

Permit

Environmental Protection Act 1994

Environmental authority EPPG00546313

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

Environmental authority number: EPPG00546313

Environmental authority takes effect on 19 September 2018

Environmental authority holder(s)

Name(s)	Registered address
APA PIPELINES INVESTMENTS (BWP) PTY LIMITED	Level 25 580 George St SYDNEY NSW 2000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Resource Activity, Non-Scheduled, Petroleum Activity, Petroleum Pipeline Licence - PPL	PPL123

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:

Environmental authority

- 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.

Clancy Mackaway
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

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Date issued: 20 September 2018

Environmental authority

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)

Legislative Requirements and Conditions of Environmental Authority

Schedule A – Authorised Activities

- PPSCA 1 All reasonable steps must be taken to ensure the petroleum activities comply with the eligibility criteria for the activity.
- PPSCA 2 The following types of petroleum activities are not authorised:
- (a) processing or storing petroleum or petroleum byproducts that are not necessarily associated with pipeline construction or operation
 - (b) extracting earthen materials (other than drilling waste rock or trench spoil) of more than 100,000t/year
 - (c) extracting by dredging more than 1000t/year of material from the bed of naturally occurring surface waters
 - (d) construction of power lines (either above or below ground) outside the right of way necessary for the pipeline.
- PPSCA 3 Only low impact petroleum activities can be undertaken within Category A Environmentally Sensitive Areas (ESAs), or Category B ESAs or Category C ESAs other than state forests or timber reserves, or within the ESAs' primary protection zone.
- Var 1 Despite (PPSCA 3), petroleum activities for pipeline operations and maintenance may be undertaken within Category A Environmentally Sensitive Areas (ESAs), or Category B ESAs or Category C ESAs and associated protection buffers, provided activities are restricted to the approved pipeline easement and area previously disturbed for pipeline construction.
- PPSCA 5 Records demonstrating compliance with (PPSCA 3) and (Var 1) must be kept.
- Authorised Petroleum Activities**
- A1 The petroleum pipeline must only be located within the PPL123 pipeline corridor as outlined in Appendix 2 and defined by coordinates listed in Table 1—Location of the PPL123 pipeline corridor.

Table 1—Location of the PPL123 pipeline corridor

Pipeline Licence No.	Location	Latitude (GDA 94)	Longitude (GDA 94)
PPL123	KP0	-26° 40' 53.3"	150° 16' 0.9"
	KP52	-26° 41' 31.6"	149° 45' 22.8"
	KP86	-26° 39' 5.9"	149° 25' 24.6"
	KP111.7	-26° 41' 43.1"	149° 11' 7.9"
	KP111.97	-26 41' 38.54"	149° 11' 14.04"

Note: KP – kilometre points along the pipeline route from the start point.

Schedule B – Protecting Environmental Values

- PPSCB 1 Petroleum activities that cause significant disturbance to land must not be carried out until financial assurance has been given to the administering authority as security for compliance with the environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the *Environmental Protection Act 1994*.
- PPSCB 2 Petroleum activities must not cause environmental nuisance from dust, odour, light, smoke or noise at a sensitive place, other than where an alternative arrangement is in place.
- PPSCB 3 Contaminants must not be directly or indirectly released to land or air except for those releases authorised by standard conditions (PPSCC 9), (PPSCC 13), (PPSCC 14), (PPSCC 15), (PPSCC 16), (PPSCE 4), (PPSCE 8), (PPSCE 11), (PPSCD 8), (PPSCE 12) and (PPSCF 3).
- PPSCB 4 Only low impact petroleum activities are permitted in a designated precinct of a Strategic Environmental Area.
- PPSCB 5 Petroleum activities must:
- (a) firstly, avoid, then minimise, then mitigate any negative impacts on areas of vegetation or other areas of ecological value
 - (b) minimise disturbance to land that may otherwise result in land degradation
 - (c) minimise isolation, fragmentation or dissection of tracts of vegetation that would lead to a reduction in the current level of ecosystem functioning or ecological connectivity
 - (d) minimise clearing of mature or hollow bearing trees.
- PPSCB 6 Where significant disturbance to land is to occur, records demonstrating compliance with standard condition (PPSCB5) must be kept.

Schedule C – Water Management

Release to Waters

- C1 The holder of this authority must ensure that the petroleum activities do not result in the release of contaminants to waters unless specifically authorised under this authority.

Schedule D – Protecting Acoustic Values

- Noise 1 Notwithstanding condition (PPSCB 2), emission of noise from the petroleum activity(ies) at levels less than those specified in **Protecting acoustic values, Table 2—Noise nuisance limits** are not considered to be environmental nuisance.

Protecting acoustic values, Table 2—Noise nuisance limits

Time period	Metric	Short term noise event	Medium term noise event	Long term noise event
7:00am—6:00pm	<u>L_{Aeq,adj,15 min}</u>	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
	<u>Max L_{pA, 15 mins}</u>	55 dBA	55 dBA	55 dBA
6:00am—7:00am	L _{Aeq,adj,15 min}	40 dBA	38 dBA	35 dBA

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

7:00am—6:00 pm: 35 dBA

6:00pm—10:00 pm: 30 dBA

10:00pm—6:00 am: 25 dBA

6:00am—7:00 am: 30 dBA

Noise 2 If the noise subject to a valid complaint is tonal or impulsive, the adjustments detailed in **Protecting Acoustic Values, Table 3—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}.

Protecting acoustic values, Table 3—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

Noise 3 Notwithstanding condition (Noise 1), emission of any low frequency noise must not exceed either (Noise 3(a)) and (Noise 3(b)), or (Noise 3(c)) and (Noise 3(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

Schedule E – General Conditions

Documentation

PPSCC 1 All plans, procedures and reports must:

(a) be certified by a suitably qualified person

(b) be kept on record for a minimum of 5 years.

PPSCC 2 All plans and procedures required to be developed must be implemented.

Plant and equipment

PPSCC 3 All plant and equipment reasonably necessary to ensure compliance with the standard conditions must be installed.

PPSCC 4 All plant and equipment must be maintained and operated in their proper and effective condition.

PPSCC 5 All measures reasonably necessary to ensure compliance with the standard conditions must be implemented.

Contingency and emergency response

General 16 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.

Soil management

PPSCC 8 Measures must be implemented and maintained to minimise stormwater entry onto significantly disturbed land.

PPSCC 9 Sediment and erosion control measures to prevent soil loss and deposition beyond significantly disturbed land must be implemented and maintained.

PPSCC 10 The measures required by standard conditions (PPSCC 8) and (PPSCC 9) must be in accordance, to the greatest practicable extent, with the International Erosion Control Association (IECA) *Best Practice Erosion and Sediment Control* (BPESC) document and/or the *Australian Pipelines and Gas Association Code of Environmental Practice: Onshore Pipelines* (2017).

Chemical storage

- PPSCC 11 Chemicals and fuels on the relevant tenures must be stored in, or serviced by, an effective containment system that meets Australian Standards, where such a standard is relevant.

Waste management

- PPSCC 12 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.
- PPSCC 13 For waste fluids that can be stored in a container that is other than a low hazard dam, the container must either be an above ground container or a structure which contains the wetting front.
- PPSCC 14 Waste, including waste fluids, must be transported off-site for lawful re-use, remediation, recycling or disposal unless the waste is specifically authorised by standard conditions (PPSCC 15), (PPSCC 16), (PPSCE 8) and (PPSCF 3) to be disposed of or used on-site.
- PPSCC 15 Green waste may be used on-site for rehabilitation and/or sediment and erosion control purposes.

Treated sewage effluent

- PPSCC 16 Treated sewage effluent or greywater can be released to land provided it:
- (a) meets or exceeds secondary treated class B standards for a treatment system with a daily peak design capacity of between 150 EP and 1500 EP; or
 - (b) meets or exceeds secondary treated class C standards for a treatment system with a daily peak design capacity of less than 150 EP; and
 - (c) is released within fenced and signed contaminant release area(s) and does not result in pooling or run-off or aerosols or spray drift or vegetation die-off.

Financial assurance

- PPSCC 17 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.

Schedule F – Pipeline Planning

Site planning

- PPSCD 1 Pipeline planning must be in accordance, to the greatest practicable extent, with the relevant section of the *Australian Pipelines and Gas Association Code of Environmental Practice: Onshore Pipelines* (2017) and/or AS 2885.1:2012.

Planning for land disturbance

- PPSCD 2 Notwithstanding condition (PPSCD 1), pipeline construction corridors must:
- (a) be minimised in width to the greatest practicable extent

(b) not exceed 40m in width

(c) not include turn around and work areas associated with pipeline construction that exceed 50m in width

(d) be preferentially located alongside existing linear infrastructure.

Confirming biodiversity values

Biodiversity 1 Prior to undertaking activities that result in significant disturbance to land in areas of native vegetation, confirmation of on-the-ground biodiversity values of the native vegetation communities at that location must be undertaken by a suitably qualified person.

Biodiversity 2 A suitably qualified person must develop and certify a methodology so that condition (Biodiversity 1) can be complied with and which is appropriate to confirm on-the-ground biodiversity values.

Biodiversity 3 For condition (Biodiversity 4), where mapped biodiversity values differ from those confirmed under condition (Biodiversity 1), petroleum activities may proceed in accordance with the conditions of the environmental authority based on the confirmed on-the-ground biodiversity value.

Biodiversity 4 The location of the petroleum activity(ies) must be selected in accordance with the following site planning principles:

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

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

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

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

(e) in order of preference, avoid then minimise clearing of native mature trees.

Schedule G – Construction, operational and maintenance conditions

PPSCE 1 Pipeline construction must be in accordance, to the greatest practicable extent, with the relevant section of the *Australian Pipelines and Gas Association Code of Environmental Practice: Onshore Pipelines* (2017) and/or AS 2885.1:2012.

Activities in watercourses, wetlands, lakes and springs

Var 2 Petroleum activities that require earthworks, vegetation clearing and/or placing fill, other than that associated with the construction and/or maintenance of linear infrastructure, are not permitted in or within:

(a) 200 metres of any wetland, lake or spring; or

(b) 100 metres of the outer bank of any other watercourse.

- PPSCE 3 The construction and/or maintenance for linear infrastructure that will result in significant disturbance to a wetland, lake, spring or watercourse must be conducted in accordance with the following order of preference. Conducting works:
1. firstly, in times where there is no water present
 2. secondly, in times of no flow
 3. thirdly, in times of flow, but in a way that does not impede low flow.
- PPSCE 4 Petroleum activities must not result in water turbidity increases of more than 10% in high ecological value waters outside contained construction or maintenance areas.
- PPSCE 5 The construction and/or maintenance for linear infrastructure that will result in significant disturbance to a lake, spring or watercourse must be designed and undertaken by a suitably qualified person in accordance with the guideline *Activities in a watercourse, lake or spring associated with a resource activity or mining operations*.
- PPSCE 6 The construction and/or maintenance for linear infrastructure that will result in significant disturbance to a wetland must be designed and undertaken by a suitably qualified person taking into consideration sections 5 and 6 of the guideline *Activities in a watercourse, lake or spring associated with a resource activity or mining operations*.
- Fauna Management**
- PPSCE 7 Measures to prevent fauna entrapment must be implemented during the construction of pipelines in pipe sections and pipeline trenches and operation of dams.
- Waste**
- PPSCE 8 Trench water, hydrostatic testing water or water from low point drains, may be released to land provided that it:
- (a) can be demonstrated to meet the acceptable standards for release to land
 - (b) is released in a way that does not cause visible scouring or erosion.
- PPSCE 9 If hydrostatic testing water quality does not or can not be treated to meet the requirements of standard condition (PPSCE 8), it must be managed in accordance with standard conditions (PPSCC 13) or (PPSCC 14).
- Blasting**
- PPSCE 10 A Blast Management Plan must be developed for each blasting activity in accordance with Australian Standard 2187.
- PPSCE 11 Blasting operations must be designed to not exceed an airblast overpressure level of 120dB (linear peak) at any time, when measured at or extrapolated to any sensitive place.
- PPSCE 12 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.

Structures that are dams or levees

- PPSCE 13 The hazard category of any dam or levee to be used in carrying out petroleum activities must be assessed in accordance with the Queensland Government *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*.
- PPSCE 14 Low hazard dams must be:
- (a) constructed, operated and maintained in accordance with accepted engineering standards currently appropriate for the purpose for which the dam is intended to be used; and
 - (b) designed with a floor and sides made of material that will contain the wetting front and any entrained contaminants within the bounds of the containment system during both its operational life and including any period of decommissioning and rehabilitation.
- PPSCE 15 All low hazard dams must be monitored for early signs of loss of structural or hydraulic integrity as specified in the initial hazard assessment.
- PPSCE 16 When no longer required all low hazard dams must be decommissioned to no longer accept inflow from the petroleum activities and be either:
- (a) rehabilitated; or
 - (b) agreed to in writing by the administering authority and the landholder to remain in situ following the cessation of the petroleum activity(ies) associated with the dam, with the contained water of a quality suitable for the intended ongoing uses(s) by that landholder.

Pipeline reinstatement and revegetation

- PPSCE 17 Pipeline trenches must be backfilled and topsoils reinstated within 3 months after pipe laying.
- PPSCE 18 Reinstatement and revegetation of the pipeline right of way must commence within 6 months after completion of petroleum activities for the purpose of pipeline construction.
- PPSCE 19 Backfilled, reinstated and revegetated pipeline trenches and right of way 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
 - (d) vegetated with groundcover which is not a declared pest species, and which is established and self-sustaining.

Schedule H – Construction, operational and maintenance conditions

- PPSCF 1 Pipeline operation and maintenance must be in accordance, to the greatest practicable extent, with the relevant section of the *Australian Pipelines and Gas Association Code of Environmental Practice: Onshore Pipelines* (2017) and/or AS 2885.3:2012.
- PPSCF 2 Written procedures must be developed to ensure operations and maintenance of the pipeline complies with the conditions of the environmental authority.

PPSCF 3 Flush water may be released to land provided that it meets the requirements of standard condition (PPSCE 8).

Final acceptance criteria for rehabilitation

PPSCF 4 After decommissioning, all significantly disturbed land caused by the carrying out of the petroleum activity(ies) must be rehabilitated to meet the following final acceptance criteria:

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

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

(c) for land that is not being cultivated by the landholder:

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

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

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

PPSCF 5 Monitoring of performance indicators must be carried out on rehabilitation activities until final acceptance criteria in standard condition (PPSCF 4) have been met for the rehabilitated area.

Schedule I – Monitoring and reporting conditions

Monitoring

PPSCG 1 All monitoring must be undertaken by a suitably qualified person.

PPSCG 2 If requested by the administering authority in relation to investigating a valid complaint, monitoring must be undertaken within 10 business days.

PPSCG 3 All laboratory analyses and tests must be undertaken by a laboratory that has NATA accreditation for such analyses and tests, except as otherwise authorised in writing by the administering authority.

PPSCG 4 Notwithstanding standard condition (PPSCG 3), where there are no NATA accredited laboratories available to test for a specific analyte or substance, then duplicate samples must be sent to separate laboratories for independent testing or evaluation.

Sampling

PPSCG 5 The methods of surface water sampling must comply with that set out in the Queensland Government's *Monitoring and Sampling Manual 2009 – Environmental Protection (Water) Policy 2009*.

PPSCG 6 The methods of groundwater sampling must comply with the Australian Government's *Groundwater Sampling and Analysis – A Field Guide* (2009:27 GeoCat #6890.1).

PPSCG 7 Noise must be measured in accordance with the prescribed standards in the *Environmental Protection Regulation 2008*.

PPSCG 8 The method of measurement of ambient air quality or point source contaminant releases to air must comply with the *Queensland Air Quality Sampling Manual and/or Australian Standard 4323.1:1995 Stationary source emissions method 1: Selection of sampling positions*, whichever is appropriate for the relevant measurement.

Notification

Var 3 In addition to the requirements under Chapter 7, Part 1, Division 2 of the *Environmental Protection Act 1994*, the administering authority must be notified through the Pollution Hotline and in writing, as soon as possible, but within 48 hours of becoming aware of any of the following events:

- (a) Any unauthorised significant disturbance to land
- (b) Unauthorised releases of any volume of prescribed contaminants to waters
- (c) Unauthorised releases of volumes of contaminants, in any mixture, to land greater than:
 - i. 200 L of hydrocarbons; or
 - ii. 5 000 L of raw sewage; or
 - iii. 10 000 L of treated sewage effluent.
- (d) Monitoring results where two out of any five consecutive samples do not comply with the relevant limits in the environmental authority.

Reporting

PPSCG 10 The annual return must include an Update Report detailing activities during the annual return period, demonstrating:

- (a) significant disturbance during the period
- (b) rehabilitation undertaken
- (c) a list of all valid complaints relating to environmental issues made including the date, source, reason for the complaint and a description of investigations undertaken in resolving the complaint
- (d) the results of all monitoring undertaken.

Appendix 1 - Definitions

Term	Definition
acceptable standards for release to land	is defined as: (a) electrical conductivity (EC) not exceeding 3000µS/cm (b) sodium adsorption ratio (SAR) not exceeding 8 (c) and for hydrostatic testing water, water from low point drains and flush water, total heavy metals for each element listed meets the respective short term trigger value in Table 4.2.6. – Heavy metals and metalloids in Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC) 2000.
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 <i>Australian National Committee on Large Dams</i> (ANCOLD), guidelines published by Queensland government departments and relevant Australian and New Zealand Standards.
acid sulfate soil(s)	means a soil or soil horizon which contains sulfides or an acid soil horizon affected by oxidation of sulfides.
administering authority	has the meaning in Schedule 4 of the <i>Environmental Protection Act 1994</i> .
alternative arrangement	means a written agreement about the way in which a particular nuisance impact will be dealt with at a sensitive place, and may include an agreed period of time for which the arrangement is in place. An alternative arrangement may include, but is not limited to, a range of nuisance abatement measures to be installed at the sensitive place, or provision of alternative accommodation for the duration of the relevant nuisance impact.
analogue site(s)	means an area of land which contains values and characteristics representative of an area to be rehabilitated prior to disturbance. Such values must encompass land use, topographic, soil, vegetation and other ecological characteristics. Analogue sites can be the pre-disturbed site of interest where significant surveying effort has been undertaken to establish benchmark parameters.
analyte(s)	means a chemical parameter determined by either physical measurement in the field or by laboratory analysis.
annual return period	means the most current 12-month period between 2 anniversary dates.

aquifer	means an identifiable stratigraphic formation that has the potential to produce useful flows of water.
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.
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 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 2885.0- 2008/Amdt 1-2012 Pipelines - Gas and Liquid Petroleum General Requirements, Australian Standard 2885.1:2012 Pipelines – Gas and Liquid Petroleum Design and Construction and Australian Standard 2885.3:2012 Pipelines – Gas and Liquid Petroleum Operation and Maintenance, or any updated versions that become available from time to time.
Australian Standard 4323	means Australian Standard 4323.1:1995 "Stationary source emissions method 1: Selection of sampling positions".
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	of any waters, has the meaning in Schedule 12 Part 2 of the Environmental Protection Regulation 2008.
biodiversity values	for the purposes of this environmental authority, means environmentally sensitive areas, prescribed environmental matters and wetlands.

brine	means saline water with a total dissolved solid concentration greater than 40 000 mg/l.
business day	has the meaning in section 36 of the <i>Acts Interpretation Act 1954</i> .
Category A ESA	means any area listed in Schedule 12, Section 1 of the <i>Environmental Protection Regulation 2008</i> .
Category B ESA	means any area listed in Schedule 12, Section 2 of the <i>Environmental Protection Regulation 2008</i> .
Category C ESA	means any of the following areas: • nature refuges as defined in the conservation agreement for that refuge under the <i>Nature Conservation Act 1992</i> • State forests or timber reserves as defined under the <i>Forestry Act 1959</i> • resources reserves under the <i>Nature Conservation Act 1992</i> • an area validated as 'essential habitat' or 'essential regrowth habitat' from ground-truthing surveys in accordance with the <i>Vegetation Management Act 1999</i> for a species of wildlife listed as endangered, vulnerable, rare or near threatened under the <i>Nature Conservation Act 1992</i> • 'of concern regional ecosystems' identified in the database called 'RE description database' containing regional ecosystem numbers and descriptions • threshold regional ecosystems as defined and listed in Appendix 6 of the <i>Queensland Biodiversity Offsets Policy</i> • critically limited regional ecosystems as defined and listed in Appendix 5 of the <i>Queensland Biodiversity Offsets Policy</i>.
certified	in relation to any matter other than a design plan, 'as constructed' drawings or an annual report regarding dams means, a Statutory Declaration by a suitably qualified person or suitably qualified third party accompanying the written document stating: • the person's qualifications and experience relevant to the function • that the person has not knowingly included false, misleading or incomplete information in the document • that the person has not knowingly failed to reveal any relevant information or document to the administering authority • that the document addresses the relevant matters for the function and is factually correct; and • that the opinions expressed in the document are honestly and reasonably held.

clearing	has the meaning in the dictionary of the <i>Vegetation Management Act 2000</i> .
cultivated	means used for cropping or gardening.
daily peak design capacity	for sewage treatment works, has the meaning in Schedule 2, section 63(4) of the <i>Environmental Protection Regulation 2008</i> as the higher equivalent person (EP) for the works calculated using each of the formulae found in the definition for EP.
dam(s)	means a land-based structure or a void that is designed to contain, divert or control flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works. A dam does not mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.
declared pest species	has the meaning in the <i>Land Protection (Pest and Stock Route Management) Regulation 2003</i> and is a live animal or plant declared to be a declared pest under section 36 (Declaring Pests by Regulation) or section 37(2) (Declaring Pest under Emergency Pest Notice) of that Act and includes reproductive material of the animal or plant.
decommissioning	in relation to pipelines means the actions undertaken in accordance with the requirements of Australian Standard 2885, as amended from time to time, to prepare the pipeline and peripheral facilities for pending suspension or abandonment.
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.
document	has the meaning in section 36 of the <i>Acts Interpretation Act 1954</i> .
ecological connectivity	is a measure of ecological condition and means the flow or connection of organisms and ecological processes across landscapes at multiple scales. Ecological connectivity has a positive relationship with landscape connectivity and habitat connectivity and effects vary between species. It includes connectivity by stepping stone or contiguous bioregional/local corridor networks.
ecosystem functioning	means the interactions between and within living and nonliving components of an ecosystem and generally correlates with the size, shape and location of the vegetation community.
eligibility criteria	for an environmentally relevant activity, has the meaning in section 112 of the <i>Environmental Protection Act 1994</i> .

environmental harm	has the meaning in section 14 of the <i>Environmental Protection Act 1994</i> .
environmental nuisance	has the meaning in section 15 of the <i>Environmental Protection Act 1994</i> .
environmental value(s)	has the meaning in section 9 of the <i>Environmental Protection Act 1994</i> .
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 <i>Environmental Protection Regulation 2008</i> where: • $EP = V/200$ where V is the volume, in litres, of the average dry weather flow of sewage that can be treated at the works in a day; or • $EP = M/2.5$ where M is the mass, in grams, of phosphorus in the influent that the works are designed to treat as the inlet load in a day.
environmentally relevant activity or ERA	has the meaning in section 18 of the <i>Environmental Protection Act 1994</i> .
financial assurance	for an environmental authority, means financial assurance given for the authority under Chapter 5, part 12, division 2 of the <i>Environmental Protection Act 1994</i> .
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.
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.
green waste	means waste that is grass cuttings, trees, bushes, shrubs, material lopped from trees, untreated timber or other waste that is similar in nature but does not include declared pest species.
greywater	means wastewater generated from domestic activities such as laundry, dishwashing, and bathing. Greywater does not include sewage.
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 <i>Manual for Assessing Hazard Categories and Hydraulic Performance of Dams</i> , published by the Queensland Government, as amended from time to time.

high ecological value waters	means Queensland waters that are scheduled waters under the <i>Environmental Protection (Water) Policy 2009</i> as high value ecological waters.
hub	means more than one unit of fuel burning or combustion equipment capable of burning fuel at a rate of at least 500 kg/hour individually or combined, located within five (5) km of any other fuel burning or combustion equipment capable of burning fuel at a rate of at least 500 kg/hour individually or combined.
impulsive	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.
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.
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.
levee	means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.
linear infrastructure	means powerlines, pipelines, roads and access tracks.
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.
low hazard dam	low hazard dam means any dam that is not classified as high or significant as assessed using the <i>Manual for Assessing Hazard Categories and Hydraulic Performance of</i>

	<i>Dams</i> , published by the Queensland Government and which contains contaminants in concentrations which exceed or will exceed, during the dam's operational life, the values or range shown in Table 3 of the manual.
low impact petroleum activities	means petroleum activities which do not result in the clearing of native vegetation, cause disruption to soil profiles through earthworks or excavation or result in significant disturbance to land which cannot be rehabilitated immediately using hand tools after the activity is completed. Examples of such activities include but are not necessarily limited to soil surveys (excluding test pits), topographic surveys, cadastral surveys and ecological surveys, may include installation of monitoring equipment provided that it is within the meaning of low impact and traversing land by car or foot via existing access tracks or routes or in such a way that does not result in permanent damage to vegetation.
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.
month	has the meaning in section 36 of the <i>Acts Interpretation Act 1954</i> .
NATA accreditation	means accreditation by the National Association of Testing Authorities Australia.
non-linear infrastructure	means infrastructure that is other than a powerline, a pipeline, a road, an access track and includes only the following: • workers camps • maintenance facilities • no-release sewage treatment plants • laydown areas • structures (i.e. dams or levees) • tanks • sediment and erosion control measures • above ground containers and chemical / fuel storages

	• water pumps and generators • stockpiles.
outer bank	has the meaning in section 5A of the <i>Water Act 2000</i> .
performance indicator(s)	means a quantitative measure against which success can be assessed and audited in a consistent, objective and repeatable manner.
Prescribed contaminants	has the meaning in section 440ZD of the <i>Environmental Protection Act 1994</i> .
primary protection zone	primary protection zone means an area within 200 metres from the boundary of any Category A, B or C environmentally sensitive area.
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.
reinstated or reinstatement	means the process of bulk earth works and structural replacement of preexisting conditions of a site (i.e. soil surface typography, watercourses, culverts, fences and gates and other landscape(d) features) and is detailed in the <i>APIA Code of Environmental Practice: Onshore Pipelines</i> (2009).
release, releases, released	has the meaning in Schedule 4 of the <i>Environmental Protection Act 1994</i> .
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 state. For the purposes of pipelines, restoration applies to final rehabilitation after pipeline decommissioning.
revegetation or revegetating or revegetate/d	means to actively re-establish vegetation through seeding or planting techniques in accordance with site specific management plans.
right of way	means the linear construction footprint required to install pipelines.
secondary protection zone	in relation to a Category A or Category B environmentally sensitive area means an area within 100 metres from the boundary of the primary protection zone.

secondary treated class B standards	means treated sewage effluent or greywater which meets the following standards: • total phosphorous as P, maximum 20mg/L • total nitrogen as N, maximum 30mg/L • 5-day biochemical oxygen demand (inhibited) (e.g. release pipe from sewage treatment plant), maximum 20mg/L • suspended solids, maximum 30mg/L • pH, range 6.0 to 8.5 • e-coli, 80th percentile based on at least 5 samples with not less than 30 minutes between samples, 1000cfu per 100mL, maximum 10000cfu per 100mL.
secondary treated class C standards	means treated sewage effluent or greywater which meets the following standards: • total Phosphorous as P, maximum 20mg/L • total Nitrogen as N, maximum 30mg/L • 5-day Biochemical oxygen demand (inhibited) (e.g. Release pipe from sewage treatment plant), maximum 20mg/L • suspended solids, maximum 30mg/L • pH, range 6.0 to 8.5 • e-Coli, 80th percentile based on at least 5 samples with not less than 30 minutes between samples, 10000cfu per 100mL, maximum 100000cfu per 100mL.
sensitive place	means: • a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel) • a library, childcare centre, kindergarten, school, university or other educational institution • a medical centre, surgery or hospital • a protected area

	- a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment - a work place used as an office or for business or commercial purposes, which is not part of the petroleum activity(ies) and does not include employees accommodation or public roads - for noise, a place defined as a sensitive receptor for the purposes of the <i>Environmental Protection (Noise) Policy 2008</i>.
sensitive receptor	means an area or place where noise (including low frequency, vibration and blasting) is measured to 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 activities 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	means disturbance to land as defined in Schedule 12, section 4 of the <i>Environmental Protection Regulation 2008</i>.
species richness	means the number of different species in a given area.
species diversity	means the diversity within an ecological community that incorporates both species richness and the evenness of species' abundances.
spring(s)	has the meaning in Schedule 4 of the <i>Water Act 2000</i>

stable	in relation to land, means landform dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (trafficability), erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.
strategic environmental area	has the meaning in section 11(2) of the <i>Regional Planning Interests Act 2014</i> .
structure	means a dam or levee.
suitably qualified person	means a person who has qualifications, training, skills and experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.
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).
trench spoil	means soil from the pipeline trench.
valid complaint	means a complaint that is not considered by the administering authority or holder of the environmental authority to be frivolous, vexatious or based on mistaken belief.
void	means any man-made, open excavation in the ground (includes borrow pits, drill sumps, frac pits, flare pits, cavitation pits and trenches).
waste and resource management hierarchy	has the meaning provided in section 9 of the <i>Waste Reduction and Recycling Act 2011</i> .
waste and resource management principles	has the meaning provided in section 4(2)(b) of the <i>Waste Reduction and Recycling Act 2011</i> .
waters	means all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, spring, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and underground water.

watercourse	has the meaning provided in Schedule 4 of the <i>Environmental Protection Act 1994</i> .
wetland	means a wetland as defined under the Queensland Wetlands Program and are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed 6 metres. To be classified as a wetland, the area must have one or more of the following attributes: • at least periodically, the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle; or • the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers; or • the substratum is not soil and is saturated with water, or covered by water at some time. For the purposes of petroleum activities, wetlands do not include springs and watercourses and those wetlands that are defined in the <i>Wetland Mapping and Classification Methodology</i> (2005) published by the Queensland Government as: • H2M1 Riverine or ex-riverine (lacustrine) water bodies associated with dams and weirs located in a channel • H2M3p Ponded pastures • H2M5 Palustrine/lacustrine water bodies where ecological character has changed due to gross mechanical disturbance (e.g. cropping) • H2M6 Palustrine/lacustrine water bodies that have been converted, completely or mostly, to a ring tank or other controlled storage • H2M7 Riverine water bodies that have been converted mostly to canals or irrigation channels • H3C1 Artificial stand-alone water storages not within a natural water body or channel; or • H3C2 Artificial Channel drain/canal – bore drains, swales, bores and irrigation channel overflows/ponding. Explanatory note: This definition has been amended from the Queensland Wetlands Program definition so that low value wetlands and man-made water bodies are excluded
year(s)	has the meaning in s36 of the <i>Acts Interpretation Act 1954</i> .
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

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| | <ul style="list-style-type: none">the consecutive samples are taken at approximately equal periods. |
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Appendix 2 – Approved Plans

