Permit[1]

Environmental Protection Act 1994

Environmental authority EPPG00715213

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

Permit[1] number: EPPG00715213

Environmental authority takes effect 15 May 2014.

The anniversary date of this environmental authority is 1 July.

Environmental authority holder(s)

Name	Registered address
Circumpacific Energy (Australia) Pty Limited	Level 16, 55 Clarence Street SYDNEY NSW 2000
QGC (B7) Pty Limited	Level 30, 275 George Street BRISBANE QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
Petroleum	ATP940

M Hasan.

Signature

15/5/14

Date

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[1] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation

Additional information for applicants

Environmentally relevant activities

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

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

Responsibilities under the Environmental Protection Act 1994

Separate to the requirements of the conditions of this environmental authority, the holder of the environmental authority must also meet their obligations under the *Environmental Protection Act 1994*, and the regulations made under that Act. For example, the holder must be aware of the following provisions of the *Environmental Protection Act 1994:*

General environmental duty

Section 319 of the *Environmental Protection Act 1994* states that we all have a general environmental duty. This means that we are all responsible for the actions we take that affect the environment. We must not carry out any activity that causes or is likely to cause environmental harm unless we take all reasonable and practicable measures to prevent or minimise the harm. To decide what meets your general environmental duty, you need to think about these issues:

- the nature of the harm or potential harm
- the sensitivity of the receiving environment
- the current state of technical knowledge for the activity
- the likelihood of the successful application of the different measures to prevent or minimise environmental harm that might be taken
- the financial implications of the different measures as they would relate to the type of activity.

It is not an offence not to comply with the general environmental duty, however maintaining your general environmental duty is a defence against the following acts:

a) an act that causes serious or material environmental harm or an environmental nuisance

b) an act that contravenes a noise standard

c) a deposit of a contaminant, or release of stormwater run-off, mentioned in section 440ZG.

More information is available on the Department of Environment and Heritage Protection website www.ehp.qld.gov.au.

Duty to notify

Section 320 of the *Environmental Protection Act 1994* explains the duty to notify. The duty to notify applies to all persons and requires a person or company to give notice where serious or material environmental harm is caused or threatened. Notice must be given of the event, its nature and the circumstances in which the event

happened. Notification can be verbal, written or by public notice depending on who is notifying and being notified.

The duty to notify arises where:

- a person carries out activities or becomes aware of an act of another person arising from or connected to those activities which causes or threatens serious or material environmental harm
- while carrying out activities a person becomes aware of the happening of one or both of the following events:
    - the activity negatively affects (or is reasonably likely to negatively affect) the water quality of an aquifer
    - the activity has caused the unauthorised connection of 2 or more aquifers.

For more information on the duty to notify requirements refer to the guideline *Duty to notify of environmental harm (EM467).*

Notifiable activities

It is a requirement under the *Environmental Protection Act 1994* that if an owner or occupier of land becomes aware that a Notifiable Activity (as defined by Schedule 4 of the *Environmental Protection Act 1994*) is being carried out on the land or that the land has been affected by a hazardous contaminant, they must, within 22 business days after becoming so aware, give notice to the administering authority.

Some relevant offences under the *Environmental Protection Act 1994*

Non-compliance with a condition of an environmental authority (section 430)

Section 430 of the *Environmental Protection Act 1994* requires that a person who is the holder of, or is acting under, an environmental authority must not wilfully contravene, or contravene a condition of the authority.

Environmental authority holder responsible for ensuring conditions complied with (section 431)

Section 431 of the *Environmental Protection Act 1994* requires that the holder of an environmental authority must ensure everyone acting under the authority complies with the conditions of the authority. If another person acting under the authority commits an offence against section 430, the holder also commits an offence, namely, the offence of failing to ensure the other person complies with the conditions.

Causing serious or material environmental harm (sections 437–39)

Material environmental harm is environmental harm that is not trivial or negligible in nature. It may be great in extent or context or it may cause actual or potential loss or damage to property. The difference between material and serious harm relates to the costs of damages or the costs required to either prevent or minimise the harm or to rehabilitate the environment. Serious environmental harm may have irreversible or widespread effects or it may be caused in an area of high conservation significance. Serious or material environmental harm excludes environmental nuisance.

Causing environmental nuisance (section 440)

Environmental nuisance is unreasonable interference with an environmental value caused by aerosols, fumes, light, noise, odour, particles or smoke. It may also include an unhealthy, offensive or unsightly condition because of contamination.

Depositing a prescribed water contaminant in waters (section 440ZG)

Prescribed contaminants include a wide variety of contaminants listed in Schedule 9 of the *Environmental Protection Act 1994.*

It is your responsibility to ensure that prescribed contaminants are not left in a place where they may or do enter a waterway, the ocean or a stormwater drain. This includes making sure that stormwater falling on or running across your site does not leave the site contaminated. Where stormwater contamination occurs you must ensure that it is treated to remove contaminants. You should also consider where and how you store material used in your processes onsite to reduce the chance of water contamination.

Placing a contaminant where environmental harm or nuisance may be caused (section 443)

A person must not cause or allow a contaminant to be placed in a position where it could reasonably be expected to cause serious or material environmental harm or environmental nuisance.

Some relevant offences under the *Waste Reduction and Recycling Act 2011*

Littering (section 103)

Litter is any domestic or commercial waste and any material a person might reasonably believe is refuse, debris or rubbish. Litter can be almost any material that is disposed of incorrectly. Litter includes cigarette butts and drink bottles dropped on the ground, fast food wrappers thrown out of the car window, poorly secured material from a trailer or grass clippings swept into the gutter. However, litter does not include any gas, dust, smoke or material emitted or produced during, or because of, the normal operations of a building, manufacturing, mining or primary industry.

Illegal dumping of waste (section 104)

Illegal dumping is the dumping of large volumes of litter (200L or more) at a place. Illegal dumping can also include abandoned vehicles.

Responsibilities under other legislation

An environmental authority pursuant to the *Environmental Protection Act 1994* does not remove the need to obtain any additional approval for the activity that might be required by other State and/or Commonwealth legislation. Other legislation for which a permit may be required includes but is not limited to the:

- *Aboriginal Cultural Heritage Act 2003*
- contaminated land provisions of the *Environmental Protection Act 1994*
- *Fisheries Act 1994*
- *Forestry Act 1959*
- *Nature Conservation Act 1992*
- *Petroleum and Gas (Production and Safety) Act 2004 / Petroleum Act 1923*
- *Queensland Heritage Act 1992*
- *Strategic Cropping Land Act 2011*
- *Sustainable Planning Act 2009*
- *Waste Reduction and Recycling Act 2011*
- *Water Supply (Safety and Reliability) Act 2008*
- *Water Act 2000*

Applicants are advised to check with all relevant statutory authorities and comply with all relevant legislation.

An environmental authority for petroleum activities is not an authority to negatively impact on water levels or pressure heads in groundwater aquifers in or surrounding formations. There are obligations to minimise or

mitigate any such negative impact under other Queensland Government and Commonwealth Government legislation.

This environmental authority contains standard conditions from *Eligibility criteria and standard conditions – Petroleum exploration activities* (2013), version 1, published by the Queensland Government. The standard conditions are identified by the code PESC, which appears below the condition number (where relevant) throughout this environmental authority.

This environmental authority contains conditions from *Streamlined model conditions for petroleum activities (2014)*, EM1274, version 1, published by the Queensland Government. The conditions are identified by the general environmental value and number (e.g. Air 1)

Definitions

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

Schedules

Schedule A - General conditions

APPENDIX A – Definitions

APPENDIX B – Locality Map of ATP940

APPENDIX C – Environmentally Sensitive Areas

SCHEDULE A GENERAL CONDITIONS

Condition 1 – Significant disturbance

Petroleum activities must not cause more than 0.1% of the total land area on the relevant petroleum authorities (excluding pipeline licences) that constitute the petroleum project to be significantly disturbed any one time.

Condition 2 – Financial assurance

PESCB 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*.

Condition 3

PESCC 41
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.

Condition 4 – Environmentally sensitive areas

The holder of the environmental authority must not:

(a) conduct petroleum activities within a Category A or Category B environmentally sensitive area;
(b) cause any significant disturbance to land within 1km of a Category A environmentally sensitive area or within 500m of a Category B environmentally sensitive area; or
(c) conduct petroleum activities in a Category C environmentally sensitive area unless there is a written agreement to enter the area for those activities from the relevant administering authority.

Condition 5

If the relevant administering authority imposes any conditions on undertaking petroleum activities within a Category C environmentally sensitive area, the holder must comply with those conditions.

Condition 6 – River Trust Asset Areas

Petroleum Activities must not be carried out in River Trust Asset Areas without the approval of the relevant River Trust.

Condition 7 – Heritage places and archaeological artefacts

The holder of the environmental authority must take all reasonable and practicable measures to avoid impacting upon places of known or potential cultural heritage significance whilst carrying out petroleum activities.

Condition 8 – Wild river areas

The holder of the environmental authority must ensure that any petroleum activities carried out within a wild river area comply with the conditions in the relevant **wild river declaration** for the area that state they are for petroleum activities.

Condition 9 – Clearing vegetation

Clearing vegetation must be minimised and only be undertaken where necessary to carry out the authorised petroleum activities. Where viable alternatives exist, clearing vegetation must not be undertaken:

(a) in, or within 50 metres of, the **high bank** of a **watercourse**;
(b) in, or within 100 metres of a **wetland** or **spring**;
(c) in a way that dissects large tracts of vegetation resulting in a reduction in the current level of **ecosystem functioning**, an increase in **threatening processes**, or dissection of corridors of vegetation that provide connection between contiguous tracts of vegetation;
(d) in a way that damages adjacent live vegetation;
(e) in an **'of concern' regional ecosystem**;
(f) on slopes greater than 6° (~10%);
(g) on **dispersible soils** or **highly erodible soils**; or
(h) in **discharge areas**.

Condition 10

Cleared vegetation must be stockpiled in a manner that facilitates respreading or salvaging and does not impede vehicle, stock or wildlife movements.

Condition 11 – Topsoil management

Except in areas of highly erodible soils, topsoil must be:

(a) removed from an area prior to other significant disturbance commencing in the area;
(b) stockpiled in a manner that will minimise erosion and preserve its biological and chemical integrity; and
(c) used only for on-site rehabilitation purposes.

Condition 12 – Acid sulfate soils

When carrying out petroleum activities in areas with a high probability of acid sulfate soils, the holder of the environmental authority must comply with an acid sulfate soil environmental management plan prepared in accordance with the *State Planning Policy 2/02 Guideline: Planning and Managing Development Involving Acid Sulfate Soils* and the relevant Guidelines.

Condition 13 – Drilling operations

All waste fluids and muds resulting from drilling and exploration activities must be contained in an appropriately constructed dam or containment structure for disposal, remediation or reuse where applicable.

Condition 14

Oil and synthetic based drilling muds are not authorised to be used under the authority.

Condition 15 – Pipeline construction

The pipeline construction corridor must not exceed 30 metres in width. Turn arounds and work areas must not exceed 50 metres in width.

Condition 16

During construction, pipe must be strung with gaps to allow for fauna movement across the line of the pipe.

Condition 17

Measures must be employed to prevent fauna entrapment in pipe sections or within the pipeline trench.

Condition 18

Open trenches and pipes must be checked for fauna prior to backfill and any trapped animals removed.

Condition 19

Hydrostatic test water must be contained in dams on site, tested and either:

(a) directly reused where appropriate for petroleum activities;
(b) treated so that it meets water quality criteria for the intended reuse; or
(c) disposed of via evaporation.

Condition 20

The pipeline construction corridor must be rehabilitated on completion of laying the pipe, with the exception of the width of an access track, if necessary, to enable vehicular movement along the corridor for pipeline inspection and maintenance.

Condition 21 – Spill response

A spill response plan must be developed for all pipelines and other plant or equipment under this authority carrying liquids that have the potential to cause environmental harm. The plan must address the following:

(a) monitoring and detection systems;
(b) notification and reporting procedures (internal and external);
(c) call-out procedures and contact lists;
(d) measures required to halt the spill (i.e. control of pumps, valves etc);
(e) spill containment procedures;
(f) procedures to safely recover the spilt material;
(g) clean up and rehabilitation procedures;
(h) requirements for the remediation or disposal of contaminated soil;
(i) personnel responsibilities;
(j) equipment requirements, location, storage, maintenance and transport;
(k) communications and logistics; and
(l) incident investigation procedures.

Condition 22

Workforce training must be conducted in spill response and recovery procedures.

Condition 23 – Contaminant release

Contaminants that are likely to cause environmental nuisance, or serious or material environmental harm, must not be released directly or indirectly to land or **waters** unless explicitly authorised in the environmental authority.

Condition 24 – Bunding

Any container such as a tank or drum that contains material that has the potential to cause material or serious environmental harm if **released** to the environment must be appropriately labelled and be contained in a **bunded** area. Volumes of liquid less than 1000L may be stored without bunding if:

(a) recovery of any spilt material is possible;
(b) containers or drums are stored undercover on an impervious base;

(c) the storage is occurring at least 50m from any waters; and
(d) absorbent material is readily available for clean up if necessary.
(e) Individual drums may be temporarily stored on spill containment pallets.

Condition 25

The net capacity of a bunded compound in a storage facility must be at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas.

Condition 26

If an automatic fire sprinkler system is installed in or over any bunded tank or drum storage compound, the capacity of the on-site containment must be increased to include the output from the sprinkler system over a 20 minute period.

Condition 27

If the material to be bunded is contained in drums (or other small containers) the bunded area must contain at least 25% of the total volume of the stored product.

Condition 28

The bund floor and wall must be built of materials impervious to the contents of any tank or container within the bund and be capable of preventing the migration of any spillage or leakage outside the bund wall to the environment.

Condition 29

Wall type bunds at tank storage facilities must be at least 0.5 metres high and not exceed 1.5 metres high. The distance between a tank and the bund wall must be at least 1 metre.

Condition 30

A collection sump must be provided in the bund floor and the floor must be graded in such a way that liquids collect in the sump. The sump must not be connected to a sewer drainage system or any waters.

Condition 31

The bund must be designed to minimise rainwater collection. Removal of accumulated rainwater must be done with a manually operated pump, baling from the sump or via a locked valve. Rainwater from the bund must meet water quality criteria for the intended use or receiving environment prior to release.

Condition 32

All pipework must be sited above ground and go over the bund walls where possible. Pumps must still be able to operate when the bund is full of liquid.

Condition 33

Piping and pumping facilities must be arranged so that the potential for leaks to escape the confines of the bund is minimised.

Condition 34 – Flammable and combustible liquids

Flammable and combustible liquids, including petroleum products, must be stored and handled in accordance with the latest edition of Australian Standard 1940 – The storage and handling of flammable and combustible liquids.

Condition 35 – Erosion and sediment control

Erosion protection and sediment control measures must be designed, implemented and maintained to minimise erosion and the release of sediment resulting from carrying out the petroleum activities.

Condition 36 – Protection of watercourses, wetlands and springs

Unless otherwise approved under relevant legislation, the holder of the environmental authority must not:

(a) excavate or place **fill** in a way that interferes with the flow of water in a watercourse, wetland, or spring, including: works that divert the course of flow of the water, or works that impound the water;
(b) undertake activities that take water from a watercourse, wetland or spring; or
(c) undertake activities that take **overland flow water** using works that are mentioned as assessable development in a water resource plan under the *Water Act 2000*.

Condition 37 – Activities in a watercourse, wetland or spring

Significant disturbance to the **bed or banks** of a watercourse or wetland, or to a spring must:

(a) only be caused where necessary for the construction, operation and/or maintenance of roads, tracks and pipelines that are essential for carrying out other authorised petroleum activities and no reasonable alternative location is feasible; and
(b) be no larger than the minimum area necessary for the purpose; and
(c) be designed by an appropriately qualified person; and
(d) be undertaken and maintained by a person with appropriate skills who has been informed of the design and is appropriately supervised; and
(e) have rehabilitation commence as soon as reasonably practicable upon cessation of the relevant authorised petroleum activities.

Condition 38

Sediment control measures must be implemented to minimise any increase in water turbidity due to carrying out petroleum activities in the bed or banks of a watercourse or wetland, or in a spring.

Condition 39

Routine visual monitoring must be undertaken while carrying out petroleum activities in a watercourse, wetland or spring. If, due to the petroleum activities, water turbidity increases in the watercourse, wetland or spring outside contained areas, works must cease and the sediment control measures must be rectified before activities recommence.

Condition 40 – Management of dams

Only low hazard dams are authorised under this authority.

Condition 41

All **dams** must be designed, constructed, operated and maintained in accordance with **accepted engineering standards** currently appropriate for the purpose for which they are intended.

Condition 42

The **hazard category** of each dam must be determined by a **suitably qualified and experienced person** prior to its construction and at least once per year, based on documented evidence sufficient to define or confirm the current nature and extent of environmental consequences from potential failure of that dam.

Condition 43

Where the hazard category of a dam is for the first time assessed as significant or high, the holder of the environmental authority must:

(a) as soon as reasonably possible, advise the administering authority of the current details of that dam, including:
   i. the assessed hazard category of that dam,
   ii. sufficient points of latitude and longitude in the current Australian geodetic datum to form a perimeter around that dam and its associated works,
   iii. the maximum surface area, maximum volume, maximum depth of that dam; and
(b) apply to amend the environmental authority to authorise the dam; and
(c) ensure that the dam meets the **hydraulic performance** required of the assessed hazard category within 12 months of that assessment.

Condition 44

The condition of all 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.

Condition 45 – Decommissioning dams

Each dam must be decommissioned such that it either:

(a) becomes a **stable** landform that no longer contains **flowable substances**; or
(b) is approved or authorised under relevant legislation for a **beneficial use**; or
(c) is a void authorised by the administering authority to remain after decommissioning, or
(d) is compliant with the rehabilitation requirements of the authority; and
(e) is agreed by the post petroleum authority landowner/holder to remain after surrender of the environmental authority and meets water quality criteria for the intended use.

Condition 46 – Access to dams

Any dam constructed as part of the petroleum activities must be managed so that either:

(a) where the quality of the water is likely to result in adverse health affects if contacted or consumed, adequate barriers are provided to limit access to the water by humans, livestock and native fauna; or
(b) where the quality of the water will not result in any adverse health affects if contacted or consumed, safe access to the water is provided for livestock and native fauna.

Condition 47 – Associated water

Associated water may be temporarily contained in a dam or other containment vessel on site prior to:

(a) reuse on site for petroleum activities; or
(b) use under the provisions of the *Petroleum and Gas (Production and Safety) Act 2004*; or
(c) use for an approved beneficial use; or
(d) removal from site for treatment or disposal at an appropriately authorised facility.

Condition 48

If the use of associated water for a purpose other than a petroleum activity has been authorised by a beneficial use approval can be used in accordance with the approval for the stated type of use(s).

Condition 49 – Release of contaminants to the atmosphere

The release of **noxious** or **offensive** odour, dust, particulate matter or any other airborne contaminant resulting from the petroleum activities must not cause environmental nuisance at any sensitive place or commercial place.

Condition 50 – Noise management

If the environmental authority holder receives a complaint as defined in Condition 60 about noise from the petroleum activities at a **sensitive place** or **commercial place**, the holder must conduct an appropriate investigation and must implement remedial action if the noise from the petroleum activities exceeds the noise limits at the sensitive place or commercial place in Table 1 – Noise Limits.

Table 1 – Noise limits

Sensitive place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and public holidays**		
	7am to 6pm	**6pm to 10pm**	**10pm to 7am**	**9am to 6pm**	**6pm to 10pm**	**10pm to 9am**
$L_{A90, adj, 15 mins}$	lesser of bg+3 or 48	bg+0	bg+0	bg+0	bg+0	bg+0
$L_{A10, adj, 15 mins}$	lesser of bg+5 or 50	lesser of bg+5 or 45	bg+0	lesser of bg+5 or 45	lesser of bg+5 or 40	bg+0
$L_{A1, adj, 15 mins}$	lesser of bg+10 or 55	lesser of bg+10 or 50	lesser of bg+5 or 45	lesser of bg+10 or 50	lesser of bg+10 or 45	lesser of bg+5 or 40
Commercial place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and public holidays**		
	7am to 6pm	**6pm to 10pm**	**10pm to 7am**	**9am to 6pm**	**6pm to 10pm**	**10pm to 9am**
$L_{A90, adj, 15 mins}$	lesser of bg+5 or 50	bg+0	bg+0	lesser of bg+3 or 43	bg+0	bg+0
$L_{A10, adj, 15 mins}$	lesser of bg+10 or 55	lesser of bg+10 or 50	lesser of bg+5 or 45	lesser of bg+10 or 50	lesser of bg+10 or 45	lesser of bg+5 or 40
$L_{A1, adj, 15 mins}$	lesser of bg+15 or 60	lesser of bg+15 or 55	lesser of bg+10 or 50	lesser of bg+15 or 55	lesser of bg+15 or 50	lesser of bg+10 or 45

- bg = **background noise level**
- In the event that measured bg is less than 25 dB(A), then 25 dB(A) is to be substituted for the measured level.
- If the background is higher than the number shown on the second line in any box, the limit is to be background plus 0.

Condition 51

The method of measurement and reporting of noise levels must comply with the latest edition of the Department of Environment and Heritage Protection's (Environmental Protection Agency's) Noise Measurement Manual or the most recent version of AS1055 Acoustics – Description and measurement of environmental noise.

Condition 52 – General waste management

Where practicable, general waste generated in carrying out the petroleum activities must be reused, recycled or removed to a facility that can lawfully accept the waste under the *Environmental Protection Act 1994*.

Condition 53

If no viable alternative exists, solid general waste may be disposed of on site at a facility designed to receive waste at a rate of less than 50t per year only if it is:

(a) disposed of into a waste disposal trench;
(b) consolidated, compacted and covered with a layer of inert material following placement of the waste into the trench;
(c) managed in a way that prevents scavenging and access by vermin;
(d) managed in a way that prevents or contains wind blown litter; and
(e) managed in a way that prevents or controls **leachate** generated from the activity.

Condition 54

Waste, including vegetation, must not be burnt.

Condition 55 – Regulated waste

Regulated waste must be removed and transported from the site by a person who holds a current authority to transport such wastes to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994*.

Condition 56

Regulated waste generated in carrying out the petroleum activities can be temporarily stored on the site awaiting removal provided:

(a) it is stored in a place and circumstance in which there is minimal risk of causing contamination to land or waters or a fire hazard; and
(b) each container of regulated waste stored awaiting movement off site is clearly marked to identify the contents.

Condition 57

A record of all regulated waste (excluding trackable waste) must be kept detailing the following information:

(a) date of pickup of waste;
(b) description of waste;
(c) quantity of waste;
(d) origin of waste; and
(e) destination of waste.

Condition 58 – Treated Sewage Effluent
PESCC 28

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.

Condition 59 – Monitoring

The holder of the environmental authority must:

(a) develop a monitoring program that will demonstrate compliance with the conditions of the environmental authority;
(b) document monitoring and inspections carried out under the monitoring program and any actions taken; and
(c) record, compile and keep for a minimum of seven (7) years all monitoring results and data.

Condition 60 - Complaints

The holder of the environmental authority must:

(a) when the administering authority advises the holder of a complaint that the administering authority does not consider to be frivolous, vexatious or based on a mistaken belief alleging nuisance (e.g. caused by dust or noise), investigate the complaint and advise the administering authority of the action proposed or undertaken in relation to the complaint;
(b) if the administering authority is not satisfied with the proposed or completed action, undertake monitoring or other action requested by the administering authority; and
(c) maintain a record of complaints and incidents causing environmental harm and actions taken in response to the complaints or incidents for a minimum of seven (7) years.

Condition 61 - Rehabilitation

As soon as practicable after the **end** of petroleum activities that have caused significant disturbance to land, the holder of the environmental authority must:

(a) remediate contaminated land caused by petroleum activities in accordance with EP Act requirements and this authority; and
(b) undertake works to establish a safe, **stable**, non polluting landform similar to that of surrounding undisturbed areas, including where relevant:
    i. backfilling any **voids** and trenches;
    ii. neutralising and /or encapsulating any acid producing or potentially acid producing material;
    iii. removing or encapsulating in low permeability material saline residues from evaporation ponds;
    iv. re-establishing surface drainage lines;
    v. minimising the potential for slumping, subsidence or erosion;
    vi. reinstating the top layer of the soil profile;
    vii. respreading any cleared vegetation; and
    viii. promoting establishment of vegetation of similar species composition and density of cover to the surrounding undisturbed land;
    ix. unless the holder has the written consent of the landowner/holder and the administering authority.

Condition 62 – Maintenance of land rehabilitation

Monitoring and maintenance of rehabilitated areas must take place to ensure and demonstrate:

(a) stability of landforms;
(b) erosion control measures remain effective;
(c) stormwater runoff and seepage from rehabilitated areas does not negatively affect the environmental values of any waters;
(d) plants show healthy growth and recruitment is occurring; and
(e) rehabilitated areas are free of any **declared pest plants.**

Condition 63 – Rehabilitation Success

Rehabilitation can be considered successful when the site can be managed for its designated land-use (either similar to that of surrounding undisturbed areas or as otherwise agreed in a written document with the landowner/holder and administering authority) without any greater management input than for other land in the area being used for a similar purpose and there is evidence that the rehabilitation has been successful for at least three (3) years.

Condition 64 – Decommissioning pipelines

Decommission inactive buried pipelines by in-situ decommissioning (abandonment in place).

Condition 65

Prior to pipelines and equipment being disconnected they must be drained or vented and cleaned via purging or flushing.

Condition 66

Any water used for purging or flushing pipelines must be contained in dams on site, tested and either:

(a) directly reused where suitable for petroleum activities;
(b) treated so that it meets water quality criteria for the intended reuse; or
(c) removed from the site for disposal or treatment at an appropriately authorised facility; or
(d) disposed of via evaporation in a suitably lined pond.

Condition 67 – Infrastructure

All above ground **infrastructure** used for the petroleum activities must be removed prior to surrender of the environmental authority, except where it is to remain under the authority of the *Petroleum and Gas (Production and Safety) Act 2004*, or with the written agreement of the administering authority and the post petroleum authority landowner/holder.

Condition 68 – Transition of petroleum authority

The holder of the environmental authority must take responsibility for the rehabilitation of any disturbance to land undertaken as part of a petroleum activity on a petroleum authority that has been transitioned (all or in part) due to the grant of a new petroleum authority over that land which now forms part of the current project.

Condition 69 – Notification

In addition to the requirements under section 320A of the *Environmental Protection Act 1994*, the administering authority must be notified through the Pollution Hotline and in writing within 48 hours of becoming aware of any of the following events:

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

(b) threatened or actual loss of structural or hydraulic integrity of a dam

(c) any incident where there is a threatened or actual loss of well integrity

(d) When the seepage trigger action response procedure is implemented

(e) unauthorised releases of any volume of **prescribed contaminants** to water

(f) unauthorised releases of volumes of contaminants (or their mixtures) to land greater than:

  i. 200 L of hydrocarbons; or

  ii. 5 000 L of **produced water**; or

  iii. 5 000 L of raw sewage; or

  iv. 10 000 L of treated sewage effluent.

(g) the use of **restricted stimulation fluids**

Condition 70 - Venting and well flaring (Air 1)

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 (Air 1(a)) and (Air 1(b)) and (Air 1(c)), or with (Air 1(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**.

Condition 71 – Stimulation
PESCC 35

The petroleum activities must not involve well stimulation activities at a well located within 2 kilometres laterally of a **landholder's active groundwater bore** and sourced from a formation within 200 metres vertically of the **stimulation impact zone**.

Condition 72
PESCC 36
Prior to undertaking well stimulation activities, written **stimulation management procedures** must be developed.

Condition 73

Stimulation activities must not result in:
(a) negative impacts to groundwater quality beyond the stimulation impact zone; or
(b) negative impacts to water quality in landholder's active groundwater bore(s) which tap into the target **aquifer**; or
(c) interconnectivity between an aquifer and any other aquifer.

Condition 74

Stimulation management procedures must be:
(a) certified by a suitably qualified person;
(b) kept on record for a minimum of 7 years; and
(c) implemented.

Condition 75

All hydraulic stimulation plant and equipment must be maintained and operated in its proper and effective condition. For the purpose of this condition, plant and equipment does not include dams or bunding.

END OF PERMIT

APPENDIX A – DEFINITIONS

Note: Where a term is not defined in this Authority, the definition in the *Environmental Protection Act 1994*, its regulations and Environmental Protection Policies or the *Petroleum and Gas (Production and Safety) Act 2004* and its regulations must be used in that order.

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

Administering authority means:

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

Appropriately 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.

Aquifer for the purposes of this EA, means;

- Glendower Formation;
- Winton Formation;
- Mackunda Formation;
- Alluru Formation;
- an aquifer identified under the Water Resource (Great Artesian Basin) Plan 2006;
- Tinchoo Formation;
- Arraburry Formation; and
- Gilgealpa Group.

Archaeological artefact means:

(a) any artefact that is evidence of an aspect of Queensland's history, whether it is located in, on or below the surface of land, and not

(b) a thing that is Aboriginal cultural heritage under the *Aboriginal Cultural Heritage Act 2003* or Torres Strait Islander cultural heritage under the *Torres Strait Islander Cultural Heritage Act 2003*.

Archaeological investigation means a physical investigation of the place carried out by a person or persons with recognised qualifications, experience or standing in historical archaeology, mining history, cultural heritage management, or related discipline for the purpose of investigating, recording or conserving archaeological artefacts on the place.

Archaeological place means a place entered in the Queensland heritage register under Part 5 of the *Queensland Heritage Act 1992*.

Assessed or **assess** by a 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:

(a) what has been assessed and the precise nature of that assessment;

(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 activity authorised under a petroleum authority, such as producing petroleum from a well, and includes water also known as produced formation water. The term includes all contaminants suspended or dissolved in 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.

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.

Beneficial use means:

1. 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:

   (a) of benefit to that owner in that it adds real value to their business or to the general community,

   (b) in accordance with relevant provisions of the *Environmental Protection Act 1994*,

   (c) sustainable by virtue of written undertakings given by that owner to maintain that dam, and

   (d) the transfer and use have been approved or authorised under any relevant legislation; or

2. with respect to associated water, see Environmental Protection Agency's Operational Policy *Management of water produced in association with petroleum activities (associated water)* and *Notice of decision to approve a resource for beneficial use – associated water* which can be accessed on Department of Environment and Heritage Protection's website at www.ehp.qld.gov.au.

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.

Certification or **certified** by a suitably qualified and experienced person in relation to a **design plan** 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:

(a) exactly what is being certified and the precise nature of that certification;

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

(c) 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

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

Clearing means:

(a) in relation to grass, scrub or bush - the removal of vegetation by disturbing root systems and exposing underlying soil (including burning), but does not include—

i the flattening or compaction of vegetation by vehicles if the vegetation remains living; or

ii the slashing or mowing of vegetation to facilitate access tracks; or

iii the clearing of noxious or introduced plant species; and

(b) in relation to trees - cutting down, ringbarking, pushing over, poisoning or destroying in any way.

Commercial place means 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.

Construction in relation to a dam includes building a new dam and modifying or lifting an existing dam.

Cultural heritage significance means aesthetic, architectural, historical, scientific, social or other significance, to the present generation or past or future generations, as assessed against the following criteria:

(a) the place is important in demonstrating the evolution or pattern of Queensland's history;

(b) the place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage;

(c) the place has potential to yield information that will contribute to an understanding of Queensland's history;

(d) the place is important in demonstrating the principal characteristics of a particular class of cultural places;

(e) the place is important because of its aesthetic significance;

(f) the place is important in demonstrating a high degree of creative or technical achievement at a particular period;

(g) the place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;

(h) the place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history.

Dam means a land-based structure (including a **levee,** dyke or bund) or a void that is intended or used to contain, divert or control **flowable substances**, and includes any substances that are thereby contained or controlled by that land-based structure or void and **associated works**. However; a dam does *not* mean a

fabricated or manufactured tank or container designed to a recognised standard, nor does a dam mean a land-based structure where that structure is designed to an Australian Standard such as a bund designed for spill containment to AS1940.

Declared pest plants are listed in Schedule 2 of the *Land Protection (Pest and Stock Route Management) Regulation 2003.*

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.

Discharge area is an area in the landscape where the net movement of groundwater is out of the aquifer. This may be expressed by waterlogging where groundwater discharges at the soil surface because of seepage or salting because of evaporation.

Dispersible soils are structurally unstable soils that readily breakdown into their constituent particles in water (e.g. the clay material disintegrates into particles less than 2 microns across within 24 hours when soil crumbs are submerged in distilled water). These soils are also known as sodic soils and have a high percentage of sodium ions (in soluble or exchangeable form).

Ecosystem functioning means the interactions between and within living and non-living components of an ecosystem and generally correlates with the size, shape and location of an area of vegetation.

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.

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 activities such as rehabilitation. In other words, it does not refer to the 'completion' of the petroleum activity, the time at which the petroleum authority ends or the time that the land in question ceases to be part of an authority.

Evaporation pond means a dam specifically designed for the purpose of disposing of a liquid via evaporation.

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, wetland or spring including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion prevention structure or fence.

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

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

Foreseeable future is 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.

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

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

Hazard category means the level of hazard (low, significant or high) assigned to a dam as a result of an assessment against tables and other criteria in *the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (Version 1.0, 2008)* published by the Environmental Protection Agency (Department of Environment and Heritage Protection) on its website.

Heritage place means any place that may be of **cultural heritage significance,** or any place with potential to contain **archaeological artefacts** that are an important source of information about Queensland's history.

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.

Highly erodible soils means very unstable soils that are generally described as Sodosols with hard-setting, fine sandy loam to silty clay loam surfaces (solodics, solodised solonetz and solonetz) or soils with a dispersible layer located less than 25cm deep or soils less than 25cm deep.

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 in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (Version 1.0, 2008)* published by the Department of Environment and Resource Management (Department of Environment and Heritage Protection) on its website.

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

$L_{A90,\ adj,\ 15\ mins}$ means the A-weighted sound pressure level exceeded for 90 percent of the measurement time period of 15 minutes, adjusted for noise characteristics including tonality and impulsiveness and measured in the presence of the noise under investigation, using Fast Response.

$L_{A10,\ adj,\ 15\ mins}$ means the A-weighted sound pressure level exceeded for 10 percent of the measurement time period of 15 minutes, adjusted for noise character including tonality and impulsiveness and measured in the presence of the noise under investigation, using Fast Response.

$L_{A1,\ adj,\ 15\ mins}$ means the A-weighted sound pressure level exceeded for 1 percent of the measurement time period of 15 minutes, adjusted for noise character including tonality and impulsiveness and measured in the presence of the noise under investigation, using Fast Response.

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

Leachate means a liquid that contains soluble, suspended or miscible contaminants likely to have been derived from material which is stored, processed or disposed of on site and which the liquid has passed through or emerged from, or is likely to have passed through or emerged from.

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 regulated waste means any of the following regulated wastes, asbestos, clinical waste or quarantine waste that has been rendered non-infectious, fish processing waste, food processing waste, poultry processing waste, tyres or treatment tank sludge or residue produced in the carrying out of an activity in relation to sewage treatment and water supply activities.

Noxious means harmful or injurious to health or physical well being.

'Of concern' regional ecosystem means an 'of concern' regional ecosystem identified in the database maintained by the Department of Environment and Heritage Protection called 'Regional ecosystem description database' containing regional ecosystem numbers and descriptions. The database is available for inspection on the Department of Environment and Heritage Protection's website at http://www.ehp.qld.gov.au/ecosystems/biodiversity/regional-ecosystems/index.php

Offensive means causing unreasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

Overland flow water means water, including floodwater, flowing over land, otherwise than in a watercourse or lake:

(a) after having fallen as rain or in any other way; or

(b) after rising to the surface naturally from underground.

Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads, pipelines etc) which is to be left by agreement with the landowner.

Petroleum authority is:

(a) a 1923 Act petroleum tenure granted under the *Petroleum Act 1923*; or

(b) a petroleum authority granted under the *Petroleum and Gas (Production and Safety) Act 2004*; or

(c) a licence, permit, pipeline licence, primary licence, secondary licence or special prospecting authority granted under the *Petroleum (Submerged Lands) Act 1982*.

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

(a) earth; or

(b) a contaminant prescribed under section 440ZF.

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.

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 (Version 1.0, 2008)* published by the Department of Environment and Resource Management (Department of Environment and Heritage Protection) on its website.

Regulated waste means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 2008* (whether or not it has been treated or immobilised), and includes–

(a) for an element – any chemical compound containing the element; and

(b) anything that has contained the waste.

Release of a contaminant into the environment includes:

(a) to deposit, discharge, emit or disturb the contaminant; and

(b) to cause or allow the contaminant to be deposited, discharged, emitted or disturbed; and

(c) to allow the contaminant to escape; and

(d) to fail to prevent the contaminant from escaping.

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.

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 and 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 and 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) a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel;

(b) a library, childcare centre, kindergarten, school, university or other educational institution;

(c) a medical centre, surgery or hospital;

(d) a protected area;

(e) 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.

Significantly disturbed land or **significant disturbance to land** means land that is:

(a) contaminated land; or

(b) disturbed and human intervention is needed to rehabilitate it:

i to a state required under this authority; or

ii if the authority does not require the land to be rehabilitated to a particular state – to its state immediately before the disturbance.

Examples of a significant disturbance to land:

(a) areas where soil has been compacted, removed, covered, exposed or stockpiled;

(b) areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion;

(c) areas where land use suitability or capability has been diminished;

(d) areas within a watercourse, wetland, or spring where petroleum activities have occurred causing the loss of habitat or a decline in ecological processes and requiring human intervention to restore or stabilise the disturbed area and/or protect the quality of the water downstream of the disturbance;

(e) areas submerged by waste or water;

(f) areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after petroleum activities have ceased; or

(g) areas where land has become contaminated land and a suitability statement has not been issued.

However, for the purpose of this authority the following areas are not significantly disturbed:

(a) areas off the petroleum authority (e.g. roads or tracks which provide access to the petroleum authority);

(b) areas previously significantly disturbed which have been rehabilitated to the administering authority's satisfaction;

(c) areas under permanent infrastructure (e.g. roads, bridges, buildings) as agreed by the administering authority and landholder;

(d) areas that were significantly disturbed prior to the grant of the petroleum authority, unless those areas are re-disturbed by the petroleum authority holder during the course of carrying out the petroleum activities or were conducted on a petroleum authority that was replaced by the current authority (e.g. through conditional surrender or the transition from an authority to prospect to a petroleum lease).

Site means the area within the petroleum authority or authorities to which the environmental authority relates.

Spring means the land to which water rises naturally from below the ground and the land over which the water then flows.

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.

State heritage place means a place entered in the Queensland heritage register under Part 4 of the *Queensland Heritage Act 1992*.

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.

Stimulation management procedures means procedures for the management of stimulation activities that include, but is not necessarily limited to information on:

- the local stratigraphy including aquifers, faults, linear features, hydraulic conductivity, porosity, seismic risk and groundwater dependent assets
- the impacts of applied stresses including aquifer drawdown, on connectivity to aquifers above and below the fractured zone subsequent to the stimulation activity
- the extent to which there are vertically impermeable formations between the fractured zone and other aquifers
- methods to ensure isolation of hydrocarbon bearing formations from aquifers and internal and external mechanical integrity of well(s)
- process control techniques incorporating real-time analysis, fracture modelling and formation understanding utilising techniques such as micro-seismic measurements
- quantity and quality monitoring of flow back water.

Suitably qualified and experienced person in relation to dams means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 1988*, OR registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, OR holds equivalent professional qualifications to the satisfaction of the administering authority for the Act; AND the administering authority for the Act is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

(a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and

(b) a total of five (5) years of suitable experience and demonstrated expertise in the geomechanics of dams with particular emphasis on stability, geology and geochemistry; and

(c) a total of five (5) years of suitable experience and demonstrated expertise each, in three (3) of the following categories:

  i investigation and design of dams;

  ii construction, operation and maintenance of dams;

  iii hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology;

  iv hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes;

  v hydrogeology with particular reference to seepage, groundwater;

  vi solute transport processes and monitoring thereof;

vii dam safety.

Suitably qualified and experienced person – means a person:

a) holding a National Association of Testing Authorities (NATA) signatory; **or**
b) either;
   i. who is holder of a degree in Science or Applied Science conferred after due examination by a University or College of Advanced Education in Queensland; **or**
   ii. who is the holder of a degree in Science or Applied Science conferred after due examination by a University, College of Advanced Education or other Tertiary Education Institution outside Queensland and that is to be the like effect as a degree conferred by a University or College of Advanced Education in Queensland; **or**
   iii. who has corporate membership of the Royal Australian Chemical Institute; **and**
   iv. has gained at least three (3) years practical experience in chemical bacteriological or other specialist analysis to demonstrate the persons capacity to maintain a high level of performance in all aspects of the performance of the particular analysis; **or**
c) working under the direct supervision of person(s) mentioned in a) and b).

Thing means a material object without life or consciousness or some entity, object or creature which is not or cannot be specifically designated or precisely described.

Threatening processes are processes, features and actions that can have a detrimental effect upon the health and viability of an area of vegetation. For example, 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. For example, a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing pondage 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 300mm in depth from the natural surface.

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

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

Watercourse is a creek, river or stream

(a) in which water flows intermittently or permanently in a visibly defined channel, whether artificial, artificially improved or natural; and

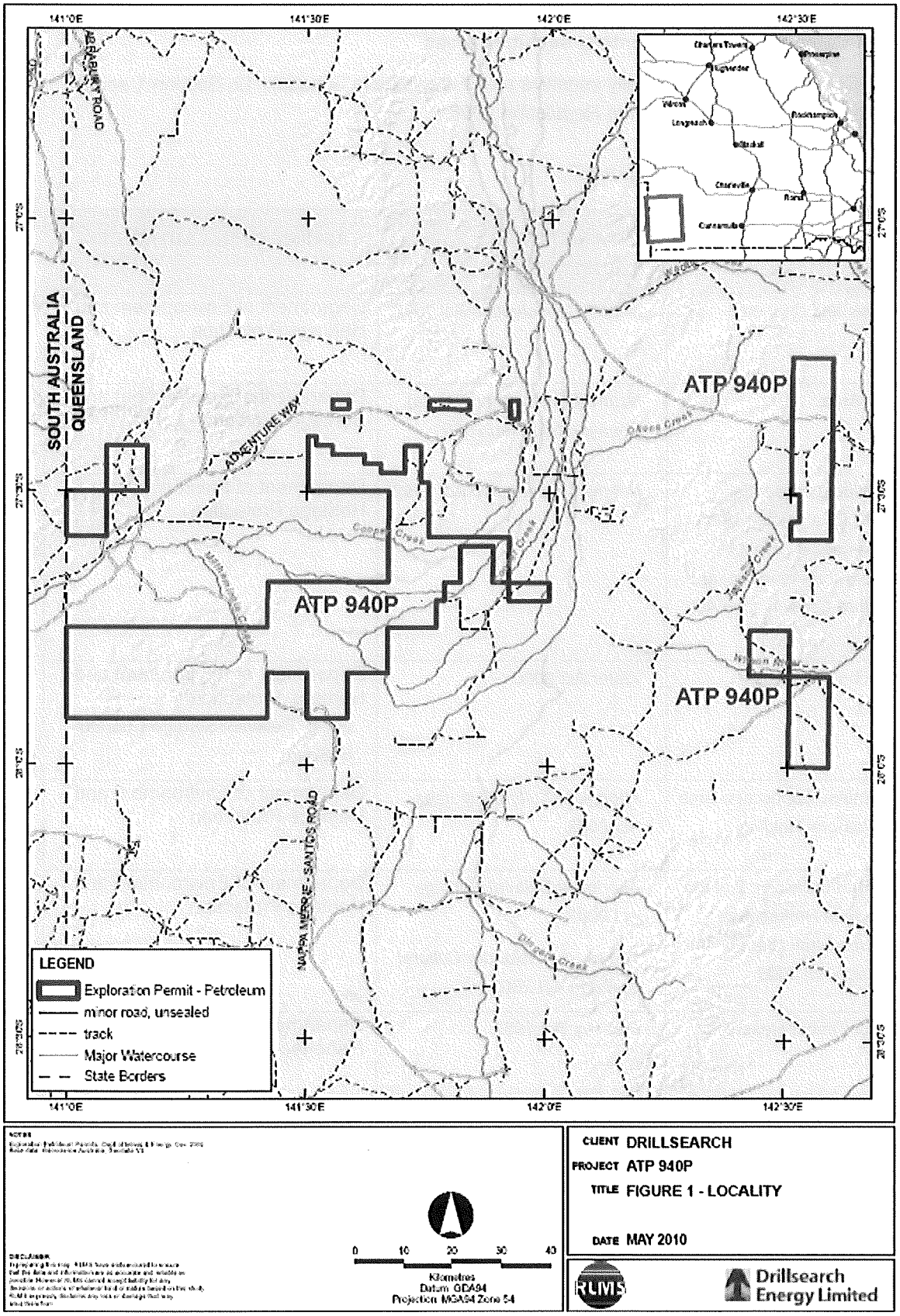
(b) that has evidence of biological dependence on any water that flows in the creek, river or stream or on the banks or bed.

Wetland means an area shown as a wetland on a 'Map of referable wetlands', a document approved by the chief executive (environment). A map of referable wetlands can be viewed at www.ehp.qld.gov.au.

Wild river declaration is a statutory instrument under the *Wild Rivers Act 2005.* A declaration lists the relevant natural values to be preserved and delineates certain parts of the wild river area and the different constraints

that may apply in these areas. With reference to environmental authorities for petroleum, each declaration also specifies conditions to be included in a new authority if the activity is to be located within the wild river area.

APPENDIX B – LOCALITY MAP OF ATP940



APPENDIX C – ENVIRONMENTALLY SENSITIVE AREAS

Category A and Category B environmentally sensitive areas

Category A and Category B environmentally sensitive areas are listed in Schedule 12, Section 1 and 2 respectively of the *Environmental Protection Regulation 2008*.

Category C environmentally sensitive areas

LAND AREA CLASSIFICATION	ADMINISTERING LEGISLATION	ADMINISTERING AUTHORITY
Nature Refuges and Resource Reserves	*Nature Conservation Act 1992*	Department of Environment and Heritage Protection
Koala Habitat Area	*Nature Conservation (Koala) Conservation Plan 2006*	Department of Environment and Heritage Protection
An area identified as essential habitat by EHP for a species of wildlife listed as endangered, vulnerable, near threatened or rare under the *Nature Conservation Act 1992*	*Nature Conservation Act 1992*	Department of Environment and Heritage Protection
Declared Catchment Areas	*Water Act 2000*	Department of Environment and Heritage Protection and/or Relevant Storage Operator or Board
Former Designated Landscape Area - Stanbroke Pastoral Holding	*Aboriginal Cultural Heritage Act 2003*	Department of Environment and Heritage Protection
Areas under Part 5 Division 2 of the *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003*	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Environment and Heritage Protection
State Forest or Timber Reserves	*Forestry Act 1959*	Department of Agriculture, Fisheries and Forestry
DPI Research Sites	*Nil*	Department of Agriculture, Fisheries and Forestry
Areas of land occupied by the Bureau of Sugar Experiment Stations.	*Sugar Industry Act 1999*	Department of Agriculture, Fisheries and Forestry
Coastal Management Districts	*Coastal Protection and*	Department of Environment and Heritage Protection

LAND AREA CLASSIFICATION	ADMINISTERING LEGISLATION	ADMINISTERING AUTHORITY
	Management Act 1995	
Declared Areas	*Sections 17, 18 and 19a of the Vegetation Management Act 1999*	Department of Environment and Heritage Protection
An area shown as a wetland on a 'map of referable wetlands'	*Environmental Protection Act 1994*	Department of Environment and Heritage Protection
Reserves under the Land Act 1994	*Land Act 1994*	Department of Environment and Heritage Protection
An 'of concern' regional ecosystem identified in the database maintained by EHPcalled 'Regional ecosystem description database' containing regional ecosystem numbers and descriptions.	*Nil*	Department of Environment and Heritage Protection

Important Note: Regional ecosystem classification is determined according to the Queensland Herbarium *Biodiversity Status Classification*. Information on ERE's is maintained by EHP on the Regional Ecosystem Description Database.