Permit

Environmental Protection Act 1994

Environmental authority EPPG00651513

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

Environmental authority number: EPPG00651513

Environmental authority takes effect on 14 April 2023

Environmental authority holder(s)

Name(s)	Registered address
STUART PETROLEUM COOPER BASIN GAS PTY LTD	Level 30 180 Ann Street BRISBANE QLD 4000

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	ATP767
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	ATP767
Schedule 3 - 06 - A petroleum activity carried out on a site containing a high hazard dam or a significant hazard dam	PL1022
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	PL1022
Schedule 3 - 06 - A petroleum activity carried out on a site containing a high hazard dam or a significant hazard dam	PL1023
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	PL1023

ABN 46 640 294 485

Queensland Government

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	PL1024
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	PL1024

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.

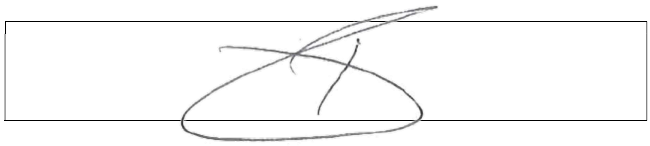
However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State*

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

14 April 2023

Date

Tristan Roberts
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 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).

Conditions of environmental authority

This environmental authority consists of the following Schedules:

Schedule A	General
Schedule B	Waste
Schedule C	Noise
Schedule D	Air
Schedule E	Land
Schedule F	Biodiversity
Schedule G	Water
Schedule H	Well construction, maintenance and stimulation activities
Schedule I	Dams
Schedule J	Rehabilitation

Appendix A	Definitions

SCHEDULE A - GENERAL

Authorised activities

(A1) This environmental authority authorises the carrying out of the following resource activities:

(a) The petroleum activities and specified relevant activities listed in *Schedule A, Table 1 - Authorised Petroleum Activities* to the extent they are carried out in accordance with the activities corresponding scale or intensity or both (where applicable); and

(b) the following specified relevant activities:

i. Operating 1 or more sewage treatment works at a site that has a **daily peak design capacity** of at least 21 **equivalent persons (EP)** to 100EP, other than no-release works, where treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme; or otherwise discharged on ATP767, PL1022, PL1023 and PL1024; and

ii. Fuel Burning – consists of using fuel burning equipment that is capable of burning at least 500 kg of fuel in an hour on PL1022, PL1023 and PL1024;

(c) **Incidental activities** that are not otherwise specified relevant activities.

Schedule A, Table 1 – Authorised Petroleum Activities

Tenure Numbers	Authorised Petroleum Activity	Scale	Intensity (Maximum size)
ATP767, PL1022, PL1023 and PL1024	Wells	442	442ha
	Historic well pads	47	38ha
	Regulated/ Low Consequence structures	11	110ha
	Sewage treatment plants	3	>21 EP ≤ 100 EP
PL1022, PL1023 and PL1024	Field compressor facility	3	11ha
	Central processing facility	1	6.25ha
	Water management facility	1	4ha

(A2) The resource activities are authorised subject to the conditions of this environmental authority.

(A3) This environmental authority does not authorise **environmental harm** unless a condition contained in this environmental authority explicitly authorises that harm. Where there is no condition, the lack of a condition shall not be construed as authorising harm.

Monitoring standards

(A4) All monitoring must be undertaken by a **suitably qualified person**.

(A5) If requested by the **administering authority** in relation to investigating a complaint, monitoring must be commenced within 10 business days.

(A6) All laboratory analyses and tests must be undertaken by a laboratory that has **NATA accreditation** for such analyses and tests.

(A7) Notwithstanding (A6), where there are no NATA accredited laboratories for a specific analyte or substance, then duplicate samples must be sent to at least two separate laboratories for independent testing or evaluation.

(A8) Monitoring and sampling must be carried out in accordance with the requirements of the following documents (as relevant to the sampling being undertaken), as amended from time to time:

(a) for **waters** and aquatic environments, the Queensland Government's Monitoring and Sampling Manual 2009 – Environmental Protection (Water) 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 and/or **Australian Standard AS3580**.

(e) for soil, the Guidelines for Surveying Soil and Land Resources, 2nd edition (McKenzie et al. 2008), and/or the Australian Soil and Land Survey Handbook, 3rd edition (National Committee on Soil and Terrain, 2009)

(f) for dust, **Australian Standard AS3580**.

Notification

(A9) In addition to the requirements under Chapter 7, Part 1, Division 2 of the *Environmental Protection Act 1994*, the administering authority must be notified through the Pollution Hotline and in writing, as soon as possible, but within 48 hours of becoming aware of any of the following events:

(a) any unauthorised **significant disturbance to land**;

(b) potential or actual loss of structural or **hydraulic integrity** of a **dam**;

(c) when the level of the contents of any **regulated dam** reaches the mandatory reporting level;

(d) when a regulated dam will not have available storage to meet the **design storage allowance** on 1 November of any year;

(e) potential or actual loss of **well integrity**;

(f) when the seepage trigger action response procedure required under condition (G13(g)) is or should be implemented;

(g) unauthorised releases of any volume of **prescribed contaminants** to waters;

(h) unauthorised releases of volumes of contaminants, in any mixture, to land greater than: i. 200 L of hydrocarbons; or

ii. 1 000 L of brine; or iii. 5 000 L of untreated coal seam gas water; or iv. 5 000 L of raw sewage; or v. 10 000 L of treated sewage effluent.

(i) monitoring results where two out of any five consecutive samples do not comply with the relevant limits in the environmental authority.

Financial assurance

(A10) 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*.

(A11) 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 give the administering authority the increased amount of financial assurance.

(A12) 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.

Contingency procedures for emergency environmental incidents

(A13) From 9 December 2015, petroleum activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents which include, but are not necessarily limited to:

(a) a clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity.

(b) consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity.

(c) response procedures to be implemented to prevent or minimise the risks of environmental harm occurring.

(d) the practices and procedures to be employed to restore the environment or mitigate any environmental harm caused.

(e) procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land.

(f) training of staff to enable them to effectively respond.

(g) procedures to notify the administering authority, local government and any potentially impacted landholder.

Maintenance of plant and equipment

(A14) All plant and equipment must be maintained and operated in their proper and effective condition.

(A15) The following infrastructure must be signed with a unique reference name or number in such a way that it is clearly observable:

(a) regulated dams and **low consequence dams**;

(b) **exploration**, **appraisal** and **development wells**;

(c) water treatment facilities;

(d) brine encapsulation facilities;

(e) landfill cells;

(f) sewage treatment facilities;

(g) specifically authorised discharge points to air and waters;

(h) any chemical storage facility associated with the environmentally relevant activity of chemical storage; and

(i) compression and processing facilities.

(A16) Measures to prevent fauna being harmed from entrapment must be implemented during the construction and operation of well infrastructure, dams and pipeline trenches.

Erosion and sediment control

(A17) For activities involving significant disturbance to land, **control measures** that are commensurate to the site-specific risk of erosion, and risk of sediment release to waters must be implemented to:

(a) allow stormwater to pass through the site in a controlled manner and at non-erosive flow velocities;

(b) minimise soil erosion resulting from wind, rain, and flowing water;

(c) minimise the duration that disturbed soils are exposed to the erosive forces of wind, rain, and flowing water;

(d) minimise work-related soil erosion and sediment runoff; and

(e) minimise negative impacts to land or properties adjacent to the activities (including roads).

Complaints

(A18) Petroleum activities must not cause **environmental nuisance** at a **sensitive place**, other than where an **alternative arrangement** is in place.

Documentation

(A19) A **certification** must be prepared by a suitably qualified person within 30 business days of completing every plan, procedure, program and report required to be developed under this environmental authority, which demonstrates that:

(a) relevant material, including current published guidelines (where available) have been considered in the written document;

(b) the content of the written document is accurate and true; and

(c) the document meets the requirements of the relevant conditions of the environmental authority.

(A20) All plans, procedures, programs, reports and methodologies required under this environmental authority must be written and implemented.

(A21) All **documents** required to be developed under this environmental authority must be kept for five years.

(A22) All documents required to be prepared, held or kept under this environmental authority must be provided to the administering authority upon written request within the requested timeframe.

(A23) A record of all complaints must be kept including the date, complainant's details, source, reason for the complaint, description of investigations and actions undertaken in resolving the complaint.

SCHEDULE B – WASTE

(B1) Measures must be implemented so that waste is managed in accordance with the **waste and resource management hierarchy** and the **waste and resource management principles**.

(B2) Waste, including waste fluids, but excluding waste used in **closed-loop systems**, must be transported off-site for lawful re-use, remediation, recycling or disposal, unless the waste is specifically authorised by conditions of the environmental authority to be disposed of or used on site.

(B3) **Waste fluids**, other than **flare precipitant** stored in **flare pits**, or **residual drilling material** or drilling fluids stored in **sumps**, must be contained in either:

(a) an above ground container; or

(b) a **structure** which contains the wetting front.

(B4) **Green waste** may be used on-site for either rehabilitation or sediment and erosion control, or both.

(B5) Vegetation waste may be burned if it relates to a state forest, timber reserve or forest entitlement area administered by the *Forestry Act 1959* and a permit has been obtained under the *Fire and Rescue Service Act 1990*.

Pipeline wastewater

(B6) **Pipeline 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.

Authorised uses of produced water for petroleum activities

(B7) **Produced water** may be re-used in drilling and well hole activities.

Use of produced water for irrigation activities

(B8) Irrigation of produced water is authorised providing it ensures:

(a) that soil structure, stability and productive capacity can be maintained or improved;

(b) toxic effects to crops do not result; and

(c) yields and produce quality are maintained or improved.

(B9) Irrigation of produced water is authorised providing a written report is provided to the chief executive which:

(a) certifies that the outcomes in condition (B8) will be achieved

(b) states water quality criteria, which has been determined in accordance with the assessment procedures outlined in *Schedule B, Table 1—Assessment procedures for water quality criteria*

(c) includes a water monitoring program to monitor that the outcomes listed in condition (B8) are being achieved.

Schedule B, Table 1 – Assessment procedures for water quality criteria

Water quality criteria	Assessment procedure
electrical conductivity sodium adsorption ratio pH	Salinity Management Handbook, with reference to Chapter 11; and/or Australian and New Zealand Guidelines for Fresh and Marine Water Quality, with reference to Volume 1 Chapter 4 and Volume 3 Chapter 9. The assessment should consider: • soil properties within the root zone to be irrigated (e.g. clay content, cation exchange capacity, exchangeable sodium percentage) • water quality of the proposed resource (e.g. salinity, sodicity) • climate conditions (e.g. rainfall) • leaching fractions • average root zone salinity (calculated) • crop salt tolerance (e.g. impact threshold and yield decline) • management practices and objectives (e.g. irrigation application rate, amelioration techniques) • broader landscape issues (e.g. land use, depth to groundwater) • any additional modelling and tests undertaken to support the varied water quality parameters.
heavy metals	Australian and New Zealand Guidelines for Fresh and Marine Water Quality, with reference to Volume 1 Chapters 3 and 4 and Volume 3 Chapter 9. The assessment should aim to derive site specific trigger values (e.g. cumulative contaminant loading limit) based on the methodology provided in the above mentioned procedure.

(B10) Produced water may be used for dust suppression provided the following criteria are met:

(a) the amount applied does not exceed the amount required to effectively suppress dust; and (b) the application:

i. does not cause on-site ponding or runoff

ii. is directly applied to the area being dust suppressed

iii. does not harm vegetation surrounding the area being dust suppressed; and

iv. does not cause visible salting.

(B11) Produced water may be used for construction purposes provided the use:

(a) does not result in negative impacts on the composition and structure of soil or subsoils

(b) is not directly or indirectly released to waters

(c) does not result in runoff from the construction site; and

(d) does not harm vegetation surrounding the construction site.

(B12) If there is any indication that any of the circumstances in condition (B10(b)(i)) to (B10(b)(iv)) or (B11(a)) to (B11(d)) is occurring the use must cease immediately and the affected area must be remediated without delay.

Managing sewage effluent from mobile or temporary facilities

(B13) Treated sewage effluent or **greywater** can be released to land provided it:

(a) meets or exceeds **secondary treated class B standards** for a treatment system with a **daily peak design capacity** of between 150 EP and 1500 EP; or

(b) meets or exceeds **secondary treated class C standards** for a treatment system with a daily peak design capacity of less than 150 EP.

(B14) The release of treated sewage effluent or greywater authorised in condition (B13) must:

(a) be to a fenced and signed contaminant release area(s)

(b) not result in pooling or run-off or aerosols or spray drift or vegetation die-off

(c) be to a contaminant release area(s) that is kept vegetated with groundcover, that is:

i. not a declared pest species

ii. kept in a viable state for transpiration and nutrient uptake; and

iii. grazed or harvested and removed from the contaminant release area as needed, but not less than every three months.

Residual drilling material

(B15) If sumps are used to store **residual drilling material** or drilling fluids, they must only be used for the duration of drilling activities.

(B16) 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.

(B17) Records must be kept to demonstrate compliance with conditions (B15) and (B16).

SCHEDULE C – NOISE

(C1) Notwithstanding condition (A18), emission of noise from the petroleum activity(ies) at levels less than those specified in *Schedule C, Table 1—Noise nuisance limits* are not considered to be environmental nuisance.

Schedule C, Table 1 – Noise nuisance limits

Time period	Metric	Short term noise event	Medium term noise event	Long term noise event
7:00am—6:00pm	LAeq,adj,15 min	45 dBA	43 dBA	40 dBA
6:00pm—10:00pm	LAeq,adj,15 min	40 dBA	38 dBA	35 dBA
10:00pm—6:00am	LAeq,adj,15 min	28 dBA	28 dBA	28 dBA
	Max LpA, 15 mins	55 dBA	55 dBA	55 dBA
6:00am—7:00am	LAeq,adj,15 min	40 dBA	38 dBA	35 dBA

1. The noise limits in Schedule C, Table 1 have been set based on the following deemed background noise levels (L_{ABG})*:*
   7:00am—6:00 pm: 35 dBA
   6:00pm—10:00 pm: 30 dBA
   10:00pm—6:00 am: 25 dBA
   6:00am—7:00 am: 30 dBA

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

Schedule C, Table 2 – Adjustments to be added to noise levels at sensitive receptors

Noise characteristic	Adjustment to noise
Tonal characteristic is just audible	+ 2 dBA
Tonal characteristic is clearly audible	+ 5 dBA
Impulsive characteristic is detectable	+ 2 to + 5 dBA

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

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

(b) the difference between the external A-weighted and C-weighted noise levels is no greater than 20 dB; or

(c) 50 dB(Z) measured inside the sensitive receptor; and

(d) the difference between the internal A-weighted and Z-weighted (Max LpZ, 15 min) noise levels is no greater than 15 dB.

(C4) A Blast Management Plan must be developed for each blasting activity in accordance with Australian Standard 2187.

(C5) Blasting operations must be designed to not exceed an airblast overpressure level of 120 dB (linear peak) at any time, when measured at or extrapolated to any sensitive place.

(C6) Blasting operations must be designed to not exceed a ground-borne vibration peak particle velocity of 10mm/s at any time, when measured at or extrapolated to any sensitive place.

SCHEDULE D – AIR

(D1) Unless venting is authorised under the *Petroleum and Gas (Production and Safety) Act 2004* or the *Petroleum Act 1923*, waste gas must be flared in a manner that complies with all of (D1(a)) and (D1(b)) and (D1(c)), or with (D1(d)):

(a) an automatic ignition system is used, and

(b) a flame is visible at all times while the waste gas is being flared, and

(c) there are no visible smoke emissions other than for a total period of no more than 5 minutes in any 2 hours, or

(d) it uses an **enclosed flare**.

(D2) The operation of fuel burning or combustion facilities must not result in ground level concentrations of contaminants exceeding the maximum limits specified in *Schedule D, Table 1—Maximum ground level concentration of contaminants to air*.

Schedule D, Table 1—Maximum ground level concentration of contaminants to air.

Contaminant	EPP Air Quality Objective / Maximum ground level concentration at 0°C	Units	Averaging Time
Nitrogen Dioxide	250	µg/m^3	1 hour
Nitrogen Dioxide	33	µg/m^3	1 year
Carbon Monoxide	11	mg/m^3	8 hours

(D3) An air receiving environment monitoring program (AREMP) must be developed to demonstrate compliance with the limits in *Schedule D, Table 1—Maximum ground level concentration of contaminants to air*.

Air receiving environment monitoring program

(D4) An air receiving environment monitoring program (AREMP) must be developed to demonstrate compliance with the limits in *Schedule D, Table 1—Maximum ground level concentration of contaminants to air.*

(D5) The AREMP must include, but not necessarily be limited to:

(a) the delineation of the relevant air shed(s)

(b) the identification of background reference sites and impact monitoring sites within the relevant air shed(s), including sensitive places

(c) a monitoring program to be carried out annually that:

i. includes background reference and impact monitoring sites

ii. includes an assessment of meteorological conditions (wind speed and direction)

iii. is sufficient to determine compliance with the limits listed in *Schedule D, Table 1—Maximum ground level concentration of contaminants to air*

v. identifies the effects of the authorised contaminants released to air in the relevant air shed(s)

vi. is representative of when the fuel burning or combustion facilities are operating under maximum operating conditions for the annual period

(d) an assessment of the condition of each **fuel burning or combustion facility**; and

(e) a description of other significant point sources in the air shed and surrounding land use including sensitive places.

(D6) A AREMP report must be written annually which includes the information required by condition (D5) and an assessment of the extent to which monitoring data for ground level concentrations complies with the air contaminant limits listed in *Schedule D, Table 1—Maximum ground level concentration of contaminants to air.*

(D7) Where monitoring data indicates that ground level concentrations listed in *Schedule D, Table 1— Maximum ground level concentration of contaminants to air* have not been met, the AREMP report required by condition (D6) 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 *Schedule D, Table 1— Maximum ground level concentration of contaminants to air*.

(D8) A statement of compliance prepared by a suitably qualified person must accompany each AREMP report required by condition (D6) and if applicable, condition (D7) stating:

(a) whether the AREMP as most recently implemented complies with the requirements of conditions (A4), condition (A8(d)), (D4) and (D5)

(b) that, to the best of the suitably qualified person's knowledge, the assessment required by condition (D6) and if applicable, condition (D8) 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.

(D9) Where condition (D7) applies, the documents required by conditions (D6), (D7) and (D8) must be given to the administering authority within 5 business days after the AREMP report is written.

SCHEDULE E – LAND

General

(E1) Contaminants must not be directly or indirectly released to land except for those releases authorised by conditions (B6), (B8) – (B13) and (B15).

Top soil management

(E2) **Top soil** must be managed in a manner that preserves its biological and chemical properties.

Land management

(E3) Land that has been significantly disturbed by the petroleum activities must be managed to ensure that mass movement, gully erosion, rill erosion, sheet erosion and tunnel erosion do not occur on that land.

Acid sulfate soils

(E4) **Acid sulfate soils** must be treated and managed in accordance with the latest edition of the Queensland Acid Sulfate Soil Technical Manual.

Chemical storage

(E5) Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards, where such a standard is applicable.

Pipeline operation and maintenance

(E6) Pipeline operation and maintenance must be in accordance, to the greatest practicable extent, with the relevant section of the APIA Code of Environmental Practice: Onshore Pipelines (2009).

Pipeline reinstatement and revegetation

(E7) Pipeline trenches must be backfilled and topsoils **reinstated** within three **months** after pipe laying.

(E8) **Reinstatement** and **revegetation** of the pipeline right of way must commence within 6 months after cessation of petroleum activities for the purpose of pipeline construction.

(E9) Backfilled, reinstated and revegetated pipeline trenches and right of ways must be:

(a) a **stable** landform

(b) re-profiled to a level consistent with surrounding soils

(c) re-profiled to original contours and established drainage lines; and

(d) vegetated with groundcover which is not a declared pest species, and which is established and **growing**.

SCHEDULE F – BIODIVERSITY

Confirming biodiversity values

(F1) Prior to undertaking activities that result in significant disturbance to land in areas of native vegetation, confirmation of on-the-ground **biodiversity values** of the native vegetation communities at that location must be undertaken by a suitably qualified person.

(F2) A suitably qualified person must develop and certify a methodology so that condition (F1) can be complied with and which is appropriate to confirm on-the-ground biodiversity values.

(F3) Where mapped biodiversity values differ from those confirmed under conditions (F1) and (F2), petroleum activities may proceed in accordance with the conditions of the environmental authority based on the confirmed on-the-ground biodiversity value.

Planning for land disturbance

(F4) The location of the petroleum activity(ies) must be selected in accordance with the following site planning principles:

(a) maximise the use of **areas of pre-existing disturbance**

(b) in order of preference, avoid, minimise or mitigate any impacts, including cumulative impacts, on areas of native vegetation or other areas of ecological value

(c) minimise disturbance to land that may result in **land degradation**

(d) in order of preference, avoid then minimise isolation, fragmentation, edge effects or dissection of tracts of native vegetation; and

(e) in order of preference, avoid then minimise **clearing** of native mature trees; and

(f) WSGP Environmental Protocol for Field Development and Constraints Analysis [SENEXWSGP-EN-PRC-002] is applied.

Planning for land disturbance—linear infrastructure

(F5) Linear infrastructure construction corridors must:

(a) maximise co-location

(b) be minimised in width to the greatest practicable extent; and

(c) for **linear infrastructure** that is an **essential petroleum activity** authorised in an **environmentally sensitive area** or its **protection zone**, be no greater than 40m in total width.

(F6) Conditions (F1) to (F5) do not apply to disturbance undertaken prior to the 12 May 2015.

Authorised disturbance to Environmentally Sensitive Areas

(F7) Where petroleum activities are to be carried out in environmentally sensitive areas or their protection zones, the petroleum activities must be carried out in accordance with *Schedule F, Table 1—Authorised petroleum activities in environmentally sensitive areas and their protection zones*.

Schedule F, Table 1 – Authorised petroleum activities in environmentally sensitive areas and their protection zones

Environmentally sensitive area	**Within the environmentally sensitive area**	**Primary protection zone of the environmentally sensitive area**	**Secondary protection zone of the environmentally sensitive area**
Category A environmentally sensitive areas	No petroleum activities permitted.	Only **low impact petroleum activities** permitted.	Only essential petroleum activities permitted.
Category B environmentally sensitive areas that are other than 'endangered' **regional ecosystems**	Only low impact petroleum activities permitted.	Only low impact petroleum activities permitted.	Only essential petroleum activities permitted.
Category B environmentally sensitive areas that are 'endangered' regional ecosystems	Only low impact petroleum activities permitted	Only essential petroleum activities permitted.	Only essential petroleum activities permitted.
Category C environmentally sensitive areas that are 'nature refuges' or 'koala habitat'	Only low impact petroleum activities permitted.	Only low impact petroleum activities permitted.	N/A
Category C environmentally sensitive areas that are 'essential habitat', 'essential regrowth habitat' or 'of concern' regional ecosystems	Only low impact petroleum activities permitted.	Only essential petroleum activities permitted.	N/A
Category C environmentally sensitive areas that are 'regional parks' (previously known as 'resources reserves')	Only essential petroleum activities permitted.	Only essential petroleum activities permitted.	N/A
Category C environmentally sensitive areas that are 'state forests' or 'timber reserves'	Only essential petroleum activities permitted.	Petroleum activities permitted.	N/A

(F8) A report must be prepared for each **annual return period** for all petroleum activities that involved clearing of any environmentally sensitive area or protection zone which includes:

(a) records able to demonstrate compliance with condition (F4), (F5) and (F7);

(b) a description of the works;
(c) a description of the area and its pre-disturbance values (which may include maps or photographs, but must include GPS coordinates for the works); and

(d) based on the extent of environmentally sensitive areas and primary protection zones on the relevant resource authority(ies), the proportion of native vegetation cleared per environmentally sensitive area and primary protection zone, including regional ecosystem type, over the annual return period.

Impacts to prescribed environmental matters

(F9) **Significant residual impacts** to **prescribed environmental matters**, other than if the impacts were authorised by an existing authority before the 12 May 2015, are not authorised under this environmental authority unless the impact is specified in *Protecting biodiversity values, Table 2 – Significant residual impacts to prescribed environmental matters*

Schedule F, Table 2 – Significant residual impacts to prescribed environmental matters

Prescribed environmental matter	Location of impact	Maximum extent of impact permitted in Stage 1	Total maximum extent of impact
Regulated vegetation			
Regional ecosystems within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map 11.10.11, 11.10.7, 11.10.9, 11.10.6, 11.3.39	PL1022, PL1023, PL1024	1.98ha	2.61ha
Connectivity areas			
Connectivity area that is a regional ecosystem (not in urban area)- RE 11.10.11, 11.10.7a, 11.10.6a, 11.10.9, 11.3.39, 11.10.11	PL1022, PL1023, PL1024	144ha	211ha
Protected wildlife habitat			
Habitat for an animal that is vulnerable wildlife – Glossyblack cockatoo (*Calyptorhynchus lathami)*	PL1022, PL1023, PL1024	52ha	220ha

(F10) Records demonstrating that each impact to a prescribed environmental matter not listed in the environmental authority did not, or is not likely to, result in a significant residual impact to that matter must be:

(a) completed by a **suitably qualified person**; and

(b) kept for the life of the environmental authority.

(F11) An environmental offset made in accordance with the Environmental Offsets Act 2014 and Queensland Environmental Offsets Policy, as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in *Schedule F, Table 2— Significant residual impacts to prescribed environmental matters*, unless a lesser extent of the impact has been approved in accordance with condition (F12).

(F12) The significant residual impacts to a prescribed environmental matter authorised in condition (F9) for which an environmental offset is required by condition (F11) may be carried out in stages. An environmental offset can be delivered for each stage of the impacts to prescribed environmental matters.

(F13) Prior to the commencement of each stage, a report completed by an **appropriately qualified person,** that includes an analysis of the following must be provided to the administering authority:

(a) for the forthcoming stage—the estimated significant residual impacts to each prescribed environmental matter;

(b) for the previous stage, if applicable—the actual significant residual impacts to each prescribed environmental matter, to date.

(F14) The report required by condition (F13) must be approved by the administering authority before a notice of election for the forthcoming stage, if applicable, is given to the administering authority.

(F15) A notice of election for the staged environmental offset referred to in condition (F13), if applicable, must be provided to the administering authority no less than three months before the proposed commencement of that stage, unless a lesser timeframe has been agreed to by the administering authority.

(F16) Within six months from the completion of the final stage of the project, a report completed by an appropriately qualified person, that includes the following matters must be provided to the administering authority:

(a) an analysis of the actual impacts on prescribed environmental matters resulting from the final stage; and

(b) if applicable, a notice of election to address any outstanding offset debits for the authorised impacts.

SCHEDULE G – WATER

General

(G1) Contaminants must not be directly or indirectly released to waters.

Authorised impacts to wetlands

(G2) The extraction of groundwater as part of the petroleum activity(ies) from underground aquifers must not directly or indirectly cause environmental harm to a **wetland**.

Authorised activities in waters

(G3) Petroleum activities must not occur in or within 200m of a:

(a) **wetland of high ecological significance**

(b) **Great Artesian Basin Spring** (c) **subterranean cave GDE**.

(G4) Other than for disturbance which occurred prior to 12 May 2015, only construction or maintenance of linear infrastructure is permitted in or within any **wetland of other environmental value** or in a **watercourse**.

(G5) The construction or maintenance of linear infrastructure in a wetland of other environmental value must not result in the:

(a) clearing of riparian vegetation outside of the minimum area practicable to carry out the works; or

(b) ingress of saline water into freshwater aquifers; or

(c) draining or filling of the wetland beyond the minimum area practicable to carry out the works.

(G6) After the construction or maintenance works for linear infrastructure in a wetland of other environmental value are completed, the linear infrastructure must not:

(a) drain or fill the wetland

(b) prohibit the flow of surface water in or out of the wetland

(c) lower or raise the water table and hydrostatic pressure outside the bounds of natural variability that existed before the activities commenced

(d) result in ongoing negative impacts to water quality

(e) result in bank instability; or

(f) result in fauna ceasing to use adjacent areas for habitat, feeding, roosting or nesting.

(G7) The construction or maintenance of linear infrastructure activities in a watercourse must be conducted in the following preferential order:

(a) firstly, in times where there is no water present

(b) secondly, in times of no flow

(c) thirdly, in times of flow, providing a **bankfull** situation is not expected and that flow is maintained.

(G8) The construction or maintenance of linear infrastructure authorised under condition (G4) must comply with the water quality limits as specified in *Schedule G, Table 1—Release limits for construction or maintenance of linear infrastructure*.

Schedule G, Table 1 – Release limits for construction or maintenance of linear infrastructure

Water quality parameters	Units	Assessment procedure
Turbidity	Nephelometric Turbidity Units (NTU)	For a wetland of other environmental value, if background water turbidity is above 45 NTU, no greater than 25% above background water turbidity measured within a 50m radius of the construction or maintenance activity. For a watercourse, if background water turbidity is above 45 NTU, no greater than 25% above background water turbidity measured within 50m downstream of the construction or maintenance activity.
		For a wetland of other environmental value, if background water turbidity is equal to, or below 45 NTU, a turbidity limit of no greater than 55 NTU applies, measured within a 50m radius of the construction or maintenance activity. For a watercourse, if background water turbidity is equal to, or below 45 NTU, a turbidity limit of no greater than 55 NTU applies, measured within 50m downstream of the construction or maintenance activity.
Hydrocarbons	-	For a wetland of other environmental value, or watercourse, no visible sheen or slick.

(G9) Monitoring must be undertaken at a frequency that is appropriate to demonstrate compliance with condition (G8).

Register of activities in wetlands and watercourses

(G10) A register must be kept of all linear infrastructure construction and maintenance activities in a wetland of other environmental value and watercourses, which must include:

(a) location of the activity (e.g. GPS coordinates (**GDA**94) and watercourse name)

(b) estimated flow rate of surface water at the time of the activity

(c) duration of works, and

(d) results of impact monitoring carried out under condition (G8).

Activities in Floodplains

(G11) Petroleum activity(ies) on **floodplains** must be carried out in a way that does not:

(a) concentrate flood flows in a way that will or may cause or threaten a negative environmental impact; or

(b) divert flood flows from natural drainage paths and alter flow distribution; or

(c) increase the local duration of floods; or

(d) increase the risk of detaining flood flows.

Seepage monitoring program

(G12) 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 three months prior to storing contaminants in containment facilities.

(G13) The seepage monitoring program required by condition (G12) must include but not necessarily be limited to:

(a) identification of the containment facilities for which seepage will be monitored;

(b) 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 bores 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 (G13(b));

(g) seepage trigger action response procedures for when trigger parameters and trigger levels identified in conditions (G13(b)) and (G13(c)) trigger the early 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.

Seepage monitoring bore drill logs

(G14) A bore drill log must be completed for each seepage monitoring bore in condition (G13) which must include:

(a) bore identification reference and geographical coordinate location;

(b) specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details;

(c) standing groundwater level and water quality parameters including physical parameter and results of laboratory analysis for the possible trigger parameters;

(d) lithological data, preferably a stratigraphic interpretation to identify the important features including the identification of any aquifers; and

(e) target formation of the bore.

SCHEDULE H – WELL CONSTRUCTION AND MAINTENANCE

Drilling activities

(H1) Oil based or **synthetic based drilling muds** must not be used in the carrying out of the petroleum activity(ies).

(H2) Drilling activities must not result in the connection of the target gas producing formation and another aquifer.

(H3) Practices and procedures must be in place to detect, as soon as practicable, any fractures that have or may result in the connection of a target formation and another aquifer as a result of drilling activities.

Stimulation activities

(H4) **Stimulation** activities are not permitted.

SCHEDULE I – DAMS

Assessment of consequence category

(I1) The **consequence category** of any structure must be **assessed** by a **suitably qualified and experienced person** in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635) at the following times:

(a) prior to the design and **construction** of the **structure**, if it is not an **existing structure**; or

(b) if it is an existing structure, prior to the adoption of this schedule; or

(c) prior to any change in its purpose or the nature of its stored contents.

(I2) 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.

(I3) 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 construction of a regulated structure

(I4) Conditions (I5) to (I9) inclusive do not apply to existing structures.

(I5) All **regulated structures** must be designed by, and **constructed** under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).

(I6) 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**.

(I7) 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.

(I8) **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.

(I9) 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

(I10) 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 (I9), and

ii. a set of 'as constructed' drawings and specifications, and

iii. certification of those 'as constructed drawings and specifications' in accordance with condition (I9), 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.

(I11) 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

(I12) Conditions (I13) to (I16) inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

(I13) 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.

(I14) The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

(I15) 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.

(I16) The holder must record any changes to the MRL in the Register of Regulated Structures.

Design storage allowance

(I17) 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.

(I18) 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).

(I19) The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

(I20) 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

(I21) Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

(I22) 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**.**

(I23) 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).

(I24) The holder must:

(a) Within 20 business days of receipt of the annual inspection report, provide to the administering authority:

i. The recommendations section of the annual inspection report; and

ii. If applicable, any actions being taken in response to those recommendations; and

(b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.

Transfer arrangements

(I25) The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, **design plan** and other supporting documentation, to a new holder on transfer of this authority.

Decommissioning and rehabilitation

(I26) Dams must not be abandoned but be either:

(a) decommissioned and rehabilitated to achieve compliance with condition (I27); or

(b) be left in-situ for a beneficial use(s) provided that:

i. it no longer contains contaminants that will migrate into the environment; and
ii. it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and
iii. the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).

(I27) After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria:

(a) the landform is safe for humans and fauna;

(b) the landform is stable with no subsidence or erosion gullies for at least three (3) years;

(c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated;

(d) not allowing for acid mine drainage; or

(e) there is no ongoing contamination to waters (including groundwater);

(f) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the Instructions for the treatment and management of acid sulfate soils (2001);

(g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class; (h) for land that is not being cultivated by the landholder:

a. groundcover, that is not a declared pest species is established and self-sustaining

b. vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining, and

c. the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the petroleum activity(ies).

(i) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within 3 months of petroleum activities being completed.

Register of Regulated Dams

(I28) A **Register of Regulated Dams** must be established and maintained by the **holder** for each **regulated dam**.

(I29) 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.

(I30) The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition (I10) has been achieved.

(I31) The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.

(I32) 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.

(I33) 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

(I34) 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.

(I35) All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in *Schedule J, 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.

Schedule I, Table 1 - Transitional hydraulic performance requirements for existing structures

Transition period required for existing structures to achieve the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Dams*			
Compliance with criteria	**High**	**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.

(I36) *Schedule J, Table 1 – Transitional hydraulic performance 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.

(I37) Certification of the transitional assessment required by (I34) and (I35) (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.

SCHEDULE J – REHABILITATION

Rehabilitation planning

(J1) A Rehabilitation Plan must be developed by a suitably qualified person and must include the:

(a) rehabilitation goals; and

(b) procedures to be undertaken for rehabilitation that will:

i. achieve the requirements of conditions (J2) to (J8), inclusive; and

ii. provide for appropriate monitoring and maintenance.

Transitional rehabilitation

(J2) **Significantly disturbed areas** that are no longer required for the on-going petroleum activities, must be rehabilitated within 12 months (unless an exceptional circumstance in the area to be rehabilitated (e.g. a flood event) prevents this timeframe being met) and be maintained to meet the following acceptance criteria:

(a) contaminated land resulting from petroleum activities is remediated and rehabilitated (b) the areas are:

i. non-polluting

ii. a stable landform

iii. re-profiled to contours consistent with the surrounding landform

(c) surface drainage lines are re-established

(d) top soil is reinstated; and (e) either:

i. groundcover, that is not a declared pest species, is growing; or

ii. an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained.

Final rehabilitation acceptance criteria

(J3) All significantly disturbed areas caused by petroleum activities which are not **being or intended to be utilised by the landholder or overlapping tenure holder**, must be rehabilitated to meet the following final acceptance criteria measured either against the highest ecological value **adjacent land use** or the **pre-disturbed land use**:

(a) greater than or equal to 70% of native ground cover species richness;

(b) greater than or equal to the total per cent of ground cover;

(c) less than or equal to the per cent species richness of declared plant pest species; and

(d) where the adjacent land use contains, or the pre-clearing land use contained, one or more regional ecosystem(s), then at least one regional ecosystem(s) from the same broad vegetation group, and with the equivalent biodiversity status or a biodiversity status with a higher conservation value as any of the regional ecosystem(s) in either the adjacent land or predisturbed land, must be present.

Final rehabilitation acceptance criteria in environmentally sensitive areas

(J4) Where significant disturbance to land has occurred in an environmentally sensitive area, the following final rehabilitation criteria as measured against the pre-disturbance biodiversity values assessment (required by conditions (F1) and (F2) must be met:

(a) greater than or equal to 70% of native ground cover species richness;

(b) greater than or equal to the total per cent ground cover;

(c) less than or equal to the per cent species richness of declared plant pest species;

(d) greater than or equal to 50% of organic litter cover;

(e) greater than or equal to 50% of **total density of coarse woody material**; and

(f) all **predominant species** in the **ecologically dominant layer**, that define the pre-disturbance regional ecosystem(s) are present.

Continuing conditions

(J5) Conditions (J2), (J3) and (J4) continue to apply after this environmental authority has ended or ceased to have effect.

Rehabilitation reporting for relinquishment of part of an authority to prospect area under the *Petroleum and Gas (Production and Safety) Act 2004*

(J6) Prior to relinquishing all or part of an authority to prospect area, a rehabilitation report must be prepared which specifically relates to the area to be relinquished and demonstrates condition (J2), (J3) and (J4) has been met.

(J7) The report required under condition (J6) must be submitted to the administering authority at least 40 business days prior to the relinquishment notice being lodged with the administering authority for the *Petroleum and Gas (Production and Safety) Act 2004*.

Remaining dams

(J8) Where there is a dam (including a low consequence dam) that is being or intended to be utilised by the landholder or overlapping tenure holder, the dam must be decommissioned to no longer accept inflow from the petroleum activity(ies) and the contained water must be of a quality suitable for the intended on-going uses(s) by the landholder or overlapping tenure holder.

Definitions

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

Note: Where a term is not defined in this environmental authority, the definition in the Environmental Protection Act 1994*, its regulations and Environmental Protection Policies, then 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.

"acid sulfate soil(s)" means a soil or soil horizon which contains sulfides or an acid soil horizon affected by oxidation of sulfides.

"adjacent land use(s)" means the **ecosystem function** adjacent to an area of significant disturbance, or where there is no ecosystem function, the use of the land. An adjacent land use does not include an adjacent area that shows evidence of edge effect.

"administering authority" means:
(a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 of the *Environmental Protection Act 1994*—the local government; or

(b) for all other matters—the Chief Executive of the Department of Environment and Science ; or

(c) another State Government Department, Authority, Storage Operator, Board or Trust, whose role is to administer provisions under other enacted legislation.

"affected person" is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

"alternative arrangement" means a written agreement about the way in which a particular environmental nuisance impact will be dealt with at a sensitive place, and may include an agreed period of time for which the arrangement is in place. An alternative arrangement may include, but is not limited to, a range of nuisance abatement measures to be installed at the sensitive place, or provision of alternative accommodation for the duration of the relevant nuisance impact.

"analogue site(s)" means an area of land which contains values and characteristics representative of an area to be rehabilitated prior to disturbance. Such values must encompass land use, topographic, soil, vegetation, vegetation community attributes and other ecological characteristics. Analogue sites can be the pre-disturbed site of interest where significant surveying effort has been undertaken to establish benchmark parameters.

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

"annual inspection report" in relation to Schedule I – Dams means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan);
(a) against recommendations contained in previous annual inspections reports;
(b) against recognised dam safety deficiency indicators;

(c) for changes in circumstances potentially leading to a change in consequence category;

(d) for conformance with the conditions of this authority;

(e) for conformance with the 'as constructed' drawings;

(f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment,

state of the containment barrier and the level of liquids in the **dam** (or network of linked containment systems);

(g) for evidence of conformance with the current operational plan.

"annual return period" means the most current 12-month period between two anniversary dates.

"appraisal well" means a petroleum well to test the potential of one (1) or more natural underground reservoirs for producing or storing petroleum. For clarity, an appraisal well does not include an exploration well.

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

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

Part A in all cases:

Parameter	Maximum Concentration
pH	6 – 10.5 (range)
Electrical Conductivity	20 dS/m (20,000 µS/cm)
Chloride*	8000 mg/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 (mg/kg)
Arsenic	20
Selenium	5
Boron	100
Cadmium	3
Chromium (total)	400
Copper	100
Lead	600

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

"areas of pre-existing disturbance" means areas where environmental values have been negatively impacted as a result of anthropogenic activity and these impacts are still evident. Areas of pre-disturbance may include areas where legal clearing, logging, timber harvesting, or grazing activities have previously occurred, where high densities of weed or pest species are present which have inhibited re-colonisation of native regrowth, or where there is existing infrastructure (regardless of whether the infrastructure is associated with the authorised petroleum activities). The term 'areas of pre-disturbance' does not include areas that have been impacted by wildfire/s, controlled burning, flood or natural vegetation die-back.

"assessed or assessment" by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment: (a) exactly what has been assessed and the precise nature of that determination;

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

(c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and

(d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

"associated 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 3580" 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.
- Australian Standard: AS/NZS 3580.1.1; 2007; Methods for sampling and analysis of ambient air: Guide to siting air monitoring equipment.

- Australian Standard: AS 3580.5.1-2011, Methods for sampling and analysis of ambient air: Determination of oxides of nitrogen - Direct-reading instrumental method.
- Australian Standard: AS 3580.7.1-2011, Methods for sampling and analysis of ambient air: Determination of oxides of carbon monoxide - Direct-reading instrumental method.
- Australian Standard: AS 3580.14; 2011; Methods for sampling and analysis of ambient air: Meteorological monitoring for ambient air quality monitoring applications.

"authority" means an environmental authority or a development approval.

"background noise level" means the sound pressure level, measured in the absence of the noise under investigation, as the $L_{A90,T}$ being the A-weighted sound pressure level exceeded for 90% of the measurement time period T of not less than 15 minutes (or $L_{A\ 90,\ adj,\ 15\ mins}$), using Fast response.

"bankfull" means the channel flow rate that exists when the water is at the elevation of the channel bank above which water begins to spill out onto the floodplain. The term describes the condition of the channel relative to its banks (e.g. overbank, in-bank, bankfull, low banks, high bank).

"bed" of any waters, has the meaning in Schedule 12 of the Environmental Protection Regulation 2008 and—
(a) includes an area covered, permanently or intermittently, by tidal or non-tidal waters; but

(b) does not include land adjoining or adjacent to the bed that is from time to time covered by floodwater.

"being or intended to be utilised by the landholder or overlapping tenure holder" for significantly disturbed land, means there is a written agreement (e.g. land and compensation agreement) between the landholder or the overlapping tenure holder and the holder of the environmental authority identifying that the landholder or the overlapping tenure holder has a preferred use of the land such that rehabilitation standards for revegetation by the holder of the environmental authority are not required.

For dams, means there is a written agreement (e.g. land and compensation agreement) between the landholder or the overlapping tenure holder and the holder of the environmental authority identifying that the landholder or the overlapping tenure holder has a preferred use for the dam such that rehabilitation standards for revegetation by the holder of the environmental authority are not required.

"biodiversity values" for the purposes of this environmental authority, means environmentally sensitive areas, prescribed environmental matters and wetlands.

"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.

"Category C Environmentally Sensitive Area" means any of the following areas:
- nature refuges as defined in the conservation agreement for that refuge under *the Nature Conservation Act 1992*
- koala habitat areas as defined under the Nature Conservation (Koala) Conservation Plan 2006
- state forests or timber reserves as defined under the *Forestry Act 1959*
- regional parks (previously known as resource reserves) under the *Nature Conservation Act 1992*
- an area validated as 'essential habitat' or 'essential regrowth habitat' from ground-truthing surveys in accordance with the *Vegetation Management Act 1999* for a species of wildlife listed as endangered or vulnerable under the *Nature Conservation Act 1992*
- 'of concern regional ecosystems' that are remnant vegetation and identified in the database called 'RE description database' containing regional ecosystem numbers and descriptions.

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

- the person's qualifications and experience relevant to the function
- that the person has not knowingly included false, misleading or incomplete information in the document
- that the person has not knowingly failed to reveal any relevant information or document to the administering authority
- that the document addresses the relevant matters for the function and is factually correct; and that the opinions expressed in the document are honestly and reasonably held. **"certification"** in relation to Schedule I - Dams 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"** in relation to Schedule I – Dams have a corresponding meaning as 'certification'.

"clearing" has the meaning in the dictionary of the *Vegetation Management Act 2000* and for vegetation—
(a) means remove, cut down, ringbark, push over, poison or destroy in any way including by burning, flooding or draining; but

(b) does not include destroying standing vegetation by stock, or lopping a tree.

"closed-loop systems" means using waste on site in a way that does not release waste or contaminants in the waste to the environment.

"coal seam gas water" means groundwater that is necessarily or unavoidably brought to the surface in the process of coal seam gas exploration or production.

"coal seam gas water concentrate" means the concentrated saline water waste stream from a water treatment process that does not exceed a total dissolved solid concentration of 40 000 mg/L.

"coal seam gas evaporation dam" is defined as a impoundment, enclosure or structure that is designed to be used to hold coal seam gas water for evaporation.

"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 purpose of preparing a design plan.

"control measure" has the meaning in section 47 of the Environmental Protection Regulation 2008 and means a device, equipment, structure, or management strategy used to prevent or control the release of a contaminant or waste to the environment.

"coal seam gas water" means underground water brought to the surface of the earth, or moved underground in connection with exploring for, or producing coal seam gas.

"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(s)" means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works.

"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.

"declared plant pest species" has the meaning in the Land Protection (Pest and Stock Route Management) Regulation 2003 and is a 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 plant.

"design plan" is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

"design storage allowance or DSA" means an available volume, estimated in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635), published by the administering authority, as amended from time to time, that must be provided in a dam to an **annual exceedance probability** (AEP) specified in that Manual.

"designer" for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

"development approval" means a development approval under the *Integrated Planning Act 1997* or the *Sustainable Planning Act 2009* in relation to a matter that involves an environmentally relevant activity under the *Environmental Protection Act 1994*.

"development wells" means a petroleum well which produces or stores petroleum. For clarity, a development well does not include an appraisal well.

"document" has the meaning in the *Acts Interpretation Act 1954* and means:
- any paper or other material on which there is writing; and
- any paper or other material on which there are marks; and
- figures, symbols or perforations having a meaning for a person qualified to interpret them; and
- any disc, tape or other article or any material from which sounds, images, writings or messages are capable of being produced or reproduced (with or without the aid of another article or device).

"ecologically dominant layer" has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means the layer making the greatest contribution to the overall biomass of the site and the vegetation community (NLWRA 2001). This is also referred to as the ecologically dominant stratum or the predominant canopy in woody ecosystems.

"ecosystem function" means the interactions between and within living and nonliving components of an ecosystem and generally correlates with the size, shape and location of the vegetation community.

"emergency action plan" means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to downstream communities and the implementation of protection measures. The plan must require dam owners to annually update contact.

"enclosed flare" means a device where the residual gas is burned in a cylindrical or rectilinear enclosure that includes a burning system and a damper where air for the combustion reaction is admitted.

"environmental harm" has the meaning in section 14 of the *Environmental Protection Act 1994* and means any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance.

Environmental harm may be caused by an activity—
(a) whether the harm is a direct or indirect result of the activity; or

(b) whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors.

"environmental nuisance" has the meaning in section 15 of the *Environmental Protection Act 1994 and means* unreasonable interference or likely interference with an environmental value caused by— (a) aerosols, fumes, light, noise, odour, particles or smoke; or

(b) an unhealthy, offensive or unsightly condition because of contamination; or

(c) another way prescribed by regulation.

"environmentally sensitive area" means Category A, B or C environmentally sensitive areas (ESAs).

"Environmental offset" has the meaning in section 7 of the *Environmental Offsets Act 2014.*

"equivalent person or EP" has the meaning under section 3 of the Planning Guidelines For Water Supply and Sewerage, 2005, published by the Queensland Government. It is calculated in accordance with Schedule 2, Section 63(4) of the Environmental Protection Regulation 2008 where:
- EP = V/200 where V is the volume, in litres, of the average dry weather flow of sewage that can be treated at the works in a day; or
- EP = M/2.5 where M is the mass, in grams, of phosphorus in the influent that the works are designed to treat as the inlet load in a day.

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

  - temporary administration sites and warehouses
  - dust suppression activities using water that meets the quality and operational standards approved under the environmental authority
- communication and power lines that are necessary for the undertaking of petroleum activities and that are located within well sites, well pads and pipeline right of ways without increasing the disturbance area of petroleum activities
- supporting access tracks
- gathering / flow pipelines from a well head to the initial compression facility
- activities necessary to achieve compliance with the conditions of the environmental authority in relation to another essential petroleum activity (e.g. sediment and erosion control measures, rehabilitation).

"existing structure" means a structure that was in existence prior to the adoption of this schedule of conditions under the authority.

"exploration well" means a petroleum well that is drilled to:
- explore for the presence of petroleum or natural underground reservoirs suitable for storing petroleum; or
- obtain stratigraphic information for the purpose of exploring for petroleum.

For clarity, an exploration well does not include an appraisal or development well.

"extreme storm storage" – means a storm storage allowance determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority

"flare pit" has the meaning in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635), and means containment area where any hydrocarbon that is discovered in an over-pressured reservoir during a drilling operation is diverted to, and combusted. The flare pit is only used during the drilling and work over process on a petroleum well.

"flare precipitant" means waste fluids which result from the operation of a flare.

"floodplains" has the meaning in the *Water Act 2000* and means an area of reasonably flat land adjacent to a watercourse that—
- is covered from time to time by floodwater overflowing from the watercourse; and
- does not, other than in an upper valley reach, confine floodwater to generally follow the path of the watercourse; and
- has finer sediment deposits than the sediment deposits of any bench, bar or in-stream island of the watercourse.

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

"fuel burning or combustion facility" 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 500 kg of fuel in an hour.

"GDA" means Geocentric Datum of Australia.

"Great Artesian Basin (GAB) spring" means an area protected under the *Environment Protection and Biodiversity Conservation Act 1999* because it is considered to be a Matter of National Environmental Significance and identified as a:
- community of native species dependent on natural discharge of groundwater from the Great Artesian Basin; or
- Great Artesian Basin spring; or

- Great Artesian Basin discharge spring wetland.

A GAB spring includes a spring vent, spring complex or watercourse spring and includes the land to which water rises naturally from below the ground and the land over which the water then flows.

Note: The Australian Government's Protected Matters Search Tool should be used to get an indication of whether the area of interest may contain an MNES spring.

Note: The GAB springs dataset can be requested from the Queensland Government Herbarium

"green waste" means waste that is grass cuttings, trees, bushes, shrubs, material lopped from trees, untreated timber or other waste that is similar in nature but does not include declared pest species.

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

"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.

For the purposes of the environmental authority, groundwater dependent ecosystems do not include those mapped as "unknown".

"growing" means to increase by natural development, as any living organism or part thereof by assimilation of nutriment; increase in size or substance.

"holder" means:
(a) where this document is an environmental authority, any person who is the holder of, or is acting under, that environmental authority; or

(b) where this document is a development approval, any person who is the registered operator for that development approval.

"hydraulic integrity or performance" means the capacity of a dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

"incidental activity" for this environmental authority means an activity that is not a specified relevant activity and is necessary to carry out the activities listed in *Schedule A, Table 1 – Authorised Petroleum Activities.*

"impulsive (for noise)" means sound characterised by brief excursions of sound pressure (acoustic impulses) that significantly exceed the background sound pressure. The duration of a single impulsive sound is usually less than one second.

"LA 90, adj, 15 mins" means the A-weighted sound pressure level, adjusted for tonal character that is equal to or exceeded for 90% of any 15 minutes sample period equal, using Fast response.

"LAeq, adj, 15 mins" means the A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character, that within any 15 minute period has the same square sound pressure as a sound level that varies with time.

"land degradation" has the meaning in the *Vegetation Management Act 1999* and means the following:
- soil erosion
- rising water tables
- the expression of salinity
- mass movement by gravity of soil or rock
- stream bank instability

- a process that results in declining water quality.

"landholder's active groundwater bore" means bores that are able to continue to provide a reasonable yield of water in terms of quantity for the bores authorised purpose or use. This term does not include monitoring bores owned by the administering authority of the *Water Act 2000*.

"levee" means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of **water** or **flowable substances** at any other times.

"linear infrastructure" means powerlines, pipelines, flowlines, roads and access tracks.

"liquid" means a substance which is flowing and offers no permanent resistance to changes of shape.

"long term noise event" means a noise exposure, when perceived at a sensitive receptor, persists for a period of greater than five (5) days, even when there are respite periods when the noise is inaudible within those five (5) days.

"low consequence dam" means any dam that is not classified as high or significant as assessed using the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635), published by the administering authority, as amended from time to time.

"low impact petroleum activities" means petroleum activities which do not result in the clearing of native vegetation, cause disruption to soil profiles through earthworks or excavation or result in significant disturbance to land which cannot be rehabilitated immediately using hand tools after the activity is completed. Examples of such activities include but are not necessarily limited to soil surveys (excluding test pits), topographic surveys, cadastral surveys and ecological surveys, may include installation of monitoring equipment provided that it is within the meaning of low impact and traversing land by car or foot via existing access tracks or routes or in such a way that does not result in permanent damage to vegetation.

"mandatory reporting level or MRL" means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (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.

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

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

"medium term noise event" is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than five (5) days and does not re-occur for a period of at least four (4) weeks. Re-occurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a difference source or source location.

"methodology" means the science of method, especially dealing with the logical principles underlying the organisation of the various special sciences, and the conduct of scientific inquiry.

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

- the base of the subsoil and residual solid mixture must be separated from the groundwater table by at least one metre of a continuous layer of impermeable subsoil material (kw=10–8m/s) or subsoil with a clay content of greater than 20%; 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.

"modification or modifying" (see definition of 'construction')

"month" has the meaning in the *Acts Interpretation Act 1954* and means a calendar month and is a period starting at the beginning of any day of one (1) of the 12 named months and ending—

- immediately before the beginning of the corresponding day of the next named month; or
- if there is no such corresponding day—at the end of the next named month.

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

"notice of election" has the meaning in section 18(2) *Environmental Offsets Act 2014*.

"operational plan" in relation to Schedule I – Dams 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.

"permanent" means infrastructure or facilities that are lasting or intended to last for the life of the development and is not temporary or mobile.

"pipeline waste water" means hydrostatic testing water, flush water or water from low point drains.

"pre-disturbed land use" means the function or use of the land as documented prior to significant disturbance occurring at that location.

"predominant species" has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a species that contributes most to the overall above-ground biomass of a particular stratum.

"prescribed contaminants" has the meaning in section 440ZD of the *Environmental Protection Act 1994* and means:

(a) earth; or

(b) a contaminant prescribed under section 440ZF.

"prescribed environmental matters" has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significance listed in schedule 2 of the Environmental Offsets Regulation 2014.

"primary protection zone" means an area within 200m from the boundary of any Category A, B or C ESA.

"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.

"protection zone" means the primary protection zone of any Category A, B or C ESA or the secondary protection zone of any Category A or B ESA.

"regional ecosystem" has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil. Regional ecosystems of Queensland were originally described in Sattler and Williams (1999). The Regional Ecosystem Description Database (Queensland Herbarium 2013) is maintained by Queensland Herbarium and contains the current descriptions of regional ecosystems.

"register of regulated 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);

vi. Design storage allowance (megalitres) and associated level of the dam (metres AHD);

vii. 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" Regulated structure means any structure in the significant or high consequence category as assessed using the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933) published by the administering authority. A regulated structure does not include:

- a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container;
- a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities;
- a flare pit.

"rehabilitation or rehabilitated" means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with acceptance criteria and, where relevant, includes remediation of contaminated land. For the purposes of pipeline rehabilitation, rehabilitation includes reinstatement, revegetation and restoration.

"reinstate or reinstatement" for pipelines, means the process of bulk earth works and structural replacement of pre-existing conditions of a site (i.e. soil surface typography, watercourses, culverts, fences and gates and other landscape(d) features) and is detailed in the Australian Pipeline Industry Association (APIA) Code of Environmental Practice: Onshore Pipelines (2013).

"residual drilling material" means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.

"restoration" means the replacement of structural habitat complexity, ecosystem processes, services and function from a disturbed or degraded site to that of a pre-determined or analogue site. For the purposes of pipelines, restoration applies to final rehabilitation after pipeline decommissioning.

"revegetation or revegetating or revegetate" means to actively re-establish vegetation through seeding or planting techniques in accordance with site specific management plans.

"secondary protection zone" in relation to a Category A or Category B ESA means an area within 100 metres from the boundary of the primary protection zone.

"secondary treated class B standards" means treated sewage effluent or greywater which meets the following standards:

- total phosphorous as P, maximum 20mg/L
- total nitrogen as N, maximum 30mg/L
- 5-day biochemical oxygen demand (inhibited) (e.g. release pipe from sewage treatment plant), maximum 20mg/L
- suspended solids, maximum 30mg/L
- pH, range 6.0 to 8.5
- e-coli, 80th percentile based on at least 5 samples with not less than 30 minutes between samples, 1,000cfu per 100mL, maximum 10,000cfu per 100mL.

"secondary treated class C standards" means treated sewage effluent or greywater which meets the following standards:

- total phosphorous as P, maximum 20mg/L
- total nitrogen as N, maximum 30mg/L
- 5-day biochemical oxygen demand (inhibited) (e.g. Release pipe from sewage treatment plant), maximum 20mg/L
- suspended solids, maximum 30mg/L
- pH, range 6.0 to 8.5

- e-Coli, 80th percentile based on at least 5 samples with not less than 30 minutes between samples, 10,000cfu per 100mL, maximum 100,000cfu per 100mL.

"sensitive place" means:
- a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel)
- a library, childcare centre, kindergarten, school, university or other educational institution a medical centre, surgery or hospital
- a protected area
- a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment
- a work place used as an office or for business or commercial purposes, which is not part of the petroleum activity(ies) and does not include employees accommodation or public roads
- for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

"sensitive receptor" is defined in Schedule 2 of the Environmental Protection (Noise) Policy 2008, and means an area or place where noise is measured.

"short term noise event" is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than eight hours and does not re-occur for a period of at least seven (7) days. Re-occurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a different source or source location.

"significant residual impact" has the meaning in section 8 of the *Environmental Offsets Act 2014*.

"significantly disturbed or significant disturbance or significant disturbance to land or areas" has the meaning in Schedule 12, section 4 of the Environmental Protection Regulation 2008. Land is significantly disturbed if—
(a) it is contaminated land; or

(b) it has been disturbed and human intervention is needed to rehabilitate it—

(i) to a condition required under the relevant environmental authority; or

(ii) if the environmental authority does not require the land to be rehabilitated to a particular condition—to the condition it was in immediately before the disturbance.

"species richness" means the number of different species in a given area.

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

"stable" has the meaning in Schedule 5 of the Environmental Protection Regulation 2008 and, for a site, means the rehabilitation and restoration of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.

"stimulation" means a technique used to increase the permeability of natural underground reservoir that is undertaken above the formation pressure and involves the addition of chemicals. It includes hydraulic fracturing / hydrofraccing, fracture acidizing and the use of proppant treatments.

Note: This definition is restricted from that in the *Petroleum and Gas (Production and Safety) Act 2004* in order to only capture the types of stimulation activities that pose a risk to environmental values of water quality in aquifers.

"structure" means a dam or levee.

"subterranean cave GDE"

- means an area identified as a subterranean cave in the mapping produced by the Queensland Government and identified in the Queensland Government Information System, as amended from time to time; and
- means a cave ecosystem which requires access to groundwater on a permanent or intermittent basis to meet all or some of their water requirements so as to maintain its communities of plants and animals, ecological processes and ecosystem services. Subterranean cave GDEs are caves dependent on the subterranean presence of groundwater. Subterranean cave GDEs have some degree of groundwater connectivity and are indicated by either high moisture levels or the presence of stygofauna, or both, referred to in the Queensland Government WetlandsInfo mapping program, as amended from time to time.

Note: the Subterranean GDE (caves) dataset can be displayed through the Queensland Government WetlandInfo mapping program.

Note: the Subterranean GDE (caves) dataset can be obtained from the Queensland Government Information System.

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

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

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

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

"suitably qualified third party" means a person who:
(a) has qualifications and experience relevant to performing the function including but not limited to:

i. a bachelor's degree in science or engineering; and

ii. 3 years' experience in undertaking soil contamination assessments; and

(b) is a member of at least one organisation prescribed in Schedule 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.

"sump" means a pit in which waste residual drilling material or drilling fluids are stored only for the duration of drilling activities.

"synthetic based drilling mud" means a mud where the base fluid is a synthetic oil, consisting of chemical compounds which are artificially made or synthesised by chemically modifying petroleum components or other raw materials rather than the whole crude oil.

"system design plan" means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

"top soil" means the surface (top) layer of a soil profile, which is more fertile, darker in colour, better structured and supports greater biological activity than underlying layers. The surface layer may vary in depth depending on soil forming factors, including parent material, location and slope, but generally is not greater than about 300mm in depth from the natural surface.

"total density of coarse woody material" means the total length of logs on the ground greater than or equal to 10cm diameter per hectare and number of logs on the ground greater than or equal to 10cm diameter per hectare.

"valid complaint" means all complaints unless considered by the administering authority to be frivolous, vexatious or based on mistaken belief.

"void" means any constructed, open excavation in the ground.

"waste and resource management hierarchy" has the meaning provided in section 9 of the *Waste Reduction and Recycling Act 2011 and* is the following precepts, listed in the preferred order in which waste and resource management options should be considered—

(a) AVOID unnecessary resource consumption

(b) REDUCE waste generation and disposal

(c) RE-USE waste resources without further manufacturing

(d) RECYCLE waste resources to make the same or different products

(e) RECOVER waste resources, including the recovery of energy

(f) TREAT waste before disposal, including reducing the hazardous nature of waste

(g) DISPOSE of waste only if there is no viable alternative.

"waste and resource management principles" has the meaning provided in section 4(2)(b) of the *Waste Reduction and Recycling Act 2011* and means the:

(a) polluter pays principle

(b) user pays principle

(c) proximity principle

(d) product stewardship principle.

"waste fluids" has the meaning in section 13 of the *Environmental Protection Act 1994* in conjunction with the common meaning of "fluid" which is "a substance which is capable of flowing and offers no permanent resistance to changes of shape". Accordingly, to be a waste fluid, the waste must be a substance which is capable of flowing and offers no permanent resistance to changes of shape.

"watercourse" has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means:

1) a river, creek or stream in which water flows permanently or intermittently—

   (a) in a natural channel, whether artificially improved or not; or

   (b) in an artificial channel that has changed the course of the watercourse.

2) Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

"water year" means the 12-month period from 1 July to 30 June.

"waters" includes all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, spring, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and underground water.

"well integrity" the ability of a well to contain the substances flowing through it.

"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 (6) 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.

"wet season" means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

END OF ENVIRONMENTAL AUTHORITY