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PPA
PROPERTY
PROJECTS
AUSTRALIA

Assessment Report

REGIONAL PLANNING INTERESTS ACT 2014

- Assessment Report submitted in support of application for Regional Interests Development Approval for carrying out activities in a Priority Living Area under the Regional Planning Interests Act 2014.

Prepared by Property Projects Australia Pty Ltd
Prepared for Bronco Energy Pty Ltd

16 June 2025

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APPENDICES

1. ABOUT THIS REPORT

Property Projects Australia (PPA) has prepared this report to accompany the assessment application for a Regional Interests Development Approval (RIDA) required under Part 3 Division 2 of the Queensland *Regional Planning Interests Act 2014* (RPI Act). This report is intended to be read in conjunction with the assessment application form provided.

2. BACKGROUND MATERIAL

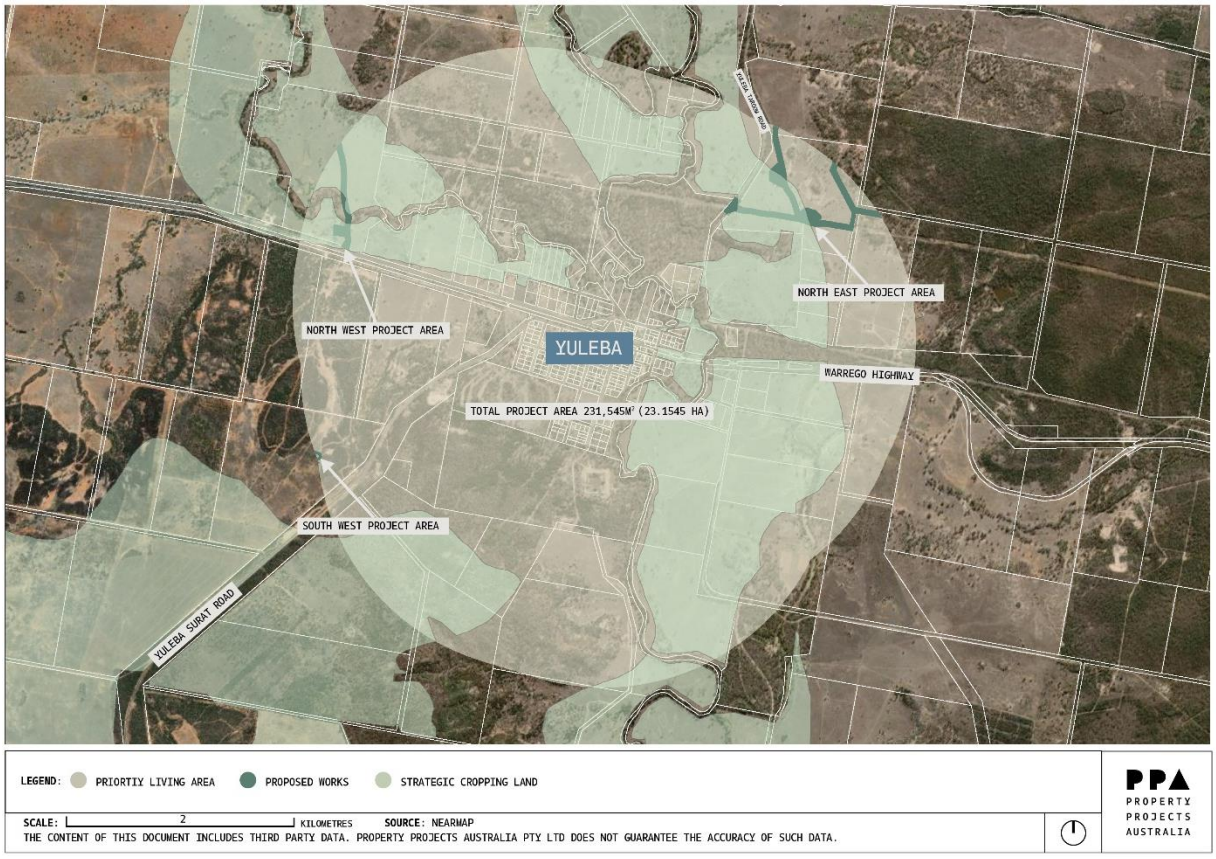
2.1. Priority Living Area

The land subject to this application is located within a Priority Living Area (PLA) (**Figure 1**) as defined by the *Regional Planning Interests Act 2014* (RPI Act). A PLA represents an area of regional interest and is designed to provide certainty for investment in the development of towns and growth areas. The PLA encompasses both towns and the surrounding areas, ensuring the protection of these areas of regional interest.

2.2. Strategic Cropping Land

The land subject to this application is located within a Strategic Cropping Area (SCA) as defined by the RPI Act. Further, areas of mapped Strategic Cropping Land (SCL) as shown on the SCL Trigger Map intersect the land and activities subject to this application.

FIGURE 1: OVERALL PROJECT AREA & STRATEGIC CROPPING LAND MAPPING



No new disturbance (constituting a significant impact or otherwise) is proposed to be undertaken within areas mapped as SCL on the SCL Trigger Map as part of this application.

2.3. Assessment application

The following documents have been considered in the preparation of this report:

- *RPI Act Statutory Guideline 01/14: How to make an assessment application for a regional interests development approval under the Regional Planning Interests Act 2014*;
- *RPI Act Statutory Guideline 04/14: Carrying out resource activities and regulated activities within a Priority Living Area*;
- *RPI Act Statutory Guideline 06/14: Public Notification of assessment applications*; and
- *RPI Act Statutory Guideline 11-16: Companion Guide*.

Having regard to the above documents, this report outlines how the proposed resource activity meets the requirements of the Queensland *Regional Planning Interests Regulation 2014* (RPI Reg).

2.4. Environmental Authority and Resource Authority

All proposed resource activities subject to this application are located in Petroleum Lease (PL) 281 and the Santos Roma Shallow Gas Project Area East (RSGPAE) gas field. Resource (petroleum) activities in PL 281 are authorised under the conditions of the RSGPAE Environmental Authority (EA) EPPG00662213. The RSGPAE EA authorises petroleum activities across PLs 281 and 282, and Authority to Prospect (ATP) 631. The RSGPAE EA currently authorises several hundred Coal Seam Gas (CSG) production wells and associated supporting infrastructure. A copy of the RSGPAE EA and PL 281 tenure report are attached as **Appendix B**.

3. PLA ASSESSMENT CRITERIA

The RPI Reg identifies the required outcome for this application as follows:

> *The location, nature and conduct of the activity is compatible with the planned future for the priority living area stated in a planning instrument under the Planning Act.*

The associated prescribed solution under the RPI Reg is as follows:

> *The application demonstrates each of the following:*
>
> *a) The activity is unlikely to adversely impact on development certainty:*
>
> *i. For land in the immediate vicinity of the activity; and*
>
> *ii. The priority living area generally;*
>
> *b) Carrying out the activity in the priority living area, and in the location stated in the application, is likely to result in community benefits and opportunities, including, for example, financial and social benefits and opportunities.*

The RPI Act Statutory Guideline 04/14 (*Carrying out resource activities and regulated activities within a Priority Living Area*) provides specific guidance on how to address the abovementioned prescribed solution criteria. A response to each of the prescribed criteria as they relate to this application has been provided in **Appendix A**.

4. PROJECT DESCRIPTION

4.1. The Applicant

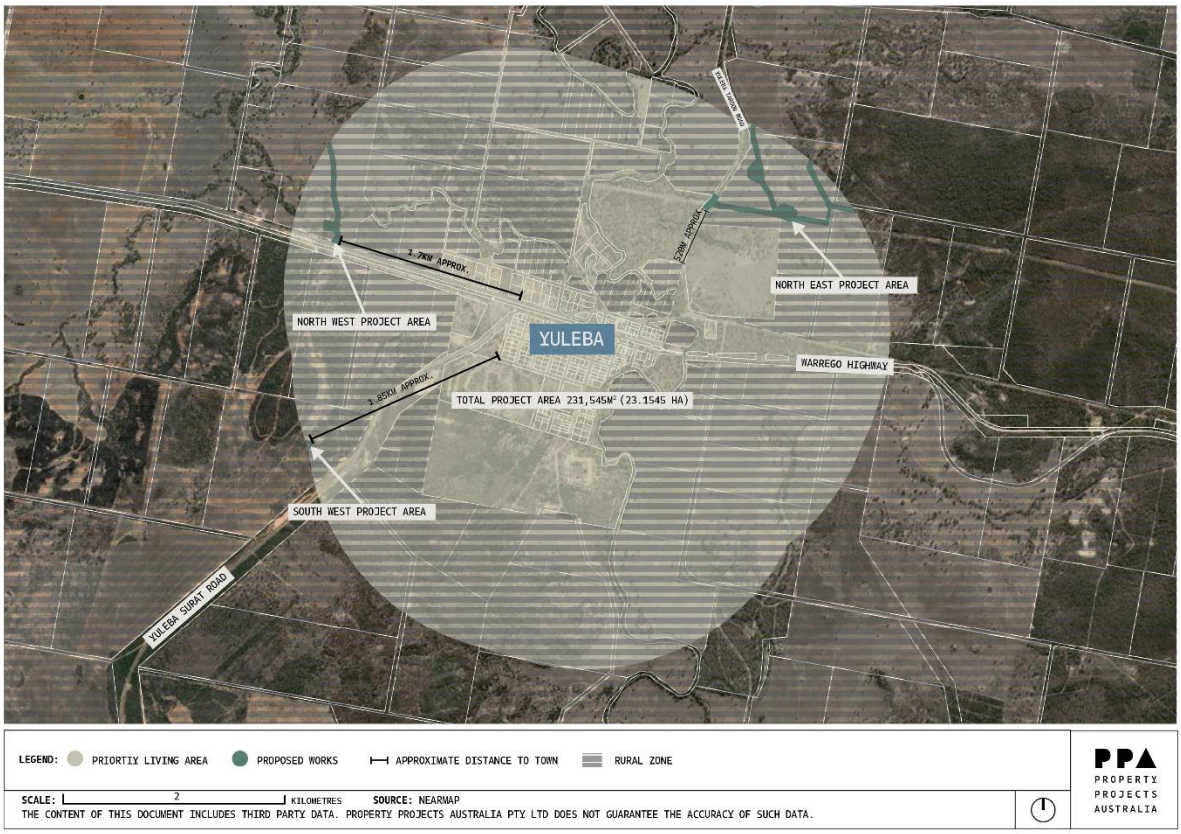
Bronco Energy Pty Ltd (henceforth referred to as 'Santos') on behalf of its joint venture partners Total Energies EP Australia III, PAPL (Upstream II) Pty Limited and KGLNG E&P II Pty Ltd, propose to undertake petroleum resource activities in resource authority PL 281.

4.2. Project Location

The project involves three project sites located on PL 281 in the Santos RSGPAE gas field. Petroleum resource activities are proposed to be undertaken at all three project sites. Further, the project sites are located within a rural area surrounding the township of Yuleba, on the border of the *Yuleba Priority Living Area* (henceforth referred to as the 'PLA') as depicted **in Figure 2**.

Detailed descriptions of each project site are provided in **Section 4.4**.

FIGURE 2: OVERALL PROJECT AREA



4.3. Roma Shallow Gas Project Area East

As discussed in Section 2.4, the RSGPAE gas field is a CSG production activity that consists of several hundred CSG production wells and associated supporting infrastructure. The RSGPAE gas field includes a substantial area of land surrounding the township of Yuleba.

4.4. Proposed Activities

Proposed resource activities to be located within the PLA are ancillary and associated activities to CSG production (**Figure 2)**. The following sections outline the activities that are proposed to be undertaken at each of the three project sites.

4.4.1 Southwest Project Area – 'Wattle Tee' *(Lot 287 on WV459)*

With reference to **Figure 3**, proposed activities include:

1. construction and use of a new temporary access road (being for the duration of CSG activities allowing access to a CSG well (well located outside the PLA). Within the PLA, the temporary access road will be approximately 70m in total length and approximately 12m wide (refer to Figure 3); and
2. well pad / lease (the well bore and most of the well pad / lease is located outside of the PLA). The well pad / lease will impact approximately 8m^2 of the PLA (refer to Figure 3).

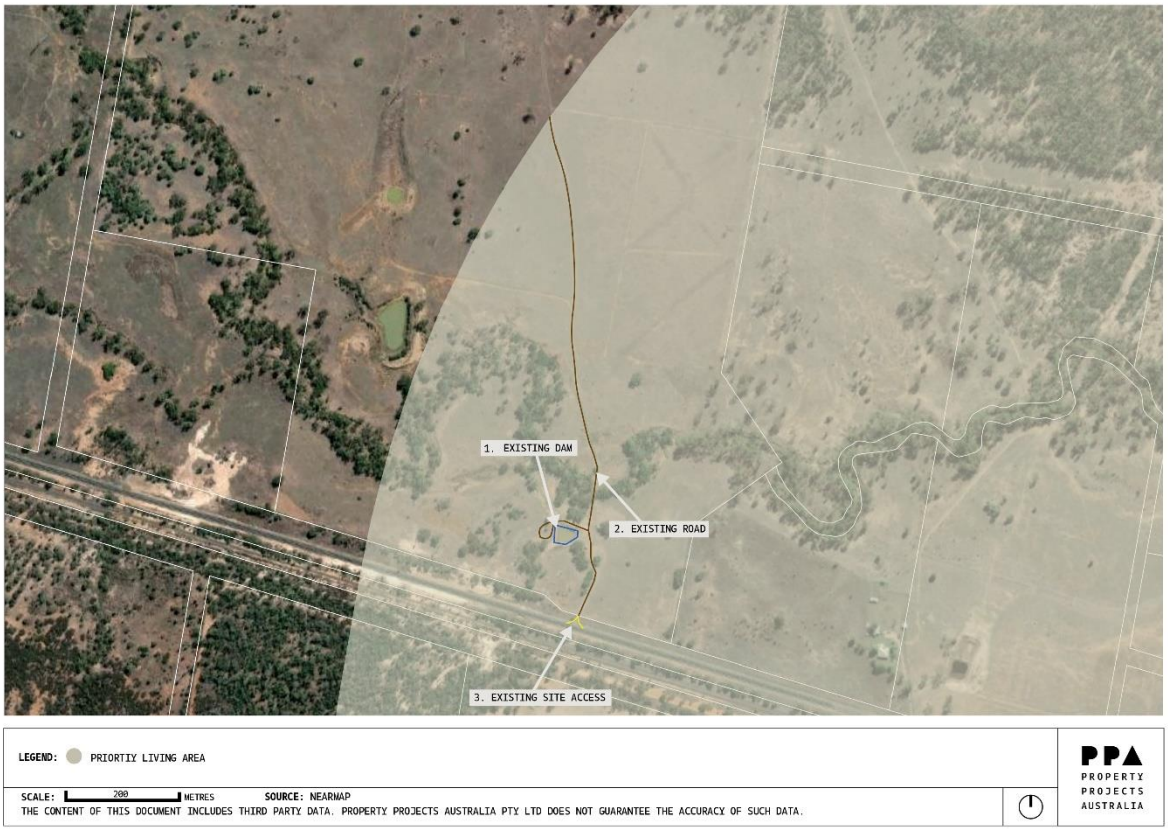
FIGURE 3: SOUTH WEST PROJECT AREA

4.4.2 Northwest Project Area – 'The Lagoons' (Lot 271 on WV1113)

With reference to **Figure 4**, proposed activities include:

1. use of an existing landholder dam for water supply;
2. use of an existing road (approximately 950 m of which is located within the PLA); and
3. use of an existing site access between the project site to the Warrego Highway.

FIGURE 4: NORTH WEST PROJECT AREA



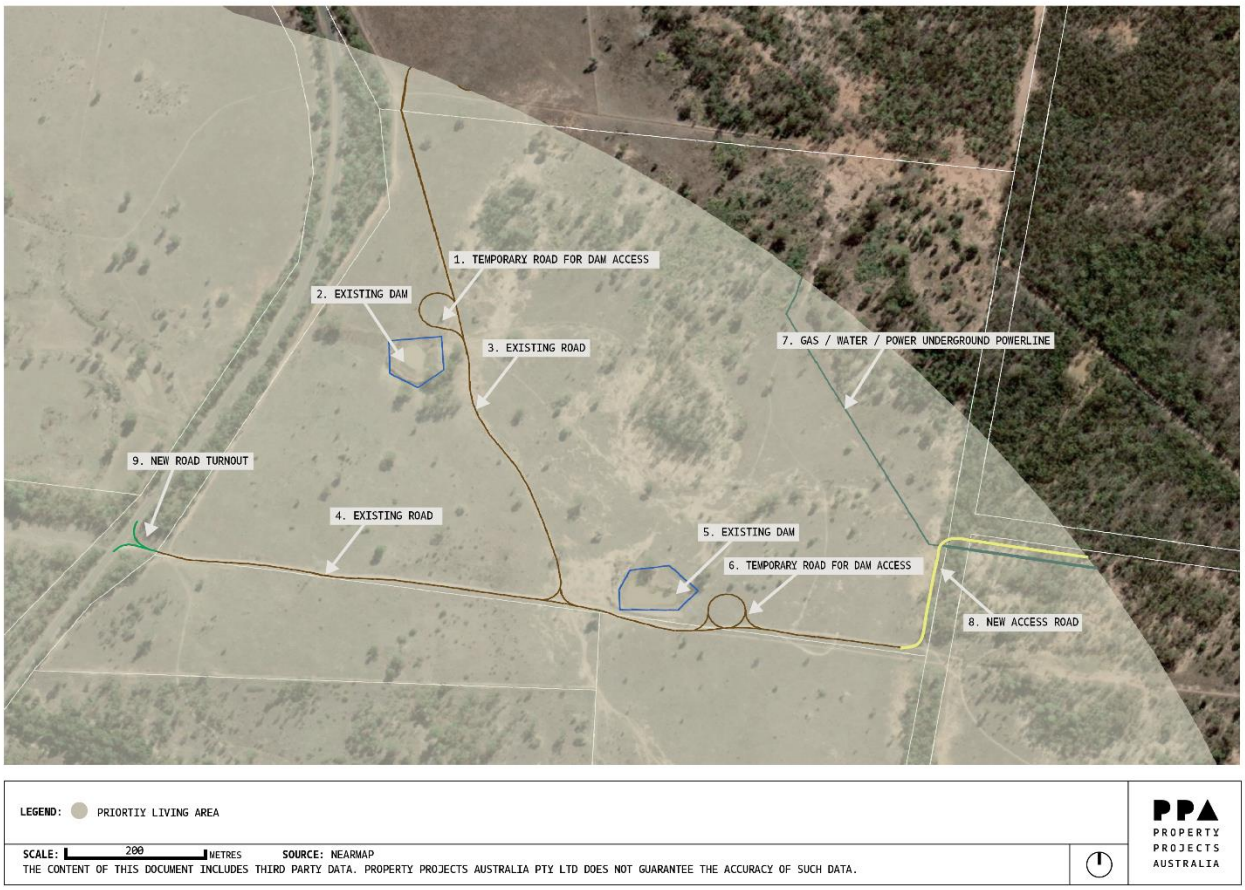
4.4.3 Northeast Project Area – 'Boxgrove' (Lots 109 on WV1081, 50 on WAL53532, 119 on WV237, 65 on WAL53531, Yuleba Taroom Road)

With reference to **Figure 5**, proposed activities include:

1. construction and use of a temporary access road (for the duration of CSG activities) to provide access to an existing dam (total length of approximately 150 m and approximately 12m wide);
2. use of an existing dam;
3. use of an existing road (total length of approximately 770 m);
4. use of an existing road (total length of approximately 1 km);
5. use of a second existing dam;
6. construction and use of a new 15Om long temporary access road to an existing dam;
7. construction of co-located gas and water flowlines and a power line, within a single trench approximately 20m wide RoW (total length of approximately 675m within the PLA);
8. construction and use of a new road (total length of approximately 365 m within the PLA); and
9. construction and use of a new road turnout on Yuleba Taroom Road (approximately 50m in length).

The above-mentioned construction, maintenance, and use of new and existing roads will provide access to existing dams and nearby project sites (being located outside of the PLA) to undertake resource activities.

FIGURE 5: NORTH EAST PROJECT AREA



4.5. Affected Land Area

The total land area to be affected by the proposed resource activities is approximately 22.8 ha. This figure includes existing roads and dams within the affected area of the PLA. The distribution of this area across the three sites is summarised in the table below:

Table 1 – Schedule of Affected Areas

Site	Affected Area
North West	Approximately 5.5 ha
North East	Approximately 17.2 ha
South West	Approximately 0.1 ha
Total	22.8 ha

4.6. Application Requirement

The proposed resource activity is to be located within an area of regional interest, specifically the PLA. According to the RPI Act, a resource activity may only be undertaken within a PLA if the individual or entity carrying out the activity holds, or is acting under, a RIDA for the activity, or otherwise where an exemption applies. A RIDA ensures that the resource activity complies with specific criteria designed to manage and mitigate impacts on the PLA, preserving the area's regional interests.

5. TOWNSHIP OF YULEBA

5.1. Characteristics

Yuleba is a small rural town located on the Warrego Highway with a population of approximately 200 residents. The township is characterised by low-density residential development and offers a range of services, including a church, hotel, memorial hall, golf course, and general store. The area surrounding Yuleba is predominantly used for rural activities and includes a combination of cleared land primarily used mainly for grazing and areas of remnant forest. Further away from the township, various activities associated with natural CSG production (including CSG wells and associated activities) are dispersed throughout the landscape.

5.2. Planning Scheme

The *Maranoa Regional Council Planning Scheme* (Planning Scheme) applies to the land subject to the application, which identifies Yuleba as a district centre. All land subject to the application is located within the *Rural Zone* under the Planning Scheme and is substantially separated from land located in any other zone.

The purpose of the Rural Zone is outlined in *Rural Zone Code* – and its purpose is to:

a) *provide for a wide range of rural uses including cropping, intensive horticulture, intensive animal industries, animal husbandry, animal keeping, extractive industry, special industry (explosives manufacturing and storage) and other primary production activities on large lots without affecting urban areas;*
b) *provide opportunities for non-rural uses that are compatible with agriculture, the energy sector, the environment and the landscape character of the rural area where they do not compromise the long-term use of the land for rural purposes;*
c) *protect or manage significant natural features, resources, cropping land, and processes, including the capacity for primary production;*
d) *ensure primary production is maintained by protecting the productive capacity of all rural land. This includes protecting rural land from alienation and fragmentation that may lead to a loss in productivity;*
e) *ensure that development in the zone protects and enhances transport infrastructure; and,*
f) *ensure that development maintains the integrity and water quality of the Murray Darling Basin Catchment.*

The proposed resource activities to be located within the Rural Zone align with the intent of the Rural Zone Code. Although the activities are non-rural in nature, they are ancillary to resource development and are designed to be low-impact, temporary, and co-located with existing rural and resource-based land uses. Activities proposed across the three project sites, such as construction of new temporary access roads, minor well pad encroachment, and the use of existing dams and road infrastructure (refer to **Section 4.4**) are compatible with ongoing and future rural production, given their scale (which is minimal with regard to the overall rural land at each site) and siting.

As the overall impact to the landscape is minimised and works are proposed within open areas, no impacts to significant natural features or rural character will be caused.

Further, as outlined within **Figure 2** and Appendix A, the proposed resource activities will not affect urban areas given their minimal impact and the substantial distance between the location of the proposed activities and urban areas (NW project area 1.7km, NE project area 520m, SW project area 1.8km).

6. CONCLUSIONS AND RECOMMENDATION

This assessment report has been prepared by Property Projects Australia on behalf of Santos in relation to the carrying out of a resource activity under the RPI Act within the PLA.

This assessment report demonstrates the proposed resource activities comply with the relevant assessment criteria under the RPI Act and RPI Reg. Therefore, the application is recommended for approval.

7. REFERENCE LIST

Maranoa Regional Council . (2025). *Planning Schemes and Maps*. Retrieved from Maranoa Regional Council : https://www.maranoa.qld.gov.au/maranoa-planning-scheme

Queensland Government. (2025). *Queensland Globe*. Retrieved from Queensland Globe: https://qldglobe.information.qld.gov.au/

The Department of State Development, Manufacturing, Infrastructure and Planning . (2019, August). *RPI Act Statutory Guideline 06/14.*

The Department of State Development, Manufacturing, Infrastructure and Planning. (2019, August). *RPI Act Statutory Guideline 01/14.* Retrieved from https://dsdmipprd.blob.core.windows.net/general/rpi-guideline-01-14-assessment-application.pdf

The Department of State Development, Manufacturing, Infrastructure and Planning. (2019, August). *RPI Act Statutory Guideline 04/14.* Retrieved from https://dsdmipprd.blob.core.windows.net/general/rpi-guideline-04-14-carrying-out-activities-in-pla.pdf

The Department of State Development, Manufacturing, Infrastructure and Planning. (2019, August). *RPI Act Statutory Guideline 11/16.* Retrieved from https://dsdmipprd.blob.core.windows.net/general/rpi-guideline-11-16-dilgp-companion-guide.pdf

APPENDIX A

Assessment Criteria Tables

Prepared by:

Property Projects Australia Pty Ltd

Table 1: Prescribed solution (a)

Item	Impact criteria	Response to prescribed solution
To understand whether an activity may adversely impact on development certainty, the applicant should undertake and submit an analysis that demonstrates the extent to which the activity would or would not:		
a)	Result in the loss of land available for urban development as identified in a local government planning scheme, development scheme or other applicable statutory planning instrument	All land proposed to be impacted by activities is located within the *Rural Zone,* which does not anticipate the use of the land for urban development. The lots subject to the proposed activities are of a significant scale and do not contain existing urban development. Even if urban development were to be planned in the future, the proposed activities would not prevent this future land use as there will be no permanent loss of land. The proposed extent of disturbance is both minimal and temporary.
b)	Prevent or delay the orderly expansion of planned urban development as identified in a local government planning scheme, development scheme or other applicable statutory planning instrument (for example, the life of the proposed resource activity may delay access to land and preventing its timely development)	For the reasons outlined in the response provided to item (a), the proposal will not prevent any anticipated urban expansion. It is noted that the proposed activities are not located in proximity to the urbanised area of Yuleba and do not represent logical expansion areas for the town. There is no planned urban development identified for the subject land under any statutory instrument.
c)	Result in the discontinuation of an activity that is lawfully in existence under a local government planning scheme, development scheme or other applicable statutory planning instrument	Based on a review of the most recent available aerial imagery (dated 9 April 2024) the land subject to the proposed activities is either vacant or used for low intensity rural activities (i.e. grazing), and the proposal will only affect a small part of the area that is used for rural activities. The activities will not result in the discontinuance of a lawfully operating activity. Importantly, landholders will retain access to and continued use of all tracks, dams, and Rights of Way developed under these proposed activities, ensuring that existing rural operations can continue with minimal disruption.

d)	Increase the cost of planned development (for example, changes to the existing landform could make the land more difficult or costly to develop)	The land areas subject to the proposed activities are not planned for development (for example, no works are anticipated for the site under the *Local Government Infrastructure Plan* of the *Maranoa Regional Council Planning Scheme*). No significant impacts on landform will occur because of the proposed development, and no other works are proposed that would make land difficult or costly to develop.
e)	Damage or otherwise affect existing infrastructure (for example, structural damage cause by subsidence)	The proposed activities do not have the potential to damage or otherwise affect any existing infrastructure. It is noted that new and existing access roads that undergo maintenance will be available for handover to the landowner at the end of the proposed activities.
f)	Result in additional demand on existing infrastructure or services (for example, town water)	The proposed activities do not result in any increase in demand on any existing infrastructure or services. It is noted that water for construction will be sourced from landholder dams or elsewhere beyond the *Priority Living* Area in accordance with regulatory requirements. The town water supply will not be utilised.
g)	Negatively impact on the amenity of the PLA in general and on land in the immediate vicinity of the activity	The proposed activities will not have any material impact on the amenity of the PLA in general. These activities are consistent with existing land use practices within the PLA. All activities proposed within the PLA are ancillary to resource extraction and include roads and a gathering line (refer to detailed discussion provided in **Section 4.4),** rather than direct extraction activities. As such, the nature, scale, and location of the proposed works are not expected to result in any noticeable change to amenity of the area.
To determine the impact on amenity, the proposed activity should be evaluated against the following factors:		

a)	the compatibility of the activity with surrounding activities	A discussion regarding compatibility with relation to each aspect of the proposed activities is provided below. 1. Southwest: The activities in this area are limited to the construction of a temporary access road, which will be used to provide access to a well, and a small portion of the associated well pad. No proposed activities are to be located in proximity to existing activities other than grazing land. 2. Northwest: Activities in this area include use of an existing road on the site, and an upgrade of the existing crossover from Warrego Highway. No new activities are proposed in proximity to the dwelling house. All other areas are predominantly cleared. No impact on the use of the land for rural activities will arise from the use of the existing infrastructure. 3. Northeast: The land in the northeast is used for grazing activities and is not located in proximity to any sensitive land uses. Overall, the proposed activities occurring within the PLA are consistent with the existing land use of the PLA (which includes primarily low intensity rural uses and resource related infrastructure) and are therefore compatible with the established character and function of the area.
b)	the nature and scale of the proposed activity and the extent of its intrusion on the predominant character of the surrounding area	All proposed activities are of a character and scale which is consistent with the existing character of the surrounding locality. New roads will be generally consistent in width with existing roads in the area (approximately 12m), and there will be no intrusion into the predominant rural character of the landscape, as the works are compatible with the current land use practices such as grazing and resource operations. With relation to each activity location:

		1. Southwest – The proposed road does not provide any connection further into the PLA, and the activities associated with the well pad are very limited in extent. No material impact on the PLA is likely to occur. 2. Northwest – These activities will utilise an existing property access point from the Warrego Highway. The Warrego Highway is already associated with a higher volume of traffic and the improved access will not direct traffic into the inner areas of the township. 3. Northeast – Activities in this area include upgrades and extensions to the existing access roads on private property. Existing dams and roads will predominantly be utilised. No material impact on the landscape character will be caused.
c)	the extent of change to the volume or nature of traffic on the roads in the PLA	The proposed activities are associated with existing resource operations located outside of the PLA and represent ancillary works such as access roads and flowlines. As such, they do not introduce new, intensive uses or permanent infrastructure within the PLA. No noteworthy change in the volume or nature of traffic on roads in the PLA will be caused. Traffic movements generated by the proposal are expected to be low in frequency, short in duration, and primarily associated with construction and occasional maintenance. These movements will occur over a limited period and will utilise existing roads or temporary access tracks designed in a manner consistent with the form and scale of surrounding rural infrastructure. Importantly, access routes have been selected to avoid directing traffic through more sensitive areas, including residential townships or community facilities. Upgrades to existing crossovers will improve safety without increasing traffic volumes in a way that would alter the rural character or amenity of the PLA. As such, there will

		be no adverse effect on the function of local roads, no increase in through-traffic, and no long-term impact on the amenity of the PLA or its surrounding land uses.
d)	the effect on the existing linkages between various parts of the PLA (for example, between residential areas and employment areas)	The proposed activities will not impact on any linkages between various parts of the PLA. It is noted that all infrastructure utilised or established is located on private property within large rural lots, which are located towards the border of the PLA.
e)	changes to the outlook from key vistas, nearby sensitive uses (for example, residential areas) or public facilities (for example, parks) and tourist attractions	The proposed activities involve a minimal disturbance footprint and are not clearly viewable from any nearby sensitive use, public facilities, or tourist attractions.
f)	the effect on the sense of place, local cultural heritage values and perceptions of safety	The minimal disturbance footprint and activity frequency, along with Santos' Cultural Heritage assessment process, implemented via a Cultural Heritage Management Plan (CHMP), will ensure there are no impacts on sense of place or any local cultural heritage values. The CHMP provides a structured framework for identifying, protecting, and managing cultural heritage values in consultation with relevant Traditional Owner groups, ensuring that all activities respect and preserve culturally significant areas. The proposed activities within the PLA are not associated with any safety risks typically linked to resource activities, except for the gathering line, which may be perceived as a safety risk. However, Santos will construct and operate the gathering line in accordance with best practice Australian Standard AS2885, sufficiently mitigating any potential safety risk to the PLA. It is also noted that no activities are proposed in proximity to existing residences or areas likely to attract public gatherings or regular movement of people, further reducing any potential risk to public safety.
g)	the visual prominence of the site	No significant impacts on the visual prominence of the site will be caused. All proposed activities will have minimal visual impact, are comparable with rural infrastructure improvements, and are not located on land which has a visual significance.

h)	proposed landscaping and enhancements	There are no proposed landscaping or other enhancements in the areas subject to impacts from the proposed development.

Table 2: Prescribed solution (b)

Item	Impact criteria	Response to prescribed solution
The applicant should submit an analysis of:		
a)	The economic and social benefits that will be associated with the additional workforce (during both the construction phase and operation phases)	The proposed activities are minor in scale and will not involve a significant additional workforce. However, they will support the continued operation and efficiency of broader coal seam gas (CSG) activities in the region, particularly those occurring outside the PLA. These activities form part of a larger, established gas production network in the vicinity of Yuleba and will enable the safe and reliable delivery of gas resources. In doing so, they contribute to regional energy supply security and help sustain ongoing employment and contracting opportunities in the area, particularly through local service providers, suppliers, and maintenance personnel. While the direct economic input of these specific works may be limited, their role in supporting wider operations will deliver flow on economic benefits to the local township of Yuleba. The continuation of resource development activity also reinforces the area's economic identity as a hub for rural and resource based industries.
b)	Direct contributions (monetary or in kind) towards:	
	i) the improvement of trunk infrastructure (whether it be the capacity or the quality of the infrastructure)	No improvements to trunk infrastructure are proposed and no direct contributions towards public infrastructure are proposed or warranted in association with the proposed activities within the PLA.
	ii) Public infrastructure (including public transport, health and education services, and cultural and social infrastructure such as parks, sport and recreation facilities, bikeways and walkways)	

	iii) A community initiative or facility (for example public artwork, community notice board, community centre)	

APPENDIX B

Resource Authority and Environmental Authority

PL 281 Resource authority public report

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PL 281 Resource authority public report

Queensland Government

Permit details

Permit ID:	PL 281
Type:	Petroleum Lease
Status:	Granted
Lodged date:	02/10/2008
Grant date:	15/09/2017
Commencement date:	15/09/2017
Expiry date:	14/09/2038
Plan/program expiry date:	24/09/2025
Current term:	21 years
Work program type:	
Conditions:	
Locality:	EASTERN FLANK OF ROMA HIGH 24.6KM FROM COXON CREEK
Remarks:	
Act permit granted under:	Petroleum and Gas (Production and Safety) Act 2004
Act now administered under:	Petroleum and Gas (Production and Safety) Act 2004

Holders

Authorised holder representative (AHR)

Santos Limited
Team Leader Tenures Compliance Level 22, Santos Place 32 Turbot Street BRISBANE QLD 4000

Holders

	Holder name	Share %	Status	Held from	Held to	Authorised holder
*	TOTALENERGIES EP AUSTRALIA III	22.523462500000	Current	08/09/2022		No
*	BRONCO ENERGY PTY LIMITED Level 22, Santos Place 32 Turbot Street BRISBANE QLD 4000	42.667550000000	Current	15/09/2017		Yes
*	PAPL (UPSTREAM II) PTY LIMITED Team Leader Tenures Compliance Level 22 Santos Place 32 Turbot Street BRISBANE QLD 4000	22.523462500000	Current	15/09/2017		No
*	KGLNG E&P II PTY LTD Level 11, 28 The Esplanade PERTH WA 6000	12.285525000000	Current	15/09/2017		No
	TOTAL E&P AUSTRALIA III	22.523462500000	Former	15/09/2017	08/09/2022	
	BRONCO ENERGY PTY LIMITED	100.000000000000	Former	02/10/2008	28/04/2014	

Tenancy type: Tenancy in Common

PL 281 Resource authority public report

Queensland Government

Area

Location:	View Map
Mining district:	Dalby
Local authority:	Maranoa Regional Council
Area:	22991.6500 Hectares
Exclusions:	
Marked out date:	

Sub-blocks

BIM	Block	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Charleville	2225	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Charleville	2296	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Charleville	2297	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Background land

No data available

Survey plans

Plan No.	Description	Date received	Locality	Volume	Folio
MP43369	PETROLEUM LEASE 281 PWL - LILYVALE 4,AUTHORITY TO PROSPECT 631 PWL - LILYVALE 4	08/01/2014	YULEBA SOUTH		
MP45424	PETROLEUM LEASE 281 PWL - BXGGWUJ 01	24/04/2017	DALBY		
MP45880	PETROLEUM LEASE 281 PWL OF RM40-145 1, RM40-149 1, RM40-150 1, RM40-146 1, RM40-143 1, RM40-144 1, RM40-147 1, RM40-151 1, RM40-152 1, RM40-148 1	12/09/2019	YULEBA NORTH		
MP46064	PWL OF RM40-04 1, RM40-05 1, RM40-06 1, RM40-07 1, RM40-08 1, RM40-09 1, RM40-10 1, RM40-11 1, RM40-12 1, RM40-17 1, RM40-18 1, RM40-19 1, RM40-19 2, RM40-20 1, RM40-27 1, RM40-28 1, RM40-29 1, RM50-148 1, RM50-149 1 & RM50-150 1	31/08/2020			
MP46073	PWL OF RM40-14 1, RM40-14 1A & RM40-16 1	30/09/2020			
MP46202	PWL OF REUBEN DOWNS 1	17/10/2022			
MP46389	PWL OF RM42-07 1, RM42-10 1, RM42-11 1, RM42-12 1 & RM42-14 1	03/12/2022			
MP46743	PWL OF RM90-93-1, RM90-94-1, RM90-95-1, RM90-84-1, RM90-73-1, RM90-74-1, RM40-45-1, RM40-155-1, RM90-63-1, RM90-62-1, RM90-72-1, RM90-82-1, RM90-71-1 & RM90-61-1	30/01/2024			

Relinquishment details

No data available

Sub-blocks retained

No data available

Term history

Term	Date notice issued	Date lodged	Date approved	Date commenced	Date term ends	Term	Act granted under
2017 - 2038		02/10/2008	15/09/2017	15/09/2017	14/09/2038	21 years	Petroleum and Gas (Production and Safety) Act 2004

Native title

Outcome	Process
Section 31 Agreement	Right to Negotiate

Purpose and minerals

Prescribed Purpose
PETROLEUM

Prescribed minerals
Coal Seam Gas

Related permits

Pre-requisite permits:	ATP 631 - PL TO BE GRANTED UNDER THE P&G ACT 2004.

Financial

Rent details

Area units:	230
Rate/unit area:	$171.72

Activities

Activity name	Activity / Dealing No	Status	Date received	Expected completion	Date completed	Remarks
Change of holder name	387558	Registered	30/08/2022		08/09/2022	MMOL Reference:387558. Changed name from TOTAL E&P AUSTRALIA III to TOTALENERGIES EP AUSTRALIA III .
Coordination arrangement	245802	Approved	06/06/2018		28/09/2020	Approved 25 September 2020.

Permit

Environmental Protection Act 1994

Environmental Authority EPPG00662213

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

Environmental authority number: EPPG00662213

Environmental authority takes effect on 17 October 2019

Environmental authority holder(s)

Name(s)	Registered address
KGLNG E & P II Pty Ltd	Level 11 28 The Esplanade PERTH WA 6000
Bronco Energy Pty Limited	Ground Floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000 Australia
PAPL (Upstream II) Pty Limited	Level 12 60 Carringotn Street SYDNEY NSW 2000
Total E & P Australia III	Level 13 BGC Centre 28 The Esplanade PERTH WA 6000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 03: A petroleum activity that is likely to have a significant impact on a category A or B environmentally sensitive area	ATP631, PL281, PL282
Schedule 3 06: A petroleum activity carried out on a site containing a high hazard dam or a significant hazard dam	ATP631, PL281, PL282
Schedule 3 07: A petroleum activity involving injection of a wastefluid into a natural underground reservoir or aquifer	ATP631, PL281, PL282

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Environmentally relevant activity/activities	Location(s)
Schedule 3 08: A petroleum or GHG storage activity, other than items 1 to 7, that includes an activity from Schedule 2 with an AES	ATP631, PL281, PL282
Ancillary 08 - Chemical Storage 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	ATP631, PL281, PL282
Ancillary 55 - Other waste reprocessing or treatment 2: Operating a facility for receiving and either reprocessing or treating, in a year, the following quantity of category 2 regulated waste- (c) more than 10,000t	ATP631, PL281, PL282
Ancillary 62 - Resource recovery and transfer facility operation 1: Operating a facility for receiving and sorting, dismantling, baling or temporarily storing- (c) category 2 regulated waste	ATP631, PL281, PL282
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-i) 21 to 100EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ATP631, PL281, PL282
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ATP631, PL281, PL282
Ancillary 64 - Water treatment 3: Treating 10ML or more raw water in a day	ATP631, PL281, PL282

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

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

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

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

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Sustainable Planning Act 2009* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

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

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the

additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

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

Date issued: 17 October 2019

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Obligations under the *Environmental Protection Act 1994*

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

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

This environmental authority consists of the following Schedules:

Part A

Legislative Requirements and Conditions of Environmental Authority relevant to GLNG project

Part B

Legislative Requirements and Conditions for the Santos GLNG Gas Field Development Project

Part A

Legislative Requirements and Conditions of Environmental Authority relevant to GLNG project

SCHEDULE A – GENERAL

A1 This environmental authority authorises the carrying out of the following **resource activity**(**ies**):

(a) The petroleum activities listed in *Schedule A, Table 1 – Scale and Intensity for the Activities* to the extent they are carried out in accordance with the activity's corresponding scale and intensity; and

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

Schedule A, Table 1 – Scale and Intensity for the Activities

Tenure Number/s	Petroleum Activities and Infrastructure	Scale (number of activities)	Intensity (maximum size in total)
ATP 631 PLs 281, 282	Coal seam gas exploration, appraisal and development wells	457 wells	686 ha
	Regulated Dam(s) <400 megalitres	2	32.04 ha
	Non-Regulated Dam(s)	898	225 ha
	Water treatment facilities	3	≤17 ML/day
	Sewage treatment works that discharge treated effluent to an infiltration trench or through an irrigation scheme, or to land for dust suppression, construction or operational purposes.	1	≤450 **equivalent person (EP)**
		8	≤100 EP

A2 The resource activities in condition (A1) are authorised subject to the conditions of this environmental authority.

A3 This environmental authority does not authorise a relevant act* to occur in carrying out an authorised **resource activity** unless a condition expressly authorises the relevant act** to occur. Where there is no condition, the lack of a condition must not be construed as authorising the relevant act.

Note:

*See section 492A of the Act.

** Section 493A (2) of the Act provides that a relevant act is unlawful unless it is authorised to be done under, among other things, an environmental authority.

PREVENT OR MINIMISE LIKELIHOOD OF ENVIRONMENTAL HARM

A4 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.

MAINTENANCE OF MEASURES, PLANT AND EQUIPMENT

A5 All measures, plant and equipment must be:
(a) installed to ensure compliance with the conditions of this environmental authority;
(b) maintained in their proper and effective conditions; and
(c) operated in a proper and effective manner.

A6 No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration materially increases, or is likely to increase, the environmental harm caused by the petroleum activities.

FINANCIAL ASSURANCE

A7 The holder of this authority must provide a financial assurance from time to time, in the amount and form required by the administering authority for the authorised petroleum activities

A8 The financial assurance is to remain in force until the administering authority is satisfied that no claim is likely to be made on the assurance.

A9 The calculation of financial assurance must be in accordance with the most recent version of the administering authority's Guideline "*Financial Assurance under the Environmental Protection Act 1994*".

A10 Prior to any changes in petroleum activities which would result in an increase to the maximum disturbance since the last financial assurance calculation was submitted, the holder of the environmental authority must submit, and the administering authority must have approved, an application to amend the financial assurance.

THIRD PARTY AUDIT

A11 A **third party auditor,** nominated by the holder of this environmental authority and accepted by the administering authority, must audit compliance with the conditions of this environmental authority at a minimum frequency of every three (3) years.

A12 Notwithstanding condition (A11) and prior to undertaking the third party audit, the scope and content of the third party audit can be negotiated with the administering authority.

A13 An audit report must be prepared and certified by the **third party auditor** presenting the findings of each audit carried out.

A14 Any recommendations arising from the audit report must be acted upon by:
(a) investigating any non-compliance issues identified; and
(b) as soon as reasonably practicable, implementing measures or taking necessary action to ensure compliance with the requirements of this environmental authority.

A15 A written response must be attached to the audit report detailing the actions taken or to be taken on stated dates:

(a) to ensure compliance with this environmental authority; and
(b) to prevent a recurrence of any non-compliance issues identified.

CONTINGENCY PROCEDURE FOR EMERGENCY ENVIRONMENTAL INCIDENTS

A16 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.

INFRASTRUCTURE

A17 The following **infrastructure** must be clearly and permanently marked for the life of the petroleum activity(ies) with a unique reference name / number in such a way that it is clearly observable:

(a) regulated dams and low hazard dams;
(b) exploration, appraisal and development wells;
(c) water treatment facilities;
(d) sewage treatment facilities;
(e) authorised discharge points to air and **waters**;
(f) any chemical storage facility associated with the environmentally relevant activity of chemical storage; and
(g) compressor stations.

MONITORING

A18 All monitoring must be undertaken by a suitably qualified person.

A19 All laboratory analyses and tests required to be conducted under this environmental authority must be carried out by a laboratory that has **NATA accreditation** for such analyses and tests, unless NATA accredited tests are not available.

A20 Any management or monitoring plans, systems, programs or procedures required to be developed and implemented by a condition of this environmental authority must be reviewed for performance and amended as required but not less than once every three (3) years in accordance with the requirements for the particular plans, systems, programs and procedures in the conditions of this environmental authority.

A21 An annual report must be prepared each year and submitted to the administering authority in the form requested by the administering authority. This report must include but not necessarily be limited to:

(a) the results of the Seepage Monitoring Program that is required by the conditions of this environmental authority;

(b) a summary of:

(i) any investigations required for the Seepage Monitoring Program prescribed under this environmental authority;

(ii) the **regulated dam** register in the approved format that is required by the conditions of this environmental authority;

(iii) the results of annual regulated dam water quality monitoring that is required by the conditions of this environmental authority;

(iv) the results of vibration and blast monitoring required by the conditions of this environmental authority;

(v) any well closure reports that are required by the conditions of this environmental authority, where applicable;

(vi) the results of any baseline or **stimulation** impact monitoring program that is required by this environmental authority, where applicable;

(vii) non **NATA accredited** laboratory testing methods, where applicable;

(c) the management criteria report required by section 126 of the *Environmental Protection Act 1994;*

(d) if prepared for the subject annual return period, any third audit report and written response to said report that is required by this environmental authority;

(e) a comparison of the previous 12 months monitoring results to both the limits set in this environmental authority and to relevant prior results including data analyses and interpretation to assess the nature and extent of any contamination and the level of environmental harm caused as a result of the contamination and the environmentally relevant activity(ies);

(f) details of any exceedances with the conditions of this environmental authority and the dates and times these exceedances were reported to the administering authority; and

(g) an outline of actions taken to minimise the risk of environmental harm from any circumstance, condition or elevated contaminant level identified by the monitoring or recording programs as required by condition (A20).

SURFACE WATER SAMPLING METHODOLOGY

A22 The methods of water sampling required by this environmental authority must comply with that set out in the latest edition of the *Queensland Monitoring and Sampling Manual* as amended from time to time.

GROUNDWATER SAMPLING METHODOLOGY

A23 The methods of groundwater sampling required by this environmental authority must comply with the latest edition of the *Queensland Monitoring and Sampling Manual*, AS/NZS 5667:11 1998 *Water Sampling Guidelines - Part 11 Guidance on sampling groundwater*, and the Australian Government's *Groundwater Sampling and Analysis - A Field Guide* (2009:27 GeoCat #6890.1) as relevant and as amended from time to time.

NOISE SAMPLING METHODOLOGY

A24 Noise must be measured in accordance with the prescribed standards in the *Environmental Protection Regulation 2008*.

DOCUMENTATION AND RECORDS MANAGEMENT

A25 A record of all documents required by this environmental authority must be kept for a minimum of five (5) years.

A26 All plans and monitoring programs required by this environmental authority must be **certified by a suitably qualified person.**

A27 All plans and monitoring programs required under this environmental authority must be implemented.

SCHEDULE B – WATER

B1 Contaminants must not be directly or indirectly released to any **waters** except as permitted under this environmental authority.

EROSION AND SEDIMENT CONTROL

B2 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) preferentially divert stormwater around **significantly disturbed** land, or 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).

WORKS IN WATERCOURSES, WETLANDS AND LAKES

B3 Only construction or maintenance of **linear infrastructure** is permitted in or within a **general ecologically significant wetland** or in a **watercourse**.

B4 The construction and/or maintenance of **linear infrastructure** that will result in significant disturbance in or on the **bed and banks** of a **watercourse** or within a **general ecologically significant wetland** must be conducted in accordance with the following order of preference:

(a) conducting works in times when there is no water present;
(b) conducting works in times of no flow;
(c) conducting works in times of flow but in a way that does not impede **low flow**.

B5 The construction and maintenance of **linear infrastructure** authorised under condition (B3) must comply with the water quality limits specified in *Schedule B, Table 1 – Release Limits for Construction or Maintenance of Linear Infrastructure.*

Schedule B, Table 1 – Release Limits for Construction or Maintenance of Linear Infrastructure

Water Quality Parameters	Units	Water Quality Limits
Turbidity	Nephelometric Turbidity Units (NTU)	For a **general ecologically significant wetland**, if background water turbidity is above 45 NTU, no greater than 25% above background water turbidity measured within a 50 m 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 50 m downstream of the construction or maintenance activity
		For a general ecologically significant wetland, 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 50 m downstream of the construction or maintenance activity.
Hydrocarbons	-	For a general ecologically significant wetland, or **watercourse**, no visible sheen or slick

B6 Monitoring must be undertaken at a reasonable frequency that is appropriate to demonstrate compliance with condition (B5).

B7 Written notification detailing the location (GPS coordinates) of any significant disturbance to be undertaken in or on the **bed and banks** of a **watercourse,** or **general ecologically significant wetland,** must be provided to the administering authority at least 24 hours prior to the commencement of the significant disturbance.

B8 Petroleum activities must occur outside a **wetland of high ecological significance.**

B9 Petroleum activities must not negatively impact a **wetland of high ecological significance.**

B10 **Linear infrastructure** activities, other than linear infrastructure construction and/or maintenance activities, must not change the existing surface water hydrological regime of any **general ecologically significant wetland.**

B11 The construction and/or maintenance of **linear infrastructure** in any **general ecologically significant wetland** must not:

(a) prohibit the flow of surface water in or out of the wetland;
(b) impact surface water quality in the wetland unless specifically authorised by this environmental authority;
(c) drain the wetland;
(d) fill the wetland;
(e) impact bank stability; or
(f) result in the clearing of riparian vegetation outside of the required footprint.

B12 Where the petroleum activity(ies) is carried out on **floodplains**, petroleum activity(ies) must be carried out in a way that does not:

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

WELL TESTING

B13 Subject to Conditions (B14) and (B15) the injection of CSG water or better quality groundwater is authorised in wells that are not exploration, appraisal or development wells, for the purposes of **hydraulic testing,** where such hydraulic tests are undertaken for no more than two (2) consecutive days

B14 The maximum volume of CSG water or better quality groundwater injected for the purposes of **hydraulic testing identified** in Condition (B13) must not exceed 1 ML per hydraulic test.

B15 Written notification detailing the type and location (GPS coordinates) of any **hydraulic testing** undertaken in accordance with condition (B13) must be provided to the administering authority at least 10 business days prior to the commencement of the hydraulic test

SCHEDULE BB – GROUNDWATER

BB1 The extraction of groundwater as part of the petroleum activity (ies) from underground aquifers must not directly or indirectly cause environmental harm to any **watercourse, lake** or **wetland.**

SEEPAGE MONITORING PROGRAM

BB2 A Seepage Monitoring Program must be developed to detect any seepage to groundwater as a result of storing contaminants in a regulated structure(s) (e.g. surface dams, monocells).

BB3 The Seepage Monitoring Program, must include, but not necessarily be limited to:

(a) procedures to detect any seepage to groundwater and surrounding soils from **regulated structure**(s) and its possible effect on groundwater and soils;

(b) identification of seepage monitoring bores and their locations including:

  (i) baseline / hydraulically up-gradient seepage monitoring bores (i.e. bores where groundwater quality will not have been affected by petroleum activities;

  (ii) seepage monitoring bores that are within aquifers potentially affected by the regulated structure(s) authorised under this environmental authority;

  (iii) a geodetic survey of all seepage monitoring bores; a geodetic survey showing groundwater potentiometric surface;

(c) the Seepage Monitoring Program has been designed consistent with relevant Guidelines and Standards such that the Program design has:

  (i) a sufficient number seepage monitoring points and / or wells to obtain representative groundwater samples from the uppermost aquifer up-gradient and down-gradient of the potential influence;

  (ii) if a salt monocell is authorised under this environmental authority, a sufficient number of seepage monitoring bores located not more than 150 m from the monocell or the boundary of the monocell facility, whichever is the closer;

  (iii) sufficient regularity and spatial and temporal replication to make statistically valid conclusions about the presence or absence of contaminants;

  (iv) procedures to determine the quality of groundwater down gradient of any potential sources of contaminants including groundwater passing the relevant seepage monitoring bore(s);

  (v) procedures to allow an assessment of whether there has been any statistically significant adverse change in groundwater quality at locations hydraulically down gradient of the containment activity (ies).

(d) procedures to determine groundwater flow direction, groundwater flow rate and hydraulic conductivity beneath the relevant regulated structure(s);

(e) sampling of all baseline or hydraulically up-gradient monitoring bores for the minimum groundwater parameters levels listed below prior to the commencement of any new containment activities;

(f) identification of the trigger parameter(s) associated with the potential contaminants of concern identified in (e);

(g) a sampling program of all seepage monitoring bores:

  (i) to measure and record standing groundwater levels in metres accurate to 0.01 metres to be plotted as function of time (hydrograph) to identify seasonal patterns;

  (ii) annual monitoring of seepage monitoring bores for the respective trigger parameter(s) identified in (f) whilst activities are being carried out;

(iii) annual monitoring of seepage monitoring bores for the respective trigger parameter(s) identified in (f) for a minimum of three (3) years after the containment activity(ies) ceases;

(h) a Seepage Trigger Action Response Procedure which must include but not be limited to the following:
  (i) trigger levels for the relevant trigger parameter(s) identified in (f);
  (ii) trigger and action response measures at which investigations will be undertaken;
  (iii) action levels for the relevant possible contaminants of concern at which the holder of this environmental authority will undertake additional investigation into the potential for environmental harm, including the validation and verification of the source, cause and extent of contamination;

(i) identification of monitoring equipment to be used; and

(j) a rationale containing details on the Programs purpose, conceptualisation and verification of the procedures, determinations, analysis and assumptions undertaken.

BB4 Seepage monitoring bores identified in (BB3) must be monitored annually for the trigger parameter(s) specified in *Schedule BB, Table 1 – Seepage Monitoring Trigger Parameters.*

Schedule BB, Table 1 – Seepage Monitoring Trigger Parameters

Parameter	Units	Untreated Coal Seam Water	Permeate	Brine
Static Water Level	m	monitor	monitor	monitor
pH	pH unit	monitor	monitor	monitor
EC	µS/cm	monitor	monitor	monitor
Major Anions (sulphate, chloride)	mg/L	monitor	-	-
Major Cations (calcium, magnesium, sodium and potassium)	mg/L	monitor	-	-

MONITORING BORES

BB5 The following information concerning each newly constructed groundwater monitoring bore must be submitted to the administering authority with each annual return:

(a) bore ID and location presented on a plan;

(b) design of the monitoring bores installed;

(c) specific construction information including but not limited to geographical coordinate (including the geophysical coordinate system utilised) depth of bore, depth and length of casing, depth and length of screening, presence of any measuring probe;

(d) identification of any aquifers intercepted by the monitoring bores;

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

(f) a lithological log and preferably a stratigraphic interpretation to identify the important features.

SCHEDULE BE – FLUID INJECTION

INJECTION OF TREATED COAL SEAM GAS WATER, TREATED WATER OR BRINE

BE1 The injection of treated **coal seam gas water**, treated water or **brine** into a groundwater aquifer is not authorised under this environmental authority.

WELL INTEGRITY

BE2 Unless otherwise stated in the conditions of this environmental authority, injection wells must be constructed according to the current standards applicable to water bore drilling activities under the *Water Act 2000* (i.e. Minimum Construction Requirements for Water Bores in Australia [National Water Commission, 2012 or subsequent revisions]).

BE3 Fluid injection authorised by this environmental authority must have appropriate records and documents which support and indicate mechanical integrity and which hold a certificate of mechanical integrity prepared and **certified by a suitably qualified person**, available for inspection such that:

(a) there is no significant leakage in the casing, tubing, or packer; and
(b) there is no significant fluid movement into a water resource aquifer through vertical channels adjacent to the well bore hole.

BE4 Wells used for untreated coal seam water or **brine** fluid injection must have:

(a) an annulus packer at the junction of the aquitard and the target formation within the production casing;
(b) injection tubing installed which extends through the packer into the target information;
(c) an inert fluid in the annulus between the injection tubing and the production casing;
(d) a system installed to record any loss of contaminant of the inert fluid.

BE5 For fluid injection:

(a) where injection tubing is required by condition (BE4(b)), injection must only occur through injection tubing;
(b) the injection pressure must not exceed the dry **overburden pressure** of the base of the overlying aquitard for injection at depth less than 100 m or 90 per cent of the formation fracture pressure for injection at depth greater than 100 m.

INJECTION MANAGEMENT PLAN

BE6 An Injection Management Plan, prepared by a suitable qualified person, must be submitted to the administering authority prior to the carrying out of the fluid injection activity (ies).

BE7 The Injection Management Plan required by Condition (BE6) must include but not necessarily be limited to:

(a) estimated volumes and rates of fluid to be produced and injected;
(b) a description of the physical, chemical and biological components and their concentrations of the fluid to be produced;

(c) details of how and where the fluid will be produced, aggregated, stored and kept separate from waters until it is, treated and injected into the source aquifer;
(d) details of where the fluid is proposed to be treated including a description of the treatment process;
(e) a demonstration that the injection fluid has inconsequential reactivity with the target formation and native groundwater it will come into contact with;
(f) the characteristics of the receiving environment;
(g) identification of the water quality impact zone and the hydraulic impact zone;
(h) identification of all existing bores, lakes, wetlands, environmental assets and watercourses connected to groundwater, faults and other geologic features that occur within the water quality impact zone and the hydraulic impact zone;
(i) identification of proposed fluid injection wells;
(j) identification of the environmental values and water quality objectives of the potential water quality impact zone of the target formation in accordance with the *Environmental Protection Act 1994, Environmental Protection Regulation 2008, Environmental Protection (Water) Policy 1997* and the *Queensland Water Quality Guidelines 2006*;
(k) an assessment of the potential impacts on the environmental values of the receiving environment including migration of injection fluid or native groundwater out of the target formation through wells, bores, wetlands, connected watercourses, faults or other geologic features likely to impact on other aquifers;
(l) a risk assessment consistent with the risk framework specified in Australian Guidelines for Water Recycling: Managed Aquifer Recharge identifying potential hazards, their inherent risk, preventative measures for the management of potential hazards and after consideration of the operational monitoring to manage potential hazards identified in the risk assessment including details on sampling and analysis methods including frequency and locations, and quality assurance and control;
(m) verification methods to assess performance of the injection activities;
(n) control measures that will be implemented for fluid storage, treatment and injection to prevent or control the release of a contaminant or waste to the environment;
(o) the indicators or other criteria against which the performance of fluid injection will be assessed;
(p) procedures that will be adopted to regularly review the monitoring program and to report to management and the administering authority should unforeseen or non-compliant monitoring results be recorded;
(q) procedures that will be implemented to prevent unauthorised environmental harm from unforeseen or non-compliant monitoring results;
(r) procedures for dealing with accidents, spills, failure of containment structures, and other incidents that may arise in the course of fluid injection; and
(s) a program to monitor impacts on the environmental values of the receiving environment identified by condition (BE7) (k).

SCHEDULE C – REGULATED STRUCTURES

ASSESSMENT OF HAZARD CATEGORY

C1 The **hazard category** of any **structure** must be assessed by a **suitably qualified and experienced person** in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, as amended from time to time.

C2 The **hazard assessment** required under condition (C1) must occur in any of the following situations:

(a) prior to the design and **construction** of the structure;
(b) prior to any change in its purpose or its stored contents;
(c) for a structure assessed and certified as a high or significant hazard structure, at least biennially after its **construction**;
(d) for an **existing low hazard dam**, within 120 business days of 28 February 2013.

C3 A hazard assessment report and **certification** must be prepared by a **suitably qualified and experienced person for** any **structure** assessed.
Note: The hazard assessment report may include a hazard assessment for more than one structure.

C4 Where an existing structure is for the first time assessed as significant or high, the structure must meet the conditions required for regulated structures under this environmental authority within 12 months of that assessment.

CONSTRUCTION OF LOW HAZARD DAM TO CONTAIN WETTING FRONT

C5 Where a **dam** is assessed as low hazard, it must be:

(a) constructed, operated and maintained in accordance with **accepted engineering** standards currently appropriate for the purpose for which the **dam** is intended to be used; and
(b) designed with a floor and sides made of material that will contain the wetting front and any entrained contaminants within the bounds of the containment system during both its operational life and including any period of decommissioning and rehabilitation.

C6 In the event of early signs of loss of structural or hydrological integrity of a **low hazard** dam:

(a) immediate action to prevent or minimise any actual or potential environmental harm must be taken; and
(b) any findings and actions taken must be reported in writing to the administering authority within 20 business days of that event.

MONITORING OF LOW HAZARD DAMS

C7 The condition of all low hazard dams must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a **suitably qualified and experienced person**. The methods of monitoring and frequency of monitoring shall be as assessed by the person who conducts the hazard assessment based on the particular circumstances of each dam.

C8 **Construction** of any dam determined to be a **regulated structure** is prohibited until:
- (a) a **hazard category** assessment report and **certification** has been submitted to the administering authority;
- (b) a **design plan** for the regulated structure has been prepared by a **suitably qualified and experienced person**; and
- (c) certification from a suitable qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant conditions of this environmental authority has been received.

C9 The **design plan** must contain the information prescribed in the *Guideline – Structures which are dams or levees constructed as part of environmentally relevant activities*.

C10 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 Hazard Categories and Hydraulic Performance of Dams*, as amended from time to time.

C11 All regulated structures must be constructed in accordance with a **design plan** that has been certified by a **suitably qualified and experienced person** in accordance with the requirements of the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, as amended from time to time.

C12 Certification by a **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**; and
- (b) **construction** of the regulated structure is in accordance with the design plan.

C13 All **regulated structures** must be designed and constructed to prevent:
- (a) floodwaters from entering the **regulated structure** from a **watercourse** or drainage line to the **annual exceedance probability** specified for determining **spillway** capacity in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, as amended from time to time; and
- (b) wall failure due to erosion by floodwaters arising from the watercourse or drainage line to the annual exceedance probability specified for determining spillway capacity in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, as amended from time to time; and
- (c) overtopping as a result of a flood event of the annual exceedance probability specified for determining spillway capacity in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, as amended from time to time.

OPERATION OF A REGULATED STRUCTURE

C14 Operation of a **regulated structure** is prohibited unless:
- (a) one paper copy and one electronic copy of the **design plan** and **certification**, and a set of 'as constructed' drawings and specifications has been submitted to the administering authority, together with certification that the structure:
  - (i) has been constructed in accordance with the design plan;
  - (ii) is capable of delivering the performance stated in the design plan; and
  - (iii) is compliant with the relevant conditions of this environmental authority;

(b) the conditions of this environmental authority relating to the construction of the structure have been met; and
(c) for regulated dams, the details required under this environmental authority have been entered into a Register of Regulated Dams.

REGULATED DAM REGISTER

C15 A register of regulated dams must be established in accordance with the administering authority's *Regulated Dam Register* template, as amended from time to time.

C16 The information contained in the register of regulated dams must always be current and complete on any given day.

MANDATORY REPORTING LEVEL

C17 The **mandatory reporting level** must be marked on a **regulated structure** in such a way that it is clearly visible.

C18 On becoming aware that the mandatory reporting level has been reached, action must be taken to prevent or, if unable to prevent, to minimise, any actual or potential environmental harm.

DESIGN STORAGE ALLOWANCE

C19 On 1 November of each year, storage must be available in each **regulated structure** to meet the **design storage allowance** estimated for the dam in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams,* as amended from time to time.

C20 On becoming aware that the **regulated structure** will not have the available storage to meet the **design storage allowance** on 1 November of any year, action must be taken to prevent or, if unable to prevent, to minimise, any actual or potential environmental harm.

MONITORING

C21 The condition of all containment structures must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a **suitably qualified and experienced person.** The methods of monitoring and frequency of monitoring shall be as assessed by the person who conducts the hazard assessment based on the particular circumstances of each dam.

C22 Each **regulated structure** must be monitored for the water quality characteristics and at the monitoring location and frequency specified in *Schedule C, Table 1 – Regulated Structure Contaminant Monitoring* as follows:

Schedule C, Table 1 – Regulated Structure Contaminant Monitoring

Quality Characteristic (units)	Monitoring Location	Frequency of Monitoring
pH (pH unit)	At a depth of 0.3 m to 1.0 m and be taken as far as practicable from the edge of the **regulated structure**	No earlier than August and no later than October inclusive, every year.
Electrical Conductivity (µS/m)		
Turbidity (NTU)		
Temperature		
Dissolved Oxygen (mg/L)		
Sodium adsorption ratio (SAR)		
Aluminium (mg/L)		
Arsenic (mg/L)		
Barium (mg/L)		
Boron (mg/L)		
Cadmium (mg/L)		
Chromium (CrVI) (mg/L)		
Copper (mg/L)		
Iron (mg/L)		
Fluoride (mg/L)		
Lead (mg/L)		
Manganese (mg/L)		
Mercury (ng/L)		
Nickel (mg/L)		
Selenium (mg/L)		
Silver (mg/L)		
Strontium (mg/L)		
Tin (mg/L)		
Zinc(mg/L)		
Total phosphorus (mg/L)		
Total Nitrogen (mg/L)		
Total petroleum hydrocarbons (µg/L)		
BTEX (µg/L)		
Polycyclic aromatic hydrocarbons (µg/L)		
Gross alpha + gross b radionuclides by gamma eta or spectroscopy (Bq/L)		

ANNUAL INSPECTION AND REPORT

C23 Each **regulated structure** must:

(a) be inspected annually by a **suitably qualified and experienced person**; and

(b) be assessed for the condition and adequacy of each **regulated structure** for dam safety and against the necessary structural, geotechnical and **hydraulic performance** criteria in each annual inspection.

C24 A **suitably qualified and experienced person** must:

(a) prepare an annual inspection report containing details of the assessment and including recommended actions to ensure the integrity of the structure; and

(b) certify the annual inspection report in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, as amended from time to time.

C25 The recommendations contained within the annual inspection report must be considered and actions taken to ensure that the **regulated structure** will safely perform its intended function.

C26 Within 20 business days of receipt of the annual inspection report, the administering authority must be notified in writing, of the recommendations of the inspection report and the actions to be or that are being taken to ensure the integrity of each **regulated structure.**

SCHEDULE D – LAND

GENERAL

D1 Contaminants must not be directly or indirectly released to land except as permitted under this environmental authority.

D2 The release of contaminants to land must be carried out in a manner such that:

(a) vegetation is not damaged;
(b) soil quality is not adversely impacted;
(c) there is no surface ponding or runoff to **waters**;
(d) there is no aerosols or odours;
(e) deep drainage below the root zone of any vegetation is minimised;
(f) the quality of shallow aquifers is not adversely affected.

CHEMICAL STORAGE

D3 All chemical storages must:

(a) be stored in, or serviced by, an effective containment system that is impervious to the materials stored therein; and
(b) be stored and handled in accordance with the relevant Australian Standard where such Standard is available; and
(c) be managed to prevent the release of substances to **waters** or land.

HYDROSTATIC TEST WATER AND LOW POINT DRAINS

D4 Contaminants that are hydrostatic test water from pipelines and contaminants from low point drains may be released to land in accordance with condition (D2).

USE OF COAL SEAM GAS WATER

D5 **Coal seam gas water** produced from the authorised petroleum activity(ies) which is used for:

(a) domestic or stock purposes must meet the *ANZECC* and *ARMCANZ Water Quality Guidelines 2000* for stock and domestic purposes, as amended from time to time;
(b) irrigation purposes must meet the *ANZECC* and *ARMCANZ Water Quality Guidelines 2000* for irrigation purposes, as amended from time to time.

D6 **Coal seam gas water** produced from the authorised petroleum activity(ies) may be used for:

(a) dust suppression on roads; and
(b) for construction and operational purposes for the petroleum activity (ies) authorised by this environmental authority.

D7 **Coal seam gas water** may be transferred to a third party to be used for the following purposes subject to compliance with conditions (D8) and (D9):

(a) dust suppression;
(b) construction and operational purposes;
(c) livestock watering purposes.

D8 Any **coal seam gas water** supplied to a third party for livestock watering purposes in accordance with condition (D7)(c) must meet the *ANZECC* and *ARMCANZ Water Quality Guidelines 2000* for livestock watering purposes, as amended from time to time.

D9 If the responsibility of **coal seam gas water** is given or transferred to a third party in accordance with condition (D7), the holder of the environmental authority must ensure that:

(a) the responsibility of the **coal seam gas water** is given or transferred in accordance with a written agreement (the third party agreement); and

(b) the third party is made aware of the General Environmental Duty under section 319 of the *Environmental Protection Act 1994.*

SEWAGE TREATMENT WORKS

D10 Treated sewage effluent may only:

(a) be released to land by sub-surface or spray irrigation at designated, fenced contaminant release area(s);

(b) be used for dust suppression, construction and operational purposes in accordance with conditions (D21) and (D23).

D11 Treated sewage effluent may only be released to land by large droplet or by subsurface irrigation at designated, fenced and signed contaminant release areas.
Note: This condition applies to temporary and permanent sewage treatment plant operations.

D12 A buffer distance of 50 meters must be applied from the location of the effluent irrigation area to any **watercourse**, wetland or protected area and 100m from any potable water supply (bore or a catchment) or stock drinking water supply.
Note: This condition applies to temporary and permanent sewage treatment plant operations.

D13 When circumstances prevent the irrigation of treated sewage effluent to land, the contaminants must be directed to on-site storage or lawfully disposed of off-site.
Note: This condition applies to temporary and permanent sewage treatment plant operations.

D14 The quantity of treated sewage effluent used in accordance with condition (D10) must be determined by an appropriate method, for example, a flow meter.
Note: This condition applies to temporary and permanent sewage treatment plant operations.

D15 Treated sewage effluent must comply, at the sampling and in-situ measurement point(s), with each of the release limits specified in *Schedule D, Table 1 – Treated Sewage Effluent Standards for Release to Land* for each quality characteristic.
Note: This condition applies to temporary and permanent sewage treatment plant operations with a design capacity of greater than 21 to 100 equivalent persons.

D16 Treated sewage effluent released to land must be monitored at the frequency and for the parameters specified in *Schedule D, Table 1 – Treated Sewage Effluent Standards for Release to Land* for each quality characteristic.

Schedule D, Table 1 – Treated Sewage Effluent Standards for Release to Land

Quality Characteristic	Sampling and In situ Measurement Point Location	Limit Type Limit	Release	Frequency
5-day Biochemical oxygen demand (BOD)	Release pipe from sewage treatment works	Maximum	20 mg/L	Quarterly
E. coli		**80th percentile** based on at least 5 samples with not less than 30 minutes between samples	1000 cfu per 100 mL	
		Maximum	10,000 cfu per 100 mL	
pH		Range	6.0-8.5	Monthly
Dissolved Oxygen		Minimum	2mg/L	
Electrical Conductivity		Monitor only		

Note: This condition applies to temporary and permanent sewage treatment plant operations with a design capacity of greater than 21 to 100 equivalent persons.

D17 Prior to construction of a sewage treatment facility, the minimum area of land and location to be utilised for irrigation of treated sewage effluent, excluding any necessary buffer zones, must be nominated.
Note: this condition applies only to permanent sewage treatment plant operations with a design capacity of greater than 100 to 450 equivalent persons.

D18 All nominated locations and minimum areas of land in condition (D17) must be determined using the Model for Effluent Disposal using Land Irrigation (MEDLI) program or recognised equivalent.
Note: this condition applies only to permanent sewage treatment plant operations with a design capacity of greater than 100 to 450 equivalent persons.

D19 A copy of results of the determinations required in condition (D18) must be submitted to the administering authority.
Note: this condition applies only to permanent sewage treatment plant operations with a design capacity of greater than 100 to 450 equivalent persons.

D20 If, within 20 business days following the submission of the results required by condition (D16) the administering authority provides comments on the submission, the holder of this environmental authority must:

(a) have due regard to that comment in the finalisation of the amended results; and
(b) submit the finalised amended results within 40 business days after the administering authority provided comments; and
(c) implement the amended results.

Note: this condition applies only to permanent sewage treatment plant operations with a design capacity of greater than 100 to 450 equivalent persons.

D21 Treated sewage effluent produced from the authorised petroleum activity(ies) may only be used for dust suppression, construction and operational purposes provided that:

(a) the treated sewage effluent has not been stored in a dam or tank prior to use; and

(b) the treated sewage effluent quality meets the release limits specified in *Schedule D, Table 2 – Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes* for each of the water quality characteristics; and

(c) on local government controlled roads, written approval from the relevant Local Government has been given to the holder of this environmental authority.

Note: this condition applies only to treated sewage effluent use for the purposes of dust suppression, construction and operational purposes.

D22 Treated sewage effluent must comply, at the sampling and in-situ measurement point(s), with each of the release limits specified in *Schedule D, Table 2 – Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes* for each quality characteristic.

Note: this condition applies only to treated sewage effluent use for the purposes of dust suppression, construction and operational purposes.

D23 Treated sewage effluent released to land must be monitored at the frequency and for the quality characteristics specified in *Schedule D, Table 2 – Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes* for each quality characteristic.

Schedule D, Table 2 – Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes

Quality Characteristic	Sampling and *In situ* Measurement Point Location	Limit Type	Release Limit	Frequency
pH	e.g. treated sewage effluent storage	Range	6.0 to 8.5	Weekly*
5 — day Biochemical Oxygen Demand (BOD)		Median	20 mg/L	
E. coli		Median	<10 cfu per 100 mL	
Electrical Conductivity		Maximum	1600 µS/cm	
Turbidity		95%ile (max)	2 (5) NTU	
Total Suspended Solids		Median	5 mg/L	

**Monitoring is to be conducted on a weekly basis until 12 months of monitoring demonstrates no exceedances of the release limits. Monthly monitoring can occur thereafter, excluding E. coli.*

Note: this condition applies only to treated sewage effluent use for the purposes of dust suppression, construction and operational purposes.

SCHEDULE E – DISTURBANCE TO LAND

SOIL MANAGEMENT PLAN

E1 The identification of management of soil must be undertaken in accordance with the Soils Management Plan as amended from time to time.

E2 A copy of the Soils Management Plan must be made available to any potentially affected landholder upon request by that landholder.

FAUNA MANAGEMENT

E3 Measures must be employed to prevent fauna entrapment:

(a) during the construction of pipelines in pipe sections and pipeline trenches; or
(b) during the construction and operation of **well infrastructure** and dams.

CONFIRMING ENVIRONMENTALLY SENSITIVE AREAS AND WETLANDS

E4 Prior to undertaking petroleum activities that result in significant disturbance to land in areas of native vegetation, confirmation of on-the-ground environmentally sensitive areas and wetlands at that location must be undertaken by a **suitably qualified person.**

E5 A **suitably qualified person** must develop and certify a methodology so that condition (E4) can be complied with and which is appropriate to confirm on-the-ground environmentally sensitive areas and wetlands by 8 December 2014.

E6 Where areas mapped as environmentally sensitive areas and wetlands differ from those confirmed under conditions (E4) and (E5), petroleum activities may proceed in accordance with the conditions of the environmental authority based on the confirmed on-the-ground values.

E7 All documentation survey information photographs, field data or any material associated with the field validation requirements in (E4) must be maintained for the life of the environmental authority to demonstrate to the administering authority that surveys were conducted in a manner consistent with requirements contained in (E5).

PLANNING OF LAND DISTURBANCE

E8 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 otherwise result in **land degradation**;
(d) minimise isolation, fragmentation or dissection of tracts of native vegetation; and
(e) minimise **clearing** of native mature trees.

DISTURBANCE TO LAND – ENVIRONMENTALLY SENSITIVE AREAS

E9 Petroleum activities must be carried out in accordance with *Schedule E, Table 1 – Petroleum Activities in Environmentally Sensitive Areas* and any other relevant conditions of this environmental authority.

Schedule E, Table 1 – Petroleum Activities in Environmentally Sensitive Areas

ESA Category	Within the ESA	Primary Protection Zone of the ESA	Secondary Protection Zone of the ESA
Category A ESAs	No petroleum activities permitted	Only **low impact petroleum activities** permitted.	**Limited petroleum activities** permitted subject to condition (E12) **Limited impact camps** permitted subject to condition (E12) **Limited impact petroleum activities** permitted subject to condition (E12)
Category B ESAs excluding 'Endangered' **Regional Ecosystems**	Only low impact petroleum activities permitted	Limited petroleum activities permitted subject to condition (E12) Limited impact camps permitted subject to condition (E12) Limited impact petroleum activities permitted subject to condition (E12)	N/A
Category C ESAs that are Nature Refuges, Koala Habitat and/or Declared Catchment Areas	Only low impact petroleum activities permitted	Limited petroleum activities permitted subject to condition (E12) Limited impact camps permitted subject to conditions (E10) and (E12) Limited impact petroleum activities permitted subject to condition (E12)	N/A

ESA Category	Within the ESA	Primary Protection Zone of the ESA	Secondary Protection Zone of the ESA
Category B ESAs that are 'Endangered' Regional Ecosystems	Only limited petroleum activities permitted subject to condition (E13)	Limited petroleum activities permitted subject to condition (E12) Limited impact camps permitted subject to condition (E12) Limited impact petroleum activities permitted subject to condition (E12)	N/A
Category C ESAs that are Essential Habitat and/or 'Of Concern' Regional Ecosystems	Only limited petroleum activities permitted subject to condition (E13)	Limited petroleum activities permitted subject to condition (E12) Limited impact camps permitted subject to conditions (E10) and (E12) Limited impact petroleum activities permitted subject to condition (E12)	N/A
Category C ESAs that are Regional Parks (Resource Use Area)	Only limited petroleum activities permitted subject to condition (E13)	Limited petroleum activities permitted subject to condition (E12) Limited impact camps permitted subject to condition (E12) Limited impact petroleum activities permitted subject to condition (E12)	N/A
Category C ESAs that are State Forests and/or Timber Reserves	Only limited petroleum activities permitted subject to condition (E13) Limited impact camps permitted Limited impact petroleum activities permitted subject to conditions (E12) and (E13)	N/A	N/A

Note: Approvals may be required under the *Forestry Act 1959* where the petroleum activity (ies) is proposed to be carried out in ESAs that are State Forests or Timber Reserves.

E10 **Limited impact camps** must not be located within a primary protection zone of Category C ESA (Essential Habitat) or Category C ESA (Nature Refuges).

E11 **Limited impact petroleum activities** must not be located within areas that contain commercial species.

E12 **Limited petroleum activities**, **limited impact camps** or **limited impact petroleum activities** located within a primary protection zone or secondary protection zone of an environmentally sensitive area in accordance with *Schedule E, Table 1 – Petroleum Activities in Environmentally Sensitive Areas* must not negatively affect the adjacent environmentally sensitive area.

E13 Prior to carrying out **limited petroleum activities** or **limited impact petroleum activities** undertaken within environmentally sensitive areas in accordance with *Schedule E, Table 1 – Petroleum Activities in Environmentally Sensitive Areas*, it must be demonstrated, in the following order of preference that:

1. no reasonable or practicable alternative exists for carrying out the limited petroleum activities within the environmentally sensitive area;
2. the limited petroleum activities are preferentially located in pre-existing areas of **clearing** or significant disturbance;
3. clearance widths for linear **infrastructure** is minimised to the maximum extent possible, taking into account the following matters:
   (a) safe vehicle movement;
   (b) drainage devices installed are of a type that is appropriate for the track type and location;
   (c) erosion and sediment control measures installed are in accordance with the Erosion and Sediment Control Plan required by conditions (B2) and (B3); and
   (d) power line stays have been preferentially located within the pipeline right of way where possible;
4. the maximum clearance widths specified in *Schedule E, Table 2 – Authorised Disturbance for Linear Infrastructure* are not exceeded.

Schedule E, Table 2 – Authorised Disturbance for Linear Infrastructure

Type of Linear Infrastructure	Clearance Width (m)
(A) Access track(s) not associated with a pipeline(s), communication lines(s) or power line(s):	
(a) single carriage access tracks	18
(b) dual carriage access tracks	21
(c) single or dual carriage access track and associated turnaround bay	35
(B) Access track(s) associated with a pipeline(s), communication line(s) or power line(s)	
(a) single carriage access tracks with a single pipeline, communication line or power line	24
(b) dual carriage access track with a single pipeline, communication line or power line.	27
(c) single or dual carriage access track and associated turnaround bay with a single pipeline, communication line or power line.	41
(d) additional **clearing** for any additional parallel pipeline, communication line or power line associated with (B)(a), (b) or (c)	7*
(C) Additional clearing for take-off drains, power line stays or turnaround bays or other work areas:	
(a) Additional clearing for power line stays associated with (B)	10
(b) additional clearing for take-off drains associated with (A) or (B)	10

**Maximum total disturbance for (B) is 62 m*

SCHEDULE F – ENVIRONMENTAL NUISANCE

ODOUR, DUST AND OTHER AIRBORNE CONTAMINANTS

F1 The release of odour, dust or any other airborne contaminant(s), or light from the petroleum activity (ies) must not cause an environmental nuisance at any **sensitive place.**

NUISANCE MONITORING

F2 When the administering authority advises of a complaint alleging nuisance, the complaint must be investigated as soon as practicable. The investigation is to include monitoring of environmental nuisance at any **sensitive place** within a reasonable and practical timeframe as specified by the administering authority.

F3 The administering authority must be advised in writing of the results of the investigation (including an analysis and interpretation of the monitoring results) and actions proposed or undertaken to resolve the complaint within five (5) business days of completing the complaint investigation, unless a longer time is agreed to in writing by the administering authority.

F4 If the investigation or monitoring in accordance with condition (F2) indicates that emissions exceed the limits set in this environmental authority or are causing environmental nuisance, then:

(a) the complaint must be addressed including the use of alternative dispute resolution services if required; and / or
(b) abatement or attenuation measures must be implemented so that the authorised petroleum activity (ies) does not result in further environmental nuisance.

F5 Noise monitoring and recording required under this environmental authority must include, but not necessarily be limited to:

(a) LAN,T (where N equals the statistical levels of 1, 10 and 90 and T=15);
(b) $L_{Aeq\ adj,\ 15\ mins}$;
(c) **background noise level** as $L_{A\ 90,\ 15\ mins}$;
(d) Max $L_{pA,\ 15\ mins}$;
(e) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to measured noise levels;
(f) atmospheric conditions including temperature, relative humidity and wind speed and directions;
(g) effects due to any extraneous factors such as traffic noise;
(h) location, date and time of monitoring;
(i) if the complaint concerns low frequency noise, Max $L_{pz,\ 15\ mins}$; and
(j) if the complaint concerns low frequency noise, one third octave band measurements in dB(LIN) for centre frequencies in the 10-200 Hz range for both the noise source and the background noise in the absence of the noise source.

NOISE

F6 Noise planning must be undertaken in accordance with the *Noise Management Plan — Fairview Project Area, Roma Shallow Gas Project Area, Arcadia Valley Project Area* dated 29 June 2011 or any subsequent version.

F7 Any subsequent revision of the *Noise Management Plan — Fairview Project Area, Roma Shallow Gas Project Area, Arcadia Valley Project Area*, must include, but not necessarily be limited to:

(a) a commitment by the Chief Executive Officer for the holder of this environmental authority, or their delegate, to ensure adequate allocation of staff and resources to the establishment and operation of the Noise Management Plan;

(b) definition of roles, responsibilities and authorities within the staffing of the Noise Management Plan;
(c) delivery of training to staff and contractors and maintenance of competencies;
(d) risk / constraint analysis methods to be undertaken prior to any new operation (e.g. drill site) or installation of new equipment that has the potential to create noise nuisance;
(e) procedures and methods to undertake assessments to determine compliance with the noise limits in *Schedule F, Table 1 – Noise Limits at Sensitive Receptors* in the event of a **valid complaint** being received and when there are no **alternative arrangements** in place, taking in to account any tonal or **impulsive noise** impacts;
(f) procedures for handling noise complaints;
(g) community liaison and consultation procedures including but not limited to consultation for when night time petroleum activities are likely to exceed the noise limits in *Schedule F, Table 1 – Noise Limits at Sensitive Receptors;*
(h) procedures for managing records associated with all aspects of the Noise Management Plan including standardised forms for recording monitoring results and complaints;
(i) details of petroleum activities and measured and / or predicted noise levels of noise sources associated with those activities;
(j) reasonable and practicable control or abatement measures (including relocating the activity, altering the hours of operation, or having an alternate arrangement in place with any potentially affected person) that can be undertaken to ensure compliance with the noise limits in *Schedule F, Table 1 – Noise Limits at Sensitive Receptors*;
(k) the level of noise at **sensitive receptors** that would be achieved from implementing the measures detailed under condition (F7)(j); and
(l) mediation processes to be used in the event that noise complaints are not able to be resolved.

F8 Prior to undertaking petroleum activities that will result in **short-term, medium-term** or **long term noise events** that are likely to impact on a **sensitive receptor**, and where there are no alternative arrangements in place, any potential noise emissions from the relevant petroleum activity (ies) must be modelled or calculated to demonstrate that noise emissions will not exceed the noise levels specified in *Schedule F, Table 1 – Noise Limits at Sensitive Receptors.*

F9 The emission of noise from the petroleum activities authorised under this environmental authority must not result in levels greater than those specified in *Schedule F, Table 1 – Noise Limits at Sensitive Receptors* in the event of a **valid complaint** about noise being made to the administering authority.

Schedule F, Table 1 – Noise Limits at Sensitive Receptors

Time Period	Metric	Short Term Noise Event (dBA)	Medium Term Noise Event (dBA)	Long Term Noise Event (dBA)
7:00 am — 6:00 pm	$L_{Aeq,adj,15\ min}$	45	43	40
6:00 pm — 10:00 pm	$L_{Aeq,adj,15\ min}$	40	38	35
10:00 pm — 6:00 am	$L_{Aeq,adj,15\ min}$	28	28	28
	Max $L_{pA,\ 15\ mins}$	55	55	55
6:00 am — 7:00 am	$L_{Aeq,adj,15\ min}$	40	38	35

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

F10 If the noise subject to a complaint is tonal or impulsive, the adjustments detailed in *Schedule F, Table 2 – Adjustments to be Added to Noise Levels at Sensitive Receptors* are to be added to the measured noise level(s) to derive $\mathbf{L_{Aeq,\ adj,\ 15\ min}}$.

Schedule F, Table 2 – Adjustments to be Added to Noise Levels at Sensitive Receptors

Noise Characteristic	Adjustment to Noise (dBA)
Tonal characteristic is just audible	+ 2
Tonal characteristic is clearly audible	+ 5
Impulsive characteristic is just audible	+ 2
Impulsive characteristic is clearly audible	+ 5

F11 Where alternative arrangements are in place with an affected person(s) at a **sensitive receptor** as referred to by condition (F7)(j), the noise limits in *Schedule F, Table 1 – Noise limits at Sensitive Receptors* do not apply at that sensitive receptor for the duration for which the alternative arrangements are in place.

LOW FREQUENCY NOISE

F12 Notwithstanding condition (F9), emission of any low frequency noise must not exceed the following limits 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 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 noise levels is no greater than 15 dB.

VIBRATION AND BLASTING

F13 A Blast Management Plan must be developed for each blasting activity in accordance with **Australian Standard 2187.**

F14 Noise from blasting operations must not exceed an airblast overpressure level of 120 dB (linear peak) at any time, when measured at or extrapolated to any **sensitive receptor.**

F15 Ground-borne vibration peak particle velocity caused by blasting operations must not exceed 10 mm/s at any time, when measured at or extrapolated to any **sensitive receptor.**

BLAST AND VIBRATION MONITORING

F16 Monitoring and recording of the air blast overpressure and ground borne vibration of every blast must be undertaken.

F17 Blast and vibration monitoring must include but not necessarily be limited to:

(a) maximum instantaneous charge;
(b) location of the blast within the **site** (including any bench level);
(c) airblast overpressure level (dB Linear Peak);
(d) peak particle velocity (mm/s);
(e) location, date and time of recording;
(f) measurement instrumentation and procedure;
(g) meteorological conditions for blast monitoring (including temperature, relative humidity, temperature gradient, cloud cover, wind speed and direction); and
(h) distances from the blast site to potentially noise-affected buildings or structures.

SCHEDULE G – AIR

G1 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:

(a) an automatic ignition system is used, and
(b) a flame is visible at all times while the waste gas is being flared, and
(c) there is no visible smoke emissions other than for a total period of no more than 5 minutes in any 2 hours, or
(d) it uses an **enclosed flare**.

SCHEDULE H – WASTE

GENERAL

H1 All general and regulated waste removed from the **site** must be sent to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994* except as permitted under another condition of this environmental authority.

H2 All regulated waste removed from the **site** must be undertaken by a person who holds a current authority to transport such waste under the provisions of the *Environmental Protection Act 1994*.

H3 Waste must not be burned on the **site**, unless it is vegetation and is authorised in writing under the *Forestry Act 1959*.

COAL SEAM GAS WATER MANAGEMENT PLAN

H4 Amendments to a Coal Seam Gas Water Management Plan must be submitted to the administering authority prior to its implementation.

H5 If, within 20 business days following the submission of the amended Coal Seam Gas Water Management Plan, the administering authority provides comments on the amended Coal Seam Gas Water Management Plan, then:

(a) due regard must be had to those comments in the finalisation of the amended Coal Seam Gas Water Management Plan; and

(b) the finalised amended Coal Seam Gas Water Management Plan must be submitted within 40 business days after the administering authority provided comments.

BRINE AND SALT MANAGEMENT

H6 Following the completion of the petroleum activity (ies), any residual **brine** and / or solid salt present in any dam must be removed and transported to a facility that can lawfully reuse, recycle or dispose of such waste under the *Environmental Protection Act 1994*.

RESIDUAL DRILLING MATERIALS

H7 If sumps are used to store **residual drilling material** or drilling fluids, they must only be used for the duration of drilling activities.

H8 **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.

H9 Records must be kept to demonstrate compliance with conditions (H7) and (H8).

SCHEDULE I – REHABILITATION

I1 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 (12 to 16), inclusive; and

(ii) provide for appropriate monitoring and maintenance.

TRANSITIONAL REHABILITATION

I2 **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

I3 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 per cent 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) where the **adjacent land use** contains, or the pre-clearing land use contained, one or more **regional ecosystem(s**), then:

(i) at least one regional ecosystem(s) from the same broad vegetation group, as demonstrated by the **predominant species** in the **ecologically dominant layer**, must be present; and

(ii) the regional ecosystem present in (13) (d) (i) must possess an equivalent or higher conservation value (biodiversity status) than the regional ecosystem(s) in either the adjacent land or pre-disturbed land.

FINAL REHABILITATION ACCEPTANCE CRITERIA IN ENVIRONMENTALLY SENSITIVE AREAS

I4 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 (E4) and (E6)) must be met:

(a) greater than or equal to 70 per cent 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 per cent of organic litter cover;
(e) greater than or equal to 50 per cent 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

I5 Conditions (12), (13) and (14) continue to apply after this environmental authority has ended or ceased to have effect.

REMAINING DAMS

I6 Where there is a dam, (including a low consequence dam) that is **being or intended to be used 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.

PIPELINE ACTIVITIES

I7 Pipeline trenches must be backfilled and topsoils **reinstated** within three months after pipe laying.

I8 **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.

I9 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**.

I10 Land that has been **significantly disturbed** by the pipeline activities must be managed to ensure that gully erosion or subsidence do not occur on that land.

SCHEDULE J – WELL CONSTRUCTION, MAINTENANCE AND STIMULATION ACTIVITIES

DRILLING ACTIVITIES

J1 **Oil based** or **synthetic based drilling muds** must not be used in the carrying out of the petroleum activity (ies).

J2 Drilling activities must not result in the connection of the target gas producing formation and another aquifer.

J3 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

J4 Polycyclic aromatic hydrocarbons or products that contain polycyclic aromatic hydrocarbons must not be used in **stimulation** fluids in concentrations above the **reporting limit.**

J5 **Stimulation** activities must not negatively affect water quality, other than that within the **stimulation impact zone** of the target gas producing formation.

J6 **Stimulation** activities must not cause the connection of the target gas producing formation and another aquifer.

J7 The internal and external mechanical integrity of the well system prior to and during **stimulation** must be ensured such that there is:

(a) no significant leakage in the casing, tubing, or packer; and

(b) there is no significant fluid movement into another aquifer through vertical channels adjacent to the well bore hole.

J8 Practices and procedures must be in place to detect, as soon as practicable, any fractures that cause the connection of a target gas producing formation and another aquifer.

STIMULATION RISK ASSESSMENT

J9 Prior to undertaking **stimulation** activities, a risk assessment must be developed to ensure that stimulation activities are managed to prevent environmental harm.

J10 The **stimulation** risk assessment must be carried out for every well to be stimulated prior to stimulation activities being carried out at that well and address issues at a relevant geospatial scale such that changes to features and attributes are adequately described and must include, but not necessarily be limited to:

(a) a process description of the stimulation activity to be applied, including equipment and a comparison to best international practice;

(b) provide details of where, when and how often stimulation is to be undertaken on the tenures covered by this environmental authority;

(c) a geological model of the field to be stimulated including geological names, descriptions and depths of the target gas producing formation(s);

(d) naturally occurring geological faults;

(e) seismic history of the region (e.g. earth tremors, earthquakes);
(f) proximity of overlying and underlying aquifers;
(g) description of the depths that aquifers with environmental values occur, both above and below the target gas producing formation.
(h) identification and proximity of **landholders' active groundwater bores** in the area where stimulation activities are to be carried out;
(i) the environmental values of groundwater in the area;
(j) an assessment of the appropriate limits of reporting for all water quality indicators relevant to stimulation monitoring in order to accurately assess the risks to environmental values of groundwater;
(k) description of overlying and underlying formations in respect of porosity, permeability, hydraulic conductivity, faulting and fracture propensity;
(l) consideration of barriers or known direct connections between the target gas producing formation and the overlying and underlying aquifers;
(m) a description of the well mechanical integrity testing program;
(n) process control and assessment techniques to be applied for determining extent of stimulation activities (e.g. microseismic measurements, modelling etc.);
(o) practices and procedures to ensure that the stimulation activities are designed to be contained within the target gas producing formation;
(p) groundwater **transmissivity**, flow rate, hydraulic conductivity and direction(s) of flow;
(q) a description of the chemicals used in stimulation activities (including estimated total mass, estimated composition, chemical abstract service numbers and properties), their mixtures and the resultant compounds that are formed after stimulation;
(r) a mass balance estimating the concentrations and absolute masses of chemicals that will be reacted, returned to the surface or left in the target gas producing formation subsequent to stimulation;
(s) an environmental hazard assessment of the chemicals used including their mixtures and the resultant chemicals that are formed after stimulation including:
    (i) toxicological and ecotoxicological information of chemical compounds used;
    (ii) information on the persistence and bioaccumulation potential of the chemical compounds used;
    (iii) identification of the chemicals of potential concern derived from the risk assessment;
(t) an environmental hazard assessment of use, formation of, and detection of polycyclic aromatic hydrocarbons in stimulation activities;
(u) if used, identification and an environmental hazard assessment of using radioactive tracer beads in stimulation activities;
(v) an environmental hazard assessment of leaving chemical compounds in stimulation fluids in the target gas producing formation for extended periods subsequent to stimulation;
(w) human health exposure pathways to operators and the regional population;
(x) risk characterisation of environmental impacts based on the environmental hazard assessment;
(y) potential impacts to landholder bores as a result of stimulation activities;
(z) the determination of the likelihood of causing interconnectivity and/or negative water quality as a result of stimulation activities undertaken in close proximity or each other; and
(aa) potential environmental or health impacts which may result from stimulation activities including but not limited to water quality, air quality (including suppression of dust and other airborne contaminants), noise and vibration.

WATER QUALITY BASELINE MONITORING

J11 Prior to undertaking any **stimulation** activity, a baseline bore assessment must be undertaken of the water quality of:

(a) all **landholders' active groundwater bore**s (subject to access being permitted by the landholder) that are spatially located within a two (2) kilometre horizontal radius from the location of the stimulation initiation point within the target gas producing formation; and

(b) all landholders' active groundwater bores (subject to access being permitted by the landholder) in any aquifer that is within 200 metres above or below the target gas producing formation and is spatially located with a two (2) kilometre radius from the location of the stimulation initiation point; and

(c) any other bore that could potentially be adversely impacted by the stimulation activity (ies) in accordance with the findings of the risk assessment required by conditions (J9) and (J10).

J12 Prior to undertaking **stimulation** activities at a well, there must be sufficient water quality data to accurately represent the water quality in the well to be stimulated. The data must include as a minimum the results of analyses for the parameters in condition (J13).

J13 **Stimulation** baseline bore assessments required in Condition (J11) must include the minimum water quality **analytes** and physico-chemical parameters identified in the *Baseline Assessment Guideline* (EHP) and any **restricted stimulation fluids** as defined in the *Environmental Protection Act 1994*, as amended from time to time, in order to establish baseline water quality.

STIMULATION MONITORING PROGRAM

J14 A Stimulation Impact Monitoring Program must be developed prior to the carrying out of stimulation activities which must be able to detect adverse impacts to water quality from stimulation activities and must consider the findings of the risk assessment required by conditions (J9) and (J10) that relate to **hydraulic fracturing** activities and must include, as a minimum, monitoring of:

(a) the **stimulation fluid**(s) to be used in **stimulation** activities at sufficient frequency and which sufficiently represents the quantity and quality of the fluids used; and

(b) flow-back water(s) from stimulation activities at sufficient frequency and which sufficiently represents the quality of that flow back water; and

(c) flow-back water(s) from stimulation activities at sufficient frequency and accuracy to demonstrate that 150 per cent of the volume used in stimulation activities has been extracted from the stimulated well; and

(d) all bores identified in condition (J11) at the following minimum frequency:

(i) monthly for the first six (6) months subsequent to stimulation activities being undertaken; and

(ii) annually for the first five (5) years subsequent to stimulation activities being undertaken or until **analytes** and physico-chemical parameters listed in condition (J13) are not detected in concentrations above baseline bore monitoring data on two (2) consecutive monitoring occasions.

J15 The Stimulation Impact Monitoring Program must provide for monitoring of:

(a) **analytes** and physico-chemical parameters relevant to baseline bore and well assessments to enable data referencing and comparison including, but not necessarily being limited to the analytes and physico-chemical parameters in condition (J13); and

(b) any other analyte or physico-chemical parameters that will enable detection of adverse water quality impacts and the inter-connection with a non-target aquifer as a result of **stimulation** activities including chemical compounds that are actually or potentially formed by chemical reactions with each other or coal seam materials during stimulation activities.

J16 The results of the Stimulation Impact Monitoring Program must be made available to any potentially affected landholder upon request by that landholder.

SCHEDULE K – COMMUNITY ISSUES

K1 A record of all valid complaints and actions taken in response to the **valid complaint** must be maintained and kept.

K2 The following details for all valid complaints received must be recorded:

(a) name, address and contact number for complainant;
(b) time and date of complaint;
(c) reasons for the complaint as stated by the complainant;
(d) investigations undertaken in response to the complaint;
(e) conclusions formed;
(f) actions taken to resolve the complaint;
(g) any abatement measures implemented to mitigate the cause of the complaint; and
(h) name and contact details of the person responsible for resolving the complaint.

SCHEDULE L – NOTIFICATION PROCEDURES

L1 The Department of Environment and Heritage Protection Pollution Hotline must be notified as soon as reasonably practicable, but within 48 hours after becoming aware of:

(a) any unauthorised significant disturbance to land; or
(b) any unauthorised release of contaminants greater than:
  (i) 200 L of hydrocarbons; or
  (ii) 200 L of **stimulation additives**; or
  (iii) 500 L of **stimulation fluids**; or
  (iv) 1 000 L of **brine**; or
  (v) 5 000 L of **coal seam gas water**; or
  (vi) 10 000 L of sewage effluent.
  (vii) 100,000 L of irrigation quality coal seam gas water, in accordance with condition (D5)(b), inside designated irrigation area
(c) a potential or actual loss of structural or hydraulic integrity of a dam; or
(d) when the level of the contents of any **regulated dam** reaches the mandatory reporting level; or
(e) when a regulated dam will not have available storage to meet the **design storage allowance** on the 1 November of any year;
(f) any incident where there is a potential or actual loss of well integrity (e.g. when the annulus pressure during stimulation increases by more than 3.5 MPa from the pressure immediately preceding stimulation); or
(g) any detection of **restricted stimulation fluids** from stimulation fluid monitoring; or
(h) any analysis result from baseline bore, well or stimulation impact monitoring that exceeds a water quality objective for the protection of an environmental value of that water resource; or
(i) any analysis result from groundwater monitoring that exceeds trigger action investigation levels, if provided in this environmental authority.

L2 The notification of emergencies or incidents as required by condition (L1) must include but not be limited to the following information:

(a) the environmental authority number and name of the holder;
(b) the tenure type and number where the emergency or incident occurred;
(c) the name and telephone number of the designated contact person;
(d) the location of the emergency or incident (GDA94);
(e) the date and time that the emergency or incident occurred;
(f) the date and time the holder of this environmental authority became aware of the emergency or incident;
(g) details of the nature of the event and the circumstances in which it occurred;
(h) the estimated quantity and type of any contaminants involved in the incident;
(i) the actual or potential suspected cause of the emergency or incident;
(j) a description of the land use at the site of the emergency or incident (eg. grazing, pasture, forest etc.) and/or the name of any relevant **waters** and other environmentally sensitive features;
(k) a description of the possible impacts from the emergency or incident;
(l) a description of whether stock and/or wildlife were exposed to any contaminants released and measures taken to prevent access for the duration of the emergency or incident;
(m) any sampling conducted or proposed, relevant to the emergency or incident;
(n) landholder details and details of landholder consultation;
(o) immediate actions taken to control the impacts of the emergency or incident and how environmental harm was mitigated at the time of the emergency or incident; and
(p) whether further examination/root cause analysis is required and if so, the expected date by when this examination will be completed and reported to the administering authority.

L3 Within 10 business days following the initial notification under conditions (L1) and (L2) unless a longer time is agreed to by the administering authority, a written report must be provided to the administering authority, including the following (where relevant to the emergency or incident):

(a) the root cause of the emergency or incident;
(b) the confirmed quantities and types of any contaminants involved in the incident;
(c) results and interpretation of any analysis of samples taken at the time of the emergency or incident (including the analysis results of any impact monitoring);
(d) a final assessment of the impacts from the emergency or incident including any actual or potential environmental harm that has occurred or may occur in the longer term as a result of the release;
(e) the success or otherwise of actions taken at the time of the incident to prevent or minimise environmental harm;
(f) results and current status of landholder consultation, including commitment to resolve any outstanding issues / concerns; and
(g) actions and / or procedural changes to prevent a recurrence of the emergency or incident.

SCHEDULE M – DEFINITIONS

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

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

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

"aggregation dam" means a **regulated dam** that receives and contains **coal seam gas water** or coal seam gas concentrate. The primary purpose of the dam must not be to evaporate the water even though this will naturally occur.

"AHD" means Australian Height Datum and is the datum used for the determination of elevations in Australia. The determination uses a national network of benchmarks and tide gauges and sets mean sea level at zero elevation.

"alternative arrangement" means a written agreement between the holder of this environmental authority and an affected or potentially affected person at a sensitive receptor for a defined noise nuisance impact and may include an agreed period of time for which the arrangement is in place. An agreement for alternative arrangements may include, but not necessarily be limited to a range of noise abatement measures to be installed at a sensitive receptor and / or provision of alternative accommodation for the duration of the defined noise nuisance impact.

"analogue site" 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.

"analytes" means a chemical parameter determined by either physical measurement in the field or by laboratory analysis.

"annual exceedance probability or **AEP"** is the probability that *a given rainfall total accumulated over a given duration will be exceeded in any one year.*

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

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

Part A in all cases:

Parameter	Maximum Concentration
pH	6 – 10.5 (range)
Electrical Conductivity	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-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.

"associated works" in relation to a dam, means:
- any kind and all things associated with the construction and operation of a dam; and
- any land used for those operations.

"Australian Standard 1055" means **Australian Standard 1055**.1:1997 *Description and Measurement of Environmental Noise – General procedures*.

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

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

"Australian Standard 4323" means Australian Standard 4323.1:1995 *Stationary source emissions method 1: Selection of sampling positions*.

"Australian / New Zealand Standard 5667.11" means Australian / New Zealand Standard 5667.11: 1998 *Water Quality – Sampling – Guidance on sampling at Groundwaters*.

"Australian / New Zealand Standard 5667.12" means Australian / New Zealand Standard 5667.12:1999 *Guidance on Sampling of Bottom Sediments for permanent, semi-permanent water holes and water storages*.

"authorised person" means a person holding office as an authorised person under an appointment under the *Environmental Protection Act 1994* by the chief executive or chief executive officer of a local government.

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

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

"bed and banks" for a watercourse or wetland means land over which the water of the watercourse or wetland normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed or banks that is from time to time covered by floodwater.

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

"beneficial use" means
- with respect to dams, that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:
  - of benefit to that owner in that it adds real value to their business or to the general community,
  - in accordance with relevant provisions of the *Waste Reduction and Recycling Act 2011*,
  - sustainable by virtue of written undertakings given by that owner to maintain that dam, and
  - the transfer and use have been approved or authorised under any relevant legislation. Or
- with respect to **coal seam gas water**, refer to the Department of Environment and Heritage Protection's *Guideline – Approval of Coal Seam Gas Water for Beneficial Use.*

"bore" means a water observation bore or a water supply bore that is either sub-artesian or artesian.

"brine" means saline water with a total dissolved solid concentration greater than 40 000 mg/l.

"brine dam" means a regulated dam that is designed to receive, contain or evaporate **brine**.

"bund or bunded" in relation to spill containment systems for fabricated or manufactured tanks or containers designed to a recognised standard means an embankment or wall of brick, stone, concrete or other impervious material which may form part or all of the perimeter of a compound and provides a barrier to retain liquid. Since the bund is the main part of a spill containment system, the whole system (or bunded area) is sometimes colloquially referred to within industry as the bund. The bund is designed to contain spillages and leaks from liquids used, stored or processed above ground and to facilitate clean-up operations. As well as being used to prevent pollution of the receiving environment, bunds are also used for fire protection, product recovery and process isolation.

"BTEX" means benzene, toluene, ethylbenzene, ortho-xylene, para-xylene, meta-xylene and total xylene.

"business day" has the meaning in the *Acts Interpretation Act 1954* and means a day that is not—
- a Saturday or Sunday; or
- a public holiday, special holiday or bank holiday in the place in which any relevant act is to be or may be done.
- a business day that occurs during the period starting on 20 December in a year and ending on 5 January in the following year.

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

"Category B Environmentally Sensitive Area" means any area listed in Schedule 12, part 1, section 2 of the *Environmental Protection Regulation 2008*.

"Category C Environmentally Sensitive Area" means any of the following areas:
- Nature Refuges as defined under the *Nature Conservation Act 1992*;
- Koala Habitat Areas as defined under the *Nature Conservation (Koala) Conservation Plan 2006*;
- State Forests or Timber Reserves as defined under the *Forestry Act 1959*;
- Regional parks (resource use area) under the *Nature Conservation Act 1992*;
- An area validated as "Essential Habitat" 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 identified in the database called 'RE description database' containing Regional Ecosystem numbers and descriptions.

"certification or certified by a suitably qualified and experienced person" in relation to a **design plan**, 'as constructed' drawings or an annual report regarding dams, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:
- exactly what is being certified and the precise nature of that certification.
- the relevant legislative, regulatory and technical criteria on which the certification has been based;
- the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.

"certify" or "certification" or "certified" in relation to any matter other than a **design plan**, 'as constructed' drawings or an annual report regarding dams in this environmental authority means a Statutory Declaration by a suitably qualified person accompanying the written document stating that:
(a) all relevant material has been considered in the written document; and
(b) that the content of the written document is accurate and true; and
(c) that the written document meets the requirements of the relevant conditions of the environmental authority.

"clearing" for vegetation means removing, cutting down, ringbarking, pushing over, poisoning or destroying in any way including by burning, flooding or draining; but does not include destroying standing vegetation by stock, or **lopping** a tree.

"coal seam gas water" means underground water brought to the surface of the earth, or otherwise interfered with, in connection with exploring for or producing coal seam gas. Coal seam gas water is a waste defined under section 13 of the *Environmental Protection Act 1994.*

"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 water dams" include any type of dam (storage or evaporation) used to contain groundwater that is necessarily or unavoidably brought to the surface in the process of coal seam gas exploration or production.

"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.

"commercial species" means species as listed in parts 1, 2 and 3 of Schedule 6 of the Vegetation Management Regulation 2012, which are above the diameters / sizes specified in this Schedule for each listed species.

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

"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.

"dam" means a land-based structure or a void that is designed to 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**. A dam does *not* mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

"dam crest volume" means the volume of material 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 (e.g. via a 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 the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and **certifications**, together with the planned decommissioning and rehabilitation works and outcomes. A **design plan** may include 'as constructed' drawings.

"design storage allowance or **DSA"** means an available volume, estimated in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, prepared by the Department of Environment and Heritage Protection , as amended from time to time, that must be provided in a dam to an **annual exceedance probability** specified in that Manual.

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

"discharge area" means:
- that part of the land surface where groundwater discharge produces a net movement of water out of the groundwater; and
- identified by an assessment process consistent with the document *Salinity Management Handbook* Queensland Department of Natural Resources, 1997, as amended from time to time; or
- identified by an approved salinity hazard map held by the Department of Environment and Heritage Protection.

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

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

"end" means the stopping of the particular activity that has caused a significant disturbance in a particular area. It refers to, among other things, the end of a seismic survey or the end of a drilling operation. It does not refer to the end of all related petroleum activities such as rehabilitation. In other words, it does not refer to the 'completion' of the petroleum activities, the time at which the petroleum authority ends or the time that the land in question ceases to be part of an authority.

"equivalent person or EP" means an equivalent person under volume 1, section 2 of the *Guidelines for Planning and Design of Sewerage Schemes*, October 1991, published by the Water Resources Commission, Department of Primary Industries, Fisheries and Forestry.

"**evaporation dam"** means an impoundment, enclosure or structure that is designed to be used to hold CSG water for evaporation.

"existing dam" means an existing evaporation, aggregation or **brine dam** and any dam that is constructed and / or whose construction had substantially commenced on 14 December 2012.

"existing low hazard dam" means a **low hazard dam** that was constructed and/or whose construction had substantially commenced on 28 February 2013.

"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**.

"exploring for petroleum" means carrying out an activity for the purpose of finding petroleum or natural underground reservoirs as per section 14 of the *Petroleum and Gas (Production and Safety) Act 2004* for example including:
- conducting a geochemical, geological or geophysical survey;
- drilling a well;
- carrying out testing in relation to a well;
- taking a sample for chemical or other analysis.

"field validation surveys" means vegetation assessments undertaken in accordance with the most current version of the *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland.*

"fill" means any kind of material in solid form (whether or not naturally occurring) capable of being deposited at a place but does not include material that forms a part of, or is associated with, a structure constructed in a watercourse or wetland including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion prevention structure or fence.

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

"foliage cover" means the proportion of the ground, which would be shaded if sunshine came from directly overhead and is defined for each stratum. It includes branches and leaves and is similar to the crown type of Walker and Hopkins (1990) but is applied to a stratum or plot rather than an individual crown.

"foreseeable future" means the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptably low probability of failure before that time.

"general ecological significant wetland" otherwise known as "wetlands of other environmental value", is a wetland that meets the definition of a wetland and that is shown as a general ecological significant wetland or "wetlands of other environmental value" on the map of referable wetlands
"geophysical survey" means a systematic collection of geophysical data.

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

"hazard category" means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, prepared by the Department of Environment and Heritage Protection, as amended from time to time.

"high bank" means the defining terrace or bank or, if no bank is present, the point on the active floodplain, which confines the average annual peak flows in a watercourse.

"high value regrowth" vegetation means
- any of the following:
  - an endangered regional ecosystem;
  - an of concern regional ecosystem;
  - a least concern regional ecosystem; and
- have not been cleared since 31 December 1989; and
- is shown on a **regrowth vegetation map**.

"hydraulic fracturing" means a technique used to create cracks in underground coal seams to increase the flow and recovery of gas or oil out of a well. It involves pumping a fluid, comprised largely of water and sand, under pressure, into a coal seam. This action fractures the coal seam which provides a pathway that increases the ability for gas to flow through the coal.

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, prepared by the Department of Environment and Heritage Protection, as amended from time to time.

"hydraulic testing" means the testing of a geological formation to evaluate the hydrogeological characteristics of the formation.

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

"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 – Scale and Intensity for the Activities.*

"infrastructure" means plant or works including for example, communication systems, compressors, powerlines, pumping stations, reservoirs, roads and tracks, water storage dams, evaporation or storage ponds and tanks, equipment, buildings and other structures built for the purpose and duration of the conduct of the petroleum activities) including temporary structures or structures of an industrial or technical nature, including, for example, mobile and temporary camps.

Infrastructure does not include other facilities required for the long term management of the impact of those petroleum activities or the protection of potential resources. Such other facilities include dams other than water storage dams (e.g. evaporation dams), pipelines and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

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

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

"lake" means:
- a lagoon, swamp or other natural collection of water, whether permanent or intermittent; and
- the **bed and banks** and any other element confining or containing the water.

"land 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.

"landfill monocell" means a specialised, isolated landfill facility where a single specific waste type is exclusively disposed (i.e. salt).
"landholders' active groundwater bores" for the purposes of stimulation baseline and impact monitoring in this environmental authority 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*.

"leachate" means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of onsite which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

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

"limited impact camps" mean accommodation camps that:
- are temporary (no more than 6 months);
- are located within pre-existing areas of **clearing** or significant disturbance;
- are up to 2 ha or located within well sites; and
- may involve sewage treatment works that are no release works or release works that involve an irrigation release within pre-existing areas of **clearing** or significant disturbance.

"limited impact petroleum activities" means petroleum activities that are located within areas that are not a **regional ecosystem** and:
- are single **well sites** (includes observation, pilot, injection and production wells) or multi-well sites greater than 1ha; and
- may involve construction of new access tracks that are required as part of the construction or servicing a petroleum activity that can be lawfully carried out within an ESA or its protection zone; and
- may involve upgrading or maintenance of existing roads or tracks; and
- may include power and communication lines; and
- may include gas gathering lines from a well site to the initial compression facility; and
- may include water gathering lines from a well site to the initial water storage or **dam**.

"limit of reporting" means the lowest amount of an analyte in a sample that can be quantifiably determined with stated, acceptable precision and accuracy under stated analytical conditions (i.e. the lower limit of quantification).

"limited petroleum activities" mean any low impact petroleum activity, and:
- single well sites (includes observation, pilot, injection and production wells) up to 1 ha and associated infrastructure (water pumps and generators, sumps, flare pits or dams) located on the well site or up to 1.25 ha if the well pad includes the use of a tank (minimum 1 ML) for above ground fluid storage,
- multi-well sites up to an additional (in addition to single well site above) 0.25 ha per additional well and associated infrastructure (water pumps and generators, sumps, flare pits, dams or tanks) located on the well site to a maximum of 3 ha,
- construction of new access tracks that are required as part of the construction or servicing a petroleum activity that can be lawfully carried out within an ESA or its protection zone
- upgrading or maintenance of existing roads or tracks,
- power and communication lines,
- gas gathering lines from a well site to the initial compression facility,
- water gathering lines from a well site to the initial water storage or dam,
- camps within well site that may involve sewage treatment works that are a no release works.

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

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

"lopping" a tree, means cutting or pruning its branches, but does not include —
- removing its trunk; and
- cutting or pruning its branches so severely that it is likely to die.

"low flow" means flow up to the one month average recurrence interval.

"low hazard dam" means any dam in the low hazard category as assessed using the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, prepared by the Department of Environment and Heritage Protection, as amended from time to time.

"low impact petroleum activities" means petroleum activities which do not result in the **clearing** of native vegetation, earthworks or excavation work that cause either, a significant disruption to the soil profile or permanent damage to vegetation that cannot be easily rehabilitated immediately after the activity is completed. Examples of such activities include but are not necessarily limited to:
- chipholes
- coreholes
- geophysical surveys
- seismic surveys
- soil surveys
- topographic surveys
- cadastral surveys
- ecological surveys
- installation of environmental monitoring equipment (including surface water)

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

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

"mandatory reporting level" or **"MRL"** means a warning and reporting level determined in accordance with the criteria in the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams" prepared by the Department of Environment and Heritage Protection, as amended from time to time.

"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.

"meter" means a device for measuring, or giving an output signal proportional to, quantities of water passed and/or the rate of flow in a pipe."

"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 = 10–8 m/s) or subsoil with a clay content of greater than 20 per cent; and
- the residual solids is mixed with subsoil in the **sump** and cover; and
- the subsoil and residual solids is mixed at least three parts subsoil to one part waste (v/v); and
- a minimum of one metre of clean subsoil must be placed over the subsoil and residual solids mixture; and
- topsoil is replaced.

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

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

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

"oil based drilling mud" means mud where the base fluid is a petroleum product such as diesel fuel.

"overburden pressure" means the pressure or stress imposed on a layer of soil or rock by the weight of overlying material. The overburden pressure at a depth z is given by $p(z) = p0 + g \int 0 \approx p(z)\, dz$ where p(z) is the density of the overlying rock at depth z and g is the acceleration due to gravity. p0 is the datum pressure, like the pressure at the surface.

"permanent sewage treatment plant operations" means sewage treatment plant operations with a design capacity of greater than 21 but less than 450 equivalent persons carried out at one location for of a period of greater than six months in a calendar year.

"pest" means species:

- declared under the *Land Protection (Pest and Stock route Management) Act 2002*;
- declared under Local Government model local laws; and
- which may become invasive in the future.

"**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 storage gases" has the meaning provided in section 12 of the *Petroleum and Gas (Production and Safety) Act 2004.*

"primary protection zone" means an area within a 200 metre buffer from the boundary of any Category A, B or C Environmentally Sensitive Area.

"programmed and approved" means when the location of infrastructure has been approved by the **authorised person**(s) with the organisation(s).

"**regional ecosystem(s)"** 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 geology, landform and soil. Regional ecosystems of Queensland were originally described in Sattler and Williams (1999). The Regional

Ecosystems Description Database (Queensland Herbarium 2013) is maintained by Queensland Herbarium and contains the current descriptions of regional ecosystems.

"regrowth vegetation map" means a map certified by the chief executive as the regrowth vegetation map for the State and showing for the State:

- areas of regrowth vegetation, identified on the map as high-value regrowth vegetation, that:
  - are any of the following:
    (i) an endangered regional ecosystem;
    (ii) an of concern regional ecosystem;
    (iii) a least concern regional ecosystem; and
  - have not been cleared since 31 December 1989; and
- particular watercourses in the Burdekin, Mackay Whitsunday and Wet Tropics catchments, identified on the map as regrowth watercourses; and
- areas the chief executive decides under section 20AI of the *Vegetation Management Act 1999* to show on the map as **high value regrowth** vegetation.

"regulated dam" means any dam in the significant or high hazard category as assessed using the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, published by the Department of Environment and Heritage Protection, as amended from time to time.

"regulated structure" means any dam or levee in the significant or high hazard category as assessed using the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, published by the Department of Environment and Heritage Protection, as amended from time to time.

"rehabilitation or rehabilitated" means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria 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).

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

"remnant vegetation" means vegetation, part of which forms the predominant canopy of the vegetation:

- covering more than 50 per cent of the undisturbed predominant canopy; and
- averaging more than 70 per cent of the vegetation's undisturbed height; and
- composed of species characteristic of the vegetation's undisturbed predominant canopy cover.

"reporting limit" means the lowest concentration that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions. For many **analytes**, the reporting limit is selected as the lowest non-zero standard in the calibration curve. Results that fall below the reporting limit will be reported as "less than" the value of the reporting limit. The reporting limit is also referred to as the practical quantitation limit or the limit of quantitation. For polycyclic aromatic hydrocarbons, the reporting limit must be based on super-ultra trace methods and, depending on the specific polycyclic aromatic hydrocarbon, will range between 0.005 ug/L – 0.02 ug/L.

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

"resource activity(ies) has the meaning in section 107(d) of the *Environmental Protection Act 1994***.**

"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 rehabilitations after pipeline decommissioning.

"restricted stimulation fluids" means fluids used for the purpose of stimulation, including fracturing, that

contain the following chemicals in more than the maximum amounts prescribed under section 81B of the *Environmental Protection Regulation 2008*:

- petroleum hydrocarbons containing benzene, ethylbenzene, toluene or xylene; or
- chemicals that produce, or are likely to produce, benzene, ethylbenzene, toluene or xylene as the chemical breaks down in the environment.

The amount of any chemical is not measured in relation to water included in the restricted **stimulation fluid**. For clarity, the term restricted stimulation fluids only applies to fluids injected down well post-perforation.

"**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, B or C Environmentally Sensitive Area means an area within an 100 metre buffer from the boundary of a **primary protection zone**.

"sensitive place" means:

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

"sensitive receptor" means an area or place where noise (including low frequency, vibration and blasting) is measured investigate whether nuisance impacts are occurring and includes:

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

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

"significantly disturbed 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 a particular conditions – to the condition it was in immediately before the disturbance

"site" means the relevant petroleum activity(ies) to which the environmental authority relates.

"species diversity" means the diversity within an ecological community that incorporates both **species richness** and the evenness of species' abundances.

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

"specified relevant activities" for this environmental activity means an activity that:

(a) but for being carried out as a resource activity, would otherwise be an activity prescribed under section 19 of the *Environmental Protection Act 1994* as an environmentally relevant activity; or
(b) stimulation activities; or
(c) extracting material other than by dredging.

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

"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 a natural underground reservoir, including for example, hydraulic fracturing / hydrofraccing, fracture acidizing and the use of proppant treatments.

"stimulation fluid" means the fluid injected into an aquifer to increase the permeability of a natural underground reservoir. For clarity, the term stimulation fluid only applies to fluids injected down well post-perforation.

"stimulation impact zone" means a 100 metre maximum radial distance from the stimulation target location within a gas producing formation.

"structure" for the purposes of Schedule C means a dam or levee.

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

"suitably qualified and experienced person" in relation to a hazard assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:
- exactly what has been assessed and the precise nature of that assessment;
- the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- 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
- the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

"suitably qualified and experienced person" in relation to regulated structures means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 1988*, 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.

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

"suitably qualified third party" means a person who:
(a) has qualifications and experience relevant to performing the function including but not limited to:
    (i) a bachelor's degree in science or engineering; and
    (ii) 3 years' experience in undertaking soil contamination assessments; and
(b) is a member of at least one organisation prescribed in Schedule 8 of the *Environmental Protection Regulation 2008*; and
(c) not be an employee of, nor have a financial interest or any involvement which would lead to a conflict of interest with the holder(s) of the environmental authority.

"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.

"temporary sewage treatment plant operations" means sewage treatment plant operations with a design capacity of equal to or less than 100 equivalent persons carried out at one location for a period of no greater than six months in a calendar year.

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

"threatening processes" means processes, features and actions that can have a detrimental effect upon the health and viability of an area of vegetation (e.g. altered hydrology, land use practices, invasion by pest and weed species, land degradation, edge effects and fragmentation).

"tolerable limits" means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values (e.g. a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing damage and limiting infiltration and percolation).

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

"transmissivity" means the rate of flow of water through a vertical strip of aquifer which is one unit wide and which extends the full saturated depth of the aquifer.

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

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

"unacceptable risk" means those risks identified as unacceptable through a risk assessment that substantially conforms with Australian Standard 4360:2004 *Risk Management* or any updated version that becomes available from time to time.

"valid complaint" means a complaint the administering authority considers is not frivolous, nor vexatious, nor based on mistaken belief.

"visible salt" means where salt crystals accumulate on the soil surface.

"void" means any man-made, open excavation in the ground (includes borrow pits, drill sumps, frac pits, flar pits, cavitation pits and trenches).

"waters" includes all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, 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.

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

- a river, creek or stream in which water flows permanently or intermittently:
  - in a natural channel, whether artificially improved or not; or
  - in an artificial channel that has changed the course of the watercourse.
- Watercourse includes the **bed and banks** and any other element of a river, creek or stream confining or containing water.

"well infrastructure" means infrastructure required for the construction and completion of a well including but not limited to cellar pits, dams and drill sumps.

"well site" means a maximum area of land disturbance for the purposes of constructing, installing and operating an exploration, appraisal or **development well** or such wells as part of a multi-well arrangement and includes well lease infrastructure.

"wetland" for the purpose of this environmental authority 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
- are wetlands as defined under the Queensland Wetlands Program as areas of permanent or periodic / intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six (6) metres, 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.

"wetland of high ecological significance" otherwise known as a "high conservation value wetland", is a wetland that meets the definition of a wetland and that is shown as a wetland of high ecological significance or high conservation value wetland on the map of referable wetlands.

"year" means a period of 12 months.

"80th percentile" in relation to release limits means that not more than one (1) of the measured values is to exceed the stated release limit for any five (5) consecutive samples where:
- the consecutive samples are taken over a five (5) month period; and
- the consecutive samples are taken at approximately equal periods.

END OF PART A OF ENVIRONMENTAL AUTHORITY

Part B

Legislative Requirements and Conditions for the Santos GLNG Gas Field Development Project

Any condition with * is a Coordinator General Stated Condition for the Santos GLNG Gas Field Development Project.

Schedule A- General

Scoping Table Conditions

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

(a) the petroleum activities listed in *Schedule A, Table 1 – Scale and Intensity for the Activities* to the extent they are carried out in accordance with the activity's corresponding scale and intensity;

(b) **incidental activities** that are not otherwise **specified relevant activities**.

Schedule A, Table 1 – Scale and Intensity for the Activities

Infrastructure	**Scale (Maximum number of activities)**		**Intensity (Maximum size of disturbed area during construction)**
Wells	646		Up to 969 ha
Compressor Stations (below the threshold of 500kg of fuel per hour)	2		Up to 16 ha
Regulated Structure(s)	8		Up to 128 ha
Water Treatment Facilities	2		Up to 20 ha
Stimulation activities	All wells are subject to stimulation activities		
Sewage Treatment plants	2	>100 EP ≤ 1,500EP	As Required
	8	>21 EP ≤ 100 EP	
Gathering Lines /transmission pipelines	As Required		As Required
Access roads	As Required		Access road width: up to 30m

A2* The resource activities in condition (A1) are authorised subject to the conditions of this environmental authority.

A3* This environmental authority authorises a relevant act[1] to occur only to the extent that:

(a) the relevant act is an ordinary consequence of carrying out the resource activities authorised by this environmental authority in accordance with its conditions; or

(b) the relevant act is specifically authorised by the conditions of this environmental authority and carrying out an activity which results in the relevant act does not contravene the conditions of this authority.

Monitoring

A4* All monitoring required 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 required must be undertaken by a laboratory that has **NATA accreditation** for such analyses and tests.

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

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

(a) for waters and aquatic environments, the Queensland Government's Monitoring and Sampling Manual 2009 Environmental Protection (Water) Policy 2009

(b) for groundwater, Groundwater Sampling and Analysis A Field Guide (2009:27 GeoCat #68901)

(c) for noise, the Environmental Protection Regulation 2008

(d) for air, the Queensland Air Quality Sampling Manual and/or Australian Standard 4323.1:1995 Stationary source emissions method 1: Selection of sampling positions, as appropriate for the relevant measurement

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

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

Contingency Procedures for Emergency Environmental Incidents

A9* 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.

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

Maintenance of Plant and Equipment

A10* All plant and equipment must be maintained and operated in their proper and effective condition.

A11* The following infrastructure must be signed with a unique reference name or number in such a way that it is clearly observable:

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

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

(c) water treatment facilities

(d) sewage treatment facilities

(e) specifically authorised discharge points to air and waters

(f) any chemical storage facility associated with the environmentally relevant activity of chemical storage

(g) field compressor stations

(h) central compressor stations

(i) gas processing facilities; and

(j) pipeline compressor stations.

A12* Measures to prevent fauna being harmed from entrapment must be implemented during the construction and operation of well infrastructure, dams and pipeline trenches.

Complaints

A13* Petroleum activities must not cause **environmental nuisance** at a **sensitive place**, other than where an **alternative arrangement** is in place.

Documentation

A14* 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.

A15* All plans, procedures, programs, reports and methodologies required under this environmental authority must be written and implemented.

A16* All documents required to be developed under this environmental authority must be kept for five (5) years.

A17* 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.

A18* A record of all complaints must be kept including the date, complaint's details, source, reason for the complaint, description of investigations and actions undertaken in resolving the complaint.

Third Party Audit

A19* A **third party auditor**, nominated by the holder of this environmental authority and accepted by the administering authority, must audit compliance with the conditions of this environmental authority at a minimum frequency of every three (3) years.

A20* Notwithstanding condition (A19), and prior to undertaking the third party audit, the scope and content of the third party audit can be negotiated with the administering authority.

A21* An audit report must be prepared and certified by the third party auditor presenting the findings of each audit carried out.

A22* Any recommendations arising from the audit report must be acted upon by:

(a) investigating any non-compliance issues identified; and

(b) as soon as reasonably practicable, implementing measures or taking necessary action to ensure compliance with the requirements of this environmental authority.

A23* A written response must be attached to the audit report detailing the actions taken or to be taken on stated dates:

(a) by the holder to ensure compliance with this environmental authority; and

(b) to prevent a recurrence of any non-compliance issues identified.

A24* The audit report required by condition (A21) and the written response to the audit report required by condition (A23) must be submitted with the subsequent annual return.

Schedule B – Water

General

B1* Contaminants must not be directly or indirectly released to any waters except as permitted under this environmental authority.

B2* The extraction of groundwater as part of the petroleum activities from underground aquifers must not directly or indirectly cause environmental harm to any **watercourse** or **wetland.**

Works in Watercourses and Wetlands

B3* Only construction or maintenance of **linear infrastructure** is permitted in or within a general ecologically significant wetland or in a watercourse.

B4* The construction and/or maintenance of linear infrastructure that will result in significant disturbance in or on the **bed and banks** of a watercourse or within a **general ecologically significant wetland** must be conducted in accordance with the following order of preference:

(a) conducting works in times when there is no water present;

(b) conducting works in times of no flow;

(c) conducting works in times of flow but in a way that does not impede low flow.

B5* The construction and maintenance of linear infrastructure authorised under condition (B3) must comply with the water quality limits specified in *Schedule B, Table 1 Water release limits for Construction or Maintenance of Linear infrastructure*.

Schedule B, Table 1 - Water Release limits for Construction or Maintenance of Linear Infrastructure.

Water Quality Parameters	Units	Water Quality Limits
Turbidity	NTU	For a general ecologically significant wetland, 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 general ecologically significant wetland, 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	-	No visible sheen

B6* Monitoring must be undertaken at a reasonable frequency to ensure compliance with condition (B5).

B7* 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 or surface water at the time of the activity
(c) duration of work
(d) results of impact monitoring carried out under condition (B6).

B8* Petroleum activities must occur outside a **wetland of high ecological significance**.

B9* Petroleum activities must not negatively impact a wetland of high ecological significance.

B10* Linear infrastructure activities, other than linear infrastructure construction and/or maintenance activities, must not change the existing surface water hydrological regime of any general ecologically significant wetland.

B11* The construction and/or maintenance of linear infrastructure in any general ecologically significant wetland must not:

(a) prohibit the flow of surface water in or out of the wetland;
(b) impact surface water quality in the wetland unless specifically authorised by this environmental authority;
(c) drain the wetland;
(d) fill the wetland;
(e) impact bank stability; or
(f) result in the **clearing** of riparian vegetation outside of the required footprint.

Floodplains

B12* Where the petroleum activity is carried out on floodplains the petroleum activity must be carried out in a way that does not:

(a) concentrate flood flows in a way that will or may cause or threaten an adverse environmental impact; or
(b) divert flood flows from natural drainage paths and alter flow distribution; or
(c) increase the local duration of floods; or
(d) increase the risk of detaining flood flows.

Seepage Monitoring Program

B13* A seepage monitoring program must be developed by a suitably qualified person which is commensurate with the site-specific risks of contaminant seepage from containment facilities, and which requires and plans for detection of any seepage of contaminants to groundwater as a result of storing contaminants by no longer than 3 months following the effective date of this environmental authority.

B14* The seepage monitoring program required by condition (B13) 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 as provided for in condition (B15).
(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** 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 (B15)
(g) seepage trigger action response procedures for when trigger parameters and trigger levels identified in conditions (B15) and (B14)(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.

B15* Seepage monitoring bores identified in (B14) (b) must be monitored quarterly for the trigger parameter(s) specified in *Schedule B, Table 2 Seepage Monitoring Trigger Parameters*.

Schedule B, Table 2 Seepage Monitoring Trigger Parameters

Parameter	Units	Untreated Coal Seam Water	Permeate	Brine
Static Water Level	m	monitor	monitor	monitor
pH	pH unit	monitor	monitor	monitor
EC	µS/cm	monitor	monitor	monitor
Major Anions (sulphate, chloride)	mg/L	monitor	-	-
Major Cations (calcium, magnesium, sodium and potassium)	mg/L	monitor	-	-

Seepage Monitoring Bore Drill Log

B16* A bore drill log must be completed for each seepage monitoring bore in condition (B14) 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.

Well Testing

B17* Subject to condition (B18) and condition (B19), the injection of CSG water or better quality groundwater is authorised in wells that are not exploration, appraisal or development wells, for the purposes of **hydraulic testing**, where such hydraulic tests are undertaken for no more than two (2) consecutive days.

B18* The maximum volume of CSG water or better quality groundwater injected for the purposes of hydraulic testing identified in condition (B17) must not exceed 1ML per hydraulic test.

B19* Written notification detailing the type and location (GPS coordinates) of any hydraulic testing undertaken in accordance with condition (B17) must be provided to the administering authority at least 10 business days prior to the commencement of the hydraulic test.

Schedule C – Land

General

C1* Contaminants must not be directly or indirectly released to land except as permitted under this environmental authority.

Top Soil Management

C2* Top soil must be managed in a manner that preserves its biological and chemical properties.

Erosion and Sediment Control

C3* 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) preferentially divert stormwater around **significantly disturbed** land, or 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).

Land Management

C4* Land that has been significantly disturbed by the pipeline activities must be managed to ensure that gully erosion or subsidence do not occur on that land.

Chemical Storage

C5* Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards, where such a standard is applicable.

Pipeline Operation and Maintenance

C6* Contaminants authorised to be released to land under conditions (C7), (C9), and (C15) must be carried out in a manner that ensures:

(a) vegetation is not damaged;
(b) soil quality is not adversely impacted;
(c) there is no surface ponding or runoff beyond the designated release area;
(d) there is no aerosols or odours;
(e) deep drainage below the root zone of any vegetation is minimised;
(f) the quality of shallow aquifers is not adversely affected.

Pipeline Wastewater

C7* Contaminants that are hydrostatic test water from pipelines and contaminants from low point drains, may be released to land in accordance with condition (C6).

C8* **Produced water** may be re-used in:
(a) drilling and well hole activities; or
(b) stimulation activities.

C9* Produced water may be released to land for the following purposes:
(a) dust suppression;
(b) construction and operational purposes for the petroleum activity authorised by this environmental authority; and
(c) irrigation.

C10* Produced water irrigated to land must:
(a) not exceed the release limits specified in Schedule C, Table 1a Irrigation water quality monitoring; and
(b) be monitored at the frequency and for the quality characteristics at the monitoring point specified in *Schedule C, Table 1a - Irrigation water quality monitoring*; or
(c) the process under (C11) has been completed.

C11* Produced water for irrigation which does not meet criteria in condition (C10) (a) and (b) may be used for irrigation provided a report has been completed which:
(a) determines soil structure, stability and productive capacity will be maintained or improved;
(b) determines there are no toxic effects to crops;
(c) determines yields and produce quality are maintained or improved;
(d) states water quality criteria, which has been determined in accordance with the assessment procedures outlined in Schedule C, Table 1b Assessment procedures for water quality criteria; and
(e) includes a water monitoring program to ensure that condition (C11) (a)(b) and (c) are being achieved.

Schedule C, Table 1a - Irrigation water quality monitoring

Quality Characteristic	Release Limit	Limit Type	Frequency	Monitoring Point
Electrical conductivity (EC)	<950 µs/cm^3	95th percentile over a one-year period	Fortnightly	At a location following final treatment and prior to release.
Sodium adsorption ratio (SAR) for heavy soils	≤6			
SAR for light soils	≤12			
pH	6.0 - 8.5			
Aluminium	20 mg/L	Maximum	Bi-annually	
Arsenic	2.0 mg/L			
Boron	Refer to table 9.2.18 of ANZECC	Refer to table 9.2.18 of ANZECC		
Cadmium	0.05 mg/L	Maximum		
Chromium	1 mg/L			
Cobalt	0.1 mg/L			
Copper	5 mg/L			
Fluoride	2 mg/L			
Iron	10 mg/L			
Lithium	2.5 mg/L			
Lead	5 mg/L			
Manganese	10 mg/L			
Mercury	0.002 mg/L			
Molybdenum	0.05 mg/L			
Nickel	2 mg/L			
Zinc	5 mg/L			

Schedule C, Table 1b 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.

C12* Produced water may be used for domestic or stock purposes provided the water quality complies with the criteria specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ 2000).

C13* Produced water may be transferred to a third party to be used for the following purposes, subject to condition (C14):

(a) dust suppression;
(b) construction and operational purposes; or
(c) domestic or stock purposes provided the water quality complies with criteria specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ 2000).

C14* If the responsibility of produced water is given or transferred to a third party in accordance with condition (C13), the holder of the environmental authority must ensure:

(a) the responsibility of the produced water is given or transferred in accordance with a written agreement (third party agreement);
(b) the third party is made aware of the General Environmental Duty under section 319 of the Environmental Protection Act 1994.

Sewage Treatment Works

C15* **Greywater** or treated sewage effluent from a treatment system with a daily peak design capacity of up to 450 EP may be:

(a) released to land by sub-surface or spray irrigation provided it is to a fenced and signed contaminant release area that is:

(i) a minimum distance of 50 metres from any watercourse, wetland or protected area; and

(ii) a minimum distance of 100 metres from any potable water supply or stock drinking water supply; and

(iii) kept vegetated with groundcover that is not a **prohibited or restricted pest species**; or

(b) used for dust suppression, construction or operational purposes subject to condition (C22).

C16* When circumstances prevent the irrigation of treated sewage effluent to land, the contaminants must be directed to on-site storage or lawfully disposed of off-site.

Sewage Treatment Works Between 100 EP and 450 EP

C17* Prior to construction of a sewage treatment works with a **daily peak design capacity** of greater than 100EP, the minimum area of land and location to be utilised for irrigation of treated sewage effluent, excluding any necessary buffer zones, must be nominated.

C18* All nominated locations and minimum areas of land in condition (C17) for sewage treatment works with a daily peak design capacity of greater than 100EP, must be determined using the Model for Effluent Disposal using Land Irrigation (MEDLI) program or recognised equivalent and use model inputs representative of the activity and release location including but not limited to effluent quality, soil and vegetation types, and climatic conditions.

C19* Treated sewage effluent must only be released to the nominated locations and minimum areas of land determined by the MEDLI program or recognised equivalent identified in condition (C18).

C20* Treated sewage effluent released to land must comply, at the monitoring point(s), with each of the release limits specified in *Schedule C, Table 2 Treated sewage effluent standards for release to land from sewage treatment works with a daily peak design capacity of greater than 100EP* for each quality characteristic.

C21* Treated sewage effluent released to land must be monitored at the frequency and for the quality characteristics specified in *Schedule C, Table 2 Treated sewage effluent standards for release to land from sewage treatment works with a daily peak design capacity of greater than 100EP* for each quality characteristic.

Schedule C, Table 2 Treated sewage effluent standards for release to land from sewage treatment works with a daily peak design capacity of greater than 100EP

Quality Characteristic	Release Limit	Limit Type	Frequency	Monitoring Point
5-day Biochemical oxygen demand (BOD)	20 mg/L	Maximum	Quarterly	Release pipe from sewage treatment works
E. coli	1000 cfu per 100 mL	80th percentile based on at least 5 samples with not less than 30 minutes between samples		
	10,000 cfu per 100 mL	Maximum		
pH	6.0 - 8.5	Range	Monthly	
Dissolved Oxygen	2 mg/L	Minimum		
Electrical Conductivity		Monitor only		

Treated sewage effluent use for the purposes of dust suppression, construction and operational purposes

C22* Treated sewage effluent may only be used for dust suppression, construction and operational purposes provided that:

(a) the treated sewage effluent has not been stored in a dam or tank prior to use;

(b) on local government controlled roads, written approval from the relevant Local Government has been given to the holder of this environmental authority; and

(c) the treated sewage effluent quality:

(i) is monitored at the location and frequency specified *in Schedule C, Table 3 Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes*; and

(ii) meets the release limits for each quality characteristic specified in Schedule C, *Table 3 Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes*.

Schedule C, Table 3 – Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes

Quality Characteristic	**Sampling and *In situ* Measurement Point Location**	**Limit type**	**Release Limit**	**Frequency**
pH	Treated sewage effluent storage	Range	6.0 to 8.5	Weekly until 12 months of monitoring demonstrates no exceedances of the release limits. Monthly monitoring can occur thereafter.
5-day Biochemical Oxygen Demand (BOD)		Median	20 mg/L	
Electrical Conductivity		Maximum	1600 uS/cm	
Turbidity		95%ile (max)	2 (5) NTU	
Total Suspended Solids		Median	5 mg/L	
E. coli		Median	<10 cfu per 100 mL	Weekly

Schedule D – Biodiversity Values

Confirming Biodiversity Values

D1* Prior to undertaking activities that result in significant disturbance to land in areas of native vegetation, confirmation of on-the-ground environmentally sensitive areas and wetlands at that location must be undertaken by a suitably qualified person.

D2* A suitably qualified person must develop and certify a methodology so that condition (D1) can be complied with and which is appropriate to confirm on-the-ground environmentally sensitive areas and wetlands.

D3* Where areas mapped as environmentally sensitive areas and wetlands differ from those confirmed under conditions (D1) and (D2), petroleum activities may proceed in accordance with the conditions of the environmental authority based on the confirmed on the- ground values.

D4* All documentation survey information photographs, field data or any material associated with the field validation requirements in (D1) must be maintained for the life of the environmental authority to demonstrate to the administering authority that surveys were conducted in a manner consistent with requirements contained in (D2).

D5* The location of the petroleum activity 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.

Disturbance to Land Environmentally Sensitive Areas

D6* Petroleum activities must be carried out in accordance with *Schedule D, Table 1 Petroleum Activities in Environmentally Sensitive Areas*, and any other relevant conditions of this environmental authority.

Schedule D, Table 1 Petroleum Activities in Environmentally Sensitive Areas

ESA Category	Within the ESA	Primary protection zone of the ESA	Secondary protection zone of the ESA
Category A ESAs	No petroleum activities permitted	Only **low impact petroleum** activities permitted.	Limited petroleum activities permitted subject to condition (D10) **Limited impact camps** permitted subject to condition (D10) **Limited impact petroleum activities** permitted subject to condition (D10)
Category B ESAs excluding 'Endangered' Regional Ecosystems	Only low impact petroleum activities permitted	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to condition (D10) Limited impact petroleum activities permitted subject to condition (D10)	
Category C ESAs that are Nature Refuges, Koala Habitat and/or Declared Catchment Areas	Only low impact petroleum activities permitted	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to conditions (D7) and (D10) Limited impact petroleum activities permitted subject to condition (D10)	
Category B ESAs that are 'Endangered 'Regional Ecosystems	Only limited petroleum activities permitted subject to condition (D11)	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to condition (D10) Limited impact petroleum activities permitted subject to condition (D10)	
Category C ESAs that are Essential Habitat, Essential Regrowth Habitat and/or 'Of Concern' Regional Ecosystems	Only limited petroleum activities permitted subject to condition (D11)	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to conditions (D7) and (D10) Limited impact petroleum activities permitted subject to condition (D10)	
Category C ESAs that are Regional Parks (Resource Use Area)	Only limited petroleum activities permitted subject to condition (D11)	Limited petroleum activities permitted subject to condition (D10)	

ESA Category	Within the ESA	Primary protection zone of the ESA	Secondary protection zone of the ESA
		Limited impact camps permitted subject to condition (D10) Limited impact petroleum activities permitted subject to condition (D10)	
Category C ESAs that are State Forests and/or Timber Reserves	Limited petroleum activities permitted subject to condition (D11) Petroleum activities that are extraction activities and screening activities permitted. Limited impact camps permitted. Limited impact petroleum activities permitted subject to conditions (D8) and (D11)		

Note: Approvals may be required under the Forestry Act 1959 where the petroleum activity is proposed to be carried out in ESAs that are State Forests or Timber Reserves.

D7* Limited impact camps must not be located within a primary protection zone of Category C ESA (Essential Habitat) or Category C ESA (Nature Refuges).

D8* Limited impact petroleum activities must not be located within areas that contain commercial species.

D9* Despite condition (D6) decommissioning petroleum activities are authorised within all ESAs other than Category A ESAs, and within all ESA protection zones when conducted in accordance with the land disturbance planning principles provided in condition (D5).

D10* Limited petroleum activities, limited impact camps or limited impact petroleum activities located within a primary protection zone or secondary protection zone of an environmentally sensitive area in accordance with *Schedule D, Table 1 Petroleum Activities in Environmentally Sensitive Areas* must not negatively affect the adjacent environmentally sensitive area.

D11* Prior to carrying out limited petroleum activities or limited impact petroleum activities undertaken within environmentally sensitive areas in accordance with *Schedule D, Table 1 Petroleum Activities in Environmentally Sensitive Areas*, it must be demonstrated, in the following order of preference that:

(a) no reasonable or practicable alternative exists for carrying out the limited petroleum activities within the environmentally sensitive area;
(b) the limited petroleum activities are preferentially located in pre-existing areas of clearing or significant disturbance;
(c) clearance widths for linear infrastructure is minimised to the maximum extent possible, taking into account the following matters:
    i. safe vehicle movement;
    ii. drainage devices installed are of a type that is appropriate for the track type and location;
    iii. erosion and sediment control measures installed are in accordance condition (B2); and
    iv. power line stays have been preferentially located within the pipeline right of way where possible.

(d) the maximum clearance widths specified in *Schedule D, Table 2 Authorised Disturbance for Linear Infrastructure* are not exceeded.

Schedule D, Table 2 Authorised Disturbance for Linear Infrastructure

Type of Linear Infrastructure	Clearance width (m)
(A) Access track(s) not associated with a pipeline(s), communication lines(s) or power line(s):	
(a) single carriage access tracks	18
(b) dual carriage access tracks	21
(c) single or dual carriage access track and associated turnaround bay	35
(B) Access track(s) associated with a pipeline(s), communication line(s) or power line(s):	
(a) single carriage access tracks with a single pipeline, communication line or power line	24
(b) dual carriage access track with a single pipeline, communication line or power line.	27
(c) single or dual carriage access track and associated turnaround bay with a single pipeline, communication line or power line.	41
(d) additional clearing for any additional parallel pipeline, communication line or power line associated with (B)(a), (b) or (c)	7[1]
(C) Additional clearing for take-off drains, power line stays or turnaround bays or other work areas:	
(a) Additional clearing for power line stays associated with (B)	10
(b) additional clearing for take-off drains associated with (A) or (B)	10

[1] Maximum total disturbance for (B) is 62m.

Offset Delivery

D12* An Offset Plan must be prepared in accordance with section 5 of the Offset Strategy at Appendix AB of the final environmental impact statement (EIS) decided by the Coordinator-General on 3 September 2015. After a decision under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and three (3) months prior to any construction activities, the proponent must submit the Offset Plan to the Department of Environment and Science. The Offset Plan must consider offsets for any significant residual impacts to the following ecological receptors:

(i) regional ecosystems listed as endangered (biodiversity status)
(ii) regional ecosystems listed as of concern (biodiversity status)
(iii) essential habitat
(iv) wetlands of general ecological significance.

The Offset Plan must:

(a) detail how the specific offset requirements conditioned by the Commonwealth Minister for the Environment in any approval for the project under the EPBC Act will be delivered
(b) detail proposed offsets to address any significant residual impacts for the ecological receptors at condition (D12) (i)-(iv)
(c) include, but not necessarily be limited to:
    (i) a detailed description of the land to which the plan relates, the values affected and the extent and likely timing of impact on each value
    (ii) evidence that values impacted can be offset
    (iii) the method for delivering the offset, including consideration of land-based offsets, direct benefit management plans, offset transfers and/or offset payments and other tenure activities
(d) ensure a legally binding mechanism to protect and manage offset areas
(e) include a staging plan to demonstrate how offsets will be delivered and managed over the life of the project
(f) consider existing, proposed and future offsets prepared and/or planned under the existing environmental authorities pertaining to the project area.

Maximum Disturbance

D13* Disturbance to ecological receptors listed in *Schedule D, Table 3 Maximum disturbance limits to ecological receptors*, must not exceed the relevant maximum disturbance limits.

Schedule D, Table 3 Maximum disturbance limits to ecological receptors

Ecological Receptor	Proposed disturbance area (ha)
Endangered vegetation (REs and high value regrowth) (biodiversity status)	70.6
Of-concern vegetation (REs and high value regrowth) (biodiversity status)	189.7
Essential habitat	1.5
Wetlands (general ecological significance)	4
Resource reserves	0
State forest and timber reserves	262.9

Schedule E – Waste

General Waste Management

E1* 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.**

E2* 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 (E3), (E5), (E6), (C7), (C9) and (C15) to be disposed of or used on site.

E3* Unless otherwise authorised by the conditions of this EA to be released to land, Waste fluids, other than **flare precipitant** stored in **flare pits**, or residual drilling material, or drilling fluids stored in **sump**s, must be contained in either:

(a) an above ground container; or
(b) a structure which contains the wetting front.

E4* 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*.

Residual Drilling Materials

E5* If sumps are used to store residual drilling material or drilling fluids, they must only be used for the duration of drilling activities.

E6* Residual drilling material can only be disposed of on-site:

(a) by **mix-bury-cover method** if the residual drilling material meets the **approved quality criteria**; or
(b) if it is certified by a **suitably qualified third party** as being of acceptable quality for disposal to land by the proposed method and that environmental harm will not result from the proposed disposal.

E7* Records must be kept to demonstrate compliance with condition (E5) and condition (E6).

Schedule F – Noise

F1* Notwithstanding condition (A16), emission of noise from the petroleum activity at levels less than those specified in *Schedule F, Table 1 Noise nuisance limits* are not considered to be environmental nuisance.

Schedule F, Table 1 Noise nuisance limits

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

Note: The noise limits in 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

F2* If the noise subject to a **valid complaint** is tonal or **impulsive**, the adjustments detailed in *Schedule F, 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 F, 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

F3* Notwithstanding condition (F1), emission of any low frequency noise must not exceed either (F3(a)) and (F3(b)), or (F3(c)) and (F3(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 $L_{pZ,\ 15\ min}$**) noise levels is no greater than 15 dB.

F4* A Blast Management Plan must be developed for each blasting activity in accordance with **Australian Standard 2187**.

F5* 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.

F6* 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 G – Air

Venting and Flaring

G1* 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 (G1(a)) and (G1(b)) and (G1(c)), or with (G1(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**.

Schedule H – Regulated Structures

Assessment of Consequence Category

H1 The **consequence category** of any **structure** must be **assessed** by a **suitably qualified and experienced person** in accordance with the *Manual for assessing consequence categories and **hydraulic performance** of structures* (ESR/2016/1933[1]) at the following times:

a) prior to the design and **construction** of the **structure**, or
b) prior to any change in its purpose or the nature of its stored contents.

H2 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.

H3 Certification must be provided by the **suitably qualified and experienced person** who undertook the assessment, in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

Design and Construction of a Regulated Structure

H4 All **regulated structures** must be designed by, and **constructed[2]** under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the ***Manual** for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

H5 Construction of a regulated structure is prohibited unless:

a) the **holder** has submitted a **consequence category assessment** report and certification to the administering authority; and
b) certification for the design, **design plan** and the associated operating procedures has been **certified** by a suitably qualified and experienced person in compliance with the relevant condition of this **authority**.

H6 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933), and must be recorded in the **Register of Regulated Structures**.

H7 **Regulated structures** must:

a) be designed and constructed in compliance with the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933);
b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:
    i. floodwaters from entering the regulated dam from any **watercourse** or drainage line; and
    ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
c) have the floor and sides of the **dam** designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and **rehabilitation** of the dam.

[1] This is the publication number, which can be used as a search term to find the latest version of the publication at www.des.qld.gov.au.
[2] Certification of design and construction may be undertaken by different persons.

H8 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure
b) construction of the regulated structure is in accordance with the design plan.

Notification of Affected Persons

H9 All **affected person**s must be provided with a copy of the **emergency action plan** in place for each regulated structure

a) prior to the operation of the new regulated structure; and
b) if the emergency action plan is amended, within 5 business days of it being amended.

Operation of a Regulated Structure

H10 Operation of a regulated structure is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following:

a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition H5;
b) a set of 'as constructed' drawings and specifications;
c) certification of the 'as constructed drawings and specifications' in accordance with condition H8;
d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified **system design plan**;
e) the requirements of this authority relating to the **construction** of the regulated structure have been met;
f) the holder has entered the details required under this **authority**, into a Register of Regulated Structures; and
g) there is a current **operational plan** for the regulated structure.

H11 Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

Mandatory Reporting Level

H12 Conditions H13 to H16 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

H13 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.

H14 The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

H15 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.

H16 The holder must record any changes to the MRL in the Register of Regulated Structures.

Design Storage Allowance

H17 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.

H18 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).

H19 The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

H20 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

H21 Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

H22 At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.

H23 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

H24 The holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority:

a) The recommendations section of the annual inspection report; and
b) If applicable, any actions being taken in response to those recommendations; and
c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days11 of receipt of the request.

Transfer Arrangements

H25 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

H26 Regulated structures must not be abandoned but be either:

a) decommissioned and rehabilitated to achieve compliance with condition H27; or
b) be left in-situ for a use by the landholder provided that:
    i. it no longer contains contaminants that will migrate into the environment; and
    ii. it contains water of a quality that is demonstrated to be suitable for its intended use(s); and
c) the holder of the environmental authority and the landholder agree in writing that the;
    i. dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and
    ii. landholder is responsible for the dam, on and from an agreed date.

H27 Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, **stable**, non-polluting landform and be suitable for the relevant final land use.

Register of Regulated Structures

H28 A Register of Regulated Structures must be established and maintained by the holder for each regulated structure.

H29 The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.

H30 The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition H10 has been achieved.

H31 The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.

H32 All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.

H33 The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.

Schedule I – Well construction, maintenance and stimulation activities

Drilling Activities

I1* Oil based or **synthetic based drilling mud**s must not be used in the carrying out of the petroleum activity(ies).

I2* Drilling activities must not result in the connection of the target gas producing formation and another aquifer.

I3* Practices and procedures must be in place to detect, as soon as practicable, any fractures that have or may result in the connection of a target gas producing formation and another aquifer as a result of drilling activities.

Stimulation Activities

I4* Polycyclic aromatic hydrocarbons or products that contain polycyclic aromatic hydrocarbons must not be used in **stimulation fluid**s in concentrations above the **reporting limit**.

I5* Stimulation activities must not negatively affect water quality, other than that within the **stimulation impact zone** of the target gas producing formation.

I6* Stimulation activities must not cause the connection of the target gas producing formation and another aquifer.

I7* The internal and external mechanical integrity of the well system prior to and during well stimulation must be ensured such that there is:

a) no significant leakage in the casing, tubing, or packer; and
b) there is no significant fluid movement into another aquifer through vertical channels adjacent to the well bore hole.

I8* Practices and procedures must be in place to detect, as soon as practicable, any fractures that cause the connection of a target gas producing formation and another aquifer.

Stimulation Risk Assessment

I9* Prior to undertaking well stimulation activities, a risk assessment must be developed to ensure that stimulation activities are managed to prevent environmental harm.

I10* The stimulation risk assessment must be carried out for every well to be stimulated prior to stimulation activities being carried out at that well and address issues at a relevant geospatial scale such that changes to features and attributes are adequately described and must include, but not necessarily be limited to:

a) a process description of the stimulation activity to be applied, including equipment and a comparison to best international practice;
b) provide details of where, when and how often stimulation is to be undertaken on the tenures covered by this environmental authority;
c) a geological model of the field to be stimulated including geological names, descriptions and depths of the target gas producing formation(s);
d) naturally occurring geological faults;
e) seismic history of the region (e.g. earth tremors, earthquakes);
f) proximity of overlying and underlying aquifers;

g) description of the depths that aquifers with environmental values occur, both above and below the target gas producing formation.
h) identification and proximity of **landholders' active groundwater bores** in the area where stimulation activities are to be carried out;
i) the environmental values of groundwater in the area;
j) an assessment of the appropriate limits of reporting for all water quality indicators relevant to stimulation monitoring in order to accurately assess the risks to environmental values of groundwater;
k) description of overlying and underlying formations in respect of porosity, permeability, hydraulic conductivity, faulting and fracture propensity;
l) consideration of barriers or known direct connections between the target gas producing formation and the overlying and underlying aquifers;
m) a description of the well mechanical integrity testing program;
n) process control and assessment techniques to be applied for determining extent of stimulation activities (e.g. microseismic measurements, modelling etc);
o) practices and procedures to ensure that the stimulation activities are designed to be contained within the target gas producing formation;
p) groundwater **transmissivity**, flow rate, hydraulic conductivity and direction(s) of flow;
q) a description of the chemicals used in stimulation activities (including estimated total mass, estimated composition, chemical abstract service numbers and properties), their mixtures and the resultant compounds that are formed after stimulation;
r) a mass balance estimating the concentrations and absolute masses of chemicals that will be reacted, returned to the surface or left in the target gas producing formation subsequent to stimulation;
s) an environmental hazard assessment of the chemicals used including their mixtures and the resultant chemicals that are formed after stimulation including:
    (i). toxicological and ecotoxicological information of chemicals used;
    (ii). information on the persistence and bioaccumulation potential of the chemicals used;
    (iii). identification of the stimulation fluid chemicals of potential concern derived from the risk assessment;
t) an environmental hazard assessment of use, formation of, and detection of polycyclic aromatic hydrocarbons in stimulation activities;
u) if used, identification and an environmental hazard assessment of using radioactive tracer beads in stimulation activities
v) an environmental hazard assessment of leaving stimulation chemicals in the target gas producing formation for extended periods subsequent to stimulation;
w) human health exposure pathways to operators and the regional population;
x) risk characterisation of environmental impacts based on the environmental hazard assessment;
y) potential impacts to landholder bores as a result of stimulation activities;
z) the determination of the likelihood of causing interconnectivity and/or negative water quality as a result of stimulation activities undertaken in close proximity or each other; and
aa) potential environmental or health impacts which may result from stimulation activities including but not limited to water quality, air quality (including suppression of dust and other airborne contaminants), noise and vibration.

Water Quality Baseline Monitoring

I11* Prior to undertaking any stimulation activity, a baseline bore assessment must be undertaken of the water quality of:
(a) all landholders' active groundwater bores (subject to access being permitted by the landholder) that are spatially within a two (2) kilometre horizontal radius from the location of the stimulation initiation point within the target gas producing formation; and
(b) all landholders' active groundwater bores (subject to access being permitted by the landholder) in any aquifer that is within 200 metres above or below the target gas producing formation and is spatially located with a two (2) kilometre radius from the location of the stimulation initiation point; and
(c) any other bore that could potentially be adversely impacted by the stimulation activity(ies) in accordance with the findings of the risk assessment required by conditions (I9) and (I10).

I12* Prior to undertaking stimulation activities at a well, there must have sufficient water quality data to accurately represent the water quality in the well to be stimulated. The data must include, as a minimum, the results of analyses for the parameters in condition (I13).

I13* Baseline bore and well assessments must include relevant **analytes** and physicochemical parameters to be monitored in order to establish baseline water quality and must include, but not necessarily be limited to:

(a) pH
(b) electrical conductivity [µS/m]
(c) turbidity [NTU]
(d) total dissolved solids [mg/L]
(e) temperature [°C]
(f) dissolved oxygen [mg/L]
(g) dissolved gases (methane, chlorine, carbon dioxide, hydrogen sulfide) [mg/L]
(h) alkalinity (bicarbonate, carbonate, hydroxide and total as CaCO3) [mg/L]
(i) sodium adsorption ratio (SAR)
(j) anions (bicarbonate, carbonate, hydroxide, chloride, sulphate) [mg/L]
(k) cations (aluminium, calcium, magnesium, potassium, sodium) [mg/L]
(l) dissolved and total metals and metalloids (including but not necessarily being limited to: aluminium, arsenic, barium, borate (boron), cadmium, total chromium, copper, iron, fluoride, lead, manganese, mercury, nickel, selenium, silver, strontium, tin and zinc) [µg/L]
(m) total petroleum hydrocarbons [µg/L]
(n) **BTEX** (as benzene, toluene, ethylbenzene, ortho-xylene, para- and meta-xylene, and total xylene) [µg/L]
(o) polycyclic aromatic hydrocarbons (including but not necessarily being limited to: naphthalene, phenanthrene, benzo[a]pyrene) [µg/L]
(p) sodium hypochlorite [mg/L]
(q) sodium hydroxide [mg/L]
(r) formaldehyde [mg/L]
(s) ethanol [mg/L]; and
(t) gross alpha + gross beta or radionuclides by gamma spectroscopy [Bq/L].

Stimulation Impact Monitoring Program

I14* A Stimulation Impact Monitoring Program must be developed prior to the carrying out of stimulation activities which must be able to detect adverse impacts to water quality from stimulation activities and must consider the findings of the risk assessment required by conditions (I9) and (I10) that relate to stimulation activities and must include, as a minimum, monitoring of:

(a) the stimulation fluids to be used in stimulation activities at sufficient frequency and which sufficiently represents the quantity and quality of the fluids used; and
(b) flow back waters from stimulation activities at sufficient frequency and which sufficiently represents the quality of that flow back water; and
(c) flow back waters from stimulation activities at sufficient frequency and accuracy to demonstrate that 150 per cent of the volume used in stimulation activities has been extracted from the stimulated well; and
(d) all bores in accordance with condition (I11) at the following minimum frequency:
    i. monthly for the first six (6) months subsequent to the stimulation activities being undertaken; then
    ii. annually for the first five (5) years subsequent to the stimulation activities being undertaken or until analytes and physico-chemical parameters listed in condition (I13) are not detected in concentrations above baseline bore monitoring data on two (2) consecutive monitoring occasions.

I15* The Stimulation Impact Monitoring Program must provide for monitoring of:

a) analytes and physico-chemical parameters relevant to baseline bore and well assessments to enable data referencing and comparison including, but not necessarily being limited to the analytes and physico-chemical parameters in condition (I13); and

b) any other analyte or physico-chemical parameters that will enable detection of adverse water quality impacts and the inter-connection with a non-target aquifer as a result of stimulation activities including chemical compounds that are actually or potentially formed by chemical reactions with each other or coal seam materials during stimulation activities.

I16* The results of the Stimulation Impact Monitoring Program must be made available to any potentially affected landholders upon request by that landholder.

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 prohibited or restricted pest species, is **growing**; or
  - (ii). an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained.

Remaining Dams

J3* Where there is a dam, (including a low consequence dam) that is being or intended to be used 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.

Pipeline Activities

J4* Pipeline trenches must be backfilled and topsoils reinstated within three months after pipe laying.

J5* 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.

J6* 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 prohibited or restricted pest species, and which is established and growing.

Final Rehabilitation Acceptance Criteria

J7* 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 per cent 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 prohibited or restricted pest species
(d) where the adjacent land use contains, or the pre-clearing land use contained, one or more regional ecosystem(s), then:
  (i). at least one Regional Ecosystem(s) from the same broad vegetation group, as demonstrated by the **predominant species** in the **ecologically dominant layer**, must be present; and,
  (ii). the Regional Ecosystem present in (J9)(d)(i) must possess an equivalent or higher conservation value (biodiversity status) than the Regional Ecosystem(s) in Either the Adjacent Land or Pre-Disturbed Land.

Final Rehabilitation Acceptance Criteria in Environmentally Sensitive Areas

J8* 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 (J1) and (J2)) 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 prohibited or restricted 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.

Schedule K – Notification

K1* The administering authority must be notified through the Pollution Hotline as soon as reasonably practicable, but within 48 hours after becoming aware of:

(a) any unauthorised significant disturbance to land; or
(b) any unauthorised release of contaminants greater than:
  (i). 200 L of hydrocarbons; or
  (ii). 200 L of stimulation additives; or
  (iii). 500 L of stimulation fluids; or
  (iv). 1,000 L of brine; or
  (v). 5,000 L of coal seam gas water; or
  (vi). 10,000 L of sewage effluent;
  (vii). 100,000 L of irrigation-quality coal seam gas water, released inside a designated irrigation area authorised by condition (C9)(c).
(c) a potential or actual loss of structural or hydraulic integrity of a dam; or
(d) when the level of the contents of any regulated dam reaches the mandatory reporting level; or
(e) when a regulated dam will not have available storage to meet the design storage allowance on the 1 November of any year; or
(f) any incident where there is a potential or actual loss of **well integrity** (e.g. when the annulus pressure during stimulation increases by more than 3.5 MPa from the pressure immediately preceding stimulation); or
(g) any detection of **restricted stimulation fluids** from stimulation fluid monitoring; or
(h) any analyses result from baseline bore, well or stimulation impact monitoring that exceeds a water quality objective for the protection of an environmental value of that water resource; or
(i) any analyses result from groundwater monitoring that exceeds trigger action investigation levels, if provided in this environmental authority.

K2* The notification of emergencies or incidents as required by condition (K1) must include but not be limited to the following information:

(a) the environmental authority number and name of the holder;
(b) the tenure type and number where the emergency or incident occurred;
(c) the name and telephone number of the designated contact person;
(d) the location of the emergency or incident (GDA94);
(e) the date and time that the emergency or incident occurred;
(f) the date and time the holder of this environmental authority became aware of the emergency or incident;
(g) details of the nature of the event and the circumstances in which it occurred;
(h) the estimated quantity and type of any contaminants involved in the incident;
(i) the actual or potential suspected cause of the emergency or incident;
(j) a description of the land use at the site of the emergency or incident (e.g. grazing, pasture, forest etc.) and/or the name of any relevant waters and other environmentally sensitive features;
(k) a description of the possible impacts from the emergency or incident;
(l) a description of whether stock and/or wildlife were exposed to any contaminants released and measures taken to prevent access for the duration of the emergency or incident;
(m) any sampling conducted or proposed, relevant to the emergency or incident;
(n) landholder details and details of landholder consultation;
(o) immediate actions taken to control the impacts of the emergency or incident and how environmental harm was mitigated at the time of the emergency or incident; and
(p) whether further examination/root cause analysis is required and if so, the expected date by when this examination will be completed and reported to the administering authority.

K3* Within 10 business days following the initial notification under conditions (K1) and (K2) unless a longer time is agreed to by the administering authority, a written report must be provided to the administering authority, including the following (where relevant to the emergency or incident):

(a) the root cause of the emergency or incident;

(b) the confirmed quantities and types of any contaminants involved in the incident;
(c) results and interpretation of any analysis of samples taken at the time of the emergency or incident (including the analysis results of any impact monitoring);
(d) a final assessment of the impacts from the emergency or incident including any actual or potential environmental harm that has occurred or may occur in the longer term as a result of the release;
(e) the success or otherwise of actions taken at the time of the incident to prevent or minimise environmental harm;
(f) results and current status of landholder consultation, including commitment to resolve any outstanding issues / concerns; and
(g) actions and / or procedural changes to prevent a recurrence of the emergency or incident.

Schedule L – Definitions

"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 or property can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

"Alternative Arrangement" means a written agreement about the way in which a particular 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" 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.

"Analytes" means a chemical parameter determined by either physical measurement in the field or by laboratory analysis.

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

"Annual Inspection Report" means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan):

(a) against recommendations contained in previous annual inspections reports;

(b) against recognised dam safety deficiency indicators;

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

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

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

(f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);

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

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

"Approved Quality Criteria" for the purposes of residual drilling materials, means the residual drilling material meet the following quality standards:

Part A In all cases:

Parameter	Maximum concentration
pH	6-10.5 (range)
Electrical Conductivity	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
Arsenic	20 mg/kg
Selenium	5 mg/kg
Boron	100 mg/kg
Cadmium	3 mg/kg
Chromium	400 mg/kg
Copper	100 mg/kg
Lead	600 mg/kg

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

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

"Areas of Pre-existing Disturbance" means areas where environmental values have been negatively impacted as a result of anthropogenic activity and these impacts are still evident. Areas of pre-disturbance may include areas where legal clearing, logging, timber harvesting, or grazing activities have previously occurred, where high densities of weed or pest species are present which have inhibited re-colonisation of native regrowth, or where there is existing infrastructure (regardless of whether the infrastructure is associated with the authorised 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 4323"means Australian Standard 4323.1:1995 Stationary source emissions method 1: Selection of sampling positions.

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

"Authority" means an environmental authority.

"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 per cent of the measurement time period T of not less than 15 minutes, using Fast response.

"Bed and Banks" for a watercourse or wetland means land over which the water of the watercourse or wetland normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed or banks that is from time to time covered by floodwater.

"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.

"Bore" means a water observation bore or a water supply bore that is either sub-artesian or artesian.

"Brine" means saline water with a total dissolved solid concentration greater than 40,000 mg/l.

"Bund or bunded" in relation to spill containment systems for fabricated or manufactured tanks or containers designed to a recognised standard means an embankment or wall of brick, stone, concrete or other impervious material which may form part or all of the perimeter of a compound and provides a barrier to retain liquid. Since the bund is the main part of a spill containment system, the whole system (or bunded area) is sometimes colloquially referred to within industry as the bund. The bund is designed to contain spillages and leaks from liquids used, stored or processed above ground and to facilitate clean-up operations. As well as being used to prevent pollution of the receiving environment, bunds are also used for fire protection, product recovery and process isolation.

"Business Day" has the meaning in the *Acts Interpretation Act 1954* and *Environmental Protection Act 1994* and means a day that is not—

- a Saturday or Sunday; or
- public holiday, special holiday or bank holiday in the place in which any relevant act is to be or may be done; or
- a business day that occurs during the period starting on 20 December in a year and ending on 5 January in the following year.

"BTEX" means benzene, toluene, ethylbenzene, ortho-xylene, paraxylene, meta-xylene and total xylene.

"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 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 (resource use area) under the *Nature Conservation Act 1992*;
- An area validated as "Essential 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 identified in the database called 'RE description database' containing Regional Ecosystem numbers and descriptions.

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

- The person's qualifications and experience relevant to the function;
- that the person has not knowingly included false, misleading or incomplete information in the document;
- that the person has not knowingly failed to reveal any relevant information or document to the administering authority;
- that the document addresses the relevant matters for the function and is factually correct; and

- that the opinions expressed in the document are honestly and reasonably held.

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

"Commercial species" means species as listed in parts 1, 2 and 3 of Schedule 6 of the Vegetation Management Regulation 2012, which are above the diameters / sizes specified in this Schedule for each listed species.

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

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

"Consequence Category" means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).

"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.

"Daily Peak Design Capacity" for sewage treatment works, has the meaning in Schedule 2, section 63(4) of the *Environmental Protection Regulation 2008* as the higher equivalent person (EP) for the works calculated using each of the formulae found in the definition for EP.

"Dam" means a land-based structure or a **void** that 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**).

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

"Document" has the meaning in the *Acts Interpretation Act 1954* and means:

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

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

"Design Storage Allowance or DSA" means an available volume, estimated in accordance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933) published by

the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an **annual exceedance probability (AEP)** specified in that Manual.

"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 affected persons and the implementation of protection measures. The plan must require dam owners to annually review and update contact information where required.

"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.

"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.

"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 (ESR/2016/1933)* published by the administering authority.

"Flare Pit" has the meaning in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (*ESR/2016/1933)*, 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.

"General Ecologically Significant Wetland" otherwise known as "wetlands of other environmental value", is a wetland that meets the definition of a wetland and that is shown as a general ecologically significant wetland or "wetland of other environmental value" on the **map of referable wetlands**.

"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

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

"Groundwater Dependent Ecosystems (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 any person who is the holder of, or is acting under, that environmental authority.

"Hydraulic Performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

"Hydraulic Testing" means the testing of a geological formation to evaluate the hydrogeological characteristics of the formation.

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

"Incidental Activity" for this environmental authority means an activity that is not a specified relevant activity and is necessary to carry out the activities listed in Schedule A, Table 1 – Scale and Intensity for the Activities.

"$L_{Aeq,adj,\ 15mins}$" 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.

"Landholders' Active Groundwater Bores" 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*.

"limited impact camp" mean accommodation camps that:

- are temporary (no more than 6 months);
- are located within pre-existing areas of clearing or significant disturbance;
- are up to 2 ha or located within **well sites**; and
- may involve sewage treatment works that are no release works or release works that involve an irrigation release within pre-existing areas of clearing or significant disturbance.

"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.

"Limited Impact Camps" mean accommodation camps that:

- are temporary (no more than 6 months);
- are located within pre-existing areas of clearing or significant disturbance;
- are up to 2 ha or located within well sites; and
- may involve sewage treatment works that are no release works or release works that involve an irrigation release within pre-existing areas of clearing or significant disturbance.

"Limited Impact Petroleum Activities" means petroleum activities that are located within areas that are not a regional ecosystem and:

- are single well sites (includes observation, pilot, injection and production wells) greater than 1.25 ha; or

- are multi-well sites greater than 3 ha; and
- may involve construction of new access tracks that are required as part of the construction or servicing a petroleum activity that can be lawfully carried out within an ESA or its protection zone; and
- may involve upgrading or maintenance of existing roads or tracks; and
- may include power and communication lines; and
- may include gas gathering lines from a well site to the initial compression facility; and
- may include water gathering lines from a well site to the initial water storage or dam.

"Limited Petroleum Activities" mean any low impact petroleum activity, and:

- single well sites (includes observation, pilot, injection and production wells) up to 1 ha and associated infrastructure (water pumps and generators, sumps, flare pits or dams) located on the well site or up to 1.25 ha if the well pad includes the use of a tank (minimum 1ML) for above ground fluid storage,
- multi-well sites up to an additional (in addition to single well site above) 0.25 ha per additional well and associated infrastructure (water pumps and generators, sumps, flare pits, dams or tanks) located on the well site to a maximum of 3 ha,
- construction of new access tracks that are required as part of the construction or servicing a petroleum activity that can be lawfully carried out within an ESA or its protection zone upgrading or maintenance of existing roads or tracks,
- power and communication lines,
- gas gathering lines from a well site to the initial compression facility,
- water gathering lines from a well site to the initial water storage or dam,
- camps within well site that may involve sewage treatment works that are a no release works.

"Linear Infrastructure" means powerlines, pipelines, flowlines, roads and access tracks.

"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 a high or significant consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

"Low Impact Petroleum Activities" means petroleum activities which do not result in the clearing of native vegetation, earthworks or excavation work that cause either, a significant disruption to the soil profile or permanent damage to vegetation that cannot be easily rehabilitated immediately after the activity is completed. Examples of such activities include but are not necessarily limited to:

- chipholes
- coreholes
- geophysical surveys
- seismic surveys
- soil surveys
- topographic surveys
- cadastral surveys
- ecological surveys

- installation of environmental monitoring equipment (including surface water)

"Mandatory Reporting Level or MRL" means a warning and reporting level determined in accordance with the criteria in the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933) published by the administering authority.

"Manual" in reference to dams means the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933) published by the administering authority, as amended from time to time.

"Map of Referrable Wetlands" has the meaning in Schedule 12 of the Environmental Protection 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.

"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.

"Operational Plan" includes:

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

(b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

"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.

"Primary Protection Zone" means an area within 200m from the boundary of any Category A, B or C Environmentally Sensitive Area.

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

"Prohibited or Restricted Pest Species" means any pest that is:

(a) a plant or animal, other than a native species of plant or animal, that is

i. invasive biosecurity matter under the Biosecurity Act 2014 (Qld); or

Notes—

1 See the Biosecurity Act 2014, schedule 1, part 3 or 4 or schedule 2, part 2; and

2 See the note to the Biosecurity Act 2014, schedules 1 and 2.

ii. controlled biosecurity matter or regulated biosecurity matter under the Biosecurity Act 2014 (Qld)

iii. tramp ants listed in schedule 1 and schedule 2 of the Biosecurity Act 2014 (Qld)

(b) a pest declared under a local law by the local government for the Land to be a pest because the pest is causing, or has the potential to cause, an adverse environmental, economic or social impact in all or part of the local government area.

"Register of Regulated Structures" includes:

(a) Date of entry in the register;

(b) Name of the structure, its purpose and intended/actual contents;

(c) The consequence category of the dam as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933);

(d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;

(e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;

(f) For the regulated dam, other than in relation to any **levees** –

i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;

ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area

iii. **Dam crest volume** (megalitres);

iv. Spillway crest level (metres AHD).

v. Maximum operating level (metres AHD);

vi. Storage rating table of stored volume versus level (metres AHD);

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

viii. Mandatory reporting level (metres AHD);

(g) The design plan title and reference relevant to the dam;

(h) The date construction was certified as compliant with the design plan;

(i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;

(j) Details of the composition and construction of any liner;

(k) The system for the detection of any leakage through the floor and sides of the dam;

(l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;

(m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;

(n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

"Regulated 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 APGA Code of Environmental Practice: Onshore Pipelines Revision 4 (2017).

"Reporting Limit" means the lowest concentration that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes, the reporting limit is selected as the lowest non-zero standard in the calibration curve. Results that fall below the reporting limit will be reported as "less than" the value of the reporting limit. The reporting limit is also referred to as the practical quantitation limit or the limit of quantitation. For polycyclic aromatic hydrocarbons, the reporting limit must be based on super-ultra trace methods and, depending on the specific polycyclic aromatic hydrocarbon, will range between 0.005 ug/L 0.02 ug/L.

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

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

"Restricted Stimulation Fluids" has the meaning in section 206 of *the Environmental Protection Act 1994* and means fluids used for the purpose of stimulation, including fracturing, that contain the following chemicals in more than the maximum amount prescribed under a regulation:

(a) petroleum hydrocarbons containing benzene, ethylbenzene, toluene or xylene

(b) chemicals that produce, or are likely to produce, benzene, ethylbenzene, toluene or xylene as the chemical breaks down in the environment.

"Revegetation 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.

"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; and
- 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.

"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.

"Specified Relevant Activities" for this environmental activity means an activity that:

(a) but for being carried out as a resource activity, would otherwise be an activity prescribed under section 19 of the *Environmental Protection Act 1994* as an environmentally relevant activity; or

(b) stimulation activities; or

(c) extracting material other than by dredging

"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 a natural underground reservoir that is undertaken above the formation pressure and involves the addition of chemicals. In includes hydraulic fracturing / hydrofraccing, fracture acidizing and the use of proppant treatments.

"Stimulation Fluid" means the fluid injected underground to increase permeability. For clarity, the term stimulation fluid only applies to fluid injected down well post-perforation.

"Stimulation Impact Zone" means a 100m maximum radial distance from the stimulation target location within a gas producing formation.

"Structure" for the purpose of Schedule H means dam or levee.

"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 to performance relative to the subject matters using the relevant protocols, standards, methods or literature.

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

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

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

"Suitably Qualified Third Party" means a person who:

(a) has qualifications and experience relevant to performing the function including but not limited to:

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

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

(b) is a member of at least one organisation prescribed in Schedule 8 of the *Environmental Protection Regulation 2008*; and

(c) not be an employee of, nor have a financial interest or any involvement which would lead to a conflict of interest with the holder(s) of the environmental authority.

"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.

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

"Top 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.

"Transmissivity" means the rate of flow of water through a vertical strip of aquifer which is one unit wide and which extends the full saturated depth of the aquifer.

"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.

"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.

"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.

"Well Integrity" means the ability of a well to contain the substances flowing through it.

"Well Site" means a maximum area of land disturbance for the purposes of constructing, installing and operating an exploration, appraisal or development well or such wells as part of a multi-well arrangement and includes well lease infrastructure.

"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" otherwise known as "high conservation value wetland", is a wetland that meets the definition of a wetland and that is shown as a wetland of high ecological significance or high conservation value wetland on the map

END OF PART B OF ENVIRONMENTAL AUTHORITY

APPENDIX C

Title Searches

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**10949072**	**Search Date:**	21/07/2025 11:01
Date Title Created:	18/07/1899	**Request No:**	52663426
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 65 CROWN PLAN WAL53531
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 710422627 15/03/2007

TROY MICHAEL HARLAND

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10949072 (POR 65V)

2. EASEMENT IN GROSS No 602451382 (H624859) 20/06/1985
BURDENING THE LAND
TO THE SOUTH WEST QUEENSLAND ELECTRICITY BOARD
OVER EASEMENT J ON AP14684

3. TRANSFER No 703665089 01/11/1999 at 10:25
EASEMENT IN GROSS: 602451382 (H624859)
SOUTH WEST QUEENSLAND ELECTRICITY CORPORATION LIMITED

4. MORTGAGE No 712050976 17/11/2008 at 13:29
COMMONWEALTH BANK OF AUSTRALIA A.B.N. 48 123 123 124

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
724192430	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	11/07/2025 11:18	CURRENT

UNREGISTERED DEALINGS

NIL

Corrections have occurred - Refer to Historical Search

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ TITLES QUEENSLAND

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**12990017**	**Search Date:**	21/07/2025 11:01
Date Title Created:	28/09/1956	**Request No:**	52663426
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 271 CROWN PLAN WV1113
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 706713578 19/06/2003

JASON DEAN BELL
TAMARA JANE BELL JOINT TENANTS

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 12356152 (POR 271)

2. EASEMENT IN GROSS No 602742290 (H652654) 23/07/1985
BURDENING THE LAND
TO THE SOUTH WEST QUEENSLAND ELECTRICITY BOARD
OVER EASEMENT D ON AP14693

3. TRANSFER No 703665089 01/11/1999 at 10:25
EASEMENT IN GROSS: 602742290 (H652654)
SOUTH WEST QUEENSLAND ELECTRICITY CORPORATION LIMITED

4. MORTGAGE No 714265842 17/01/2012 at 10:40
AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED A.B.N. 11 005 357 522

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
713043425	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	09/02/2010 10:08	CURRENT
721887139	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	08/08/2022 10:05	CURRENT

UNREGISTERED DEALINGS

NIL

Corrections have occurred - Refer to Historical Search

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ TITLES QUEENSLAND

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**14024137**	**Search Date:**	21/07/2025 11:01
Date Title Created:	11/05/1967	**Request No:**	52663426
Previous Title:	10953126		

ESTATE AND LAND

Estate in Fee Simple

LOT 50 CROWN PLAN WAL53532
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 701299467 09/05/1996

TONY MAXWELL HARLAND

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10953126 (POR 50V)

2. EASEMENT IN GROSS No 602451382 (H624859) 20/06/1985
BURDENING THE LAND
TO THE SOUTH WEST QUEENSLAND ELECTRICITY BOARD
OVER EASEMENT K ON AP14684

3. TRANSFER No 703665089 01/11/1999 at 10:25
EASEMENT IN GROSS: 602451382 (H624859)
SOUTH WEST QUEENSLAND ELECTRICITY CORPORATION LIMITED

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
717931655	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	29/03/2017 14:21	CURRENT
717931657	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	29/03/2017 14:22	CURRENT
717931659	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	29/03/2017 14:22	CURRENT
724192427	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	11/07/2025 11:18	CURRENT

UNREGISTERED DEALINGS

NIL

Corrections have occurred - Refer to Historical Search

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ TITLES QUEENSLAND

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**14325088**	**Search Date:**	21/07/2025 11:01
Date Title Created:	16/07/1969	**Request No:**	52663426
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 109 CROWN PLAN WV1081
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 701299467 09/05/1996

TONY MAXWELL HARLAND

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10953011 (POR 49V)

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
724192427	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	11/07/2025 11:18	CURRENT

UNREGISTERED DEALINGS

NIL

** End of Current Title Search **

Requested by: D-ENQ TITLES QUEENSLAND

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**14592011**	**Search Date:**	21/07/2025 11:02
Date Title Created:	15/06/1971	**Request No:**	52663426
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 119 CROWN PLAN WV237
Local Government: MARANOA

LOT 267 CROWN PLAN WV237
Local Government: MARANOA

LOT 274 CROWN PLAN WV237
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 701299467 09/05/1996

TONY MAXWELL HARLAND

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 14592011 (POR 119)
(POR 267)
(POR 274)

2. EASEMENT IN GROSS No 602451382 (H624859) 20/06/1985
BURDENING THE LAND
TO THE SOUTH WEST QUEENSLAND ELECTRICITY BOARD
OVER EASEMENT L IN POR 119 ON AP14684

3. TRANSFER No 703665089 01/11/1999 at 10:25
EASEMENT IN GROSS: 602451382 (H624859)
SOUTH WEST QUEENSLAND ELECTRICITY CORPORATION LIMITED

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
724192427	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	11/07/2025 11:18	CURRENT

UNREGISTERED DEALINGS

NIL

Corrections have occurred - Refer to Historical Search

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ TITLES QUEENSLAND

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**16201212**	**Search Date:**	21/07/2025 11:02
Date Title Created:	16/12/1981	**Request No:**	52663426
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 287 CROWN PLAN WV459
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 722886837 17/11/2023

QAM PTY LTD A.C.N. 655 784 740 TRUSTEE
UNDER INSTRUMENT 722886837

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 16201212 (POR 287)

2. LEASE No 713640998 22/12/2010 at 10:08
OPTUS MOBILE PTY LIMITED A.C.N. 054 365 696
OF LEASE A ON SP235136
TERM: 24/05/2020 TO 23/05/2030 OPTION NIL

3. TRANSFER No 722371728 24/03/2023 at 16:12
LEASE: 713640998
AUSTRALIA TOWER NETWORK PTY LIMITED A.C.N. 643 875 165

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ TITLES QUEENSLAND