteristics, distribution and depth, recharge and flow characteristics and history of use; iii. characterisation of the physiochemical properties of the target formation; iv. compatibility of the injection fluid with the target formation and formation water; v. groundwater levels and/or pressure. g) details of the aquifer residence time including justification of its appropriateness; h) details of how and where the fluid will be produced, aggregated, treated and injected into the target aquifer; i) details of where the fluid is proposed to be treated including a description of the treatment process; j) the regional characteristics of the receiving environment; k) identification of the water quality impact zone and the hydraulic impact zone; l) identification of fluid injection wells, water bores, springs, lakes, wetlands, environmental assets and watercourses connected to the target aquifer m) identification of the environmental values and water quality objectives of the potential water quality impact zone of the target formation in accordance with the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 and the Queensland Water Quality Guidelines; n) identification of the impacts on the environmental values due to the injection fluid; o) details of how and where the fluid will be produced, aggregated, stored and kept separate from other waters until it is, treated and reinjected into the target aquifer; p) identification of any fluid injection well, all existing bores, springs, environmental assets and watercourses connected to groundwater, faults and other geologic features that occur within the water quality impact zone and the hydraulic impact zone; q) a water management program for water not suitable to inject, r) an assessment of the potential for migration of injection fluid or native groundwater out of the target formation through wells, bores, springs, connected watercourses, faults or other geologic features likely to impact on other aquifers; s) a risk assessment identifying potential hazards, their inherent risk, preventative measures for the management of potential hazards and details on sampling and analysis methods to verify preventative measures of potential hazards, including frequency and locations and quality assurance and control; t) verification methods to assess performance of the injection activities; u) control measures that will be implemented for fluid storage, treatment and injection to prevent or control the release of contaminant or waste to the environment; v) the indicators or other criteria against which the performance of fluid injection will be assessed; w) procedures that will be adopted to regularly review the monitoring program and to report to management and the administering authority should unforeseen or non-compliant monitoring results be recorded; x) procedures that will be implemented to prevent unauthorised environmental harm from unforeseen or non-compliant monitoring results; and

	y) procedures for dealing with accidents, spills, failure of containment structures and other incidents that may arise in the course of fluid injection.
E11	The injection Management Plan must include a review process to identify improvements or changes to the injection activities, including: (a) submission of any amendments to the administering authority for review and comment; and (b) Incorporating comments from the administering authority.
Injection Monitoring Program	
E 12	The holder of this environmental authority must conduct fluid injection in accordance with the 'Injection Management Plan, Glenaras Aquifer Injection Management Plan - Hutton Sandstone April 2020' as amended from time to time.
E 13	The Injection Monitoring Program must include, but not necessarily be limited to: (a) monitoring for all parameters listed in section 9.3 of ''Injection Management Plan, Glenaras Aquifer Injection Management Plan -Hutton Sandstone April 2020"; (b) monitoring of radionuclides: gross alpha and beta; (c) monitoring at monitoring bore locations listed in section 9.1 of ''Injection Management Plan, Glenaras Aquifer Injection Management Plan -Hutton Sandstone April 2020"; (d) monitoring at injection well locations listed in Schedule E, Table 1 – Details of authorised fluid injection (e) an analysis of how the measured parameters compare with the relevant water quality guidelines for environmental and human health.
Reporting Requirements for Injection Trials	
E 14	Within six (6) months of completion of the injection trial, the holder of the authority must submit to the administering authority an Injection Trial Report prepared by a suitably qualified person.
E 15	The Injection Trial Report must include, but not necessarily be limited to: For any well to be used for fluid injection: a) details of the well including but not limited to: (i) location details (GDA94); (ii) the inferred lithology[3]; (iii) casing details (type, outer diameter (mm), wall thickness (mm) & locations (depth from & to in metres)); (iv) cementing details (type, hole diameter (mm), casing outer diameter (v) (mm) and locations (depth from & to in metres)); (vi) target formation fracture pressure; and (vii) target formation pressure prior to injection; b) a detailed interpretation of the logs and other tests conducted during drilling and construction or refurbishment of the well; c) a completed well schematic d) a casing integrity assessment technique such as:

	(i) radioactive tracer survey; (ii) oxygen activation log; (iii) cement integrity log; or (iv) an equivalent survey technique approved by the administering authority; e) outcomes of the injection trial including, but not limited to: (i) well head injection rates versus formation pressure; target formation pressure within the hydraulic impact zone during and upon completion of the trial; (ii) hydraulic gradient of the target formation within the hydraulic impact zone upon completion of the trial; (iii) the effectiveness of aquitards (including the stability of the aquitard) and aquicludes of confining the injected fluid within the target formation; and (iv) a detailed interpretation of the logs and other tests conducted during the injection trial against their specific objectives; f) the results of the monitoring program as required by condition (E 13) including (i) Reporting on the parameters outlined in Schedule E, Table 2 – specific contaminant limits for injection fluid outlining if compliance with these parameters has been met (ii) a water compatibility analysis of the injection fluid and native groundwater that includes identification of potential impacts on water quality of the aquifer or geological formation within the water quality impact zone g) analysis of monitoring and operational data in terms of: (i) validation of conceptual framework for injection; and (ii) additional hazards that were not identified earlier; h) a revised risk analysis that identifies all potential hazards, likelihood of various risk elements and associated consequences; i) a re-evaluation of the hydraulic impact zone; and j) a re-evaluation of the water quality impact zone.
Full Scale Water Reinjection	
E 16	Full Scale CSG Water Injection is not authorised under this environmental authority.
Well Closure	
E 17	A Well Closure Plan must be submitted to the administering authority within six months prior to the cessation of fluid injection at a well.
E 18	The Well Closure Plan must include, but not necessarily be limited to the following: (a) details of when and under what circumstances the injection well will be decommissioned; (b) sealing details including the method, type of material to be used and the location and the depth (metres) from ground surface of the bottom of the seal will be located; and (c) any proposed test or measure to be made.
E 19	Actions outlined in the well closure plan must be completed within three months of the cessation of fluid injection at the injection well.

E 20	Upon completion of injection activities at a fluid injection well, a well closure report demonstrating compliance with the well closure plan as required by conditions (B 50) to (B 52) for that well must be prepared by a suitably qualified person and submitted to the administering authority with the next annual return.
Injection cessation report	
E 21	A fluid injection cessation report which has been certified by a suitably qualified person must be submitted to the administering authority within two months of completion of fluid injection activities.
E 22	The fluid injection cessation report must include, but not necessarily be limited to: (a) volumes of fluid injected at each well; (b) a risk assessment statement providing details on identified hazards including their inherent risk, summary of the results from the verification monitoring, preventative measures and the residual risk; and (c) a monitoring report outlining the methods and results of verification monitoring undertaken to assess the performance of the injection activities and preventative measures for identified hazards.
Fluid Injection Notification	
E 23	The Department of Environment and Science must be notified as soon as reasonably practicable, but within 48 hours of becoming aware of: (a) migration of injected fluid out of the target formation; or (b) a loss of hydraulic isolation of the target formation; or (c) the detection of groundwater contaminants that were not detected in background samples; or (d) an injection fluid monitoring result that does not comply with any one of the parameters in *Schedule E: Table 2 - Specific Contaminant Limits for Injection Fluid*.

Definitions

Explanatory note: *Where a term is not defined in this document, the definition in the* Environmental Protection Act 1994*, its regulations and* environmental protection policies*, then the* Acts Interpretation Act 1954 *then the Macquarie Dictionary should be used in that order.*

Term	Definition
acid sulfate soil(s)	means a soil or soil horizon which contains sulfides or an acid soil horizon affected by oxidation of sulfides.
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.
administering authority	has the meaning in Schedule 4 of the *Environmental Protection Act 1994.*
affected person	is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life or property can be put at risk due to dwellings or workplaces being in the path of a dam break flood.
alternative arrangement	means a written agreement about the way in which a particular 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 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 exceedance probability or AEP	the probability that at least one event in excess of a particular magnitude will occur in any given year.

<table>
<tr><th>Term</th><th>Definition</th></tr>
<tr><td>Annual inspection report</td><td>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.</td></tr>
<tr><td>approved quality criteria</td><td>for the purposes of residual drilling materials, means the residual drilling material meet the following quality standards:
<u>Part A</u>
In all cases:
<table>
<tr><th>Parameter</th><th>Maximum concentration</th></tr>
<tr><td>pH</td><td>6–10.5 (range)</td></tr>
<tr><td>Electrical Conductivity</td><td>20dS/m (20,000µS/cm)</td></tr>
<tr><td>Chloride*</td><td>8000mg/L</td></tr>
</table>
*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.
<u>Part B</u>
If any of the following metals are a component of the drilling fluids, then for that metal:
<table>
<tr><th>Parameter</th><th>Maximum concentration</th></tr>
<tr><td>Arsenic</td><td>20mg/kg</td></tr>
<tr><td>Selenium</td><td>5mg/kg</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Term</th><th>Definition</th></tr>
<tr><td></td><td>
<table>
<tr><td>Boron</td><td>100mg/kg</td></tr>
<tr><td>Cadmium</td><td>3mg/kg</td></tr>
<tr><td>Chromium (total)</td><td>400mg/kg</td></tr>
<tr><td>Copper</td><td>100mg/kg</td></tr>
<tr><td>Lead</td><td>600mg/kg</td></tr>
<tr><td>Nickel</td><td>60mg/kg</td></tr>
<tr><td>Zinc</td><td>200mg/kg</td></tr>
<tr><td>Mercury</td><td>1mg/kg</td></tr>
</table>
The limits in Part B refer to the post soil/by-product mix.
Part C
If a hydrocarbon sheen is visible, the following hydrocarbon fractions:
<table>
<tr><th>TPH</th><th>Maximum concentration</th></tr>
<tr><td>C6-C10</td><td>170mg/kg</td></tr>
<tr><td>C10-C16</td><td>150mg/kg</td></tr>
<tr><td>C16-C34</td><td>1300mg/kg</td></tr>
<tr><td>C34-C40</td><td>5600mg/kg</td></tr>
<tr><td>Total Polycyclic Aromatic Hydrocarbons (PAHs)</td><td>20mg/kg</td></tr>
<tr><td>Phenols (halogenated)</td><td>1mg/kg</td></tr>
<tr><td>Phenols (non-halogenated)</td><td>60mg/kg</td></tr>
<tr><td>Monocyclic aromatic hydrocarbons[1]</td><td>7mg/kg</td></tr>
<tr><td>Benzene</td><td>1mg/kg</td></tr>
</table>
The limits in Part C refer to the post soil/by-product mix.
</td></tr>
<tr><td>aquifer</td><td>means an identifiable stratigraphic formation that has the potential to produce useful flows of water.</td></tr>
</table>

[1] Total sum of benzene, toluene, ethyl benzene, xylenes (includes ortho, para and meta xylenes) and styrene.

Term	Definition
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 petroleum 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.
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.
Associated works	in relation to a dam, means: a) operations of any kind and all things constructed, erected or installed for that dam; and b) b) any land used for those operations.
Authority	means an environmental authority or a development approval.
bed	of any waters, has the meaning in Schedule 12 Part 2 of the Environmental Protection Regulation 2008.
business day	has the meaning in section 36 of the *Acts Interpretation Act 1954*.
Category A ESA	means any area listed in Schedule 12, Section 1 of the Environmental Protection Regulation 2008.
Category B ESA	means any area listed in Schedule 12, Section 2 of the Environmental Protection Regulation 2008.

Term	Definition
Category C ESA	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 reserves under the *Nature Conservation Act 1992* • an area validated as 'essential habitat' or 'essential regrowth habitat' from ground-truthing surveys in accordance with the *Vegetation Management Act 1999* for a species of wildlife listed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992* • 'of concern regional ecosystems' identified in the database called 'RE description database' containing regional ecosystem numbers and descriptions • threshold regional ecosystems as defined and listed in Appendix 6 of the *Queensland Biodiversity Offsets Policy* • critically limited regional ecosystems as defined and listed in Appendix 5 of the *Queensland Biodiversity Offsets Policy*.
Certification	means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by this Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).
certified	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.
Certifying, certify or certified	have a corresponding meaning as 'certification'.
clearing	has the meaning in the dictionary of the *Vegetation Management Act 2000*.

Term	Definition
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 *Manual for assessing consequence categories and hydraulic performance of structures*, published by the Queensland Government, as amended from time to time.
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. Consequence in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.
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 (ESR/2016/193313).
cultivated	means used for cropping or gardening.
dam(s)	means a land-based structure or a void that is designed to contain, divert or control flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works. A dam does not mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.
Dam crest volume	means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (for example, via spillway).
daily peak design capacity	for sewage treatment works, has the meaning in Schedule 2, section 63(4) of the Environmental Protection Regulation 2008 as the higher equivalent person (EP) for the works calculated using each of the formulae found in the definition for EP.
declared pest species	has the meaning in the Land Protection (Pest and Stock Route Management) Regulation 2003 and is a live animal or plant declared to be a declared pest under section 36 (Declaring Pests by Regulation) or section 37(2) (Declaring Pest under Emergency Pest Notice) of that Act and includes reproductive material of the animal or plant.
designated precinct	has the meaning in Part 5 section 15(3) of the Regional Planning Interests Regulation 2014: • for a strategic environmental area mentioned in section 4(1)—the area identified as a designated precinct on the strategic environmental area map for the strategic environmental area; or • if a strategic environmental area is shown on a map in a regional plan—the

Term	Definition
	area identified on the map as a designated precinct for the strategic environmental area.
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 (ESR/2016/193313) published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.
Designer for the purposes of a regulated dam	means the certifier of the design plan for the regulated dam.
Development approval	means a development approval under the Planning Act 2016 (or under the repealed Sustainable Planning Act 2009 or Integrated Planning Act 1997) in relation to a matter that involves an environmentally relevant activity under the Environmental Protection Act 1994.
documents	has the meaning in section 36 of the *Acts Interpretation Act 1954*.
domestic purposes	has the meaning in Schedule 2 of the *Petroleum and Gas (Production and Safety) Act 2004* and section 86 of the *Petroleum Act 1923* .
ecological connectivity	is a measure of ecological condition and means the flow or connection of organisms and ecological processes across landscapes at multiple scales. Ecological connectivity has a positive relationship with landscape connectivity and habitat connectivity and effects vary between species. It includes connectivity by stepping stone or contiguous bioregional/local corridor networks.
ecosystem functioning	means the interactions between and within living and nonliving components of an ecosystem and generally correlates with the size, shape and location of the vegetation community.
eligibility criteria	for an environmentally relevant activity, has the meaning in section 112 of the *Environmental Protection Act 1994*.
Emergency action plan	means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to affected persons and the implementation of protection measures. The plan must require dam owners to annually review and update contact information where required.

Term	Definition
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 attribute	has the meaning in section 11(2) of the *Regional Planning Interests Act 2014*.
environmental harm	has the meaning in section 14 of the *Environmental Protection Act 1994*.
environmental value(s)	has the meaning in section 9 of the *Environmental Protection Act 1994*.
environmental nuisance	has the meaning in section 15 of the *Environmental Protection Act 1994.*
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(4) of the Environmental Protection Regulation 2008 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.
environmentally relevant activity or ERA	has the meaning in section 18 of the *Environmental Protection Act 1994.*
essential petroleum activities	means activities that are essential to bringing the resource to the surface and are only the following: • low impact petroleum activities • single well sites not exceeding 1 hectare disturbance and multi-well sites not exceeding 1.5 hectare disturbance • associated infrastructure located on a well site necessary for the construction and operations of wells: ○ water pumps and generators ○ flare pits ○ above ground containers and chemical / fuel storages ○ sumps for residual drilling material and drilling fluids ○ dams to contain stimulation flow back waters that are not significant or high hazard dams ○ erosion and sediment and control structures ○ pipe laydown and vegetation stockpile areas ○ a temporary camp associated with a drilling rig that may involve sewage treatment works that are no release works. • 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

Term	Definition
	activities • ecological surveys, geophysical surveys, topographic or cadastral surveys or geological surveys (including seismic and geotechnical petroleum activities) • gathering / flow pipelines from a well head to the initial compression facility • supporting access tracks
Existing structure	means a structure that prior to 14 October 2020 meets any or both of the following, a structure: a) with a design that is in accordance with the 23 March 2016, Version 5.02 Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933) and that is considerably in progress; b) that is under considerable construction or that is constructed.
Extreme Storm Storage	means a storm storage allowance determined in accordance with the criteria in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933) published by the administering authority.
flare pit	means a containment area where any hydrocarbon that is discovered in an over-pressured reservoir during the drilling operation is diverted to, and combusted. The flare pit is only used during the drilling and workover process.
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.
high ecological value waters	means Queensland waters that are scheduled waters under the Environmental Protection (Water) Policy 2009 as high value ecological waters.
Holder	means: a) where this document is an environmental authority, any person who is the holder of, or is acting under, that environmental authority; or b) where this document is a development approval, any person who is the registered operator for that development approval.
Hydraulic performance	means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/193314).

Term	Definition
Incidental activity	For this environmental authority means an activity that is reasonably necessary for carrying out the petroleum activity.
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.
landholde**r'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*.
levee	means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.
linear infrastructure	means powerlines, pipelines, roads and access tracks.
low consequence dam	means any dam that is not a high or significant consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*, published by the Queensland Government, published by the administering authority, as amended from time to time.
low impact petroleum activities	means petroleum activities which do not result in the clearing of native vegetation, cause disruption to soil profiles through earthworks or excavation or result in significant disturbance to land 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 (ESR/2016/193314) published by the administering authority.
Manual	means the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/193314) published by the administering authority, as amended from time to time.
Modification or modifying	See definition of 'construction'.

Term	Definition
mix-bury-cover	means the stabilisation of residual drilling solids in the bottom of a sump by mixing with subsoil and which occurs in a 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 >20%; 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 s36 of the *Acts Interpretation Act 1954.*
NATA accreditation	means accreditation by the National Association of Testing Authorities Australia.
oil-based	in relation to a fluid, means where the base fluid is a petroleum product such as diesel fuel.
Operational plan	includes: a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA); b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.
outer bank	has the meaning in section 5A of the *Water Act 2000*.
performance indicator(s)	means a quantitative measure against which success can be assessed and audited in a consistent, objective and repeatable manner.
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.*
production testing	has the meaning in section 73 of the *Petroleum and Gas (Production and Safety) Act 2004.*
Register of Regulated Structures	includes: a) Date of entry in the register; b) Name of the structure, its purpose and intended/actual contents; c) The consequence category of the dam as assessed using the Manual for

Term	Definition
	assessing consequence categories and hydraulic performance of structures d) (ESR/2016/193315); e) 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; f) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings; (i) For the regulated dam, other than in relation to any levees – (ii) The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam; (iii) Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area: (iv) Dam crest volume (megalitres); (v) Spillway crest level (metres AHD). (vi) Maximum operating level (metres AHD); (vii) Storage rating table of stored volume versus level (metres AHD); (viii) Design storage allowance (megalitres) and associated level of the dam (metres AHD); (ix) 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(s)	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 Queensland Government, as amended from time to time.
Regulated structure	means any structure in the significant or high consequence category as assessed using the Manual for assessing consequence categories and hydraulic performance

Term	Definition
	of structures (ESR/2016/193315) published by the administering authority. A regulated structure does not include: • a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container; • a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities; • a flare pit.
rehabilitation or rehabilitated	means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with acceptance criteria and, where relevant, includes remediation of contaminated land.
release, releases or released	has the meaning in Schedule 4 of the *Environmental Protection Act 1994.*
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 0.005µg/L – 0.02µg/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. Spillway means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges form the dam, normally under flood conditions or in anticipation of flood conditions.
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 10000cfu per 100mL.

Term	Definition
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, 10000cfu per 100mL, maximum 100000cfu 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 petroleum 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 2008.
significantly disturbed or significant disturbance or significant disturbance to land or areas	means disturbance to land as defined in Schedule 12, section 4 of the Environmental Protection Regulation 2008.
species richness	means the number of different species in a given area.
species diversity	means the diversity within an ecological community that incorporates both species richness and the evenness of species' abundances.
spring(s)	has the meaning in Schedule 4 of the *Water Act 2000*

Term	Definition
stable	in relation to land, means landform dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (trafficability), erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.
stimulation	means a technique used to increase the permeability of a natural underground reservoir 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 the 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 fluids injected down well post-perforation.
stimulation impact zone	means a 100m maximum radial distance from the stimulation target location within a gas producing formation.
stimulation management procedures	means procedures for the management of stimulation activities that include, but is not necessarily limited to information on: • the local stratigraphy including aquifers, faults, linear features, hydraulic conductivity, porosity, seismic risk and groundwater dependent assets • the impacts of applied stresses including aquifer drawdown, on connectivity to aquifers above and below the fractured zone subsequent to the stimulation activity • the extent to which there are vertically impermeable formations between the fractured zone and other aquifers • methods to ensure isolation of hydrocarbon bearing formations from aquifers and internal and external mechanical integrity of well(s) • process control techniques incorporating real-time analysis, fracture modelling and formation understanding utilising techniques such as micro-seismic measurements • quantity and quality monitoring of flow back water.
stock purposes	has the meaning in Schedule 2 of the *Petroleum and Gas (Production and Safety) Act 2004* and section 86 of the *Petroleum Act 1923*.
strategic environmental area	Has the meaning in section 11(1) of the *Regional Planning Interests Act 2014*.
structure	means a dam or levee.

Term	Definition
suitably qualified person	means a person who has qualifications, training, skills and experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.
Suitably qualified and experienced person	In relation to 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 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 8 of the Environmental Protection Regulation 2008; 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.
synthetic oil-based	means for a mud or drilling fluid, the base fluid being 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	System design plan means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.
top soil	means the surface (top) layer of a soil profile, which is more fertile, darker in colour, better structured and supports greater biological activity than underlying layers. The surface layer may vary in depth depending on soil forming factors, including parent material, location and slope, but generally is not greater than about 300mm in depth from the natural surface.

Term	Definition
valid complaint	means a complaint that is not considered by the administering authority or holder of the environmental authority to be frivolous, vexatious or based on mistaken belief.
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*.
waste and resource management principles	has the meaning provided in section 4(2)(b) of the *Waste Reduction and Recycling Act 2011*.
waters	means 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.
Water year	means the 12-month period from 1 July to 30 June.
watercourse	has the meaning provided in Schedule 4 of the *Environmental Protection Act 1994*.
well infrastructure	means infrastructure required for the construction, completion and operation of a well including but not limited to cellar pits, dams and drill sumps.
well site	means a maximum area of land disturbance for the purposes of constructing, installing and operating an exploration well or such wells as part of a multi-well arrangement and includes well lease infrastructure.
wetland	means a wetland as defined under the Queensland Wetlands Program and are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six (6) metres. To be classified as a wetland, the area must have one or more of the following attributes: • at least periodically, the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle; or • the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers; or • the substratum is not soil and is saturated with water, or covered by water at some time. For the purposes of petroleum activities, wetlands do not include springs and watercourses and those wetlands that are defined in the *Wetland Mapping and Classification Methodology* (2005) published by the Queensland Government as: • H2M1 Riverine or ex-riverine (lacustrine) water bodies associated with dams and weirs located in a channel

Term	Definition
	• H2M3p Ponded pastures • H2M5 Palustrine/lacustrine water bodies where ecological character has changed due to gross mechanical disturbance (e.g. cropping) • H2M6 Palustrine/lacustrine water bodies that have been converted, completely or mostly, to a ring tank or other controlled storage • H2M7 Riverine water bodies that have been converted mostly to canals or irrigation channels • H3C1 Artificial stand-alone water storages not within a natural water body or channel; or • H3C2 Artificial Channel drain/canal – bore drains, swales, bores and irrigation channel overflows/ponding. ***Explanatory note:*** *This definition has been amended from the Queensland Wetlands Program definition so that low value wetlands and man-made water bodies are excluded.*
Wet season	means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.
year(s)	has the meaning in s36 of the *Acts Interpretation Act 1954.*

END OF ENVIRONMENTAL AUTHORITY