

Environmental Protection Act 1994
Level 2 Environmental Authority (chapter 5A activities)

DERM Permit¹ Number:
PEN201249310

Under section 310 of the *Environmental Protection Act 1994* this permit is issued to:

Principal Holder

Oil Company of Australia (Moura) Transmissions Pty Ltd
Level 45 Australia Square
264-278 George Street
SYDNEY NSW 2000

In respect to carrying out a Level 2 chapter 5A activity(ies) as per Section 23 of the *Environmental Protection Regulation 2008* on the relevant resource authority listed below:

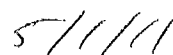
Project Name	Resource Authority Type(s) and Number(s)
Durham to ML1A	Petroleum Pipeline Licence (PPL) 90

This environmental authority takes effect from: 5 January 2011

The anniversary date of this environmental authority is 5 January

This environmental authority is subject to the attached Schedule of Conditions.




Date

Rod Kent
Delegate of Administering Authority
Department of Environment and Resource Management

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Department of Environment and Resource Management.

Additional advice about the approval

1. This approval pursuant to the *Environmental Protection Act 1994* does not remove the need to obtain any additional approval for petroleum activity(ies) which might be required by other State and/or Commonwealth legislation. Other legislation administered by DERM for which a permit may be required includes, but is not limited to the:
 - *Aboriginal Cultural Heritage Act 2003*;
 - The contaminated land provisions of the *Environmental Protection Act 1994*;
 - *Nature Conservation Act 1992*;
 - *Forestry Act 1959*;
 - *Water Supply (Safety and Reliability) Act 2009*; and
 - *Water Act 2000*.

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

2. This environmental authority consists of the following Schedules and Appendices:

Schedule A	- General
Schedule B	- Air Emissions
Schedule C	- Water Management
Schedule D	- Noise Management
Schedule E	- Waste Management
Schedule F	- Land Management
Schedule G	- Cultural Heritage
Schedule H	- Nature Conservation
Schedule I	- Declared Wild River Areas
Schedule J	- PPL90 – Gas Pipeline
Schedule K	- Monitoring Programs
Schedule L	- Community Issues
Schedule M	- Notification Procedures
Schedule N	- Transition of Relevant Resource Authority

Appendix 1	Definitions
Appendix 2	Locality Map of PPL90
Appendix 3	Environmentally Sensitive Areas

SCHEDULE A

GENERAL CONDITIONS

PREVENT AND/OR MINIMISE LIKELIHOOD OF ENVIRONMENTAL HARM

- (A1) This environmental authority does not authorise environmental harm unless a condition contained in this environmental authority explicitly authorises that harm. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.
- (A2) In carrying out petroleum activities under the relevant resource authority the holder of this environmental authority must prevent and/or minimise the likelihood of environmental harm being caused.

MAINTENANCE OF MEASURES, PLANT AND EQUIPMENT

- (A3) The holder of this authority must:
- a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and
 - b) maintain such measures, plant and equipment in a proper and efficient condition; and
 - c) operate such measures, plant and equipment in a proper and efficient manner.
- (A4) All instruments, equipment and measuring devices used for measuring or monitoring in accordance with any condition of this environmental authority must be calibrated, appropriately operated and maintained.
- (A5) No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration increases the environmental harm caused by the petroleum activities.
- (A6) The holder of this environmental authority must ensure that the operation and maintenance of all plant and equipment relating to the petroleum activities are carried out by a suitability qualified, person(s).
- (A7) All analyses and tests required to be conducted under this environmental authority must be carried out by a laboratory that has NATA certification for such analyses and tests, except where authorised otherwise by the administering authority.

SPILL RESPONSE

- (A8) A spill response plan must be developed for PPL90 and associated petroleum activities 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.

COMPLIANCE WITH AUSTRALIAN PIPELINE INDUSTRY ASSOCIATION CODE OF ENVIRONMENTAL PRACTICE

- (A9) The holder of this environmental authority must undertake the operation of the pipeline authorized under this environmental authority in accordance with the *"Australian Pipeline Industry Association Code of Environmental Practice – Onshore Pipelines"* dated October 2005 (the Code) or any subsequent versions. To the extent of any inconsistency between the conditions of this environmental authority and the Code, the conditions of this environmental authority prevail.

FINANCIAL ASSURANCE

- (A10) The holder of this environmental authority must provide financial assurance in the amount and form required by the administering authority for the operation and decommissioning of the pipeline and any associated petroleum activities. The calculation of financial assurance must be in accordance with DERM's guideline *"Financial assurance for petroleum activities"*.
- (A11) Subject to Condition (A10), the holder of this environmental authority must revise the estimate of financial assurance every five (5) years on the anniversary date of this environmental authority.
- (A12) In accordance with Condition (A11), the revised calculation of financial assurance must be provided to the administering authority on the anniversary date of this environmental authority.
- (A13) The financial assurance is to remain in force until the administering authority is satisfied that no claim is likely to be made on the assurance.

SIGNIFICANT DISTURBANCE

- (A14) The holder of this environmental authority must ensure that:
- a) Prior to conducting petroleum activity(ies) that involve significant disturbance to land, an assessment must be undertaken of the condition, type and ecological value of any vegetation in such areas where the activity is proposed to take place. The assessment must be submitted to the administering authority for assessment.

- b) The assessment required by Condition (A14 a) must be undertaken by a suitably qualified person and include the carrying out of field validation surveys, observations and mapping of any category A, B or C Environmentally Sensitive Areas (ESA's) and the presence of species classed as endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992*.

DEFINITIONS

- (A15) Words and phrases used in this environmental authority are defined in Appendix 1 – Definitions. Where a definition for a term used in this environmental authority is not defined in this environmental authority, the definitions in the *Environmental Protection Act 1994* and subordinate legislation must be used.

SCHEDULE B AIR EMISSIONS

DUST MANAGEMENT

- (B1) The release of any dust and particulate matter resulting from the petroleum activities must not cause an environmental nuisance at any sensitive or commercial place.
- (B2) Notwithstanding Condition (B1), dust and particulate matter must not exceed the following levels when measured at any sensitive or commercial place:
- a) dust deposition of 120 milligrams per square metre per day, averaged over one (1) month, when monitored in accordance with AS 3580.10.1 – *Methods for sampling and analysis of ambient air - Determination of particulates - Deposited matter - Gravimetric method of 1991*; or
 - b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (μm) (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24 hour averaging time, at a nuisance sensitive or commercial place downwind of the site, when monitored in accordance with AS3580.9.6 – *Ambient air – Particulate matter – Determination of suspended particulate PM10 high-volume sampler with size-selective inlet Gravimetric method*; or
 - c) a concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometre (μm) (PM2.5) suspended in the atmosphere of 25 micrograms per cubic metre over a 24 hour averaging time, at a nuisance sensitive or commercial place downwind of the site, when monitored in accordance with AS/NZS3580.9.10.2006.
- (B3) When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any valid complaint of environmental nuisance at any sensitive or commercial place. The results must be notified within 14 days to the administering authority following completion of monitoring.
- (B4) If monitoring in accordance with Condition (B3) indicates exceedence(s) of the relevant limit(s) in Condition (B2), the holder of this environmental authority must:
- a) address the complaint via appropriate dispute resolution if required; and/or
 - b) as soon as practicable implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.

ODOUR MANAGEMENT

- (B5) The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the petroleum activities must not cause an environmental nuisance at any sensitive or commercial place.
- (B6) When requested by the administering authority, odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any valid complaint of environmental nuisance at any sensitive place or commercial place. The results must be notified within 14 days to the administering authority following completion of monitoring.

- (B7) If monitoring in accordance with Condition (B6) indicates non-compliance with Condition (B5) the holder of this environmental authority must:
- a) address the complaint via dispute resolution if required; and/or
 - b) as soon as practicable implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.

SCHEDULE C

WATER MANAGEMENT

RELEASE TO WATERS

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

RELEASE TO LAND

- (C2) The holder of this environmental authority must ensure that the petroleum activities do not result in the release of contaminants to land, unless specifically authorised under this environmental authority.
- (C3) The holder of this environmental authority is allowed to release pipeline trench water to land for disposal provided that the water does not have any properties nor contain any organisms or other contaminants in concentrations that are capable of causing environmental harm.
- (C4) Subject to Condition (C2), the holder of this environmental authority must ensure that the release of trench water to land is carried out in a manner that ensures that:
- a) vegetation is not damaged;
 - b) soil erosion and soil structure damage is avoided;
 - c) there is no surface ponding of trench water;
 - d) the quality of groundwater is not adversely affected; and
 - e) there are no releases of trench water to any surface waters.

MANAGEMENT OF HYDRO-TEST WATER

- (C5) Hydrostatic test water must be contained in existing dams on site, tested and either:
- a) directly reused where appropriate for petroleum activities; and
 - b) treated so that it meets water quality criteria for the intended reuse.

EROSION AND SEDIMENTATION CONTROL

- (C6) The holder of this environmental authority must:
- a) design, install and maintain adequate erosion and sediment control structures to minimise the potential for stormwater runoff onto areas disturbed by petroleum activities; and
 - b) design, install and maintain adequate erosion and sediment control structures where necessary to prevent or minimise soil erosion in areas disturbed by petroleum activities and the sedimentation of any waters.

STORMWATER MANAGEMENT

- (C7) Except as provided otherwise by the conditions of this environmental authority, petroleum activities must be carried out by such reasonable and practicable means to prevent the contact of incident rainfall and stormwater runoff with waste or other contaminants.
- (C8) All stormwater treatment devices used to treat stormwater must be maintained in a proper and efficient working condition.
- (C9) The maintenance and cleaning of vehicles and other plant and equipment must be carried out in suitable areas so that the resultant contaminants are not released to any waters.

DETERMINING WATER QUALITY CONTAMINANTS

- (C10) All determinations of the quality of contaminants released must be made in accordance with methods prescribed in the DERM's *Monitoring and Sampling Manual 2009– Environmental Protection (Water) Policy, 2009* or any subsequent versions and carried out on samples that are representative.

PROTECTION OF WATERCOURSES, WETLANDS AND SPRINGS

- (C11) Unless otherwise approved under relevant legislation, the holder of this 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** conducting works that are defined as assessable development in a water resource plan under the *Water Act 2000*.

ACTIVITIES IN A WATERCOURSE, WETLAND OR SPRING

- (C12) 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 the pipeline authorised under this environmental authority, provided they are essential for carrying out 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 a suitably 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 commencing as soon as reasonably practicable upon cessation of the relevant petroleum activities.

SCHEDULE D NOISE MANAGEMENT

- (D1) The holder of this environmental authority must ensure that petroleum activities do not cause environmental nuisance at any sensitive or commercial place.
- (D2) Prior to undertaking petroleum activities that are likely to impact on a noise sensitive or commercial place, the holder of this environmental authority must investigate potential noise emissions from the relevant petroleum activities and determine if noise emissions are likely to exceed the limits set in Schedule D, Table 1. If noise emissions are likely to exceed these limits, the holder of this environmental authority must take appropriate measures to either relocate the petroleum activit(ies) or incorporate noise abatement and /or attenuation measures to mitigate those impacts. These measures must be in place prior to undertaking any petroleum activities under this environmental authority.
- (D3) Notwithstanding condition (D1), the holder of this environmental authority must ensure that noise emitted from any aspect of petroleum activities does not exceed the noise levels specified in Schedule D, Table 1 at any sensitive place or commercial place.

Schedule D, 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	lesser of bg+0 or 40	lesser of bg+0 or 40	lesser of bg+0 or 40	lesser of bg+0 or 40	lesser of bg+0 or 40
L _{A10} , adj, 15 mins	lesser of bg+5 or 50	lesser of bg+5 or 45	lesser of bg+0 or 40	lesser of bg+5 or 45	lesser of bg+5 or 40	lesser of bg+0 or 35
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	lesser of bg+0 or 45	lesser of bg+0 or 40	lesser of bg+3 or 43	lesser of bg+0 or 40	lesser of bg+0 or 40
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) can 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.

- (D4) The method of measurement and reporting of noise levels must be in accordance with the most recent edition of DERM's *Noise Measurement Manual* or the most recent version of Australian Standard AS1055 – *Acoustics – Description and measurement of environmental noise*.

- (D5) When requested by the administering environmental authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any valid complaint of environmental nuisance at any sensitive or commercial place. The results must be notified within 14 days to the administering authority following completion of monitoring.
- (D6) If monitoring in accordance with Condition (D5) indicates non-compliance with Condition (D3), the holder of this environmental authority must:
- a) address the complaint via appropriate dispute resolution if required; and/or
 - b) as soon as practicable implement noise abatement measures so that noise emissions from the activity do not result in further environmental nuisance.
- (D7) Upon agreement with any affected person(s), and where alternative arrangements are in place that prevent environmental nuisance of noise emissions within a sensitive place, the noise levels provided in Schedule, D Table 1 do not apply for that period for which the alternative arrangements are in place. Any costs associated with these arrangements must be borne by the holder of this environmental authority.

SCHEDULE E

WASTE MANAGEMENT

- (E1) 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*.
- (E2) Waste, including vegetation, must not be burnt on site.
- (E3) Any spillage of hazardous waste or other contaminants that may cause environmental harm must be effectively contained and/or cleaned up as quickly as practicable. Such spillage must not be cleaned up by hosing, or any of the spilt materials released to land or waters.
- (E4) All regulated waste removed from the site must be removed by a person who holds a current permit to transport such waste under the provisions of the *Environmental Protection Act 1994* and sent to a facility authorised to accept such waste.
- (E5) When regulated waste is removed from the site and transported by the holder of this environmental authority, a record must be kept of the following:
- a) date of waste transport;
 - b) quantity of waste removed and transported;
 - c) type of waste removed and transported;
 - d) route selected for transport of waste;
 - e) quantity of waste delivered; and
 - f) any incidents, including spills, e.g. spillage) that may have occurred on route.
- (E6) If a person removes regulated waste associated with petroleum activities carried out on the site and disposes of such waste in a manner which is not authorised or is improper or the holder of this environmental authority must notify the administering authority of all relevant facts, matters and circumstances known concerning the disposal.

SCHEDULE F LAND MANAGEMENT

MINIMISING DISTURBANCE TO LAND AND SOIL

- (F1) The holder of this environmental authority must:
- a) minimise disturbance to land to prevent land degradation; and
 - b) ensure that for land that is to be significantly disturbed by petroleum activities (except in areas of highly erosive soils) the top layer of the soil profile is removed; and
 - i. stockpiled in a manner that will preserve its biological and chemical properties, and
 - ii. used for rehabilitation purposes in accordance with Condition (F18).

ACID SULFATE SOILS

- (F2) The holder of this environmental authority must determine the presence of **acid sulfate soils** prior to any excavation or filling in areas below five (5) metres Australian Height Datum (AHD) where the natural ground level is less than 20 metres AHD.
- (F3) Where the presence of potential or actual acid sulfate soils has been determined, the holder of this environmental authority must comply with an Acid Sulfate Soil Environmental Management Plan (ASSEM Plan) prepared in accordance with Appendix 4 of the *State Planning Policy 2/02 Guideline Acid Sulphate Soils* when carrying out petroleum activities on all land, soil and sediment if
- a) excavating or otherwise removing 100m³ or more of soil or sediment; or
 - b) filling of land involving 500m³ or more of material with an average depth of 0.5 of a metre or greater.
- (F4) The ASSEM Plan must be prepared and implemented by a suitably qualified person.
- (F5) Any filling and excavation subject to Condition (F3) and Condition (F4) is prohibited unless the holder of this environmental authority has submitted to the administering authority a copy of the acid sulfate soil environmental management plan which has been assessed and accepted by the administering authority.

TRACKS AND RIGHT OF WAY (ROW)

- (F6) The holder of this environmental authority must ensure that:
- a) Existing access and fence line tracks are used wherever possible. Any new tracks must be constructed by linking natural cleared or disturbed areas.
 - b) where new vehicle tracks are required, they must not exceed 5 metres in width.
 - c) ROW disturbance must not exceed 40 metres in width without notification

- d) Track and ROW construction without involving blade clearing of established ground cover vegetation and or/clearing of mature trees must be minimised.

VEGETATION MANAGEMENT

- (F7) The holder of this environmental authority must:
 - a) prevent or minimise disturbance to vegetation, particularly remnant vegetation, by petroleum activities; and
 - b) manage the effects of clearing to prevent the loss of biodiversity, reduction of ecological processes and land degradation.

FAUNA MANAGEMENT

- (F8) During construction, pipe must be strung with gaps to allow for fauna movement across the line of the pipe.
- (F9) Measures must be employed to prevent fauna entrapment in pipe section or within the pipeline trench.
- (F10) Open trenches and pipes must be checked for fauna prior to backfill and any trapped animals removed.

PROTECTION OF RIVERINE AREAS

- (F11) Unless otherwise approved under relevant legislation, the holder of this 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;
 - 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*.
- (F12) Petroleum activities resulting in significant disturbance to the bed or banks of a watercourse, wetland or a spring must:
 - a) only be undertaken where necessary for the construction and/or maintenance of the pipeline authorised under this environmental authority, roads and tracks that are essential for carrying out the petroleum activities and no reasonable alternative location is feasible; and
 - b) be no greater than the minimum area necessary for the purpose of the significant disturbance; and
 - c) be designed and undertaken by an suitably qualified person; and
 - d) have rehabilitation commence immediately upon cessation of the works.

- (F13) 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 a spring.
- (F14) 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 works recommence.

REHABILITATION REQUIREMENTS

- (F15) Progressive rehabilitation of disturbed areas must commence as soon as practicable following the completion of any construction or operational works associated with the authorised petroleum activities on the relevant resource authority.
- (F16) The holder of the environmental authority must:
- a) remediate contaminated land caused by petroleum activities in accordance with requirements of the *Environmental Protection Act 1994* and this environmental authority; and
 - b) undertake works to establish a safe, stable, non-polluting landform similar to that of surrounding undisturbed areas. This may include excavation or placing fill in a way that does not interfere with the flow of water in a watercourse, wetland, or spring, including:
 - i. backfilling any voids and trenches;
 - ii. neutralising and/or encapsulating any acid producing or potentially acid producing material;
 - iii. re-establishing surface drainage lines;
 - iv. minimising the potential for slumping, subsidence or erosion;
 - v. reinstating the top layer of the soil profile;
 - vi. respraying any cleared vegetation; and
 - vii. promoting establishment of vegetation of similar species composition and density of cover to the surrounding undisturbed land;

unless the holder of this environmental authority has the written consent of the landowner/holder and the administering authority.

- (F17) As soon as practicable and within three (3) months from the date of cessation of petroleum activities that have caused any significant disturbance to land, the holder of this environmental authority must investigate the contaminated land status in accordance with requirements of the *Environmental Protection Act 1994* and the *National Environment Protection (Site Assessment) Measure 1999* (NEPM) where land has been subject to contamination caused by petroleum activities carried out under this environmental authority.
- (F18) All land significantly disturbed by petroleum activities must be rehabilitated to:
- a) a stable landform with a self-sustaining vegetation cover with same the species and density of cover to that of the surrounding undisturbed areas;
 - b) ensure that all land is reinstated to the pre-disturbed land use and suitability class;

- c) ensure that the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance by petroleum activities; and
- d) ensure that the water quality of any residual void or water bodies constructed meets criteria for subsequent uses and does not have the potential to cause environmental harm.

(F19) Maintenance of rehabilitated areas must take place to ensure:

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

(F20) 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 other 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.

STORAGE AND HANDLING OF CHEMICALS, FLAMMABLE AND COMBUSTIBLE LIQUIDS

- (F21) All explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the relevant Australian Standard where such is available.
- (F22) Flammable and combustible liquids (including petroleum products and associated piping and infrastructure), must be stored, handled and maintained in accordance with the latest edition of Australian Standard 1940 – *The Storage and Handling of Flammable and Combustible Liquids*.
- (F23) Any liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land. Where no relevant Australian Standard is available, the following must be applied:
- a) storage tanks must be bunded so that the capacity and construction of the bund is sufficient to contain 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; and
 - b) drum storages must be bunded so that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.
- (F24) All containment systems must be designed to minimise rainfall collection within the system.

SCHEDULE G

CULTURAL HERITAGE

HERITAGE PLACES AND ARCHAEOLOGICAL ARTEFACTS

- (G1) The holder of this 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.

SCHEDULE H

NATURE CONSERVATION

CATEGORY A, B AND C ENVIRONMENTALLY SENSITIVE AREAS (ESA)

(H1) The holder of this environmental authority must ensure that petroleum activities:

- a) are not conducted in or within 200 metres of any listed category A, B or C ESA's; and
- b) do not involve activities other than **limited petroleum activities** within 1km of a listed category A ESA, or within 500m of a listed category B or C ESA.

Note: ESA mapping is available on the Department of Environment and Resource Management website at http://www.derm.qld.gov.au/ecoaccess/maps_of_environmentally_sensitive_areas.php.

(H2) Limited petroleum activities carried out in accordance with Condition (H1) b) must be preferentially located in pre-existing areas of clearing or significant disturbance to the greatest practicable extent.

'OF CONCERN' REGIONAL ECOSYSTEMS (CATEGORY C ESA)

(H3) Despite Condition (H1), where it can be demonstrated that no reasonable or feasible alternative exists, limited petroleum activity(ies) may be undertaken in or within 200m of an 'Of Concern' RE provided that limited petroleum activity(ies) are not conducted in any area where the 'Of Concern' RE and any other Category A, B or C ESA (e.g. a National Park) or associated buffer zone overlap.

SCHEDULE I

DECLARED WILD RIVER AREAS

- (11) In a declared Wild River Area, petroleum activities must be consistent with the conditions stated in the relevant Wild River declaration. In circumstances where there is any inconsistency or conflict the conditions of the Wild River declaration prevail.

SCHEDULE J PPL90 – GAS PIPELINE

PETROLEUM INFRASTRUCTURE

- (J1) All petroleum infrastructure including buildings, structures, plant and equipment erected and/or used for the petroleum activities authorised under this environmental authority must be located within the PPL90 licence areas as shown in Appendix 2 and as defined by the coordinates in Schedule J, Table 1.

Schedule J, Table 1 – Location of the PPL90 pipeline corridor

Pipeline Licence No.	Location	Latitude (GDA 94)	Longitude (GDA 94)
PPL 90	Refer to Appendix 2 Locality Map of PPL90		
	Start Point	-25.55'00"	149.05'00"
	End Point	-26.42'00"	149.10'00"

- (J2) The pipeline authorised under this environmental authority must be constructed in accordance with the design specifications and operating parameters as described in Schedule J, Table 2, listed below:

Schedule J, Table 2 - Pipeline Design Specifications

Design Element	Design Specifications
Total Length (km)	87.3km
Diameter (mm)	323.9mm
Wall Thickness (mm)	7.2mm to 8.7mm
Pipeline Coating	Trilaminate Coating
Pipeline Content	Natural Gas
Operational Pressure	11,000kPa
Maximum Allowable Operating Pressure	15,300kPa
Steel Grade	API 5L X-70
Standard Construction Easement Width (metres)	15 metres
Minimum depth of cover (mm)	Generally, minimum 900mm Road and water crossings, minimum 1200mm
Buried Marker Tape	As required under AS2885
Cathodic Protection	Cathodic protection system
Non Destructive Testing	Regular gas leak surveys
Design life (years)	40 years

Design Element	Design Specifications
Design Capacity (TJ/day)	140TJ/day
Supervisory Control and Data Acquisition (SCADA)	Yes
Annual Capacity (natural gas tonnes/year)	51,100TJ/annum

- (J3) The relevant **references to pipeline** for PPL90 must be located in accordance with Schedule J, Table 3, and as depicted in Appendix 2 – Locality Map of PPL90.

Schedule J, Table 3 - References to Pipeline

Pipeline Facilities	Description	Location (KP)
Pig Launchers and Receivers	Pig Launcher Pig Receiver	KP0 KP87
Pipeline Pump Stations	N/A	N/A
Supervisory Control and Data Acquisition (SCADA)	Yes	Brisbane Control Centre
Pipeline markers	Intervisible in accordance with AS2885	Intervisible
Main Line Valves	Yes	KP69.2
Meter Station	ML1A	KP87
Cathodic Protection	Cathodic Protection Test Points	50 points between KP0.13 to KP86.989
Leak Detection and line break	Line break	MLV Station

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

EMERGENCY RESPONSE PLANS FOR DEALING WITH PIPELINE INCIDENTS THAT MAY RESULT IN ENVIRONMENTAL HARM

- (J4) The holder of this environmental authority must implement an Emergency Response Plan (ERP) for the operating of the pipeline and associated activities manage any emergency situation(s) that may result in environmental harm. The ERP must be implemented from the date of grant of this environmental authority and a copy of the original or subsequently amended ERP be submitted to the administering authority. The ERP must include:
- a) means by which an emergency response is initiated;
 - b) defined key roles and responsibilities required to respond to an emergency;
 - c) facilities required to coordinate the emergency response;
 - d) key contact list;
 - e) criteria for escalation of an emergency
 - f) likely emergency scenarios and guidelines for responding to such scenarios;
 - g) communication and documentation requirements; and
 - h) evacuation protocols and muster points.

- (J5) The ERP must be reviewed annually to validate the adequacy of the scope of emergency scenarios and adequacy of the content.
- (J6) In accordance with Condition (J5), the holder of this environmental authority must ensure that relevant personnel shall be trained and competent to effectively fulfill their roles required as detailed in the ERP to deal with pipeline incidents that could potentially result in environmental harm. Training records must be kept for five (5) years.
- (J7) The holder of this environmental authority must undertake emergency exercises to:
- a) test the effectiveness of the emergency response plan;
 - b) validate the competency of key emergency response personnel;
 - c) assess capability to respond to an emergency;
 - d) reinforce prior training; and
 - e) identify opportunities for improvement.

Note: Emergency response exercises may be in the form of simulated emergencies, practical drills, desktop exercises, resources and equipment checks, or other exercises designed to systematically include all personnel likely to be involved.

DECOMMISSIONING PIPELINES

- (J8) Prior to the commencement of decommissioning or abandonment of the pipeline and associated infrastructure the scope of work must be developed by the holder of this environmental authority and agreed to by the administering authority.
- (J9) The holder of this environmental authority must decommission the inactive buried pipeline by in-situ decommissioning, i.e. abandonment in place.
- (J10) Prior to the pipeline and equipment being disconnected it must be drained or vented and cleaned via purging or flushing.
- (J11) Any water used for purging or flushing the pipeline must be contained in dams on site, tested and either:
- a) directly reused, where suitable, for petroleum activities; and
 - 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.
- (J12) All petroleum infrastructure must be removed from the area approved under the relevant resource authority prior to surrender of this environmental authority, except where agreed in writing by the administering authority and the current landowner.

SCHEDULE K MONITORING PROGRAMS

MONITORING PROGRAMS

- (K1) The holder of this environmental authority must:
- a) develop and implement a monitoring program that demonstrates compliance with the conditions in this environmental authority; and
 - b) document the monitoring and inspections carried out under the program and any actions taken.
- (K2) The holder of this environmental authority must ensure that a suitably qualified person conducts all monitoring required by this environmental authority.
- (K3) Record, compile and keep all monitoring results required by this environmental authority for a minimum of five (5) years and make them available for inspection upon request by the administering authority. Monitoring results relating to rehabilitation must be kept until the relevant petroleum tenure has been surrendered.

SCHEDULE L COMMUNITY ISSUES

MANAGING COMPLAINTS

- (L1) When the administering authority advises the holder of this environmental authority of a complaint alleging nuisance (e.g. caused by dust or noise), the holder of this authority must investigate the complaint and advise the administering authority of the proposed action(s) or undertakings in relation to the complaint.
- (L2) If the administering authority is not satisfied with the proposed or completed action, the holder of this environmental authority must undertake monitoring or other action(s) as requested by the administering authority.
- (L3) When requested by the administering authority, the holder of this environmental authority must undertake specified monitoring within a reasonable and practicable timeframe nominated by the administering authority to investigate any valid complaint of environmental harm at any sensitive or commercial place. The results of the investigation (including an analysis and interpretation of the monitoring results) and any abatement measures implemented must be provided to the administering authority within 14 days of completion of the investigation, or receipt of monitoring results, whichever is the latter.
- (L4) The holder of this environmental authority must maintain a record of complaints and incidents causing environmental harm, and actions taken in response to the complaint or incident.
- (L5) The holder of this environmental authority must retain the record of complaints required by this condition for five (5) years.

COMPLAINT RESPONSE

- (L6) The holder of this environmental authority must record the following details for all complaints received and provide this information to the administering authority upon request:
 - a) time, date, name and contact details of the complainant;
 - b) reasons for the complaint;
 - c) any investigations undertaken;
 - d) conclusions formed; and
 - e) any actions taken.

SCHEDULE M

NOTIFICATION PROCEDURES

NOTIFICATION OF EMERGENCIES AND INCIDENTS

- (M1) The holder of this environmental authority must:
- a) telephone DERM's Pollution Hotline (1300 130 372) and affected landholders or their nominated representatives as soon as practicable, but within 24 hours, after becoming aware of any release of contaminants not in accordance with the conditions of this environmental authority or any event where environmental harm has been caused or may be threatened; and
 - b) notify the administering authority in writing within 14 days of the initial notification.
- (M2) Subject to condition (M1), the holder of this environmental authority is required to report in the case of uncontained spills, including, for example, hydrocarbons and CSG water, of the following volumes or kind:
- a) releases of any volume to water; and
 - b) releases of volume greater than 200L to land; and
 - c) releases of any volumes where potential serious or material environmental harm is considered to exist.
- (M3) The notification of emergencies or incidents as required by Condition (M1) and (M2) must include but not be limited to:
- a) the environmental authority number and name of environmental authority holder;
 - b) the name and telephone number of the designated contact person;
 - c) the location of the emergency or incident;
 - d) the date and time of the release;
 - e) the time the holder of the environmental authority became aware of the emergency or incident;
 - f) the estimated quantity and type of any substances involved in the incident;
 - g) the actual or potential suspected cause of the release;
 - h) a description of the effects of the incident including any environmental harm caused, threatened, or suspected to be caused by the release;
 - i) any sampling conducted or proposed, relevant to the emergency or incident; and
 - j) actions taken to prevent any further release and mitigate any environmental harm caused by the release.
- (M4) Within 14 days following the initial notification of an emergency or incident or receipt of monitoring results, whichever is the later, further written advice must be provided to the administering authority, including the following:
- a) results and interpretation of any samples taken and analysed;

- b) outcomes of actions taken at the time to prevent or minimise environmental harm; and
 - c) proposed actions to prevent a recurrence of the emergency or incident.
- (M5) As soon as practicable, but not more than six (6) weeks following the conduct of any environmental monitoring performed in relation to the emergency or incident, which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority, written advice must be provided of the results of any such monitoring performed to the administering authority.
- (M6) A record of incidents must be maintained to include a record of all incidents occurring in the previous five (5) years.

SCHEDULE N

TRANSITION OF RELEVANT RESOURCE AUTHORITY

- (N1) The holder of this environmental authority must take responsibility for the rehabilitation of any disturbance under the relevant resource authority, even after it has been transitioned (in part or in full) due to the grant of a new relevant resource authority, over that land which now forms part of the current project.

END OF CONDITIONS

APPENDIX 1 – DEFINITIONS

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

Acid sulfate soils means soil or sediment containing highly acidic soil horizons or layers affected by the oxidation of iron sulfides (*actual acid sulfate soils*) and/or soil or sediment containing iron sulfides or other sulfidic material that has not been exposed to air and oxidised (*potential acid sulfate soils*).

Note: The term acid sulfate soil generally includes both actual and potential acid sulfate soils. Actual and potential acid sulfate soils are often found in the same soil profile, with actual acid sulfate soils generally overlying potential acid sulfate soil horizons.

Administering authority means:

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

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.

CSG 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 resource 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.

AS 2885 means Australian Standard 2885 – Pipelines – Gas and Liquid Petroleum (2007) or subsequent versions thereof).

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 is situated, 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 CSG water, see DERM's policy *Coal Seam Gas Water Management Policy* and *Notice of decision to approve a resource for beneficial use – CSG water* which can be accessed on DERM's website at www.derm.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.

Contaminant is defined by the *Environmental Protection Act 1994*, under Section 11, as:

- (a) a gas, liquid or solid; or
- (b) an odour; or
- (c) an organism (whether alive or dead), including a virus; or
- (d) energy, including noise, heat, radioactivity and electromagnetic radiation; or
- (e) a combination of contaminants.

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*.

DERM means the Queensland Department of Environment and Resource Management.

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.

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 resource authority ends or the time that the land in question ceases to be part of an authority.

Environmental authority means an environmental authority for environmentally relevant activities for which an environmental authority is required under section 426A under the *Environmental Protection Act 1994*.

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

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

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

Equivalent person means an equivalent person as defined in Item 63 of Schedule 2 in the *Environmental Protection Regulation 2008*.

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.

GQAL (Good Quality Agricultural Land) means 'agricultural land is defined as land used for cropping and grazing but does not include land used for intensive animal husbandry such as aquaculture, feedlots, piggeries, poultry farms and plant nurseries. Agricultural land considered to be of good quality would be:

- Suitable for, and capable of, sustainable agricultural use;
- Important for agricultural activities of State or regional significance; and
- Available for agricultural use'

as defined in *Integrating good quality agricultural land management into regional NRM plans* (2004) published by the Queensland Government and Australian Government.

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

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 (DERM) on its website.

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

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

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 DERM 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.

Lake means a natural or artificial body of water, either permanent or intermittent.

Land use is a term to describe the selected final use of the land, which is planned to occur after the cessation of petroleum operations.

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.

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 petroleum activities mean petroleum activities including geophysical surveys (including seismic activities), well sites, well pads, sumps, flare pits, flow lines and supporting access tracks. Limited petroleum activities do not include the construction of production infrastructure for processing or storing

petroleum or by-products, dams, compressor stations, campsites/workforce accommodation, power supplies, waste disposal or other supporting infrastructure for the project.

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.

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

'Of concern' regional ecosystem means an 'of concern' regional ecosystem identified in the database maintained by DERM called 'Regional ecosystem description database' containing regional ecosystem numbers and descriptions. The database is available for inspection on DERM's website at www.derm.qld.gov.au/nature_conservation/biodiversity/regional_ecosystems/.

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 activities mean activities authorised to take place on land subject to a resource authority, including rehabilitation and decommissioning activities.

Resource authority means:

- (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*.

Pipeline means a pipe, or system of pipes, for transporting—

- (a) generally—petroleum, fuel gas or prescribed storage gases; and
- (b) GHG streams; and
- (c) substances prescribed under section 402 of the *Petroleum and Gas (Production and Safety) Act 2004*

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

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 DERM 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.

Rehabilitation means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

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.

Reference to a pipeline means—

- (a) a part of the pipeline; and
- (b) a thing connected to or associated with the pipeline that is necessary for its operation.

Examples of things that may be included in a reference to a pipeline—

- meter stations, scraper stations, valve stations, pumping stations or compressor stations
- plant and equipment, machinery and tanks
- corrosion protection apparatus
- communications equipment and towers

Representative sample means a sample which covers the variance in monitoring or other data either due to natural changes or operational phases of the petroleum activities.

River Improvement Trust Asset Area means an area within a River Improvement Area declared under the *River Improvement Trust Act 1940* that is or has been subject to restoration or flood mitigation works. The locations and details of these areas can be obtained from the relevant River Improvement Trust.

Riverine area refers to the land confined to the flood flow channel of a watercourse.

River Improvement Trust Asset Area means an area within a River Improvement Area declared under the *River Improvement Trust Act 1940* that is or has been subject to restoration or flood mitigation works. The locations and details of these areas can be obtained from the relevant River Improvement Trust.

Self sustaining means an area of land that has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

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 environmental authority; or
 - ii if this environmental 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 environmental authority the following areas are not significantly disturbed:
- (a) areas off the resource authority (e.g. roads or tracks which provide access to the resource 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 resource authority, unless those areas are re-disturbed by the holder of the relevant resource authority during the course of carrying out the petroleum activities or were conducted on a resource authority that was replaced by the current resource authority (e.g. through conditional surrender or the transition from an Authority to Prospect to a Petroleum Lease).

Site means the area under the relevant resource authority or authorities to which this 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*.

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 person means a person who has professional 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.

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

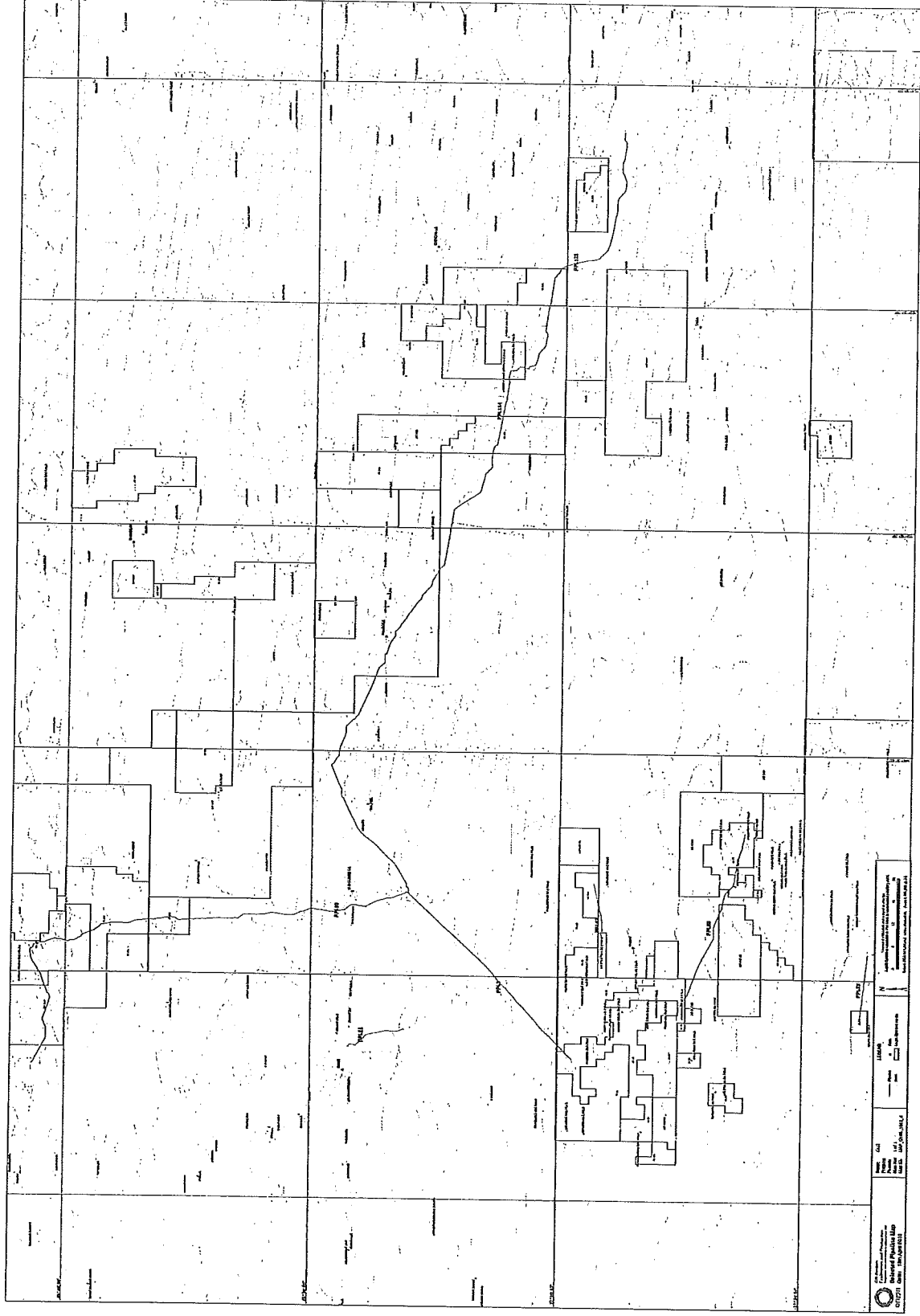
- (a) in which water flows intermittently or permanently in a visibly defined channel, whether artificial, artificially improved or natural; and
- (b) that has evidence of biological dependence on any water that flows in the creek, river or stream or on the banks or bed.

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

Wetland 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.derm.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 2 Locality Map of PPL90



APPENDIX 3- ENVIRONMENTALLY SENSITIVE AREAS

Category A and Category B environmentally sensitive areas

Category A and Category B environmentally sensitive areas are listed in Section 25 and 26 respectively of the *Environmental Protection Regulation 2008*.

Category C environmentally sensitive areas

LAND AREA CLASSIFICATION	ADMINISTERING LEGISLATION	ADMINISTERING AUTHORITY
Nature Refuges and Resource Reserves	<i>Nature Conservation Act 1992</i>	Department of Environment and Resource Management
Koala Habitat Area	<i>Nature Conservation (Koala) Conservation Plan 2006</i>	Department of Environment and Resource Management
An area identified as essential habitat by the DERM for a species of wildlife listed as endangered, vulnerable, near threatened or rare under the <i>Nature Conservation Act 1992</i>	<i>Nature Conservation Act 1992</i>	Department of Environment and Resource Management
Declared Catchment Areas	<i>Water Act 2000</i>	Department of Environment and Resource Management and/or Relevant Storage Operator or Board
Former Designated Landscape Area - Stanbroke Pastoral Holding	<i>Aboriginal Cultural Heritage Act 2003</i>	Department of Environment and Resource Management
Areas under Part 5 Division 2 of the <i>Aboriginal Cultural Heritage Act 2003</i> and <i>Torres Strait Islander Cultural Heritage Act 2003</i>	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Environment and Resource Management
State Forest or Timber Reserves	<i>Forestry Act 1959</i>	Department of Environment and Resource Management
DPI Research Sites	<i>Nil</i>	Department of Employment, Economic Development and Innovation
Areas of land occupied by the Bureau of Sugar Experiment Stations.	<i>Sugar Industry Act 1999</i>	Department of Employment, Economic Development and Innovation
Coastal Management Districts	<i>Coastal Protection and Management Act 1995</i>	Department of Environment and Resource Management
Declared Areas	<i>Sections 17, 18 and 19a of the</i>	Department of Environment and

LAND AREA CLASSIFICATION	ADMINISTERING LEGISLATION	ADMINISTERING AUTHORITY
	<i>Vegetation Management Act 1999</i>	Resource Management
An area shown as a wetland on a 'map of referable wetlands'	<i>Environmental Protection Act 1994</i>	Department of Environment and Resource Management
Reserves under the Land Act 1994	<i>Land Act 1994</i>	Department of Environment and Resource Management
An 'of concern' regional ecosystem identified in the database maintained by the DERM called 'Regional ecosystem description database' containing regional ecosystem numbers and descriptions.	<i>Nil</i>	Department of Environment and Resource Management

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