



# **Australia Pacific LNG Project**

## **Volume 5: Attachments**

### **Attachment 4: Abbreviations and Glossary of Terms**

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## 1. Abbreviations

Abbreviation	Meaning
°C	degrees Celsius
µg	microgram
µg/m <sup>3</sup>	micrograms per cubic metre
µm	micrometre
µS/cm	microsiemens per centimetre
A\$	Australian dollars
AADT	average annual daily traffic
AAGR	aggregated annual growth rate
AASS	actual acid sulfate soil
AAWMP	adaptive associated water management plan
ABARE	Australia Bureau of Agricultural and Resource Economics
ACH Act	<i>Aboriginal Cultural Heritage Act 2003</i>
ADCP	acoustic doppler current profiler
AEP	Annual Exceedence Probability
AGO	Australian Greenhouse Office
AGRU	acid gas removal unit
AHD	Australian Height Datum
Air Toxics NEPM	National Environment Protection (Air Toxics) Measure
Al	aluminium
ALARP	as low as reasonably practicable
ALDD	Australian Land Disturbance Database
ALS	airborne laser scan
ALUMC	Australian Land Use and Management Classification
Am <sup>3</sup> /s	actual cubic metres per second (at stack conditions)
AMG	Australian map grid
AMSA	Australian Maritime Safety Authority
AMTD	adopted middle thread distance
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZSIC	Australian and New Zealand Standard Industry Classifications

<b>Abbreviation</b>	<b>Meaning</b>
APHA	American Public Health Association
API	American Petroleum Institute
API RP	American Petroleum Institute recommended practice
APPEA	Australia Petroleum Production and Exploration Association
Approved Methods	approved methods for the modelling and assessment of air pollutants in NSW
AR&R	Australian rainfall and runoff
ARF	areal reduction factors
ARI	average recurrence interval
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AS	Australian Standard
AS/NZS	Australian Standard / New Zealand Standard
ASC	Australian Soil Classification
ASL	above sea level
ASS	acid sulfate soil
ASX	Australian Securities Exchange
Atm	atmosphere (pressure)
ATSI	Aboriginal and Torres Strait Islander
AUSRIVAS	Australian River Assessment System
Australia Pacific LNG	Australia Pacific LNG Pty Limited
AWBM	Australian Water Balance Model
AWQC	Australian Water Quality Centre
B	boron
BAAM	Two meanings depending on the context: Biodiversity Assessment and Management Pty Ltd Biodiversity assessment and mapping methodology
BACI	before-after-control-impact
BBS	Brigalow Belt South (bioregion)
BCC	Brisbane City Council
Bcm	billion cubic metres
BFF	breach formation factor
BGA	blue green algae

<b>Abbreviation</b>	<b>Meaning</b>
BGL	below ground level
bhp	brake horsepower
bhp-hr	brake horsepower hour
BITS	Business and Information Technology Skills Centre at Boyne Smelter
bkW	brake kilowatts (mechanical energy output)
bkW-hr	brake kilowatt hours
BLEVE	boiling liquid expanding vapour explosion
BMO	Bungil Formation, Mooga Sandstone and Orallo Formation
BOE	barrels of oil equivalent
BoM	Bureau of Meteorology
BOP	blow out protector
BPA	biodiversity planning assessment
BS	British Standard
BTEX	benzene, toluene, ethylbenzene, and xylenes
Btu	British thermal units
Btu/bhp-hr	British thermal units per brake horsepower hour
bwpd	barrels of water per day
C/MVKT	crashes per million vehicle kilometres travelled
C/O	construction/operation
Ca	calcium
CAMBA	China-Australia Migratory Bird Agreement (Cwlth)
CASA	Civil Aviation Safety Authority
CAT	Caterpillar engines
CBD	central business district
CBL	cement bond log
CBWC	Condamine-Balonne Water Committee
CCGT	combined cycle gas turbine
CCMA	Condamine Catchment Management Association
CCRCMP	Curtis Coast Regional Coastal Management Plan
CE	community engagement
CEC	cation exchange capacity

<b>Abbreviation</b>	<b>Meaning</b>
CEO	Chief Executive Officer
CG	Coordinator-General of the state of Queensland
CG Report	Report prepared by the CG that evaluates any EIS, submission and other materials in relation to a "significant project" in accordance with the SDPWO Act
CGE Model	computerised general equilibrium model
CH <sub>4</sub>	Methane
HAZOP	control hazard and operability study
Chla	chlorophyll a
CHMP	cultural heritage management plan
CHRC	Central Highlands Regional Council
CICSDA	Callide Infrastructure Corridor State Development Area
CIIP	Curtis Island Industry Precinct
CITES	Convention on International Trade in Endangered Species
Cl	chlorine
Cl <sup>-</sup>	chloride
Clean Air Regulation	NSW Protection of the Environment Operations (Clean Air) Regulation 2002
CLR	Contaminated Land Register
cm	centimetre
CMP	construction management plan
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> -e	Carbon dioxide equivalent
COAG	Council of Australian Governments
ConocoPhillips	ConocoPhillips Australia Pty Limited
Cons	construction
CPI	Consumer Price Index
CPOM	coarse particulate organic matter
CPRS	Carbon Pollution Reduction Scheme
CQGP	Central Queensland Gas Pipeline
CQLGA	Central Queensland Local Government Authority
CQPA	Central Queensland Ports Authority

Abbreviation	Meaning
CQRGMF	Central Queensland Regional Growth Management Framework
CQSS	Central Queensland Strategy for Sustainability – 2004 and Beyond
CQU	Central Queensland University
CRCCH	Co-operative Research Centre for Catchment Hydrology
CRCFE	Cooperative Research Centre for Freshwater Ecology
CSG	coal seam gas
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CST	cement stage tool
Cth	Commonwealth
Cu	copper
DA	development approval
dBA	A measured sound pressure level that incorporates A-weighting is denoted LpA, and has units of dB(A), often written as dBA.
dBC	A measured sound pressure level. The 'C' frequency weighting adjustments are much reduced at low frequencies compared to 'A' weighting, giving greater 'prominence' to the low-frequency components in the overall measured dBC sound pressure level compared to the measured dBA sound pressure level
DCDB	digital cadastral database (DERM 2009)
DDPS	Darling Downs Power Station
DEEDI	Department of Employment, Economic Development and Innovation (Qld)
DEEWR	Department of Education, Employment and Workplace Relations
DEM	digital elevation model
DERM	Department of Environment and Resource Management (Qld)
DET	Department of Education and Training (Qld)
DEWHA	Department of the Environment, Water, Heritage and the Arts (Cth)
DG	dangerous good
DGSM Act	<i>Dangerous Goods Safety Management Act 2001</i>
DIDO	drive-in/drive-out workforce
DIP	Department of Infrastructure and Planning
DME	former Department of Mines and Energy (Qld)
DMR	former Department of Main Roads (Qld)
DNR	former Department of Natural Resources (Qld)



Abbreviation	Meaning
DNRM	former Department of Natural Resources and Mines (Qld)
DNRW	former Department of Natural Resources and Water (Qld)
DOS	degrees of saturation
DPI	former Department of Primary Industries (Qld)
DPIF	former Department of Primary Industries and Fisheries (Qld)
DRET	Department of Resources, Energy and Tourism (Cth)
DSA	design storage allowance
DST	drill stem test
DTMR	Department of Transport and Main Roads (Qld)
DUAP	Department of Urban Affairs and Planning (NSW)
DWT	dead weight tonnage (relates to shipping)
E1, E2, E3...E6	exposure level
EA	environmental authority
EC	electrical conductivity
ECP	external casing packer
ECW	enhanced compression wavelet
EDI	electrodeionisation
EECO	environmental engineering company
EEO	Two meanings depending on the context: Equal employment opportunity (as defined in the social impact assessment chapters) <i>Energy Efficiency Opportunity Act (2006)</i> (as defined in the greenhouse gases chapters)
EFO	environmental flow objectives
EGIG	European Gas Pipeline Incident Data Group
EHS	extremely high strength
EIA	Environmental impact assessment
EIS	environmental impact statement
EITE	Emissions-intensive trade-exposed
EM	Ecology management
EM Plan	Environmental management plan
EMR	Environmental management register
ENSO	El Niño Southern Oscillation

Abbreviation	Meaning
EP	Environmental protection
EP Act	<i>Environmental Protection Act 1994</i>
EPA	former Environmental Protection Agency (Qld)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPC	Two meanings depending on the context: Exploration permit coal (as defined in the Land use and planning chapters) Engineering, procurement and construction
EPCM	engineering, procurement and construction management
EPM	exploration permit minerals
EPP	Environmental Protection Policy
EPP (Air)	Environmental Protection (Air) Policy 2008
EPP (Noise)	Environmental Protection (Noise) Policy 2008
EPP (Waste)	Environmental Protection (Waste Management) Policy 2000
EPP (Water)	Environmental Protection (Water) Policy 1997
EPSD Act	<i>Environment Protection (Sea Dumping) Act 1981</i>
EQIP	Education Queensland and Industry Partnership Program
ERA	environmentally relevant activity
ERP	emergency response plan
ESA	Equivalent Standard Axles
ESD	ecologically sustainable development
ESP	exchangeable sodium percentage
ESQ	Energy Skills Queensland
ESSA	emergency systems survivability analysis
EVR	endangered, vulnerable and rare
F	fluoride
FAC2	factor of 2
FAPA	Forestry Act Protected Area
FBA	Fitzroy Basin Association
Fe	iron
FEED	front end engineering design
FEFLOW	finite element subsurface FLOW system

Abbreviation	Meaning
FH	free hold
FHA	fish habitat area
FID	financial investment decision
FIFO	fly-in/fly-out workforce
Fisheries Act	<i>Fisheries Act 1994</i>
FLNE	Fisherman's Landing North Expansion
FM	flexible mesh
Forestry Act	<i>Forestry Act 1959</i>
FPZs	functional process zones
FRP	filterable reactive phosphorus
g	grams
g/bkW-hr	grams per brake kilowatt hour
g/s	grams per second
GA	Geoscience Australia
GAB	Great Artesian Basin
GABCC	Great Artesian Basin Coordinating Committee
GAGAL	Gladstone Area Group Apprentices Limited
GAPDL	Gladstone Area Promotion and Development Limited
GARID	Guidelines for the Assessment of Road Impacts of Developments
GBD	groundwater bore database
GBRWHA	Great Barrier Reef World Heritage Area
GCCI	Gladstone Chamber of Commerce and Industry
GDE	groundwater dependent ecosystem
GDP	gross domestic product
GEA	Gladstone Engineering Alliance
GEH	government employee housing
GEIDB	Gladstone Economic and Industry Development Board
GFC	global financial crisis
GHG	greenhouse gas
GILG	Gladstone Industry Leadership Group
GJ	gigajoule: $1.0 \times 10^9 \text{ J}$

<b>Abbreviation</b>	<b>Meaning</b>
GJ/hr	gigajoule per hour
GJ/s	gigajoule per second
GLNG	Gladstone LNG Project
GLNG PL	Gladstone LNG Pty Ltd
GMA	groundwater management area
GMF	groundwater management/monitoring framework
GMU	groundwater management unit
GOS	gross operating surplus
GPC	Gladstone Ports Corporation
GPF	gas processing facility
GPO	General Post Office
GPS	global positioning system
GQAL	good quality agricultural land
GRC	Gladstone Regional Council
GRP	gross regional produce
GRVP	Gladstone Regional Visioning Panel
GSD	ground sample distance
GSDA	Gladstone State Development Area
GSG	great soil group
GSP	gross state product
GVA	gross value added
H <sub>2</sub> S	hydrogen sulphide
HACC	home and community care services
HAT	highest astronomical tide
HAZOP	hazard and operability (study)
HB	handbook
HCl	hydrochloric acid
HCO <sub>3</sub>	bicarbonate
HDD	horizontal directional drilling
HDPE	high density polyethylene
HEC-RAS	Hydrologic Engineering Centre River Analysis System

Abbreviation	Meaning
Heritage Act	<i>Queensland Heritage Act 1992</i>
HICB	Hazardous Industries and Chemicals Branch
HIPAP	Hazardous Industry Planning Advisory Paper
HP	high pressure
hPa	hectopascal
HSD	health service district
HSE	Health, safety and environment
IAG	Insurance Australia Group
IAS	initial advice statement
IDAS	integrated development assessment system
IEA	International Energy Agency
IFC	International Finance Corporation
IFD	intensity-frequency duration
ILUA	Indigenous land use agreement
IOA	index of agreement
IPA	<i>Integrated Planning Act 1997</i>
IPA Regulation	Integrated Planning Regulation 1998
IPCC	Intergovernmental Panel on Climate Change
IPO	Interdecadal Pacific Oscillation
IQQM	Integrated quantity and quality model
IUCN	International Union for Conservation of Nature
J	joule
JAMBA	Japan-Australia Migratory Bird Agreement
JATWC	Joint Australia Tsunami Warning Centre
JCU	James Cook University
K	potassium
kg	kilograms
kJ	kilojoule: $1.0 \times 10^3 \text{J}$
km	kilometre
km/h	kilometre per hour
km <sup>2</sup>	square kilometre

Abbreviation	Meaning
KP	kilometre point
kPa	kilopascal
kPag	kilopascal gauge
KRA	key resource areas
kWe	kilowatts (electrical energy output)
kWm <sup>2</sup>	kilowatts per square metre
LAT	lowest astronomical tide
LB	left bank
LCL	lower control limit
LCZ	landscape character zone
LFL	lower flammable limit
LGA	Two meanings depending on the context: Local government area Local government authority
LL	land leasehold
LNG	liquefied natural gas
LOS	Level of Service
LP Act	<i>Land Protection (Pest and Stock Route Management) Act 2002</i>
LPG	liquefied petroleum gas
LS	low strength
LULUCF	land use, land use change and forestry
LWD	large woody debris
m	metre
m/day	metres per day
m/s	metres per second
m <sup>2</sup>	square metres
m <sup>3</sup>	cubic metres
m <sup>3</sup> /s	cubic metres per second
m <sup>4</sup> /s <sup>3</sup>	plume buoyancy flux
MAE	mean absolute error
mAHD	metres above Australian Height Datum

Abbreviation	Meaning
Mbgl	metres below ground level
mD	millidarcy
MDBC	Murray-Darling Basin Commission
MDL	mineral development licence
mg	milligram
Mg	magnesium
mg/L	milligram per Litre
mg/m <sup>3</sup>	milligrams per cubic metre
mg/Nm <sup>3</sup>	milligrams per normal cubic metre (0°C, 1 Atm)
MGA	Map Grid Australia
MGA94	Map Grid of Australia 1994
MHWN	mean high water neaps
MHWS	mean high water springs
MIDQ	Minister for Industrial Development of Queensland
MJ	megajoule: 1.0 x 10 <sup>6</sup> J
MJ/bkW-hr	megajoules per brake kilowatt hour
ML	Two meanings depending on the context: megalitres mining lease (as defined in the Land use and planning chapters)
ML/d	megalitres per day
MLWN	mean low water neaps
MLWS	mean low water spring
mm	millimetre
Mn	manganese
MNES	matters of national environmental significance
MOF	materials offloading facility
MP	Member of Parliament
MPI	maximum potential intensity
MRA	<i>Mineral Resources Act 1989</i>
MRC	Maranoa Regional Council
MRL	mandatory reporting level

Abbreviation	Meaning
MS	medium strength
MSDS	material safety data sheet
MSL	mean sea level
MSQ	Maritime Safety Queensland
MTDB	MERLIN mining tenures system and database 2009
Mtpa	million tonnes per annum
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
MW	megawatts
N <sub>2</sub>	nitrogen
N <sub>2</sub> O	nitrous oxide
Na	sodium
NAP	National Action Plan for Salinity and Water Quality
NATA	National Association of Testing Authorities
NBRC	North Burnett Regional Council
NC Act	<i>Nature Conservation Act 1994</i>
NCAPA	NC Act protected area
NCAT	National carbon accounting toolbox
NCR	Nature Conservation Regulation
NEPC	National Environmental Protection Council
NEPM	National Environmental protection measure
NEPM Air	National Environment protection (ambient air quality) measure
NES	National environmental significance
ng	nanogram
NGERS	National Greenhouse and Energy Reporting System
NICNAS	National Industrial Chemicals Notification and Assessment Scheme
NLWRA	National Land and Water Resources Audit
Nm <sup>3</sup> /s	normalised cubic metres per second (0°C, 1 Atm)
NO <sub>2</sub>	nitrogen dioxide
NODGDM	National Ocean Disposal Guidelines for Dredged Material 2002
NO <sub>x</sub>	oxides of nitrogen
NPI	National Pollutant Inventory



Abbreviation	Meaning
NRME	Natural Resources Mines and Energy
NRMP	Natural Resource Management Plan 2004
NRW	Natural Resources and Water, (Department of the Environment and Resource Management) (see DNRW)
NSCR	non-selective catalytic reduction (NO <sub>x</sub> emission control technology)
NSESD	National Strategy for Ecologically Sustainable Development.
NSW	New South Wales
NTRB	Native Title Representative Bodies
NTU	nephelometric turbidity units
OCIMF	Oil Companies International Marine Forum
OCPs	organochlorine pesticides
OECD	Organisation for Economic Co-Operation and Development
OESR	Office of Economic and Statistical Research
OFA	obstacle free area
OLS	obstacle level surface
OPPs	organophosphate pesticides
Ops	operation
Origin	Origin Energy Limited
ORWB	off river water bodies
ou	odour units
P	phosphorus
P1, P2, P3...P6	probability level
Pa	pascal
PAG Act	<i>Petroleum and Gas (Production and Safety) Act 2004</i> (Also referred to as the P&G Act)
PAH	polycyclic aromatic hydrocarbons
PASS	potential acid sulfate soils
PAWC	plant available water capacity
PCC	Pearsons correlation coefficient
PERN	pervious area roughness parameters
PET	Plecoptera-ephemeroptera-trichoptera

Abbreviation	Meaning
PFL	petroleum facility licence
PG	packaging group
PHA	preliminary or process hazard analysis
PIFU	Planning Information and Forecasting Unit (DIP)
PJ	petajoule: $1.0 \times 10^{15}$ J
PJ/yr	petajoules per year (also referred to as PJpa)
PL	petroleum lease
PM	particulate matter (fine dust)
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than 10 microns
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter less than 2.5 microns
PNL	planning noise level
PPE	personal protective equipment
PPL	petroleum pipeline licence (under PAG Act)
Project	Australia Pacific LNG Project
PSD	particle size distribution
psi	pound per square inch
PSL	petroleum survey licence
PTS	threshold shift (permanent)
pw	per week
QA	quality assurance
QAL	Queensland Alumina Limited
QC	quality control
QCLNG	Queensland Curtis LNG Project
QFRS	Queensland Fire and Rescue Service
QGC	Queensland Gas Company
QICN	Queensland Industry Capability Network
Qld	Queensland
QLUMP	Queensland Land Use Mapping Program 1999
QMDB	Queensland Murray Darling Basin
QMEA	Queensland Mineral and Energy Academy

Abbreviation	Meaning
QPI&F	Queensland Primary Industries and Fisheries (see DPIF)
QR	Queensland Rail
QRA	quantitative risk assessment
QUDM	Queensland urban drainage manual
QWQG	Queensland water quality guidelines
RB	right bank
RBL	rating background noise level
RCBC	reinforced rectangular box culvert
RD&D	research, development and demonstration
RE	regional ecosystem
REDD	regional ecosystem description database
RET	renewable energy target
RFU	relative fluorescence units
RHM	Regional Harbour Master (Qld)
RMS	(root-mean-square) sound pressure
RO	reverse osmosis
ROC	reverse osmosis concentrate
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement (Cwlth)
ROP	resource operations plan
RoW	right of way
RNA	recorded notifiable activity
RRC	Rockhampton Regional Council
RUP	resource utilisation plan
RWL	reduced water level
SA	South Australia
SAR	sodium adsorption ratio
SBRVMC	Southern Brigalow Regional Vegetation Management Committee
SD	statistical division
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i>
SEAP	Stream and estuarine assessment program
SEIFA	socio-economic indexes for area

Abbreviation	Meaning
SEL	sound exposure level
SEP	stakeholder engagement plan
SEQ	South-east Queensland
SEVT	semi-evergreen vine thicket
SF	State Forest
SIA	social impact assessment
SIGTTO	Society of International Gas Tanker and Terminal Operators
SIL	safety integrity level
SIMP	social impact management plan
SISP	social infrastructure strategic plan
SLA	statistical local area
SMS	safety management system
SO <sub>2</sub>	sulphur dioxide
SO <sub>4</sub>	sulfate
SOP	standard operating procedure
SPA	<i>Sustainable Planning Act 2009</i>
SPP	State planning policy
SPP 1/03	State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
SPP 2/02	State Planning Policy 2/02 Planning and Managing Development Involving Acid Sulphate Soils
SQIT	South Queensland Institute of TAFE
Sr	strontium
SRA	sustainable rivers audit
SRB	sulphate reducing bacteria
SRN	Queensland's stock route network
SWAN	simulating waves nearshore
SWMP	site waste management plan
SWOT	strengths, weaknesses, opportunities and threats
t	tonnes
TAA	titratable actual acidity

<b>Abbreviation</b>	<b>Meaning</b>
TAF	temporary accommodation facility
TAFE	Technical and Further Education
TAPM	The Air Pollution Model
TBT	tributyltin
TCEQ	Texas Commission on Environmental Quality Effects Screening Levels
TDS	total dissolved solids
TEG	triethylene glycol
The Project	Australia Pacific LNG Project
The proponent	Australia Pacific LNG Pty Limited
TJ	terajoule: $1.0 \times 10^{12} \text{J}$
TJ/d	terajoules per day
TKN	total Kjeldahl nitrogen
TN	total nitrogen
TOR	terms of reference
TP	total phosphorus
tpa	tonnes per annum
TPH	total petroleum hydrocarbons
TSP	total suspended particles
TSS	total suspended solids
TTS	threshold shift (temporary)
UCG	underground coal gasification
UCL	upper control limit
UPS	uninterrupted power supply
US EPA	United States Environmental Protection Agency
US\$	United States dollars
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VCE	vapour cloud explosion
VCU	visual character unit
VET	vocational education and training
VHS	very high strength

<b>Abbreviation</b>	<b>Meaning</b>
VicSEPP	State Environmental Protection Policy of Victoria
VM Act	<i>Vegetation Management Act 1999</i>
VOC	volatile organic compounds
VPD	vehicles per day
VPZ	valley process zone
WAFMA	West Arnhem Fire Management Agreement
WAMGBR	wave model (WAM) for the Great Barrier Reef (GBR)
Water Act	<i>Water Act 2000</i>
WBDDP	Western Basin Dredging and Disposal Project
WCM	Walloons Coal Measures
WDRC	Western Downs Regional Council
WERD	water entitlements register database
WRP	Condamine Balonne Water Resource Plan
WTF	water treatment facility
WTS	water transfer station

## 2. Glossary of Terms

Descriptor	Preferred wording/meaning
'Mining' industry	As defined by the ABS, 'Mining' captures the Australia Pacific LNG Project as well as the following products: black coal; brown coal-lignitel; crude oil; natural gas, liquefied natural gas; petroleum gases; oil and gas; iron ore mining; gold ore and copper ore mining; lead ores and concentrates (excl silver-lead-zinc ores); silver and zinc ores; uranium concentrates; gravel; sand; dimension stone; limestone ; clays; salt; natural phosphates; petroleum exploration; mineral exploration; and mining services.
A horizon	The original top layer of mineral soil divided into A1 (typically from 5 to 30cm thick; generally referred to as topsoil with a high content of organic matter, dark colour and maximum biological activity) and A2 horizons (usually 5 – 70 cm thick; similar texture to A1 but paler in colour, poorer in structure and less fertile).
Abstraction	The removal of water from a resource e.g. the pumping of groundwater from an aquifer. Interchangeable with extraction.
Acid sulfate soils	Naturally occurring soils, sediments or organic substrates (e.g. peat) that are formed under waterlogged conditions. These soils contain iron sulfide minerals (predominantly as the mineral pyrite) or their oxidation products. In an undisturbed state below the water table, acid sulphate soils are benign. However if the soils are drained, excavated or exposed to air by a lowering of the water table, the sulfides will react with oxygen to form sulfuric acid.
Advection	Transport of a substance by the ambient waters.
Aggregate (soil)	A unit of soil structure consisting of primary soil particles held together by cohesive forces or by secondary soil materials such as iron oxides, silica or organic matter. Aggregates may be natural, such as peds.
Airblast overpressure	A measure of the transient air-pressure pulse generated by a blast. Units of un-weighted peak pressure, expressed as a decibel level referenced to 20 microPascals ( $L_{peak}$ ).
Alkaline soil, alkalinity	Alkaline soils have laboratory measured pH values >8.5. Alkalinity may inhibit the growth of plants.
Alluvial	Pertaining to, contained in, or composed of, alluvium; relating to the deposits made by flowing water; washed away from one place and deposited in another; as alluvial soil, mud, accumulations, or deposits.
Alluvial terrace	Former floodplain which either no longer floods or rarely floods due to deepening or enlargement of the stream channel.
Alluvium	Sediment deposited from the transport by channelled stream flow or over-bank stream flow.
Ambient noise level	Concept of the all-encompassing noise level environment at a location of interest. A full description of the ambient noise level includes description of level variations in time and variations in the frequency composition in time, including subjective audible characteristics.

Descriptor	Preferred wording/meaning
Analyte	Substance or chemical constituent that is determined in an analytical procedure.
Andesite	Fine-grained volcanic rock composed of andesine (plagioclase) with one or more mafic constituents.
Anisotropy	The property of being anisotropic; having a different value when measured in different directions.
Anticline	A fold in which the older rocks occupy the core.
Antifoulant	Chemicals that are coated on to surfaces to prevent algae, seaweeds and marine organisms from attaching.
Apedal	In the moderately moist to moist state, none of the soil material occurs in the form of peds; it is massive or single-grained and when disturbed, separates into fragments or primary particles.
Aquatic ecosystems	The abiotic and biotic component, habitats and ecological processes contained within rivers and their riparian zones and reservoirs, lakes, wetlands and their fringing vegetation.
Aquatic macrophytes	Plants which grow in or near water. In lakes macrophytes provide cover for fish and substrate for aquatic invertebrates, produce oxygen, and act as food for some fish and wildlife. A decline in a macrophyte population may indicate water quality problems.
Aquiclude	Impermeable beds of geologic material that hinder or prevent groundwater movement. Theoretical only as all materials have some intrinsic permeability.
Aquifer	A water-saturated geologic unit that is capable of transmitting significant or usable quantities of groundwater under ordinary hydraulic gradients.
Aquitard	A water-saturated sediment or rock whose permeability is so low it cannot transmit any useful amount of water. An aquitard allows some measure of leakage between the aquifer interval it separates.
Arboreal	Living in trees.
Artesian	A condition which applies to aquifers which are confined by layers of low-permeability, and where the hydraulic head in the aquifer is higher than the overlying ground surface. Wells penetrating such aquifers may result in groundwater flowing at the surface without pumping.
Australian Soil Classification (ASC)	Australian Soil Classification—It is a multi-category scheme with classes defined on the basis of diagnostic horizons or materials and their arrangement in vertical sequence as seen in an exposed soil profile.
Assemblage	A group of species co-occurring at a location.
Associated coal seam gas (CSG) water	Water extracted from the coal seams to allow depressurisation, gas desorption and gas extraction.
Associated water	Refers to the untreated water stream associated with the extraction of CSG gas.



Descriptor	Preferred wording/meaning
Auditory frequency range	A frequency range in which sounds are potentially perceivable by humans, often reported as 20Hertz – 20kiloHertz (1 Hertz = 1 cycle per second).
Australia Pacific LNG joint venture description	Origin and ConocoPhillips are joint owners of Australia Pacific LNG. This is a 50:50 joint venture to deliver a coal seam gas (CSG) to liquefied natural gas (LNG) project located in Queensland.
Autecology	Study of a single organism, or of a single species.
Available soil water	That part of the water in the soil that can be absorbed by plant roots that can be held between field capacity and the moisture content at which plant growth ceases.
Available water holding capacity	The ability to hold that part of the water in the soil that can be absorbed by plant roots. Available water is the difference between field capacity and permanent wilting point.
B horizon	The layer of soil below the A horizon, usually of finer texture (i.e., more clayey), denser and stronger in colour. Thickness ranges from 10 cm to 2 m thick and is divided into B1 and B2 horizons.
Background noise level (L <sub>Abg</sub> )	Concept of the typical minimum ambient noise level, numerically evaluated from the level exceeded for 90 percent of 15 minute sample periods (L <sub>A90,15 minute</sub> ) during a defined time period of interest (e.g. daytime, evening or night-time).
Baseflow	The amount of groundwater flowing into a river.
Baseline noise level	Concept of the noise level prior to a development, that can be evaluated by a range of level parameters such as the minimum (L <sub>Amin</sub> ), maximum (L <sub>Amax</sub> ) and percentile descriptors (L <sub>A1</sub> , L <sub>A10</sub> , L <sub>Aeq</sub> , L <sub>A90</sub> ).
Basin	A topographic depression containing, or capable of containing, sediment.
Bathymetry	Underwater topography (soundings).
Bedrock	The solid rock that underlies unconsolidated surficial sediments.
Benthic	Relating to the bottom (bed) of any water body.
Berth pocket	An area of water adjacent to a wharf, in a port or harbour, used specifically for berthing vessels.
Bioaccumulation	The process by which substances accumulate in the tissues of living organisms.
Biodiversity	Totality of genes, species, and ecosystems of a region.
Biological diversity	The totality of genes, species, and ecosystems of a region.
Bioregion	An ecologically and geographically defined area smaller than a 'realm' or 'ecozone' (also known as an eco-region). Bioregions are defined through common physical and environmental features, including watershed boundaries and soil and terrain characteristics.
Biota	All the plant and animal life of a particular region.
Bioturbation	The displacement and mixing of sediment particles by the activities of benthic fauna.

Descriptor	Preferred wording/meaning
Boggomoss	A small peat bog that is formed by Great Artesian Basin spring discharge.
Bolus	A small handful of soil which has been moistened and kneaded into a soil ball which just fails to stick to the fingers.
Bore/borehole	A hole drilled into the ground for exploratory purposes. See “wellbore”.
Boundaries (soil)	The boundary between soil horizons defines the nature of the change from one horizon to that below. It is specified by two terms—one a measure of the width of the transition zone between the two horizons, the other a description of its shape.
Boundary condition	Specific condition at the edge or surface of a system.
Brackish water	Water that contains relatively low concentrations of soluble salts. Brackish water is saltier than fresh water, but not as salty as salt water.
Brine	Water that contains more than 35 000mg/L of dissolved solids.
Broadband noise	A noise with approximately equal acoustic energy distribution over a large range of frequencies, for example 100Hz – 2KHz. Natural examples include noise from a waterfall, or the sound of wind in trees.
Buffer	Area of vegetation providing protection from disturbance.
Bulls eye	Centre of a target of concentric circles.
Buried valley	An eroded depression in the soil or bedrock within which sediments significant permeability (e.g. sand) or low permeability (e.g. till, clay) accumulate.
C horizon	Layers below the B horizon which may be weathered, consolidated or unconsolidated parent material little affected by biological soil-forming processes.
Cainozoic	The period in geologic time between 65 million years ago and the present.
Camaenidae	A family of land snails.
Carbon dioxide equivalent (CO <sub>2</sub> -e)	The key greenhouse gases in this Project are carbon dioxide, methane and nitrous oxide. To simplify the accounting of GHGs, the unit of a carbon dioxide equivalent or CO <sub>2</sub> -e is used. This ensures that the global warming potential of each gas is accounted for. Carbon dioxide has a global warming potential of 1, methane has a global warming potential of 21, and nitrous oxide has a global warming potential of 310.
Catchment	The term used to describe the area which is drained by a river. It is sometimes called the river basin or watershed. The catchment is the most significant factor determining the amount or likelihood of flooding.
Cetacean	An animal belonging to the order Cetacea, including dolphins, porpoises, and whales.
Channel	An eroded depression in the soil or bedrock surface within which alluvial deposits accumulate (i.e. gravel, sands, silt, clay).
Chlorophyll a	The principal photosynthetic pigment possessed by phytoplankton and is used to measure phytoplankton concentrations.

Descriptor	Preferred wording/meaning
Chromosol	ASC soil order classification—soils with a clear or abrupt textural B horizon where the major half of the B2 horizon is not strongly acid (i.e. >pH5.5) and non-sodic (can be sodic at depth).
Clastic	Rocks built up from fragments of pre-existing rocks generated by weathering and erosion and transported to a point of deposition.
Climate change	Any long-term significant change in the 'average weather' that a given region experiences. Average weather may include average temperature, precipitation and wind patterns. It involves changes in the variability or average state of the atmosphere over durations ranging from decades to millions of years.
Climate variability	Deviations of climate statistics over a given period of time (such as a specific month, season or year) from the long-term climate statistics relating to the corresponding calendar period.
Coal seam	A layer, vein, or deposit of coal.
Coal seam gas (CSG)	A form of natural gas extracted from coal beds; primarily methane.
Coarse particulate organic matter (CPOM)	Any organic material greater than about 1 mm in diameter; examples include twigs, leaves, fruits and flowers of terrestrial or aquatic vegetation.
Collectors/gatherers	An ecological functional feeding group of macroinvertebrates. Collectors /gatherers depend upon fine particulate organic matter (FPOM) for their primary food resource.
Colluvium	Unconsolidated soil and rock material transported largely by gravity (i.e., mass movement: landslide, mudflow, creep or sheetflow), deposited on a lower slope and/or at the base of a slope. Does not have bedding structure such as alluvium and is has more variable grain size.
Community	A number of definitions depending on the context:  a) Used to describe that stakeholder group which is comprised of both individual community members and community groups. Community groups are regarded as members of the public or a group of citizens that have united to form an identifiable group, due to a common interest (as defined in the Social Impact Assessment chapters)  b) Group of populations of plants and animals in a given place (as defined in the terrestrial ecology chapters).
Condamine Alliance	Condamine Catchment Natural Resource Management Corporation Ltd.
Conductivity	A measure of waters' ability to conduct electricity.
Confined aquifer	Exists where the groundwater is bounded between layers of impermeable substances like clay or dense rock. When tapped by a well, water in confined aquifers is forced up, sometimes above the soil surface. This is how a flowing artesian well is formed.
Confining layer	Geologic material with little permeability or hydraulic conductivity. Water does not pass through this layer or the rate of movement is extremely slow.
Connectivity	The connectedness between patches of suitable habitat for an individual species or

Descriptor	Preferred wording/meaning
	group of species.
ConocoPhillips	ConocoPhillips Australiasia Pacific LNG Pty Ltd a joint partner of Australia Pacific LNG Pty Limited.
Consequence	Outcome or impacts of an event. There can be more than one consequence from one event. Consequences can range from positive to negative. Consequences can be expressed qualitatively or quantitatively. Consequences are considered in relation to the achievement of objectives ( <i>AS/NZS ISO 3100:2009 Risk management - Principles and guidelines</i> ).
Conservation significance	Species or community listed as endangered, vulnerable, rare, near threatened or migratory under either the EPBC Act or the NC Act and those species considered non-EVR priority species in the Brigalow belt South bioregion.
Consolidated rock	Tightly bound geologic formation composed of sandstone, limestone, granite, or other rock.
Construction/blast vibration	Transient oscillating movement of the ground or a building structure from transmission of elastic pressure waves from the vibration source, through the ground to the receptor location.
Consumer Price Index	The Consumer Price Index is social and economic indicator that is constructed to measure changes over time in the general level of prices of consumer goods and services that households acquire, use or pay for consumption.
Contaminant	A substance that is present in an environmental medium in excess of natural baseline concentration.
Contingent resources	Those quantities of hydrocarbons which are estimated, on a given date, to be potentially recoverable from known accumulations, but which are not currently considered to be commercially recoverable. Contingent resources may be of a significant size, but still have constraints to development. These constraints, preventing the booking of reserves, may relate to lack of gas marketing arrangements or to technical, environmental or political barriers.
Contrast	The degree to which a development component differs visually from its landscape setting.
Controlled action	A term used under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> to determine whether an action is likely to have an impact on matters of national environmental significance. If a project is declared a 'controlled action', development approval is required from the Minister for the Environment, Heritage and the Arts.
Corridor	A continuous link of suitable habitat between vegetation patches allowing movement by fauna.
Cretaceous	The period in geologic time between 140 and 65 million years ago; also, the corresponding system of rocks deposited during that time range.
Cuesta	A ridge with a steep face on one side and a gentle slope on the other.
Cultural heritage	The legacy of physical artifacts and intangible attributes of a group or society that are

Descriptor	Preferred wording/meaning
	inherited from past generations, maintained in the present and bestowed for the benefit of future generations.
Dam	A land-based structure or void that will contain, divert or control flowable substances. For the purposes of this study, a pond is also referred to as a dam.
Darcy's Law	A groundwater movement equation formulated by Henry Darcy during the mid-1800s based on experiments on the flow of water through beds of sand. Darcy's Law forms the scientific basis of fluid permeability used in earth science.
Datalogger	An electronic device that records data over time or in relation to location either with a built in instrument or sensor or via external instruments and sensors.
Debris	Fallen timber and leaves on the ground.
Deltaic	Sediments deposited at the mouth of a river where it enters a lake or the sea.
Depletion	The loss of water from surface water reservoirs or groundwater aquifers at a rate greater than that of recharge.
Depressurisation	The lowering of the groundwater piezometric surface over the desired area.
Dermosol	ASC soil order classification — other soils with B2 horizons that have structure more developed than weak throughout the major part of the horizon, generally non-sodic subsoil, generally gradational textured soils (gradual boundaries).
Design reviews	The focus of these reviews is to review the design for maintenance and operational activities. These require significant input from intended operations and maintenance personnel.
Devonian	Geological period 395 – 345 million years ago.
Discharge	An outflow of water from a stream, pipe, groundwater aquifer, or watershed; the opposite of recharge.
Discharge area	The area or zone where groundwater emerges from the aquifer. The outflow maybe into a stream, lake, spring, wetland, etc.
Dissolved solids	Minerals and organic matter dissolved in water.
Dominant	One or more species, by means of their number, coverage, or size that exerts considerable influence upon or control of the conditions of existence of associated species.
Drawdown	A lowering of the groundwater level caused by pumping.
Dredge	Plant and equipment for underwater excavation of the seabed.
Drift deposits	Any sediment laid down by, or in association with, the activity of glaciers and ice sheets.
Dugong	The dugong ( <i>Dugong dugon</i> ) is a large marine mammal which, together with the manatees, is one of four living species of the order Sirenia. The dugong is heavily dependent on seagrasses for subsistence.

Descriptor	Preferred wording/meaning
Duricrust	Hardened soil crust.
Electrical conductivity	Measure of a material to conduct electricity. Electrical conductivity of water is a measure of the impurity (dissolved ions) in water - usually measured in siemens per unit length (e.g. millisiemens per centimetre).
Ecologically sustainable development	The environmental component of sustainable development. It can be achieved partially through the use of the 'precautionary principle', namely that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
Ecology	The scientific study of the distribution and abundance of life and the interactions between organisms and their environment. The environment of an organism includes physical properties, which can be described as the sum of local abiotic factors such as insolation (sunlight), climate, and geology and biotic factors, which are other organisms that share its habitat.
Economic impact assessment	Assessment of the measured effect on the economy of a region of an impacting agent.
Ecosystem	A natural unit consisting of all plants, animals and micro-organisms (biotic factors) in an area functioning together with all of the non-living physical (abiotic) factors of the environment.
Ecosystem function	Processes including soil formation and stabilisation, nutrient cycling, water infiltration, pollination and seed production.
Effective porosity	The percentage of the total volume of a given mass of soil or rock that consists of interconnected void spaces.
Electrofishing	The use of electricity to stun fish. Electrofishing is a common scientific survey method used to sample fish populations to determine abundance, density, and species composition. When performed correctly, electrofishing results in no permanent harm to fish, which return to their natural state in as little as 2 minutes after being stunned.
Emergent species	A species that emerges above the canopy or overstorey.
Emissions	Release of pollutants to air.
Endemic	A species restricted to a particular place or region.
Environmental impact assessment	The process used to assess the environmental impact of a proposed development.
Environmental impact statement (EIS)	The information document prepared by the proponent when undertaking an environmental impact assessment. It is prepared in accordance with terms of reference prepared or approved by government. EIS is the term used by the <i>Environment Protection and Biodiversity Conservation Act 1999</i> and the <i>Environmental Protection Act 1994</i> , and it is defined in Part 4 of the <i>State Development and Public Works Organisation Act 1971</i> .
Environmental	A document developed by proponents during a project's planning and design. An

Descriptor	Preferred wording/meaning
management plan (EM Plan)	Environmental Management Plan provides life-of-project control strategies in accordance with agreed performance criteria for specified acceptable levels of environmental harm. It may continue through the whole life of a project (e.g. preconstruction, construction, operation and decommissioning).
Environmental planning policies (EPPs)	Supplementary laws to the <i>Environmental Protection Act 1994</i> .
Environmental values	An aspect of the environment that is to be protected.
Ephemeral	A stream, creek, river or waterbody that carries or contains water only during or immediately after irregular rainfall or flow events. These waterbodies have limited baseflow component with no groundwater discharge during the no flow period.
Epifauna	Benthic invertebrates that attach themselves to rocky reefs or to the seafloor. They include hydroids, sea-pens, small bryozoans and sponges.
Erosion	The process by which material, such as rock or soil, is worn away or removed by wind or water.
Estuarine	Pertaining to aquatic habitats where freshwater from streams or rivers mixes with sea water, resulting in a gradation of brackish waters with varying degrees of salinity. The estuarine environment consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partially obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land.
Evapotranspiration	The process by which water is discharged to the atmosphere as a result of evaporation from the soil and surface-water bodies and transpiration by plants. Transpiration is the process by which water passes through living organisms, primarily plants, into the atmosphere.
Exotic	An introduced species.
Facies	Features of a rock type or water type from which its origins can be inferred.
Fairway	Type of geological basin.
Far-field	A distance defined to be so far from the noise source that the source can be treated as a point source.
Fault	A crack in the earth's crust resulting from the displacement of one side with respect to the other.
Fault Line	Line determined by the intersection of a geological fault and the earth's surface.
Fauna	Animal life.
Fecundity	Reproductive output; number of offspring produced.
FEFLOW	3D finite element groundwater modelling software.
Ferrosol	ASC soil order classification — soils with B2 horizons in which the major part has a free iron oxide content greater than 5% Fe in the fine earth fraction (<2mm). Soils

Descriptor	Preferred wording/meaning
	with a B2horizon in which at least 0.3m has vertic properties are excluded.
Field	A geographical area under which an oil or gas reservoir lies.
Field blank	A water sample containing ultra-pure water, collected in the field, used for laboratory analysis quality control checking.
Filtering	The soil's ability to attenuate substances by retaining chemicals or dissolved substances on the soil particle surface, transforming chemicals through microbial biological processing, retarding movement, and capturing solid particles; also the use of an artificial filter to remove particulate matter from a water sample prior to chemical analysis.
Filtration	Separation of a solid and a liquid by using a porous substance that only lets the liquid pass through.
Fine particulate organic matter (FPOM)	Any organic material smaller than about 1mm in diameter. In the process of feeding, shredders often create FPOM when they consume coarse particulate organic matter (CPOM).
Floodplain	An area of land periodically inundated by floodwater.
Flora	Plant life.
Flow rate	The time required for a volume of groundwater to move between points. Typically groundwater moves very slowly—sometimes as little as millimetres per year.
Fluvial	Material deposited by moving water (i.e. rivers and streams).
Fluvial deposits	Particles of minerals or rocks which are transported and deposited by moving water (i.e. a river).
Fluvial geomorphology	The study of rivers and streams and the processes that shape them, including the transport of sediment, erosion of or deposition on the river bed.
Flux	The rate of flow of energy or particles across a given surface.
Fore-arc	A forearc is a depression in the sea floor located between a subduction zone and an associated volcanic arc.
Formation	A geologic unit of distinct rock types that is large enough in scale to be mappable over a region.
Fossiliferous	Fossil containing rock formations.
Fresh water	Water that is not salty, especially when considered as a natural resource.
Functional feeding groups	An ecological approach to the classification of Macroinvertebrates that identifies the manner in which an organism acquires food (i.e. by shredding or filtering) as opposed to classification by the material it eats (i.e. carnivores and herbivores).
GABHYD	Groundwater flow model of the Great Artesian Basin.
GABLOG	A project undertaken to prepare geophysical logs of existing water bores in the Great Artesian Basin.



Descriptor	Preferred wording/meaning
Gaining stream	A stream in which groundwater discharges contribute significantly to the streamflow volume. The same stream could be both a gaining stream and a losing stream, depending on the conditions.
Gamma log	Gamma logs record the level of natural occurring gamma ray emissions from rocks around boreholes. The gamma ray signal is comprised of gamma ray emissions from at different energy levels from the radioactive isotopes of the elements potassium ( $^{40}\text{K}$ ), Thorium ( $^{232}\text{Th}$ ) and Uranium ( $^{238}\text{U}$ ) and the daughter products in the decay of each series. In sedimentary rock sequences, relatively high natural gamma counts are recorded in shales and other clay rich sediment (due to the affinity of clay minerals for potassium) and relatively low counts are recorded in clean quartz sandstones and limestones.
Gas reserves – 2P	Proved plus probable gas reserves.
Gas reserves – 3P	Proved plus probable plus possible gas reserves.
Generalist species	A species able to make use of a variety of different resources and exist in a wide variety of habitats.
Gilgai	A small, ephemeral lake formed from a depression in the soil surface.
Good quality agricultural land (GQAL)	Land which is capable of sustainable use for agriculture, with a reasonable level of inputs, and without causing degradation of land or other natural resources.  As defined in State Planning Policy 1/92: Development and the Conservation of Agricultural Land.
Grading	The process of levelling off to a smooth horizontal or sloping surface.
Granite	A granular igneous rock composed chiefly of felspar (orthoclase) and quartz, usually with one or more other minerals, as mica, hornblende, etc.
Granodiorite	Plutonic rock consisting of potassium felspar, quartz, plagioclase, biotite and hornblende. Granodiorite is an intermediate between quartz, monzonite and quartz diorite.
Gravel	The amount (visual abundance estimate) of gravel-sized (>2mm) materials that occur on the surface and in the A1 horizon and include hard (when moist), coarse fragments and segregations of pedogenic origin.
Gravelly	Over 60% of surface cover consists of gravel (2 - 60mm).
Greenhouse gas	The gases present in the earth's atmosphere which reduce the loss of heat into space and therefore contribute to global temperatures through the greenhouse effect.
Gross value added	Gross value added measures the contribution to the economy of each individual producer, industry or sector.
Groundwater	All the water contained in the pores/voids within unconsolidated sediments or consolidated rocks (i.e. bedrock).
Group	A grouping of geological or hydrogeological formations.

Descriptor	Preferred wording/meaning
Great Soil Groups (GSG)	Great Soil Groups of Australia (as defined by Stace et al 1968), described in terms of morphology, genesis and land use.
Half graben	A topographic depression that forms as a result of movement on a fault plane.
Hazard	A source of potential harm (AS/NZS ISO 3100:2009 Risk management - Principles and guidelines).
HAZID	A hazard identification study to identify major hazards and risks.
HAZOP	A hazard and operability study to identifying hazards which may prevent efficient operation and/or which may pose a risk to the safety of personnel.
Holey-sock drogue	An underwater parachute that drifts with the current.
Holocene	Present geological epoch which commenced 10,000 years ago.
Holoplankton	Animals that spend their whole life cycle as plankton.
Horizon	A layer within the soil profile with morphological characteristics and properties different from layers below and/or above it.
Hydraulic conductivity	The ease with which water moves through soil or rock. A coefficient ("K") depends on the physical properties of formation and fluid. "K" is the rate of flow per unit cross-sectional area under the influence of a unit gradient, and has the dimension of length <sup>3</sup> /length <sup>2</sup> x time or length/time (e.g. m/s).
Hydraulic gradient	The change in hydraulic head or water level over a distance. Usually expressed in meters/meter. For example, a hydraulic gradient of 0.01 indicates a one-metre drop in water level over a distance of 100m. The hydraulic gradient is the driving force that causes groundwater to flow.
Hydraulic head	A measure of the groundwater pressure in an aquifer. Hydraulic head is determined from water level measurements in wells.
Hydrobiology	Hydrobiology Pty Ltd.
Hydrocarbons	An organic molecule containing hydrogen and carbon; the major component of petroleum.
Hydrocarbons	An organic compound containing only carbon and hydrogen.
Hydrochemical type	The definition of a chemical composition of groundwater based on the relative percentages of major cation and anion concentrations.
Hydrogeology	The science that relates geology, fluid movement (i.e. water) and geochemistry to understand water residing under the earth's surface. Groundwater as used here includes all water in the zone of saturation beneath the earth's surface, except water chemically combined in minerals.
Hydrographic	Mapping of an area of sea including coastal features.
Hydrological cycle	The paths water takes through its various states--vapour, liquid, solid--as it moves throughout the oceans, atmosphere, groundwater, streams, etc.

Descriptor	Preferred wording/meaning
Hydrological integrity	The ability of a landscape to maintain proper drainage and groundwater-surface water interaction to support healthy ecological functioning and aquatic habitat.
Hydrophone	A microphone designed to be used underwater for recording or listening to underwater sound.
Hydrostatic head	The force (pressure) exerted by a body of fluid at rest.
Hydrostratigraphic unit	Geological units that are not solely based on lithologic characteristics but also include characteristics related to water movement, occurrence and storage.
Impact mechanism	The pathway for potential impacts associated with an activity.
Impact mechanism	An action or activity, such as clearing, that has an impact on flora and fauna species, either directly or indirectly.
Impermeable layer	A layer of material (such as clay) in an aquifer through which water does not pass.
In situ	A Latin phrase meaning in the place.
Indicators	Anything that is used to measure the condition of something of interest. Indicators are often used as variables in the modelling of changes in complex environmental systems.
Infauna	Benthic invertebrates that live in the seabed, especially in sedimentary habitat.
Infiltration	Flow of water from the land surface into the subsurface. Infiltration is the main factor in recharge of groundwater reserves.
Initial advice statement (IAS)	A document prepared for a proposed project that is submitted to the Coordinator-General so that a decision can be made as to whether the project should be declared a 'significant project for which an environmental impact statement is required' under Section 26 (1) (a) of the Queensland <i>State Development and Public Works Act 1971</i>
Instream flow needs	The amount of water required in a river to sustain a healthy aquatic ecosystem, and/or meet human needs such as recreation, navigation, waste assimilation or aesthetics.
Integration	The degree to which a development component can be blended into the existing landscape without necessarily being screened from view.
Interfluvial	A ridge or area of land dividing two river valleys.
Inter-generational equity	A concept that says the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
Intermittent waterbodies	Are temporary waters that are predictably inundated each year, although the duration for which they retain water is highly variable.
Intertidal	The intertidal zone (also known as the foreshore and seashore and sometimes referred to as the littoral zone) is the area that is exposed to the air at low tide and underwater at high tide (for example, the area between tide marks).

Descriptor	Preferred wording/meaning
Intra-generational equity	A concept concerned with equity between people of the same generation.
Ion diffusion	A process whereby ions in groundwater are transported in response to differences in chemical concentration. Movement is from high concentration to low concentration.
Ion-exchange	A chemical process in which cations of like charge are exchanged equally between sediment and the groundwater.
Irrigation	The controlled application of water to cropland, hay fields, and/or pastures to supplement that supplied by nature.
Isopach	A line on a map representing points of equal thickness.
Isotropy	The condition in which the properties of a system or a parameter do not vary with direction.
Jurassic	Geological period 295 - 135 million years ago.
Kandosol	ASC soil order classification — other soils that are lacking a strong texture contrast and (i) have well-developed B2 horizons in which the major part is massive or has only a weak grade of structure, and (ii) have a maximum clay content in some part of the B2 horizon which exceeds 15%.
Kurosol	ASC soil order classification — soils with a clear or abrupt textural B horizon and in which the major part of the upper 0.2m of the B2 horizon (or the major part of the entire B2 horizon if less than 0.2m thick) is strongly acid (i.e. pH<5.5).
Labour force	The labour supply available for the production of economic goods and services in a given period. Labour force is the most widely used measure of the economically active population.
Lacustrine deposits	Sedimentary material laid down in a lake environment.
Lacustrine sediment	Sediment mass deposited from transport by waves and from sediment solution and suspension in still water in a closed depression on land.
Lagoon	A body of water enclosed by a barrier, such as a water storage pond.
Landform	A natural feature of a land surface such as a mountain, plain or valley.
Landscape	Natural and manmade features of the urban, rural or natural environment, such as vegetation, topography and land use elements.
Landscape character zone	Zones of the landscape that defined by geographical and topographical boundaries.
Landscape typology	Classification of land characteristics according to their structural features
Lateritic (laterite)	Red, residual soil containing large amounts of aluminium and ferric hydroxides, formed by the decomposition of many kinds of rocks.
Leachate	Liquids that have percolated through a soil and that carry substances in solution or suspension.
Level of Service	A qualitative measure describing traffic operational conditions on a road and the

Descriptor	Preferred wording/meaning
	perception of these conditions by motorists and/or passengers.
Likelihood	Used as a general description of probability or frequency. Can be expressed qualitatively or quantitatively (AS/NZS ISO 3100:2009 Risk management - Principles and guidelines).
Limestone	A sedimentary rock rich in calcium carbonate.
Liquefaction	Process of liquefying gas through cooling to approximately -160 °C followed by flashing to a low pressure.
Liquefied natural gas (LNG)	Natural gas that has been converted to liquid form for ease of storage or transport. Liquefied natural gas takes up about 1/600 <sup>th</sup> the volume of natural gas at a stove burner tip. It is odourless, colourless, non-corrosive, and non-toxic. When vaporized, it burns only in concentrations of 5 per cent to 15 per cent when mixed with air. The density of LNG is roughly 0.41 to 0.5kg/L at -164°C.
Lithic	Formed of rock.
Lithology	The systematic description of sediment and rocks, in terms of composition, texture and internal structure.
Lithosol	GSG classification — a shallow soil showing minimal profile development and dominated by the presence of weathering rock and rock fragments. Lacking horizons other than an A1 (one layer only).
Lithosol	Shallow soils lacking well-defined horizons and composed of imperfectly weathered fragments of rock.
LNG train	The purification and liquefaction components of an LNG facility. LNG facilities consist of one or more LNG trains.
Loam	A medium, textured soil of approximate composition 10 – 25 per cent clay, 25 - 50 per cent silt and <50 per cent sand.
Losing stream	A stream that is losing water to (or recharging) the groundwater system. The same stream could be both a gaining stream and a losing stream, depending on the conditions.
Loss of containment	Unintended spill or leak from the primary containment.
Land use, land use change and forestry (LULUCF)	Land use, land use change and forestry. Under the UNFCCC this is a greenhouse gas inventory sector that covers emissions and removals of greenhouse gases resulting from direct human-induced land use, land-use change and forestry activities.
Macroalgae	Large multicellular algae that are generally attached to the seabed.
Macrobenthic	Macrobenthic animals are the larger, more visible, benthos that are greater than 1mm in size.
Macrocrustaceans	The taxonomic group of crustaceans, which are visible without magnification.
Macroinvertebrates	The taxonomic group of freshwater invertebrates, which are visible without magnification.

Descriptor	Preferred wording/meaning
Major hazard facility	Location such as oil refinery, chemical plant and large fuel and chemical storage site where large quantities of hazardous materials are stored, handled or processed (Department of Emergency Services).
Malacologist	A person who studies molluscs.
Matters of national environmental significance	Matters of national environmental significance, as defined under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth).
Melonhole	Irregularly distributed large depressions within soil surface, usually greater than 3m in diameter.
Meroplankton	Animals that spend only part of their life cycle as plankton.
Mesa	An elevated area of land with a flat top and sides that are usually steep cliffs. Spanish for "table".
Mesozoic	The middle of the three Phanerozoic eras; it lasted from 245 to 65 million years before present.
Metamorphic rock	A rock derived from pre-existing rocks by way of mineralogical, chemical, or structural changes. These changes come in response to marked changes in temperature, pressure, shearing stress, or the chemical environment.
Meteoric water	Water derived from the Earth's atmosphere.
Micro-bat	Bats belonging to the suborder Microchiroptera, typically small, insectivorous and able to echolocate.
Micro-habitat	A small localized habitat within a larger ecosystem.
Microphyll	A small leaf.
Monitoring well	A constructed controlled point of access to an aquifer which allows groundwater observations. Small diameter observation wells are often called piezometers.
Mottled horizon	A horizon in which mottle abundance is greater than 10 per cent (visual abundance estimate) and contrast between colours is distinct and prominent.
Mottling	The presence of more than one soil colour in the same soil horizon, not including different nodule or cutan colours.
Mound spring	Mound springs are geomorphic formations raised above the surrounding land surface formed by a deposit of minerals and sediment brought up from artesian aquifers or confining beds by water at certain natural discharge points in the Great Artesian Basin. Other spring systems not raised above the surrounding land surface also occur throughout the Basin.
Nektobenthic	Describing organisms that swim near the bottom of a sea.
Non-EVR priority species	Species not listed as endangered, vulnerable, rare or near threatened under the <i>Queensland Nature Conservation Act 1992</i> and considered of conservation priority in the bioregion based on the written opinion of experts.

Descriptor	Preferred wording/meaning
Nutrients	Any substance that promotes growth with living organisms. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential and trace elements.
Offsetting	Anything that balances, counteracts, or compensates for something else; providing compensation. For example carbon offsetting is the process of reducing greenhouse gas emissions by purchasing credits from others through emissions reductions projects, or carbon trading schemes.
One-third-octave spectrum	The frequency content of a noise is described by a frequency spectrum. A frequency spectrum can be expressed as a one-third-octave spectrum, which, instead of displaying every frequency individually, is comprised of sub-frequency ranges centred at the following frequencies, measured in Hertz (1 Hertz = 1 cycle per second):  20, 25, 31.5, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, etc.
Oolitic	Sedimentary rock consisting of ooids.
Origin	Origin Energy Limited a joint partner of Australia Pacific LNG Pty Limited.
Orogenic	The process of mountain forming.
Overburden	Any loose material which overlies bedrock (often used as a synonym for Quaternary sediments and/or surficial deposits) or any barren material, consolidated or loose, that overlies an ore body.
Overwithdrawal	Withdrawal (removal) of groundwater over a period of time that exceeds the recharge rate of the supply aquifer. Also referred to as mining the aquifer.
Oxidation	A chemical reaction in which ions are transferring electrons, to increase positive valence.
Palaeocene	Period of geological time, 65 – 54.8 million years before present.
Palaeochannel	A buried stream channel.
Paludal	Pertaining to a depositional environment or organisms from a marsh. It also refers to the type of environment in which palustrine sediments can accumulate.
Paralic	Sedimentary basins developed in marginal marine environments, i.e. lagoons, littoral basins.
Peat	Unconsolidated soil material consisting largely of undecomposed, or only slightly decomposed, organic matter.
Ped	An individual, natural soil aggregate.
Pelagic	The portion of a lake that is not littoral and comprises those areas offshore more than 3 m deep.
Perched aquifer	Localized zone of saturation above the main water table created by an underlying layer of impermeable material.

Descriptor	Preferred wording/meaning
Percolation	The movement of water through the openings in rock or soil.
Permeability	A measure of the ability of a medium to transmit a fluid (any fluid). Similar to hydraulic conductivity that describes the ability of a porous medium to transmit water specifically.
Permeate	Treated water discharged after treatment using reverse osmosis.
Permian	Period of geological time, 290 – 248 million years before present.
pH	The logarithm of the reciprocal of hydrogen-ion concentration in gram atoms per litre; provides a measure on a scale from 0 to 14 of the acidity or alkalinity of a solution (where 7 is neutral and greater than 7 is more basic and less than 7 is more acidic).
Phenols	Oxygen-substituted benzenes commonly derived from the degradation of natural organic matter, the distillation of wood and coal, and the refining of oil. This particular class of organic compounds is ubiquitous in nature, and is common in groundwater.
Photosynthetic	The process by which plants convert sunlight into energy.
Phytoplankton	Floating plants.
Piezometric head	The elevation to which water will rise in a piezometer connected to a point in an aquifer. Differences in piezometric head determine the hydraulic gradient and therefore the direction of groundwater flow.
Pilotage	The service of providing expert local maritime knowledge by a licensed pilot, to assist the master of a ship to safely navigate his vessel.
Pipeline	Gas transmission pipeline.
Plankton	Plankton consists of any drifting organisms (e.g. animals or plants) that inhabit the pelagic zone of oceans, seas, or bodies of fresh water.
Planning noise level (PNL)	Nomenclature specific to the Department of Environment and Resource Management Ecoaccess guideline 'Planning for noise control' defining the permissible noise contribution from a proposed facility at a defined receptor.
Pleistocene	First epoch of the Quaternary period, from two million years ago to 10,000 years ago.
Plug and abandon	To fill a depleted well or dry hole completely with cement or with impermeable plugs (cement or other) inserted at appropriate depths to inhibit movement of water or gas between geological formations. Surface equipment is also removed from the wellhead.
Plume (groundwater)	In groundwater, a plume is an underground pattern of contaminant concentrations created by the movement of groundwater beneath a contaminant source. Contaminants spread mostly laterally in the direction of groundwater movement. The source site has the highest concentration, and the concentration decreases away from the source.
Pollution	An alteration in the character or quality of the environment, or any of its components, that renders it less suited for certain uses. The alteration of the physical, chemical, or



Descriptor	Preferred wording/meaning
	biological properties of water by the introduction of any substance that renders the water harmful to use.
Polycyclic aromatic hydrocarbons (PAH)	A group of over 100 different organic compounds composed of several benzene rings.
Pore water pressure	Pressure exerted by fluid in the void space of soil or rock. It is usually expressed with respect to atmospheric pressure so that positive pressures indicate that the porous medium is saturated and negative pressures indicate that it is unsaturated.
Porosity	The ratio of the volume of void or air spaces in a rock or sediment to the total volume of the rock or sediment. The capacity of rock or soil to hold water varies with the material. For example, saturated small grain sand contains less water than coarse gravel.
Potentiometric surface	An imaginary surface that everywhere coincides with the static level of the water in a given water bearing formation. The surface to which the water from a given interval will rise under its full hydraulic head.
Precautionary principle	The precautionary principle is the principle that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment if there are threats of serious or irreversible environmental damage.
Precipitation	The part of the hydrologic cycle when water falls, in a liquid or solid state, from the atmosphere to Earth (rain, snow, sleet).
Predators	An ecological functional feeding group of macroinvertebrates. Predators are animals that require live prey. Some ingest whole animals; others tear off and swallow large pieces, or pierce their prey in order to suck up the body fluids.
Preliminary or process hazard analysis	A high level risk review during the early conception stages of a project that concentrates on the main risks associated with the process.
Primary aquifer	An aquifer in which water moves through the original interstices of the geological formation.
Primary containment	First level of containment, eg containers, vessels, pipework.
Process	Two separate meanings are used. The context will identify the appropriate meaning. Methodology, or physical <i>process</i> e.g. the liquefaction of CSG.
Productivity (production)	Primary production is the total amount of new organic matter produced by plants through photosynthesis. Secondary production is the production of biomass by herbivores, carnivores and detritus feeders.
Project	Australia Pacific LNG project.
Proponent	Australia Pacific LNG Pty Limited a joint venture between Origin Energy Limited and ConocoPhillips Australian Pacific LNG Pty Ltd.
Province	A subregion within a bioregion that has a characteristic pattern of landform, vegetation, species distributions and patterns of movement.

Descriptor	Preferred wording/meaning
Punchlisting	These reviews focus on operability and maintainability issues at the completion (or near completion) of construction. Completed on a facility by facility basis.
Quaternary	Period of geological time covering the Holocene plus the Pleistocene. Up to 2.6 million years ago.
Radius of influence	Radial distance to points where hydraulic head is noticeably affected by a pumping well.
Ramsar	The Ramsar Convention (The Convention on Wetlands of International Importance, especially as Waterfowl Habitat) is an international treaty for the conservation and sustainable utilisation of wetlands.
Rating background noise level (RBL)	Nomenclature specific to the Department of Environment and Resource Management Ecoaccess guideline 'Planning for noise control' defining the background noise level from $L_{A90,15\text{minute}}$ levels during the day, evening and night over a minimum seven day period.
Receptors	Several definitions depending on the context: <ul style="list-style-type: none"> <li>a) Sensitive component of the ecosystem that reacts to, or is influenced by environmental stressors (as defined in the Aquatic Ecology chapters).</li> <li>b) Sites from which the proposed Project can be seen (as defined in the Landscape and Visual Amenity chapters).</li> <li>c) A place that may be sensitive to additional noise associated with a proposed development (as defined in the Noise and Vibration chapters).</li> </ul>
Recharge	The infiltration of water into the soil zone, unsaturated zone and ultimately the saturated zone. This term is commonly combined with other terms to indicate some specific mode of recharge such as recharge well, recharge area, or artificial recharge.
Recharge area	An area where permeable soil or rock allows water to seep into the ground to replenish an aquifer.
Recovery	The return of environmental conditions to the state before the project.
Red earths	GSG classification — massive, reddish sandy profiles with a gradual increase in clay content with depth over a diffuse to gradual boundary.
Regional ecosystem	Vegetation communities that are consistently associated with a particular combination of geology, land form and soil in a bioregion.
Regrowth	A native vegetation community that has regrown after clearing, in which native species that would have naturally occurred within this vegetation community dominate but have not reached the height and canopy cover necessary to be regarded as remnant as defined in the Queensland <i>Vegetation Management Act 1999</i> .
Rehabilitation	The process of environmental restoration to a former condition or status after some process (business, industry, natural disaster etc.) has damaged it.
Remediation	Containment, treatment or removal of contaminated groundwater. May also include

Descriptor	Preferred wording/meaning
	containment, treatment or removal of contaminated soil above the water table.
Remnant vegetation	Vegetation which is mapped by the Queensland Department of Environment and Resource Management as being within a remnant endangered regional ecosystem, a remnant of concern regional ecosystem, or a remnant not of concern regional ecosystem map. Vegetation remaining after an area has been cleared or modified.
Reservoir	A subsurface, porous, permeable rock body in which oil and gas is stored.
Reservoir pressure	The force exerted uniformly in all directions by a fluid (oil or gas) in the reservoir.
Residual drawdown	The difference between the original standing water level measured prior to pumping, and the depth to groundwater at a given instant during the recovery period following the cessation of pumping.
Residual risk reviews	These are risk reviews for the operations stage. The output is an area (or facility) risk register. Any further risk reduction activity identified at this point would be considered beyond the scope of the Project and rest with operations.
Re-vegetation	The process of providing denuded land with a new cover of plants.
Riparian	Any land which adjoins or directly influences or is influenced by a body of water.
Risk	As an effect of uncertainty on objectives. A risk is often specified in terms of an event or circumstance and the consequences that may flow from it. Risk is measured in terms of a combination of the consequences of an event and their likelihood. Risk may have a positive or negative impact ( <i>AS/NZS ISO 3100:2009 Risk management - Principles and guidelines</i> ).
RMS (root-mean-square) sound pressure	Mathematical averaging process for the rapid positive and negative acoustic pressure cycles (relative to atmospheric pressure) that constitutes sound, to define a positive equivalent pressure level relative to atmospheric pressure with the same energy as the cyclical quantity (because the RMS pressure is a time averaged quantity, it cannot indicate the peak instantaneous pressure such as may be relevant to assessing risk of bursting an ear-drum, as an example).
Rock pavement	Areas of shallow skeletal soils formed on Cainozoic lateritic duricrusts and sometimes lithosols derived from quartzose sandstone, forming a mosaic of exposed gravelly soils and sclerophyllous shrubs.
Rudosol	ASC soil order classification — soils with negligible pedologic organisation. They are usually young soils in the sense that the soil forming factors have had little time to pedologically modify parent rocks or sediments. The component soils can vary widely in terms of texture and depth.
Runoff	The portion of precipitation (rain and snow) that ultimately reaches streams.
Safe yield	The annual amount of water that can be taken from a source of supply over a period of years without depleting that source beyond its ability to be replenished naturally in "wet years."
Safety management system (SMS)	A documented, comprehensive, integrated system for managing safety. An SMS contains objectives, systems and procedures by which the objectives are achieved,

Descriptor	Preferred wording/meaning
	performance criteria, and the way in which adherence to the plan is to be maintained. (Guidelines for major hazard facilities – safety management systems).
Salinity	An accumulation of soluble salts in the soil root zone, at levels where plant growth or land use is adversely affected. Also used to indicate the amounts of various types of salt present in soil or water (see total dissolved solids).
Sampling sites	Specific locations within the study area where data is collected.
Sandstone	A sedimentary rock composed of individual grains of sand cemented together.
Saturated zone	The portion below the Earth's surface that is saturated with water is called the zone of saturation. The upper surface of this zone, open to atmospheric pressure, is known as the water table.
Scalds	Synonymous with rock pavements.
Scarp	A line of cliffs produced by faulting or erosion.
Sclerophyllous	Vegetation that has hard and often small leaves and short internodes (the distance between leaves along the stem).
Scope 1 emissions	Scope 1 greenhouse gas (GHG) emissions are produced from sources within the reporting boundary and arise from: combustion of fuels to generate heat and energy; on-site transport; and fugitive (intentional or unintentional) releases of GHGs from pipes and joints.
Scope 2 emissions	Scope 2 GHG emissions arise from purchased electricity, heat and steam. These emissions are generated outside of the project boundary.
Scope 3 emissions	Scope 3 GHG emissions are related to the activities of the reporting entity but arising from sources beyond the reporting boundary – for example, extraction, processing and transport of purchased fuels to the project site.
Scrapers	An ecological functional feeding group of macroinvertebrates. Scrapers depend upon attached algae and associated flora and fauna that develop on submerged substrates for their primary food resource.
Screen	The degree to which a development element is unseen due to intervening landscape elements such as topography or vegetation.
Seagrass	Flowering plants from one of four plant families (Posidoniaceae, Zosteraceae, Hydrocharitaceae, or Cymodoceaceae) which grow in marine, fully saline environments.
Secondary containment	Second level of containment, eg bunds, outer tanks.
Sedimentary	Seabed that consists of unconsolidated material – sand and mud as opposed to rock.
Seep	Point where seepage occurs.
Seepage	1. The slow movement of water into or out of a body of surface or subsurface water. 2. The loss of water by infiltration into the soil from a canal, ditch, lateral, watercourse, reservoir, storage facility, or other body of water, or from a field.

Descriptor	Preferred wording/meaning
Seismic	Pertaining to shock waves, natural or artificial, within the Earth.
Sensitivity	The relative susceptibility to adverse impacts to environments.
Sessile	Permanently attached to a substrate; not free to move about.
Shade lines	Long narrow strips of native trees retained within pasture areas to provide shelter from prevailing winds and shade for livestock.
Shale	A sedimentary rock formed by the deposition of successive layers of clay.
Shear stress	A condition in which the material on one side of a surface pushes another material on the other side of the surface with a force that is parallel to the surface.
Sheet erosion	The removal of the upper layers of soil by raindrop splash and/or runoff.
Shredders	An ecological functional feeding group of macroinvertebrates. Shredders depend upon coarse particulate organic matter (CPOM) for their primary food resource. They have specialised mouthparts that cut particulate matter for various uses. In the process of feeding, shredders create fine particulate organic material (FPOM).
SILO	The Australian Bureau of Meteorology's online rainfall data archive.
Silt	Mud or clay or small rocks deposited by a river or lake. Fine particles in the size range 0.02 - 0.002 mm.
Siltstone	Fine-grained sandstone of consolidated silt.
Skeletal soils	Thin soils.
Social impact assessment	A methodology to review the social effects of infrastructure projects and other developments.
Sodosol	ASC soil order classification — soils with strong texture contrast between A horizons and sodic B horizons which are not strongly acid.
Soil profile	A vertical section of the soil through all its horizons and extending into the parent material.
Solum	The upper part of a soil profile above the parent material in which current processes of soil formation are active. This is where the living roots and other plant and animal life characteristics are exhibited.
Sound exposure level (SEL)	The total sound energy produced by a noise event of interest, such as an aircraft flyover, a single pile strike, or the total sound exposure over a defined period such as an 8 hour working day, or 24 hour period.
Soundings	Seabed level referred to the Port Datum (LAT).
Sour gas	A natural gas containing hydrogen sulphide (H <sub>2</sub> S).
Specific storage	The volume of water released from a unit volume of porous aquifer when there is a unit decline of hydraulic head. Compare with storativity, which is the specific storage multiplied by the aquifer thickness.

Descriptor	Preferred wording/meaning
Specific yield	The quantity of water which a unit volume of aquifer, after being saturated, will yield by gravity; it is expressed either as a ratio or as a percentage of the volume of the aquifer; specific yield is a measure of the water available to wells.
Stakeholder	A person or organisation with an interest or stake in a project.
Static water level	1. Elevation or level of the water table in a well when the pump is not operating. 2. The level or elevation to which water would rise in a tube connected to an artesian aquifer or basin in a conduit under pressure.
Status	The listing of a species or community under various legislation or in government documents, for example, endangered, vulnerable, least concern
Stepping stones	Disconnected patches of habitat that more mobile species, or species with some tolerance of modified habitat, move through from one vegetation patch to another.
Storativity	The volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer, per unit change in head. It is equal to the product of specific storage and aquifer thickness. In an unconfined aquifer, the storativity is equal to the specific yield.
Storm tide	Combination of the surge with the normal tide of the day.
Stratigraphy	The study of the sequence of layered geologic deposits based on their spatial positions, depositional sequence in time, and correlations across different localities.
Stream power	The rate of energy dissipation against the bed and banks of a river or stream.
Structure (soil)	Is concerned with the arrangement of all soil particles and refers to the distinctness, size, shape and condition of the peds.
Stygofauna	Any fauna that live within groundwater systems, such as caves and aquifers, or more specifically small, aquatic groundwater invertebrates, though terrestrial air-breathing subterranean animals are also sometimes included.
Subcrop	Bedrock unit occurring at the bedrock surface but covered by surficial deposits.
Subsidence	The gradual settling or sudden sinking of the land surface owing to natural or anthropogenic influences of materials in the subsurface.
Subsoil	The layer of weathered material that underlies the surface soil.
Subtidal	A marine or estuarine environment that lies below mean low-water; always (or almost always) submerged in a tidally-influenced area.
Surface water	Water above the surface of the land, including lakes, rivers, streams, ponds, floodwater, and runoff.
Surficial deposits	Uncompacted sediments and soil lying on bedrock or occurring on or near the earth's surface.
Surficial sediments	Gravel, sand, silt, and clay particles that form the seabed.
Surge	Elevation in water level at the coast due to low pressure weather system and strong

Descriptor	Preferred wording/meaning
	winds.
Sustainable Yield	See safe yield.
Sweep path analysis	Calculation and analysis of the movement and path of different parts of a vehicle when that vehicle is undertaking a turning manoeuvre.
Sweet spot	A coal seam gas resource that has a relatively higher gas content, permeability and coal thickness resulting in superior gas flow rates and reserves recovered per well compared to surrounding areas and comparable reserves internationally.
Synergistic (synergism)	Interaction of different components that produces a total effect greater than that of the sum of the individual effects.
Syngnathids	A family of fish which includes the seahorses, the pipefishes, and the weedy and leafy sea dragons.
Taxonomic assessment	The classification of organisms into identified groups based on evolutionary relationships.
Temporary accommodation facility	Onsite accommodation for the construction and/or operational workforce.
Terms of Reference	As defined by Part 4 of the <i>State Development and Public Works Organisation Act 1971</i> .
Tertiary	A geological time unit from about 65 to 2 million years ago.
Texture	A measure of the behaviour of a small handful of soil when moistened and kneaded into a ball (bolus) and then pressed out between the thumb and forefinger.
Texture contrast soils	Soils with a very strong contrast between layers of different soil types.
Thickening	The increase in density of either tree or shrub layers within a natural vegetation community to densities greater than generally experienced within living memory.
Threshold shift (permanent, PTS)	Exposure to noise that causes the auditory system of a human or animal to permanently lose some degree of hearing sensitivity. The sensitivity is not recovered after cessation of the noise exposure.
Threshold shift (temporary, TTS)	Exposure to noise that causes the auditory system of a human or animal to temporarily lose some degree of sensitivity to sound, where the sensitivity is recovered after cessation of the noise exposure.
Tide	Movement of the oceans due to astronomical influences.
Topic Specific Risk Assessments	A risk activity that focuses on a specific area or topic. These are typically used to assist in decision making processes regarding risk.
Topography	A description of the surface features of a place or region.
Topsoil	A part of the soil profile, typically the A1 horizon, containing material which is usually darker, more fertile and better structured than the underlying layers.
Total dissolved solids	Concentration of all substances dissolved in water (solids remaining after evaporation

Descriptor	Preferred wording/meaning
(TDS)	of a water sample).
Total solids (TS)	The weight of all present solids per unit volume of water. It is usually determined by evaporation. The total weight concerns both dissolved and suspended organic and inorganic matter.
Tract	A generally continuous patch of native vegetation often containing more than one vegetation community type.
Transition fuel	As the world moves toward cleaner energy sources such as renewable energy (e.g. solar, wind and wave power), fossil fuels will continue to be used to provide energy generation. Black coal is currently the most greenhouse gas intensive fuel, but LNG is much less intensive and is seen as part of the transition to cleaner, renewable energy sources.
Transmissibility	The ease with which a fluid will flow through a porous medium. A low transmissibility indicates a high degree of difficulty in moving fluid through pore spaces at initial reservoir conditions.
Transmissivity	A measure of the capability of the entire thickness of an aquifer to transmit water. Also known as coefficient of transmissivity.
Treating	The act of subjecting a substance to a process or a chemical reagent to improve its quality or remove a contaminant.
Triassic	Period of geological time, approximately 180 – 250 million years before present.
Trip blank	A sample of analyte-free media taken from the laboratory to the sampling site and returned to the laboratory unopened.
Turbidity	The cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is a key test of water quality.
Typology	See landscape typology.
Unconfined Aquifer	A permeable bed only partly filled with water and overlying a layer of lower hydraulic conductivity. Its upper boundary is formed by a free water table where pore pressure is equal to atmospheric pressure. Water in a well penetrating an unconfined aquifer does not, in general, rise above the water surface.
Unsaturated zone	The body of soil and rock separating the water table and the land surface.
Upstream activities	For the Australia Pacific LNG project this covers the emissions from the construction and operation of the gas fields (gas processing and water treatment facilities) and the transmission pipeline.
Upstream component	The gas fields and main gas delivery pipeline up to and including where it crosses the Narrows.
Vagrant	Species more typically associated with another bioregion which very occasionally may occur in the area in question.
Vertosol	ASC Soil Order classification—Clay soils with shrink-swell properties that exhibit



<b>Descriptor</b>	<b>Preferred wording/meaning</b>
	strong cracking when dry and at depth have slickensides and/or lenticular structural aggregates. Although many soils exhibit gilgai microrelief, this feature is not used in their definition.
Visual character unit	A landscape area with similar visual characteristics.
Visual effect	A measure of the visual interaction between a development and the landscape setting within which it is located.
Visual impact	A measure of a joint consideration of both visual sensitivity and visual effect that considered together determines the visual impact of a development.
Visual sensitivity	The degree to which a change to the landscape will be perceived in an adverse way.
Watercolumn	The height of water in a bore.
Watershed	An area bounded peripherally by a divide, draining ultimately to a particular watercourse or waterbody.
Watertable	The upper surface of groundwater of the level below which the soil is saturated with water.
Wave and swell	Disturbances of the sea surface due to local winds or distant weather systems.
Weeds	Plant species that invade native ecosystems and can adversely affect the survival of indigenous flora and fauna.
Well	An excavation or structure created in the ground by digging, driving, boring or drilling to access water in the subsurface.
Wellbore	The physical hole that makes up the well, and can be cased, open or a combination of both.
Wetland	The land area alongside fresh and salt waters, that is flooded all or part of the time.
Wind rose	A form of graph showing frequency of wind speed and direction.
World Heritage Area	Australia has 17 world heritage sites with five in Queensland. Sites listed by the International World Heritage Programme. The Programme catalogues sites of cultural or natural importance to the common heritage of humanity.
WorleyParsons	WorleyParsons Services Pty Ltd.
Yield	The quantity of water removed, or able to be removed from a well.
Zooplankton	Floating animals.