

Permit

Environmental Protection Act 1994

Environmental authority EPPG00652513

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

Environmental authority number: EPPG00652513

Environmental authority takes effect on 11 July 2023.

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

Environmental authority holder(s)

Name(s)	Registered address
QGC PTY LIMITED	Level 30 275 George Street BRISBANE CITY QLD 4000
BG INTERNATIONAL LIMITED	Level 30 275 George Street BRISBANE CITY QLD 4000
CNOOC Coal Seam Gas Company Pty Ltd	Level 34 123 Eagle Street BRISBANE CITY QLD 4000
Tokyo Gas QCLNG Pty Ltd	Level 21 Exchange Plaza 2 The Esplanade PERTH WA 6000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 06 - A petroleum activity carried out on a site containing a high hazard dam or a significant hazard dam	PL201

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 08 - A petroleum or GHG storage activity, other than items 1 to 7, that includes an activity from Schedule 2 with an AES	PL201
Ancillary 15 - Fuel burning - Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	PL201
Ancillary 60 - Waste disposal - 1(d) - Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) - more than 200,000t	PL201
Ancillary 62 - Resource recovery and transfer facility operation - 1(c) - Operating a facility for receiving and sorting, dismantling, baling or temporarily storing category 2 regulated waste	PL201
Ancillary 63 - Sewage Treatment - 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP – if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	PL201

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 *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

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

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

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



Signature

11 July 2023

Date

Daniel Spelchan
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

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Privacy statement

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

Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

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

Schedules

Schedule A	General Conditions
Schedule B	Air
Schedule C	Water
Schedule D	Noise
Schedule E	Waste
Schedule F	Regulated Dams
Schedule G	Land
Schedule H	Nature Conservation
Schedule I	Injection of gas into coal seam reservoirs
Definitions	

SCHEDULE A – GENERAL CONDITIONS

- (A1) This environmental authority authorises the carrying out of the following **authorised resource activity(ies)**:
- (a) the **petroleum activities**:
 - i. petroleum exploration, appraisal and development wells;
 - ii. **limited petroleum activities**;
 - iii. compressor stations;
 - iv. **regulated structures**;
 - v. **low consequence dams**; and
 - (b) the following **specified relevant activities**:
 - i. Fuel burning equipment that is capable of burning at least 500kg of fuel in an hour;
 - ii. **Sewage** treatment – operating sewage treatment works, other than no-release works, with a total **daily peak design capacity** of 21 to 100 equivalent persons if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme;
 - iii. Regulated waste storage – operating a facility for receiving and storing regulated waste for more than 24 hours;
 - iv. for the **specified relevant activities** listed in (A1)(b)(i)-(iii), another activity where Schedule 2 of the *Environmental Protection Regulation 2008* (the Regulation) provides exemption for the activity, but only to the extent of the circumstances stated in Schedule 2 of the Regulation;
 - (c) **incidental activities** that are not otherwise specified relevant activities.
- (A2) The resource activities in condition (A1) are authorised subject to the conditions of this environmental authority.
- (A3) This environmental authority authorises a relevant act¹ to occur only to the extent that:
- (a) the relevant act is an ordinary consequence of carrying out the resource activities authorised by this environmental authority in accordance with its conditions; or
 - (b) the relevant act is specifically authorised by the conditions of this environmental authority and carrying out an activity which results in the relevant act does not contravene the conditions of this authority

Financial assurance

- (A4) **Petroleum activities** that cause **significant disturbance** to land must not be carried out until **financial assurance** has been given to the **administering authority** as security for compliance with the environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the *Environmental Protection Act 1994*.
- (A5) Prior to any changes in **petroleum activities** which would result in an increase to the maximum **significant disturbance** since **financial assurance** was last given to the **administering authority**, the **holder** of the environmental authority must amend the **financial assurance** and

¹ See section 493A of the *Environmental Protection Act 1994*

give the administering authority the increased amount of financial assurance.

- (A6) If the amount of **financial assurance** held by the **administering authority** has been discounted and either the nominated period of financial assurance has ended, or an event or change in circumstance has resulted in the **holder** of the environmental authority no longer being able to meet one or more of the mandatory pre-requisites or applicable discount criteria, the holder of the environmental authority must amend the financial assurance and give the administering authority the increased amount of financial assurance as soon as practicable.

Maintenance of measures, plant and equipment

- (A7) All plant and equipment must be maintained and operated in their proper and effective condition
- (A8) Emissions that may cause material or serious environmental harm and not specifically authorised by this environmental authority must not be released from the authorised **petroleum activities** except where they are authorised under this environmental authority.
- (A9) The **holder** of the environmental authority must comply with the relevant control strategies and standards detailed in the QGC Pty Limited "Environmental Management Plan – PL201" dated 21 January 2009, "Environmental Management Plan, Berwyndale South Gas Injection Trial - PL201" dated 26 September 2008, "Water Treatment Plants Management Plan" dated October 2009 and "Windibri Brine Management Plan" dated July 2010, to manage environmental impacts caused by the undertaking of the Environmentally Relevant Activities authorised under this environmental authority. To the extent of any inconsistency between the conditions of this environmental authority and the environmental management plans, the conditions of this environmental authority prevail.

Complaints

- (A10) If requested by the **administering authority** in relation to investigating a complaint, monitoring must be commenced within 10 business days.
- (A11) A record of all complaints must be kept including the date, complainant's details, source, reason for the complaint, description of investigations and actions undertaken in resolving the complaint.

Notification

- (A12) The **holder** of this environmental authority must telephone the **administering authority's** Pollution Hotline (1300 130 372) and the landholder or their nominated representative on the day of becoming aware of any release of contaminants not in accordance with the conditions of this environmental authority or any event where environmental harm has been caused or may be caused.
- (A13) Subject to condition (A13), the **holder** of this environmental authority is required to report in the case of uncontained spills of contaminants (including but not limited to hydrocarbon, **CSG water** or mixtures of both) of the following volumes or kind:
- (a) releases of any volume of contaminants to water; and
 - (b) releases of volumes of contaminants greater than 200L of liquid hydrocarbon, 2000 litres of **brine** or 10 000 litres of coal seam gas water to land; and
 - (c) releases of any volumes of contaminants where potential serious or material environmental harm has occurred or may occur.
- (A14) The notification of emergencies or incidents as required by conditions number (A13 and A14) must include but not be limited to the following information:
- (a) the environmental authority number and name of the **holder**;

- (b) the name and telephone number of the designated contact person;
 - (c) the location of the emergency or incident;
 - (d) the date and time of the release;
 - (e) the time the **holder** of this environmental authority became aware of the emergency or incident;
 - (f) the estimated quantity and type of any substances involved in the incident;
 - (g) the actual or potential suspected cause of the release;
 - (h) a description of the effects of the incident including any environmental harm that has occurred or may occur as a result of the release;
 - (i) any sampling conducted or proposed, relevant to the emergency or incident; and
 - (j) actions taken to prevent any further release and mitigate any environmental harm caused by the release.
- (A15) Within 10 business days following the initial notification of an emergency or incident or receipt of monitoring results, whichever is the later, a written report must be provided to the **administering authority**, including the following:
- (a) results and interpretation of any samples taken at the time of the incident and analysed;
 - (b) the outcomes of actions taken at the time of the incident to prevent or minimise environmental harm; and
 - (c) proposed actions to prevent a recurrence of the emergency or incident.
- (A16) As soon as practicable, but not more than six weeks following the conduct of any environmental monitoring performed in relation to the emergency or incident, which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority, a written report on the results of any such monitoring must be provided to the **administering authority**.

Monitoring

- (A17) All monitoring under this environmental authority must be undertaken by a **suitably qualified person**.
- (A18) All laboratory analyses and tests must be undertaken by a laboratory that has **NATA accreditation** for such analyses and tests
- (A19) Notwithstanding condition (A19), where there are no NATA accredited laboratories for a specific analyte or substance, then duplicate samples must be sent to at least two separate laboratories for independent testing or evaluation
- (A20) If monitoring conducted in accordance with this environmental authority indicated a condition or contaminant level that has caused, or has potential to cause, environmental harm, the environmental authority **holder** must:
- (a) as soon as is practicable, take the necessary actions to rectify the condition or contaminant level so as to avoid or minimise environmental harm; and
 - (b) notify the administering authority of the condition or contaminant level and the actions taken to rectify it.
- (A21) Any management or monitoring plans, systems or programs required to be developed and implemented by a condition of this environmental authority must be reviewed for performance and amended if required on an annual basis.
- (A22) The **holder** of this environmental authority must record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the **administering authority**.

- (A23) 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) Policy 2009
 - (b) for groundwater, Groundwater Sampling and Analysis – A Field Guide (2009:27 GeoCat #6890.1)
 - (c) for noise, the Environmental Protection Regulation 2008
 - (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.

SCHEDULE B – AIR

Fuel burning and combustion facilities – ambient air quality monitoring

- (B1) The operation of **fuel burning or combustion facilities** must not result in ground level concentrations of contaminants exceeding the maximum limits specified in Protecting Air Values, Table 1—Maximum ground level concentration of contaminants to air.

Protecting air values, Table 1—Maximum ground level concentration of contaminants to air

Contaminant	EPP Air Quality Objective / Maximum ground level concentration at 0° Celsius	Units	Averaging time
NOx as Nitrogen Dioxide	250	$\mu\text{g}/\text{m}^3$	1 hour
NOx as Nitrogen Dioxide	33	$\mu\text{g}/\text{m}^3$	1 year
Sulphur Dioxide	570	$\mu\text{g}/\text{m}^3$	1 hour
Sulphur Dioxide	230	$\mu\text{g}/\text{m}^3$	1 day
Sulphur Dioxide	22	$\mu\text{g}/\text{m}^3$	1 year
Carbon Monoxide	11	mg/m^3	8 hours

Air receiving environment monitoring

- (B2) An air receiving environment monitoring program (AREMP) must be developed to demonstrate compliance with the limits in Protecting Air Values, Table 1—Maximum ground level concentration of contaminants to air.
- (B3) The AREMP must include, but not necessarily be limited to:
- The delineation of the relevant air shed(s)
 - the identification of background reference sites and impact monitoring sites within the relevant air shed(s), including **sensitive places**
 - a monitoring program to be carried out annually that:
 - includes background reference and impact monitoring sites
 - includes an assessment of meteorological conditions (wind speed and direction)
 - is sufficient to determine compliance with the limits listed in Protecting Air Values, Table 2 Maximum ground level concentration of contaminants to air
 - identifies the effects of the authorised contaminants released to air in the relevant air shed(s)
 - is representative of when the **fuel burning or combustion facilities** are operating under maximum operating conditions for the annual period
 - an assessment of the condition of each fuel burning or combustion facility; and
 - a description of other significant point sources in the air shed and surrounding land use including sensitive places.

- (B4) An AREMP report must be written annually which includes the information required by condition (B3) and an assessment of the extent to which monitoring data for ground level concentrations complies with the air contaminant limits listed in Protecting Air Values, Table 1—Maximum ground level concentration of contaminants to air.
- (B5) Where monitoring data indicates that ground level concentrations listed in Protecting Air Values, Table 1—Maximum ground level concentration of contaminants to air have not been met, the AREMP report required by condition (B4) must also include an assessment of:
- (a) the extent to which the values of the air environment in the relevant air shed(s) are being protected
 - (b) an assessment of whether contaminant releases to the air environment are consistent with the air management hierarchy in the Environmental Protection (Air) Policy 2008, and
 - (c) any corrective actions that have been implemented or proposed to be implemented to become consistent with the air management hierarchy and achieve compliance with Protecting Air Values, Table 1—Maximum ground level concentration of contaminants to air.
- (B6) A **statement of compliance** prepared by a **suitably qualified person** must accompany each AREMP report required by condition (B4) and if applicable, condition (B5) stating:
- (a) whether the AREMP as most recently implemented complies with the requirements of conditions (A18), (A24)(d), (B2) and (B3)
 - (b) that, to the best of the suitably qualified person's knowledge, the assessment required by condition (B4) and if applicable, condition (B5) is true, correct and complete, and
 - (c) that, to the best of the suitably qualified person's knowledge, all information provided as part of the statement of compliance, including attachments, is true, correct and complete.
- (B7) Where condition (B5) applies, the documents required by conditions (B4), (B5) and (B6) must be given to the **administering authority** within 5 business days after the AREMP report is written.

SCHEDULE C – WATER

Contaminant release

- (C1) In the carrying out of the petroleum activity contaminants must not be directly or indirectly released to any **waters** except as permitted under this authority.

Erosion and sedimentation control measures

- (C2) The **holder** of the environmental authority must:
- (a) design, install and maintain adequate contour banks and diversion drains to minimise the potential for stormwater runoff to enter disturbed areas by **petroleum activities**; and
 - (b) design, install and maintain adequate erosion and sediment control structures where necessary to prevent or minimise erosion of disturbed areas and the sedimentation of any **waters**.

Stormwater Management Measures

- (C3) The **holder** must implement and maintain measures to minimise the likelihood of the release of contaminated stormwater from the authorised place to any stormwater drain or any **waters**.
- (C4) The maintenance and cleaning of vehicles and any other equipment or plant must be carried out in areas from where the resultant contaminants are unlikely to be released into any **waters**, roadside gutter or stormwater drainage system.
- (C5) Any spillage of wastes, or contaminants that may cause environmental harm, must be effectively contained and/or cleaned up as quickly as practicable.
- (C6) Contaminants must not be released from the authorised place to any **waters** or the bed and banks of any waters.

Reverse Osmosis Water Treatment Plants

- (C7) The **holder** of this authority may operate up to four mobile reverse osmosis water treatment plants each with a maximum treatment capacity of 1.6 ML/day.
- (C8) The **holder** of this authority may construct and operate a permanent reverse osmosis water treatment plant, with a maximum treatment capacity of 9 ML/day.
- (C9) All reverse osmosis water treatment plants operating on site must be located:
- (a) in previously disturbed areas;
 - (b) at least 150 metres from a **watercourse**;
 - (c) not within 100 metres of an **environmentally sensitive area (ESA)**;
 - (d) within a bunded area; and
 - (e) on the outer footprint of any pond area to prevent additional loading on pond structure.
- (C10) Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other **structures** used for the storage or treatment of contaminants or wastes.

Floodplains

- (C11) Activities other than **limited petroleum activities** must not be undertaken on floodplain areas that are likely to be flooded by runoff events of less than 1:50 average recurrence interval (ARI).

- (C12) Where **limited petroleum activities** are carried out on floodplain areas where the ARI is 1:50 or more frequent, the **holder** of this environmental authority must ensure that these activities do not:
- (a) concentrate flood flows;
 - (b) divert flood flows from natural drainage paths and alter flow distribution;
 - (c) increase the local duration of floods;
 - (d) increase the risk of detaining flood flows;
 - (e) increase risk to the safety of persons from flooding; or
 - (f) increase the risk of damage to property from flooding.

Effluent release from the sewage treatment plant

- (C13) Contaminants must not be released from the authorised place to any **waters** or the bed and banks of any waters.

Stormwater management for the operation of the sewage treatment plant

- (C14) There must be no release of stormwater runoff that has been in contact with any contaminants at the site to any **waters**, roadside gutter or stormwater drain.
- (C15) Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering the spray irrigation area or other **structures** used for the storage or treatment of contaminants or wastes.

SCHEDULE D – NOISE

- (D1) The **holder** of the environmental authority must ensure that **petroleum activities** do not cause an **environmental nuisance** at any **sensitive place**.
- (D2) Despite condition (D2), the **holder** of the environmental authority must ensure that **noise** emitted from any aspect of **petroleum activities** must not exceed the noise levels specified in the tables below at any **sensitive place**.

Time period	Noise level at a <i>sensitive place</i> measured as the Adjusted Maximum Sound Pressure Level $L_{A\ max, adj, T}$
7am– 6 pm	Background noise level plus 5 dB (A)
6pm–10pm	Background noise level plus 5 dB (A)
10pm–7am	Background noise level plus 3 dB (A)

Note: In no case is the **background noise level**, $L_{A90, 15\ mins}$ to be less than 25 dB(A). In the event that measured background noise level is less than 25 dB(A), then 25 dB(A) is to be used.

- (D3) When requested by the **administering authority**, **noise** monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of **environmental nuisance** at any **sensitive place**, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (D4) If monitoring in accordance with (D3), indicates Condition (D2) is not being met, then the **holder** of the environmental authority must:
- address the complaint including the use of appropriate dispute resolution if required; or
 - immediately implement **noise** abatement measures so that noise emissions from the activity do not result in further **environmental nuisance**.

SCHEDULE E – WASTE

Waste management

- (E1) The **holder** of the environmental authority must ensure that **petroleum activities** do not result in the release or likely release of a contaminant to land or **waters**, unless the release is explicitly authorised under this environmental authority.
- (E2) The **holder** of the environmental authority must remove and dispose of all regulated waste to a **licensed waste disposal facility** or recycling facility.
- (E3) **CSG water concentrate** and/or **brine** produced by the reverse osmosis water treatment plants must:
 - (a) be stored in a tank at the site of the water treatment plant and removed off-site to a facility that can lawfully accept such waste; or
 - (b) stored in a pond that has been designed and constructed for the purpose of storing the CSG water concentrate or brine in accordance with conditions Schedule F – Regulated Structures of this authority.
- (E4) Following cessation of the petroleum activity(ies), any residual **brine** or solid salt present in a **CSG water dam** must be removed and transported to a facility that can lawfully reuse, recycle or dispose of such waste.

Residual drilling material

- (E5) If sumps are used to store **residual drilling material** or drilling fluids, they must only be used for the duration of drilling activities.
- (E6) **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.
- (E7) Records must be kept to demonstrate compliance with condition (E5) and (E6).

Pipeline wastewater

- (E8) **Pipeline waste water**, may be released to land provided that it:
 - (a) can be demonstrated it meets the **acceptable standards for release to land**; and
 - (b) is released in a way that does not result in visible scouring or erosion or pooling or run-off or vegetation die-off.

SCHEDULE F – REGULATED DAMS

Assessment of consequence category

- (F1) The **consequence category** of any **structure** must be **assessed** by a **suitably qualified and experienced person** in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* at the following times:
- a) prior to the design and **construction** of the structure, if it is not an **existing structure**; or
 - b) if it is an existing structure, within 12 months of the commencement of this schedule; or
 - c) prior to any change in its purpose or the nature of its stored contents.
- (F2) 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.
- (F3) **Certification** must be provided by the **suitably qualified and experienced person** who undertook the **assessment**, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

Design and construction¹ of a regulated structure

- (F4) Conditions (F5) to (F9) inclusive do not apply to **existing structures**.
- (F5) All **regulated structures** must be designed by, and **constructed**² under the supervision of, a **suitably qualified and experienced person** in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.
- (F6) **Construction** of a **regulated structure** is prohibited unless the holder has submitted a **consequence category assessment** report and **certification** to the **administering authority** has been **certified** by a **suitably qualified and experienced person** for the design and **design plan** and the associated operating procedures in compliance with the relevant condition of this authority.
- (F7) **Certification** must be provided by the **suitably qualified and experienced person** who oversees the preparation of the **design plan** in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, and must be recorded in the **Regulated Dams/Levees register**.
- (F8) **Regulated structures** must:
- a) be designed and **constructed** in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*;
 - b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:
 - i) floodwaters from entering the **regulated dam** from any **watercourse** or drainage line; and
 - ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
 - c) have the floor and sides of the **dam** designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.

¹ Construction of a dam includes modification of an existing dam—refer to the definitions.

² Certification of design and construction may be undertaken by different persons.

- (F9) **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.

Operation of a regulated structure

- (F10) Operation of a **regulated structure**, except for an **existing structure**, is prohibited unless:
- (a) the **holder** has submitted to the **administering authority**:
 - i) one paper copy and one electronic copy of the **design plan** and **certification** of the 'design plan' in accordance with condition (F6), and
 - ii) a set of 'as **constructed**' drawings and specifications, and
 - iii) certification of those 'as constructed drawings and specifications' in accordance with condition (F9), and
 - iv) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the **certified system design plan**.
 - v) the requirements of this authority relating to the construction of the regulated structure have been met;
 - vi) the **holder** has entered the details required under this authority, into a **Register of Regulated Dams**; and
 - vii) there is a current **operational plan** for the regulated structures.
- (F11) 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 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.
- (F12) Each **regulated structure** must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current **operational plan** and, if applicable, the current **design plan** and associated **certified** 'as **constructed**' drawings.

Mandatory reporting level

- (F13) Conditions (F14) to (F17) inclusive only apply to **Regulated Structures** which have not been **certified** as low **consequence category** for 'failure to contain – overtopping'.
- (F14) 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.
- (F15) The **holder** must, as soon as practical and within 48 hours of becoming aware, notify the **administering authority** when the level of the contents of a **regulated dam** reaches the MRL.

- (F16) 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**.
- (F17) The **holder** must record any changes to the MRL in the Register of **Regulated Structures**.

Design storage allowance

- (F18) 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.
- (F19) 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).
- (F20) The **holder** must, as soon as possible and within 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**.
- (F21) 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

- (F22) Each **regulated structure** must be inspected each calendar year by a **suitably qualified and experienced person**.
- (F23) At each annual inspection, the condition and adequacy of all components of the **regulated structure** must be **assessed** and a **suitably qualified and experienced person** must prepare an **annual inspection report** containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
- (F24) The **suitably qualified and experienced person** who prepared the **annual inspection report** must **certify** the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.
- (F25) The **holder** must:
- (a) 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
 - (b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the **holder**, provide this to the administering authority within 10 business days of receipt of the request.

Transfer arrangements

- (F26) 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.

Register of Regulated Dams

- (F27) A **Register of Regulated Dams** must be established and maintained by the **holder** for each **regulated dam**:
- (F28) The **holder** must provisionally enter the required information in the Register of Regulated Dams when a **design plan** for a **regulated dam** is submitted to the **administering authority**.
- (F29) The **holder** must make a final entry of the required information in the Register of Regulated Dams once compliance with condition (F10) and (F11) has been achieved.
- (F30) The **holder** must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
- (F31) All entries in the Register of Regulated Dams must be approved by the chief executive officer for the **holder** of this authority, or their delegate, as being accurate and correct.
- (F32) 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 Dams, in the electronic format required by the administering authority.

Transitional arrangements

- (F33) 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.
- (F34) All **existing structures** must subsequently comply with the timetable for any further **assessments** in accordance with the **Manual** specified in *Schedule F, Table 1 - Transitional requirements for existing structures*, depending on the **consequence category** for each existing structure assessed in the most recent previous **certification** for that structure.
- (F35) *Schedule F, Table 1 - Transitional requirements for existing structures*, 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) It has been **certified** as no longer being **assessed** as a **regulated structure**.
- (F36) **Certification** of the transitional **assessment** required by condition (F33) and (F34) (as applicable) must be provided to the **administering authority** within six months of amendment of the authority adopting this schedule.

Schedule F – Table 1 - Transitional hydraulic performance requirements for existing structures

Transition period required for existing structures to achieve the requirements of the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Dams</i>			
Compliance with criteria	High	Significant	Low
>90% and a history of good compliance performance in 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.

Seepage Monitoring

- (F37) A seepage monitoring program must be developed by a **suitably qualified person** which is commensurate with the site-specific risks of contaminant seepage from containment facilities, and which requires and plans for detection of any seepage of contaminants to **groundwater** as a result of storing contaminants by 31 March 2015.
- (F38) The seepage monitoring program required by condition (F37) must include but not necessarily be limited to:
- identification of the containment facilities for which seepage will be monitored
 - identification of trigger parameters that are associated with the potential or actual contaminants held in the containment facilities

- (c) identification of trigger concentration levels that are suitable for early detection of contaminant releases at the containment facilities
- (d) installation of background seepage monitoring sites where **groundwater** quality will not have been affected by the **petroleum activities** authorised under this environmental authority to use as reference sites for determining impacts
- (e) installation of seepage monitoring bores that:
 - i. are within formations potentially affected by the containment facilities authorised under this environmental authority (i.e. within the potential area of impact)
 - ii. provide for the early detection of negative impacts prior to reaching **groundwater dependent ecosystems**, landholder's active groundwater bores, or water supply bores
 - iii. provide for the early detection of negative impacts prior to reaching migration pathways to other formations (i.e. faults, areas of unconformities known to connect two or more formations)
- (f) monitoring of groundwater at each background and seepage monitoring bore at least quarterly for the trigger parameters identified in condition (F38)(b).
- (g) seepage trigger action response procedures for when trigger parameters and trigger levels identified in conditions (F38)(b) and (F38)(c) trigger the detection of seepage, or upon becoming aware of any monitoring results that indicate potential groundwater contamination
- (h) a rationale detailing the program conceptualisation including assumptions, determinations, monitoring equipment, sampling methods and data analysis; and
- (i) provides for annual updates to the program for new containment facilities constructed in each annual return period.

SCHEDULE G – LAND

Land management

- (G1) Contaminants must not be directly or indirectly released to land except as permitted under this environmental authority.

Chemical storage

- (G2) Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards, where such a standard is applicable.

Produced water

- (G3) The **holder** of this environmental authority must ensure that **produced water** is contained, is not released to land or **waters** and is only used for purposes specifically authorised:
- (a) under this environmental authority; or
 - (b) under the *Petroleum and Gas (Production and Safety) Act 2004*; or
 - (c) under the *Petroleum Act 1923*; or
 - (d) under the *Waste Reduction and Recycling Act 2011*.
- (G4) Produced water that is supplied or used under separate authorisation and in accordance with condition (G3) is not further regulated under conditions of this authority.
- (G5) Produced water may be re-used in:
- (a) Drilling and well hole activities; or
 - (b) **Stimulation** activities.
- (G6) Produced water may be used for dust suppression provided the following criteria are met:
- (a) the amount of dust suppressant applied should not exceed the amount required to effectively suppress dust; and
 - (b) the application of dust suppressant must:
 - i. not cause on-site ponding or runoff
 - ii. be directly applied to the area being dust suppressed
 - iii. not harm vegetation surrounding the area being dust suppressed; and
 - iv. not cause visible salting.
- (G7) Produced water may be used for construction purposes provided the use:
- (a) does not result in runoff from the construction site; and
 - (b) does not harm vegetation surrounding the construction site.
- (G8) Produced water may be used for landscaping and revegetation provided the following criteria are met:
- (a) total dissolved solids (TDS) does not exceed 1000mg/L;
 - (b) pH range is between 6.0 and 9.5;
 - (c) does not contain any substances in concentrations that may be toxic to plant growth;
 - (d) the amount of resource applied should not exceed what is required to effectively undertake landscaping or revegetation activities; and

- (e) the application of the resource must:
 - (i) not cause on-site ponding or runoff;
 - (ii) be directly applied to the area being landscaped or revegetated;
 - (iii) not harm vegetation surrounding the area being landscaped or revegetated; and
 - (iv) not cause visible salting.
- (G9) If there is any indication that any of the circumstances in condition (G6), condition (G7), condition (G8)(e)(i), condition (G8)(e)(iii) or condition (G8)(e)(iv) is occurring the use must cease immediately, the **administering authority** notified as soon as possible, but within 48 hours of becoming aware and the affected area must be remediated without delay.
- (G10) Produced water may be used for industrial and manufacturing operations provided the following criteria are met:
 - (a) pH range is between 6.0 to 9.5; and
 - (b) the resource is not directly or indirectly released to land.
- (G11) Produced water may be used for research and development provided the resource is not directly or indirectly released to land.
- (G12) Produced water may be used for domestic stock, stock intensive and incidental land management provided the following criteria are met:
 - (a) the water quality of the resource complies with the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC and ARMCANZ 2000) Volume 1: Chapter 4.3, Table 4.3.1, 4.3.2 and 4.3.3; and
 - (b) stock and stock intensive drinking water is limited to watering livestock mentioned in Table 4.3.1 of *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC and ARMCANZ 2000) Volume 1: Chapter 4.3.
- (G13) Water quality criteria listed in condition (G8), condition (G10) and condition (G12) must be undertaken and include, at a minimum:
 - (a) fortnightly insitu sampling for pH and total dissolved solids (TDS); and
 - (b) initially monthly for other water quality parameters, and then six monthly after three consecutive detects which are less than 50 percent of the relevant parameter.
- (G14) Despite condition (A19) and condition (A20), on-line monitoring equipment is appropriate for pH and total dissolved solids (TDS) measurements, where they are operated in accordance with condition (A3).
- (G15) Produced water may be transferred to a third party to be used for the following purposes, subject to condition (G16):
 - (a) coal washing;
 - (b) dust suppression;
 - (c) construction;
 - (d) landscaping and revegetation, subject to compliance with condition (G8)(a), condition (G8)(b) and condition (G8)(c); and
 - (e) industrial and manufacturing operations, subject to compliance with condition (G10)(a).
- (G16) If the responsibility of produced water is given or transferred to a third party in accordance with condition (G15), the **holder** of the environmental authority must ensure:
 - (a) the responsibility of the produced water is given or transferred in accordance with a written agreement (third party agreement);
 - (b) the third party is made aware of the General Environmental Duty under section 319 of the *Environmental Protection Act 1994*.

- (G17) The **holder** of the environmental authority must:
- (a) minimise disturbance to land in order to prevent **land degradation**; and
 - (b) ensure that for land that is to be **significantly disturbed** by **petroleum activities**, the **top layer** of the soil profile is removed and;
 - stockpiled in a manner that will preserve its biological and chemical properties, and
 - used for rehabilitation purposes in accordance with condition (G20).

Vegetation management

- (G18) The **holder** of the environmental authority must:
- (a) prevent or minimise disturbance to vegetation by **petroleum activities**;
 - (b) manage the effects of clearing to prevent the loss of biodiversity, reduction of ecological processes and **land degradation**.
- (G19) The **holder** of the environmental authority must consider whether it is feasible to avoid clearing, and where viable alternatives exist, must not clear vegetation:
- (a) in, or within 50 metres of, the high bank of a **watercourse**;
 - (b) in, or within 50 metres of, the static high water mark of **wetlands, lakes** or springs;
 - (c) in a way that isolates clumps or **dissects corridors** of vegetation;
 - (d) on slopes greater than 5%;
 - (e) on **dispersible soils**; and
 - (f) in existing or **potential discharge areas**.

Rehabilitation landform criteria

- (G20) As soon as practicable and within six months (or longer period agreed in writing with the **administering authority**) of the end of **petroleum activities** causing **significant disturbance** to land, the **holder** of the environmental authority must:
- (a) remediate contaminated land (e.g. evaporation ponds containing hazardous waste) in accordance with *Environmental Protection Act 1994* requirements;
 - (b) reshape all **significantly disturbed land** to a **stable** landform similar to that of surrounding undisturbed areas;
 - (c) ensure that significantly disturbed land is reinstated to a suitable post-disturbance land use;
 - (d) on all significantly disturbed land, take all reasonable and practicable measures to:
 - re-establish surface drainage lines;
 - reinstate the **top layer** of the soil profile;
 - promote establishment of vegetation to protect the land surface from soil erosion; and
 - (e) promote establishment of vegetation suitable for the post disturbance land use.
 - (f) ensure that the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance by petroleum activities;

- (g) ensure that the water quality of any residual water bodies constructed by petroleum activities meets criteria for subsequent uses and does not have potential to cause environmental harm; and
- (h) decommission any inactive buried pipelines by in-situ decommissioning (i.e. abandonment in place) consistent with the requirements of **AS 2885**.

Pipeline activities

- (G21) The **holder** of the environmental authority must undertake petroleum activities that involve the operation and construction of pipelines in accordance with the following sections of AS 2885:
- (a) 3 - Pipeline integrity management;
 - (b) 6 - Threat mitigation; and
 - (c) 7 - Safety and environment.

Rehabilitation of regulated dams

- (G22) The **holder** of this environmental authority must not abandon any **dam** or pond but must decommission each dam or pond so as to prevent and/or minimise any environmental harm.
- (G23) As a minimum, decommissioning must be conducted such that each **dam** or pond either:
- (a) becomes a **stable** landform, that no longer contains substances that will migrate into the environment, or
 - (b) is approved or authorised by the **administering authority** for use by the landholder following cessation of the **petroleum activities**.
- (G24) A contaminated land assessment must be undertaken to determine if land on which the environmentally relevant activity took place is contaminated.
- (G25) Any contaminated soil must be managed in accordance with the procedures and processes set out in the EPA's *Draft Guidelines for the Assessment and Management of Contaminated Land – May 1998*.

Sewage treatment and disposal

Land disposal of effluent from the sewage treatment plant

- (G26) Treated **sewage** effluent or **greywater** from a mobile and temporary treatment system with a **daily peak design capacity** of less than 100 EP may be released to land provided it:
- (a) be to a fenced and signed contaminant release area(s);
 - (b) does not contain any properties nor contain any organisms or other contaminants in concentrations that are capable of causing environmental harm;
 - (c) not result in pooling or run-off or aerosols or spray drift or vegetation die-off;
 - (d) minimises deep drainage below the root zone of any vegetation;
 - (e) does not adversely affect the quality of shallow aquifers;
 - (f) be to a contaminant release area(s) that is kept vegetated with groundcover, that is:
 - i. not a **declared pest species**; and
 - ii. kept in a viable state for transpiration and nutrient uptake; and
 - (g) is only operated for less than six months at any one location.
- (G27) Treated **sewage** effluent or **greywater** from a sewage treatment system with a **daily peak design capacity** of less than 21 EP may be released to land provided it meets condition (G26)(a) to (f).
- (G28) The daily volume of contaminants released to land must be determined or estimated by an appropriate method, for example a flow meter, and records kept of such determinations and estimates.

- (G29) When conditions prevent the irrigation of treated effluent to land (such as during or following rain events), the contaminants must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of effluent (such as tanking off site to another treatment plant or sewer). A record must be kept of any removal or discharge off site, including destination, transporter, dates and volumes.

Infrastructure

- (G30) All infrastructure constructed by or for the **holder** of the environmental authority must be removed by the holder from the site and the site rehabilitated according to condition (G20) prior to surrender of the environmental authority.
- (G31) Where infrastructure is to remain after the surrender of the environmental authority, the **holder** must obtain the written agreement of the **administering authority** and the current land owner/holder.

SCHEDULE H – NATURE CONSERVATION

Environmentally sensitive areas (ESAs)

- (H1) The **holder** of the environmental authority must ensure that **petroleum activities**:
- (a) are not conducted within a **category A or B ESA**;
 - (b) do not cause a **significant disturbance** within 1km of a **category A ESA** or within 500m of a **category B ESA**; and
 - (c) are not conducted in a **category C ESA** unless there is a written agreement to enter the area for those activities from the relevant **administering authority**.
- (H2) The **holder** of the environmental authority must ensure that staff, contractors or agents carrying out **petroleum activities** on a petroleum authority are aware of the location of any relevant **category A, B or C ESA's** within the authority.
- (H3) Where no reasonable alternative exists, **petroleum activities** undertaken within an endangered regional ecosystem or the 500 m buffer zone of an endangered regional ecosystem, must be located according to the following order of preference:
- (a) pre-existing areas of **significant disturbance** within the buffer zone;
 - (b) undisturbed areas more than 100m from the **ESA**;
 - (c) undisturbed areas less than 100m from the **ESA**;
 - (d) pre-existing areas of significant disturbance within the **ESA**;
 - (e) areas within the **ESA** of lower environmental value (eg. not of concern remnant vegetation or of concern remnant vegetation in a polygon mapped as containing endangered regional ecosystem and other ecosystems); and
 - (f) areas where clearing of an endangered regional ecosystem is unavoidable provided the clearing does not exceed 10% of a polygon mapped as an endangered regional ecosystem and all reasonable effort is made to minimise the area cleared and to avoid clearing mature trees.
- (H4) Clearing carried out in accordance with condition (H3) must not be:
- (a) more than 10% of a polygon mapped as an endangered regional ecosystem;
 - (b) more than 3600m² for the operational area for any drill site within an endangered regional ecosystem;
 - (c) within an endangered regional ecosystem for construction of a sump larger than 30m²;
 - (d) greater than 6 metres in width for tracks that are necessary within an endangered regional ecosystem for production and exploration purposes; and
 - (e) greater than 12 metres in width for pipeline construction purposes that is necessary within an endangered regional ecosystem.

SCHEDULE I – INJECTION OF GAS INTO COAL SEAM RESERVOIRS

Target Coal Seam Reservoirs

- (I1) The **holder** of this authority is permitted to inject coal seam gas into the following coal seam reservoirs:
- (a) the Argyle reservoir of the Lower Juandah Coal Measures through the injection well BWS#119 located at 26° 50' 42" S and 150°18' 38"E; and
 - (b) the Bulwer reservoir of the Taroom Coal Measures through the injection well BWS#69 located at 26° 51' 3" S and 150°18' 38"E.
- (I2) Injection of coal seam gas must not exceed a rate of 2 TJ/day/well or a pressure of 1200 psi.
- (I3) Peudeuterated Methane (CD₄), Sulfur Hexafluoride (SF₆) and Helium (He) may be injected as tracer gases into the coal seam reservoirs identified in Condition (I1), in quantities that will not result in environmental harm.
- (I4) The injection of coal seam gas and tracer gases into the identified coal seam reservoirs is permitted only for the pilot project described in "Environmental Management Plan, Berwyndale South Gas Injection Trial, PL201 dated 26 September 2008", and injection must cease after six weeks of commencement, unless otherwise agreed in writing with the **administering authority**.

Monitoring and Reporting Requirements

- (I5) The **holder** of this authority must:
- (a) ensure that the injection of coal seam gas and tracer gases into the reservoirs prescribed in Condition (I1) do not deteriorate the quality of **groundwaters** or contaminate registered water bores;
 - (b) develop and implement measures to minimise the risk of blowouts, explosions or ingress to buildings/structures that may represent an explosion hazard;
 - (c) monitor the impact of injection pressures to prevent fracturing, breakouts and fugitive emissions;
 - (d) continuously record injection pressure, flow rate, and cumulative volume of the injected gas;
 - (e) ensure that any tracer gas sampling is undertaken and analysed by a competent third party;
 - (f) in the event of an anomalous pressure or volume recording, inform the administering authority within 24 hours of the occurrence; and
 - (g) in the event of contamination of groundwaters, develop and submit to the administering authority a plan to rehabilitate the groundwaters prior to the commencement of any rehabilitation work.
- (I6) The **holder** of the authority must develop a monitoring program for the pilot program that includes but is not limited to the requirements listed in Condition (I5) and submit the monitoring program to the **administering authority** prior to the gas injection activity commencing.
- (I7) Within two months of the conclusion of the gas injection pilot study and the tracer study, a report prepared by a competent practitioner must be submitted to the **administering authority**, summarising the results of the pilot program, any identified environmental impacts, the results of all monitoring undertaken as well as all other pertinent information.

DEFINITIONS

*Note: Terms which are defined in this environmental authority are **bolded** at the beginning of each schedule. Where a term is not defined in this environmental authority the definition in the Environmental Protection Act 1994, its regulations and Environmental Protection Policies, or the Acts Interpretation Act 1954, then the Macquarie Dictionary, then the Petroleum and Gas (Production and Safety) Act 2004 or its regulations, must be used in that order.*

Acceptable standards for release to land means wastewater of the following quality as determined by monitoring results or by characterisation:

- (a) electrical conductivity (EC) not exceeding 3000µS/cm
- (b) sodium adsorption ratio (SAR) not exceeding 8
- (c) pH between 6.0 and 9.0
- (d) heavy metals (measured as total) meets the respective short term trigger value in section 4.2.6, Table 4.2.10—Heavy metals and metalloids in Australian and New Zealand Guidelines for Fresh and Marine Water Quality
- (e) does not contain biocides.

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

Administering authority means -

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

Annual exceedance probability or **AEP** is the probability that at least one event in excess of a particular magnitude will occur in any given year.

Annual inspection report means an assessment prepared by a **suitably qualified and experienced person** containing details of the assessment against the most recent **consequence assessment** report and **design plan** (or **system design plan**);

- (a) against recommendations contained in previous annual inspections reports;
- (b) against recognised **dam** safety deficiency indicators;
- (c) for changes in circumstances potentially leading to a change in **consequence category**;
- (d) for conformance with the conditions of this authority;
- (e) for conformance with the 'as constructed' drawings;
- (f) for the adequacy of the available storage in each **regulated dam**, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);
- (g) for evidence of conformance with the current **operational plan**.

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

Part A In all cases: Parameter	Maximum concentration
pH	6–10.5 (range)
Electrical Conductivity	20dS/m (20,000µs/cm)
Chloride*	8000mg/L

*Chloride analysis is only required if an additive containing chloride was used in the drilling process
The limits in Part A must be measured in the clarified filtrate of oversaturated solids prior to mixing.

Part B If any of the following metals are a component of the drilling fluids, then for that metal: Parameter	Maximum concentration
Arsenic	20mg/kg
Selenium	5mg/kg
Boron	100mg/kg
Cadmium	3mg/kg
Chromium (total)	400mg/kg
Copper	100mg/kg
Lead	600mg/kg

The limits in Part B and Part C refer to the post soil/by-product mix.
Part C If a hydrocarbon sheen is visible, the following hydrocarbon fractions:

TPH	Maximum concentration
C6-C10	170mg/kg
C10-C16	150mg/kg
C16-C34	1300mg/kg
C34-C40	5600mg/kg
Total Polycyclic Aromatic Hydrocarbons (PAHs)	20mg/kg
Phenols (halogenated)	1mg/kg
Phenols (non-halogenated)	60mg/kg
Monocyclic aromatic hydrocarbons (Total sum of benzene, toluene, ethyl benzene, xylenes (includes ortho, para and meta xylenes) and styrene)	7mg/kg
Benzene	1mg/kg

AS 2885 Australian Standard Pipelines – Gas and Liquid Petroleum.

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 water means underground water taken or interfered with, if the taking or interference happens during the course of, or results from, the carrying out of another authorised activity under a petroleum authority, such as a petroleum well, and includes **waters** also known as produced formation water. The term includes all contaminants suspended or dissolved within the water.

Associated works in relation to a **dam**, means:

- (a) operations of any kind and all things constructed, erected or installed for that dam; and
- (b) any land used for those operations.

Australian Standard AS3580 means any of the following publications:

- AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter—Gravimetric method.
- AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet—Gravimetric method
- AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter— PM10 low volume sampler—Gravimetric sampler.

Authorised resource activities for this environmental authority means the resource activities authorised to be carried out under condition (A1).

Background noise level $L_{A90,15min}$ means the A-weighted sound pressure level of the residual noise exceeded for 90% of a representative time period of not less than 15 minutes, using time weighting, 'F'.

Brine is defined as saline water with a total dissolved solid concentration greater than 40 000mg/l.

Brine dam means a dam designed to receive, contain or evaporate brine.

"Category A Environmentally Sensitive Area" means any area listed in Schedule 12, Section 1 of the Environmental Protection Regulation 2008.

"Category B Environmentally Sensitive Area" means any area listed in Schedule 12, Section 2 of the Environmental Protection Regulation 2008.

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)).

Certifying, certify or certified have a corresponding meaning as **certification**.

Competent person - A person with the demonstrated skill and knowledge required to carry out the task to a standard necessary for the reliance upon collected data or protection of the environment.

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* (EM635).

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

CSG water is defined as underground water brought to the surface of the earth or moved underground in connection with exploring for or producing coal seam gas.

CSG water concentrate is the concentrated saline water waste stream from a water treatment process that does not exceed a total dissolved solid concentration of 40 000mg/l.

CSG evaporation dam is defined as an impoundment, enclosure or structure that is designed to be used to hold CSG water for evaporation.

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.

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

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**).

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.

Decommissioning in relation to a CSG evaporation dams includes:

- demolition and removal of associated infrastructure (e.g. offices, pipelines, pumps);
- removal and lawful management or disposal of dam contents including brine and solid salt residues;
- removal and lawful management or disposal of synthetic liner material or contaminated soil;
- remediation of contaminated land including treatment or lawful disposal as necessary;
- landowner and stakeholder consultation;
- reshaping and rehabilitation of disturbed areas;
- establishment of an end land use once decommissioning and rehabilitation has occurred; and
- monitoring and reporting program to demonstrate that decommissioning and rehabilitation has proceeded satisfactorily to successfully achieve the agreed end land use.

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 Hazard Categories and Hydraulic Performance of Structures* (EM635), 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**.

Development plan - Under the P & G Act, holders of petroleum authorities must submit a development plan for a petroleum lease or proposed petroleum lease. The plan gives detailed information about the nature and extent of activities to be carried out under the relevant lease.

Discharge area is:

- (a) that part of the land surface where **groundwater** discharge produces a net movement of water out of the groundwater; and
- (b) identified by an assessment process consistent with the document: Salinity Management Handbook, Queensland Department of Natural Resources, 1997; or
- (c) identified by an approved salinity hazard map held by the Department of Natural Resources, Mines and Water.

Dispersible soils are soils in which clay material disintegrates into particles less than 2 microns across. This can be observed within 24 hours when soil crumbs are submerged in distilled water.

Dissects corridors of vegetation means clearing vegetation that results in a break more than 50 metres wide across a corridor.

Environmental nuisance is unreasonable interference or likely interference with an environmental value caused by:

- (a) **noise**, dust, odour, light; or
- (b) an unhealthy, offensive or unsightly condition because of contamination; or
- (c) another way prescribed by regulation.

Environmentally sensitive area (as determined from the EPA GIS data base) means a location, however large or small, that has environmental values that contribute to maintaining biological diversity and integrity, have intrinsic or attributed scientific, historical or cultural heritage value, or are important in providing amenity, harmony or sense of community.

Existing structure means a structure that is constructed, or the construction of a structure has substantially commenced.

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

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.

Fuel burning or combustion facility(ies) means a permanent fuel burning or combustion equipment which in isolation, or combined in operation, or which are interconnected, is, or are capable of burning more than 500kg of fuel in an hour.

Greywater means wastewater generated from domestic activities such as laundry, dishwashing, and bathing. Greywater does not include **sewage**.

Groundwater means subsurface water, generally saturating the soil or rock in which it occurs.

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.

Groundwater dependent ecosystem (GDE) means ecosystems which require access to **groundwater** on a permanent or intermittent basis to meet all or some of their water requirements so as to maintain their communities of plants and animals, ecological processes and ecosystem services.

Hazardous contaminant means a contaminant that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause serious or material environmental harm because of:

- (a) its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity or flammability; or
- (b) its physical, chemical or infectious characteristics.

Holder means any person who is the holder of, or is acting under, this environmental authority.

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** in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635).

Incidental activity for this environmental authority means an activity that is reasonably necessary for carrying out a petroleum activity.

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.

Licensed waste disposal facility is a facility approved under a development approval and operated by a holder of a registration certificate for environmentally relevant activity item number 75 under Schedule 1 of the Environmental Protection Regulation 1998.

Limited petroleum activities mean activities including geophysical surveys (including seismic activities), well sites, well pads, sumps, flare pits, flow lines and supporting access tracks. Limited petroleum activities do not include the construction of production infrastructure for processing or storing petroleum or by-products, **dams**, compressor stations, campsites/workforce accommodation, power supplies, waste disposal or other supporting infrastructure for the project.

$L_{A \max, \text{adj}, T}$ is the adjusted average maximum A-weighted sound pressure level measured over a time period T. The maxima must be measured on a sound level meter with a frequency-weighting that corresponds to perceived loudness ("A" weighting) and the meter must be set to the "fast" response time-weighting. The measured values are to be adjusted upwards by 2 dB(A) to 5 dB(A) if the **noise** source has tonal characteristics. The measuring period must be in excess of five minutes. The arithmetic average of the adjusted maxima, after eliminating any extraneous **noise** peaks, is the measure used to characterise the noise environment. (This measure will generally be similar to a percent exceedence of 10% or less. Refer to Australian Standard AS1055.)

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* (EM635).

Lake - A natural or artificial body of water, either permanent or intermittent.

Land degradation includes the following:

- (a) soil erosion;
- (b) rising water tables;
- (c) the expression of salinity;
- (d) mass movement by gravity of soil or rock;
- (e) stream bank instability; and

(f) a process that results in declining water quality.

Mandatory reporting level or MRL means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635), published by the **administering authority**.

Manual means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635) published by the **administering authority**.

Map of referable wetlands has the meaning in Schedule 12 of the Environmental Protection Regulation 2008 and means the 'Map of referable wetlands', a document approved by the chief executive on 4 November 2011 and published by the department, as amended from time to time by the chief executive under section 144D.

Mix-bury-cover method means the stabilisation of residual drilling solids in the bottom of a sump by mixing with subsoil and which occurs in accordance with the following methodology:

- the base of the subsoil and residual solid mixture must be separated from the **groundwater** table by at least one metre of a continuous layer of impermeable subsoil material ($k_w=10-8\text{m/s}$) or subsoil with a clay content of greater than 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.

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

Noise means a sound or vibration of any frequency, whether transmitted through air or any other physical medium.

Operational plan includes:

- (a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance);
- (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**.

Petroleum activities for this environmental authority means the **authorised resource activities** identified in condition (A1).

Pipeline wastewater means hydrostatic testing water, flush water or water from low point drains.

Potential discharge area - Low lying parts of the landscape (relative to adjacent terrain) where **groundwater** movements are within 2-5m of the land surface and the landscape may be subject to upward movement of groundwater in the future.

Produced water has the meaning in Section 15A of the *Petroleum and Gas (Production and Safety) Act 2004* and means **CSG water** or **associated water** for a petroleum tenure.

Register of regulated dams includes:

- (a) Date of entry in the register;
- (b) Name of the dam, its purpose and intended/actual contents;
- (c) The **consequence category** of the dam as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635);

- (d) Dates, names, and reference for the **design plan** plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
- (e) Name and qualifications of the **suitably qualified and experienced person** who certified the design plan and 'as constructed' drawings;
- (f) For the **regulated dam**, other than in relation to any **levees** –
 - i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
 - ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area
 - iii. **Dam crest volume** (megalitres);
 - iv. **Spillway** crest level (metres AHD).
 - v. Maximum operating level (metres AHD);
 - vi. Storage rating table of stored volume versus level (metres AHD);
 - vii. **Design storage allowance** (megalitres) and associated level of the **dam** (metres AHD);
 - viii. **Mandatory reporting level** (metres AHD);
- (g) The design plan title and reference relevant to the dam;
- (h) The date **construction** was certified as compliant with the design plan;
- (i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
- (j) Details of the composition and **construction** of any liner;
- (k) The system for the detection of any leakage through the floor and sides of the dam;
- (l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
- (m) Dates when recommendations and actions arising from the annual inspection were provided to the **administering authority**;
- (n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

Regulated dam means any dam in the significant or high **consequence category** as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635), published by the **administering authority**, as amended from time to time.

Regulated structure includes land-based containment **structures**, **levees**, bunds and **voids**, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

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.

Sedimentation pond is a bunded or excavated structure used to contain and settle waterborne sediment running off disturbed areas.

Sensitive place means any of the following places –

- (a) a dwelling;
- (b) a library, childcare centre, kindergarten, school, college, university or other educational institution;
- (c) a hospital, surgery or other medical institution;
- (d) a protected area or an area identified under a conservation plan as a critical habitat or an area of major interest, under the *Nature Conservation Act 1992*;
- (e) a marine park under the *Marine Parks Act 1982*; and
- (f) a 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).

Sewage is the effluent discharged from a sanitary appliance (i.e. sewage treatment works).

Significantly disturbed land and **significant disturbance** means land if:

- (a) it is contaminated land; or
- (b) it has been disturbed and human intervention is needed to rehabilitate it:
 - i. to a state required under the relevant environmental authority; or
 - ii. if the environmental authority does not require the land to be rehabilitated to a particular state – to its state immediately before the disturbance.

Examples of a disturbance to land:

- (a) areas where soil has been compacted, removed, covered, exposed or stockpiled;
- (b) areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion;
- (c) areas where land use suitability or capability has been diminished;
- (d) areas within a **watercourse, waterway, wetland or lake** where **petroleum activities** occur and human intervention is necessary to restore or stabilise the disturbed area;
- (e) areas submerged by hazardous waste storage and dam walls in all cases;
- (f) areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads, tracks, bridges, culverts, **dams**, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after petroleum activities have ceased; or
- (g) areas where land has become contaminated land and a suitability statement has not been issued.

However, the following areas are not significantly disturbed:

- (a) areas off the petroleum authority (e.g. roads or tracks which provide access to the petroleum authority);
- (b) areas previously significantly disturbed which have been rehabilitated to the **administering authority's** satisfaction;
- (c) areas under permanent infrastructure;
- (d) areas that were significantly disturbed prior to the grant of the environmental authority, unless those areas are re-disturbed by the holder of the environmental authority during the term of the authority;
- (e) minor disturbances such as drill sumps and minor respreading of soil on GPS located seismic lines.

Stable means geo-technical stability of the rehabilitated landform where instability related to the excessive settlement and subsidence caused by consolidation / settlement of the wastes deposited, and sliding / slumping instability has ceased.

Statement of compliance for a condition in an environmental authority has the meaning in section 208 of the *Environmental Protection Act 1994* and is a condition that requires the holder to give the **administering authority** a statement of compliance about a document or work relating to a relevant activity. The condition must also state—

- (a) the criteria (the compliance criteria) the document or work must comply with; and
- (b) that the statement of compliance must state whether the document or work complies with the compliance criteria; and
- (c) the information (the supporting information) that must be provided to the administering authority to demonstrate compliance with the compliance criteria; and
- (d) when the statement of compliance and supporting information must be given to the administering authority.

Storage dam means a dam that is used to aggregate and contain CSG water prior to use, treatment or disposal of that water (by means other than evaporation). The primary purpose of the dam must not be to evaporate the water even though this will naturally occur.

Specified relevant activity for this environmental authority means an activity that, but for being carried out as a resource activity, would otherwise be a prescribed ERA.

Spillway means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges from the dam, normally under flood conditions or in anticipation of flood conditions.

Structure means a **dam** or **levee**.

Suitably qualified and experienced person in relation to **regulated structures** means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- for **regulated dams**, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.
- for regulated **levees**, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary **certification** from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

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

Suitably qualified third party means a person who:

- (a) has qualifications and experience relevant to performing the function including but not limited to:
 - i. a bachelor's degree in science or engineering; and
 - ii. 3 years' experience in undertaking soil contamination assessments; and
- (b) is a member of at least one organisation prescribed in Schedule 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.

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.

Third party auditor means a suitably qualified person who is either a certified third party auditor or an internal auditor employed by the holder of the environmental authority and the person is independent of the day to day management and operation of the petroleum activity(ies) covered by this environmental authority

Top layer - The surface layer of a soil profile, which is usually 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 natural surface.

Void means any constructed, open excavation in the ground.

Watercourse means a river, creek or stream in which water flows permanently or intermittently in a visibly defined channel (natural, artificial or artificially improved) with:

- continuous bed and banks;
- an extended period of flow for some months after rain ceases, and
- an adequacy of flow that sustains basic ecological processes and maintains biodiversity.

Waters includes river, stream, **lake**, lagoon, pond, swamp, **wetland**, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, **dams**, non-tidal or tidal waters (including the sea) or

any part thereof, stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and **groundwater** and any part thereof.

Waterway - A naturally occurring feature where surface water runoff normally collects, such as a clearly defined swale or gully, but only flows in response to a local rainfall event.

Wetland for the purpose of this environmental authority, wetland means:

- areas shown on the Map of referable wetlands which is a document approved by the chief executive on 4 November 2011 and published by the department, as amended from time to time by the chief executive under section 144D of the Environmental Protection Regulation 2008; and
- areas defined under the Queensland Wetlands Program as 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 metres, and possess 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.

The term wetland includes riverine, lacustrine, estuarine, marine and palustrine wetlands; and it does not include a Great Artesian Basin Spring or a subterranean wetland that is a cave or aquifer.

Wetland of high ecological significance means a wetland that meets the definition of a wetland and that is shown as a wetland of 'high ecological significance' or wetland of 'high ecological value' on the Map of referable wetlands.

Wetland of other environmental value means a wetland that meets the definition of a wetland and that is shown as a wetland of 'general environmental significance' or wetland of 'other environmental value' on the Map of referable wetlands.

Wild river areas are defined in the *Wild Rivers Act 2005* and may include the following—

- (a) high preservation areas;
- (b) preservation areas;
- (c) floodplain management areas;
- (d) subartesian management areas.

END OF ENVIRONMENTAL AUTHORITY