

# **Jemena Northern Gas Pipeline Pty Ltd**

## **Northern Gas Pipeline**

### **DRAFT ENVIRONMENTAL IMPACT STATEMENT**

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D	EIS Team
E	Traffic Management Plan (Construction)
F1	Environmental Risk Register
F2	Economic and Social Risk Register
G	Threatened Species Survey Report
H	Biodiversity Management Plan
I	Weed Management Procedures (Planning phase)
J	Weed Management Plan
K	Watercourse Crossing Survey Report
L	Preliminary Assessment of Geotechnical and Soil Landscape Mapping (June 2016)
M	Desktop Geotechnical Study (July 2015)
N	Water Availability Study
O	Water Management Plan
P	Primary ESCP
Q	Cultural Heritage Management Plan
R	Social Impact Assessment Scoping Study
S	Economic Impact Assessment
T	Noise Assessment
U	Noise Management Plan
V	Air Quality Assessment
W	Air Quality Management Plan



## LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation/Acronym	Meaning
<b>4WD</b>	4-wheel drive vehicle
<b>AAC</b>	Arruwurra Aboriginal Corporation
<b>AAPA</b>	Aboriginal Areas Protection Authority
<b>AARC</b>	Austral-Asia Railway Corporation
<b>AASS</b>	Actual Acid Sulphate Soils
<b>ABS</b>	Australian Bureau of Statistics
<b>ACH Act</b>	Aboriginal Cultural Heritage Act 2003 ( <i>Cth</i> )
<b>AGA</b>	Australian Gas Association
<b>AGP</b>	Amadeus Gas Pipeline
<b>AHC Act</b>	Australian Heritage Council Act 2003 ( <i>Cth</i> )
<b>AHD</b>	Australian Height Datum
<b>AIWH</b>	Australian Institute of Health and Welfare
<b>AIP</b>	Australian Industry Participation
<b>ALARP</b>	As Low As Reasonably Possible
<b>ALRA</b>	Aboriginal Land Rights (Northern Territory) Act 1976 ( <i>NT</i> )
<b>AMRCANZ</b>	Agriculture and Resource Management Council of Australia and New Zealand
<b>ANZECC</b>	Australian and New Zealand Environment and Conservation Council
<b>ANZIC</b>	Australian and New Zealand Standard Industrial Classification
<b>APA</b>	Australian Pipeline Authority Group – a pipeline company
<b>APGA</b>	Australian Pipeline & Gas Association
<b>APLNG</b>	Australia Pacific LNG
<b>APPEA</b>	Australian Petroleum Production and Exploration Association
<b>ARI</b>	Average Recurrence Interval
<b>AS</b>	Australian Standard
<b>AS 2885</b>	Australian Standard 2885 Pipelines - Gas and liquid petroleum
<b>ASS</b>	Acid Sulfate Soils
<b>ASSA</b>	Northern Territory Aboriginal Sacred Sites Act
<b>ASX</b>	Australian Stock Exchange
<b>ATSIHP Act</b>	Aboriginal and Torres Strait Islander Heritage Protection Act 1984 ( <i>NT</i> )
<b>Ausplume</b>	Ausplume is a Gaussian plume dispersion model for the assessment of air quality impacts
<b>BOD</b>	Biological oxygen demands – an indicator of water quality
<b>BOM</b>	Bureau of Meteorology
<b>BOMP</b>	Blasting Operations Management Plan
<b>BOP</b>	Balance of Payments
<b>BRS</b>	Bureau of Rural Sciences
<b>CALMET</b>	CALPUFF utilises the meteorological processing and prediction model CALMET to provide three dimensional wind field predictions for the area of interest.
<b>CALPUFF</b>	CALPUFF is an advanced, integrated Lagrangian puff modelling system for the simulation of atmospheric pollution dispersion.
<b>CASA</b>	Civil Aviation Safety Authority
<b>CE</b>	Critically Endangered

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Abbreviation/Acronym	Meaning
<b>CEMP</b>	Construction Environmental Management Plan
<b>CGP</b>	Carpentaria Gas Pipeline
<b>CHIMS</b>	Cultural Heritage Information Management System
<b>CHMP</b>	Cultural Heritage Management Plan
<b>CHMS</b>	Cultural Heritage Management Strategy
<b>CHSA</b>	Cultural Heritage Survey Agreement
<b>Class HI</b>	Heavy Industrial - location classification from Australian Standard 2885
<b>Class R1</b>	Rural - location classification from Australian Standard 2885
<b>Class R2</b>	Rural Residential - location classification from Australian Standard 2885
<b>Class W</b>	Submerged - - location classification from Australian Standard 2885
<b>CLC</b>	Central Land Council
<b>CLR</b>	Contaminated Land Register
<b>CO</b>	Carbon monoxide
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>CO<sub>2</sub>-e</b>	Carbon dioxide equivalent. Carbon dioxide equivalency is a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO <sub>2</sub> that would have the same global warming potential (GWP), when measured over a specified timescale (generally, 100 years).
<b>COAG</b>	Council of Australian Governments
<b>CP</b>	Cathodic Protection
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>CSMP</b>	Construction Safety Management Plan
<b>Cth</b>	Commonwealth
<b>dB</b>	decibel
<b>dB(A)</b>	A-weighted decibels (relative loudness as perceived by the human ear)
<b>DDMG</b>	Disaster District Management Group (in Mount Isa)
<b>DEHP</b>	Department of Environment and Heritage Protection ( <i>Qld</i> )
<b>DEM</b>	Digital Elevation Model
<b>DLPE</b>	Department of Lands Planning and Environment ( <i>NT</i> )
<b>DLRM</b>	Department of Land Resource Management ( <i>NT</i> )
<b>DNRM</b>	Department of Natural Resources and Mines ( <i>Qld</i> )
<b>DO</b>	Dissolved Oxygen – an indicator of water quality
<b>DoE</b>	Department of Environment ( <i>Cth</i> )
<b>DoH</b>	Department of Health ( <i>NT</i> )
<b>DPM&amp;C</b>	Commonwealth Department of Prime Minister and Cabinet
<b>EA</b>	Environmental Authority – an authority issued pursuant to the <i>EP Act (Qld)</i>
<b>EA Act</b>	Environmental Assessment Act ( <i>NT</i> )
<b>EC</b>	Electrical conductivity – an indicator of water quality
<b>EGP</b>	Eastern Gas Pipeline
<b>EHMS</b>	Environmental, Health and Safety Management System
<b>EIA</b>	Environmental or Economic Impact Assessment
<b>EIS</b>	Environmental Impact Statement
<b>ELDO</b>	European Launcher Development Organisation
<b>EMP</b>	Environmental Management Plan

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Abbreviation/Acronym	Meaning
<b>EMS</b>	Environmental Management System
<b>EN</b>	Endangered
<b>ENGO</b>	Environmental non-government organisation
<b>EO</b>	Environmental Officer
<b>EOL</b>	End of Line – refers to the compressor station that receives gas from the NGP
<b>EP</b>	Exploration Permit
<b>EP Act</b>	Environment Protection Act 1994 ( <i>Qld</i> )
<b>EP Reg</b>	Environment Protection Regulation 2008 ( <i>Qld</i> )
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 ( <i>Cth</i> )
<b>EPBC</b>	Environment Protection and Biodiversity Conservation
<b>EPP</b>	Environmental Protection Policy
<b>EPP (Noise)</b>	Environmental Protection (Noise) Policy 2008 ( <i>Qld</i> )
<b>EPP(Air)</b>	Environmental Protection (Air) Policy 2008 ( <i>Qld</i> )
<b>EPP(Waste)</b>	Environmental Protection (Waste Management) Policy 2000 ( <i>Qld</i> )
<b>EPP(Water)</b>	Environmental Protection (Water) Policy 2009 ( <i>Qld</i> )
<b>ERA</b>	Environmentally Relevant Activity
<b>ERP</b>	Emergency Response Plan
<b>ESA</b>	Environmentally Sensitive Area
<b>ESCP</b>	Erosion and Sediment Control Plan
<b>ESD</b>	Ecologically Sustainable Development
<b>ESIA</b>	Economic and Social Impact Assessment
<b>ESIMP</b>	Economic and Social Impact Management Plan
<b>EV's</b>	Environmental Values
<b>EVNT</b>	Endangered, Vulnerable and Near Threatened – species classifications
<b>FIFO</b>	Fly-in fly-out
<b>FSC</b>	fauna spotter catcher
<b>FTE</b>	Full time equivalent
<b>GDE</b>	Groundwater-dependent ecosystem
<b>GHG</b>	Greenhouse Gas. The NGP will emit the following reportable GHGs - carbon dioxide CO <sub>2</sub> , methane CH <sub>4</sub> , nitrogen dioxide N <sub>2</sub> O
<b>GIS</b>	Geographical Information System
<b>GPF</b>	Gas Processing Facility
<b>GPS</b>	Global Positioning System
<b>GRP</b>	Gross Regional Product
<b>GST</b>	Goods and Services Tax
<b>GVA</b>	Gross Value Added
<b>H<sub>2</sub>O</b>	Water
<b>H<sub>2</sub>S</b>	Hydrogen Sulphide
<b>ha</b>	Hectare
<b>HAZOP</b>	Hazard and Operability
<b>HC</b>	Hydrocarbon
<b>HEV's</b>	High ecological value waters – as defined in the EPP Water
<b>HIA</b>	Health Impact Assessment
<b>HP</b>	High Pressure

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Abbreviation/Acronym	Meaning
<b>HRA</b>	Health Risk Assessment
<b>HSE</b>	Health, Safety and Environment
<b>HSEMS</b>	Health, Safety & Environment Management Systems
<b>HSEQ</b>	Health, Safety, Environment & Quality
<b>IECA</b>	International Erosion Control Association
<b>IEMS</b>	Integrated Environmental Management System
<b>ILUA</b>	Indigenous Land Use Agreement
<b>IPP</b>	Industry Participation Plan
<b>ISO</b>	International Organisation for Standardization
<b>Jemena</b>	Jemena Northern Gas Pipeline Pty Ltd
<b>JEN</b>	Jemena Electricity Network
<b>JGN</b>	Jemena Gas Network
<b>JHA</b>	Job Hazard Analysis
<b>kL</b>	Kilolitre
<b>km</b>	Kilometre
<b>km/h</b>	Kilometre per hour
<b>KP</b>	Kilometre Point
<b>kV</b>	Kilovolt
<b>kVA</b>	Kilovolt ampere
<b>kw/m<sup>2</sup></b>	Kilowatt/square meter, a heat flux density unit
<b>L</b>	Litre
<b>L/hr</b>	Litres per hour
<b>L/s</b>	Litres per second
<b>LGA</b>	Local Government Area
<b>LNG</b>	Liquefied Natural Gas
<b>LP</b>	Low Pressure
<b>LP Act</b>	Land Protection (Pest and Stock Route Management) Act 2002 ( <i>Qld</i> )
<b>LP Regulation</b>	Land Protection (Pest and Stock Route Management) Regulation 2003 ( <i>Qld</i> )
<b>Ltd</b>	Limited
<b>LV</b>	Light Vehicle
<b>m</b>	Metre
<b>m/s</b>	Metres per second
<b>m<sup>2</sup></b>	Squared metres
<b>m<sup>3</sup></b>	Cubic metres
<b>MAOP</b>	Maximum Allowable Operating Pressure
<b>mBGL</b>	Metres below ground level
<b>MCD</b>	McConnell Dowell – NGP pipeline constructors
<b>MICS</b>	Mount Isa Compressor Station – also known as the End of Line Compressor station, located near Mount Isa, Queensland.
<b>µg/dL</b>	Micrograms per decilitre (specifically of blood in relation to blood lead levels)
<b>µg/m<sup>3</sup></b>	Micro-grams per cubic meter
<b>mg/L</b>	milligrams/litre
<b>MJ</b>	Megajoule – a measure of energy - equal to one million (10 <sup>6</sup> ) joules, or approximately the kinetic energy of a one megagram (tonne) vehicle moving at 160 km/h.

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Abbreviation/Acronym	Meaning
<b>ML</b>	Mining Lease or Megalitre
<b>MLV</b>	Main Line Valve – a pipeline facility
<b>mm</b>	Millimetres
<b>MNES</b>	Matters of National Environmental Significance
<b>MSDS</b>	Material Safety Data Sheet
<b>MVS</b>	Major Vegetation Subgroups
<b>mW</b>	Megawatt
<b>N<sup>2</sup></b>	Nitrogen gas
<b>NATA</b>	National Association of Testing Authorities, Australia
<b>NC Act</b>	Nature Conservation Act 1992 ( <i>Qld</i> )
<b>NCR</b>	Non-Conformance Report
<b>NEGI</b>	North East Gas Interconnector – the NGP was previously known as the NEGI
<b>NEPM</b>	National Environment Protection Measure
<b>NGA</b>	National Greenhouse Accounts
<b>NGER</b>	National Greenhouse and Energy Reporting scheme. Established under the National Greenhouse and Energy Reporting Act 2007 (NGER Act) - a single national framework for reporting and disseminating company information about greenhouse gas emissions, energy production and energy consumption
<b>NGP</b>	Northern Gas Pipeline
<b>NGO</b>	Non-government organisation
<b>NH</b>	National Highway
<b>NIC</b>	Northern Infrastructure Corridor
<b>NLC</b>	Northern Land Council
<b>NNTT</b>	National Native Title Tribunal
<b>NO</b>	Nitrogen dioxide
<b>NO<sub>x</sub></b>	Nitrogen oxide
<b>NOI</b>	Notice of Intent
<b>NSW</b>	New South Wales
<b>NRM</b>	Natural Resource Management
<b>NRU</b>	Nitrogen Reduction Unit
<b>NSW EPA</b>	New South Wales Environmental Protection Authority
<b>NT</b>	Northern Territory
<b>NT Act</b>	Commonwealth Native Title Act 1993 ( <i>Cth</i> )
<b>NTDA</b>	Native Title Determination Application
<b>NT DoH</b>	Northern Territory Department of Health
<b>NT EPA</b>	Northern Territory Environmental Protection Agency
<b>NTES</b>	Northern Territory Emergency Services
<b>NTG</b>	Northern Territory Government
<b>NTPS</b>	Northern Territory Planning Scheme
<b>NTU</b>	Nephelometric Turbidity Units – an indicator of water quality
<b>NWQMS</b>	National Water Quality Management Strategy
<b>NZS</b>	New Zealand Standard
<b>O<sub>2</sub></b>	Oxygen
<b>OH&amp;S</b>	Occupational Health and Safety
<b>Option</b>	Option for Easements (also referred to as Options)

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Abbreviation/Acronym	Meaning
<b>ORP</b>	Oxidative redox potential – an indicator of water quality
<b>P&amp;G Act</b>	Petroleum and Gas (Production and Safety) Act 2004 ( <i>Qld</i> )
<b>p.a.</b>	Per annum
<b>PASS</b>	Potential acid sulphate soils
<b>PCCS</b>	Phillip Creek Compressor Station – also known as the Start of Line compressor station – located near Warrego, Northern Territory.
<b>PCHA</b>	Post-Construction Heritage Agreement
<b>PER</b>	Public Environment Report
<b>PIG</b>	Pipeline Inspection Gauge
<b>PJ</b>	Petajoule = $10^{15}$ Joules; a measure of energy
<b>PL</b>	Pipeline License
<b>PM<sub>10</sub></b>	Particulate Matter (particles) with a mean aerodynamic diameter of <10 µm
<b>PM<sub>2.5</sub></b>	Particulate Matter (particles) with a mean aerodynamic diameter of <2.5 µm
<b>PMAV</b>	Property Map of Assessable Vegetation
<b>PPE</b>	Personal Protective Equipment
<b>PPL</b>	Petroleum Pipeline Licence
<b>Proponent</b>	Jemena Northern Gas Pipeline Pty Ltd
<b>PSL</b>	Petroleum Survey Licence
<b>Pty</b>	Proprietary
<b>PWC</b>	Power and Water Corporation NT
<b>QGEOP</b>	Queensland Government Environmental Offset Policy
<b>QH Act</b>	Queensland Heritage Act 1992 ( <i>Qld</i> )
<b>Qld</b>	Queensland
<b>QGP</b>	Queensland Gas Pipeline
<b>QWQG</b>	Queensland Water Quality Guidelines
<b>RE</b>	Regional Ecosystem
<b>RJCP</b>	Remote Jobs and Communities Program
<b>ROP</b>	Resource Operations Plan
<b>ROW</b>	Right Of Way
<b>RPD</b>	Real Property Description
<b>RR</b>	Regional Road
<b>RWA</b>	Restricted Work Area (within AAPA Authority Certificate)
<b>SCP</b>	Stakeholder Communications Plan
<b>SCR</b>	State Controlled Road
<b>SDA</b>	State Development Area
<b>SDS</b>	Safety Data Sheet
<b>SES</b>	State Emergency Service
<b>SIA</b>	Social Impact Assessment
<b>SIMP</b>	Social Impact Management Plan
<b>SLA</b>	Statistical Local Area
<b>SME</b>	Small to medium enterprise
<b>SMS</b>	Safety Management Study
<b>SOCS</b>	Sites of Conservation Significance – declared for NT
<b>SOL</b>	Start of Line – the Phillip Creek compressor station is referred to

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Abbreviation/Acronym	Meaning
<b>SO<sub>x</sub></b>	Sulphur Oxide
<b>SP Act</b>	Sustainable Planning Act 2009 ( <i>Q/d</i> )
<b>SP Regulation</b>	Sustainable Planning Regulation 2009 ( <i>Q/d</i> )
<b>SPP</b>	State Planning Policy
<b>SWMS</b>	Safe Work Methods Statements
<b>t</b>	Tonnes
<b>TDS</b>	Total Dissolved Solids – an indicator of water quality
<b>TGS</b>	Traffic Guidance Schemes
<b>TIA</b>	Traffic Impact Assessment
<b>TJ</b>	Terajoule = 10 <sup>12</sup> Joules; a measure of energy
<b>TMP</b>	Traffic Management Plan
<b>ToR</b>	Terms of Reference
<b>TPWC Act</b>	Territory Parks and Wildlife Conservation Act ( <i>NT</i> )
<b>TSP</b>	Total Suspended Particulates – a measure of air quality
<b>TSS</b>	Total Suspended Solids
<b>TSSC</b>	Threatened Species Scientific Committee
<b>UHF</b>	Ultra High Frequency
<b>UV</b>	Ultraviolet
<b>VHF</b>	Very High Frequency
<b>VM Act</b>	Vegetation Management Act 1999 ( <i>Q/d</i> )
<b>Vpd</b>	Vehicles per day
<b>Vph</b>	Vehicles per hour
<b>VU</b>	Vulnerable
<b>WA</b>	Western Australia
<b>WCD</b>	Water Control District
<b>WDL</b>	Waste Discharge Licence – administered by the NT EPA
<b>WMP</b>	Waste Management Plan
<b>WONS</b>	Weeds of National Significance
<b>WQO</b>	Water Quality Objectives

## GLOSSARY OF TERMS AND DEFINITIONS

Term	Meaning
<b>2P reserve</b>	2P reserves = 1P (proven reserves) + probable reserves, hence 'proved AND probable'.
<b>Aboriginal</b>	Inhabiting, or existing, in a land from the earliest known time, or before the arrival of colonists; original inhabitants of a place (see also indigenous).
<b>Aboriginal Areas Protection Authority</b>	As an independent statutory authority the AAPA is responsible for overseeing the protection of Aboriginal sacred sites in the Northern Territory. They maintain a register of sacred sites and sites of significance and work closely with Indigenous communities and other stakeholders to ensure that any intended land use does not impact on these cultural heritage areas.
<b>Access track turn-off Barkly Highway</b>	Turn off area from the Barkly Highway to the access tracks. It is a disturbed area outside the construction ROW but within the construction footprint.
<b>Access track turnoff to Construction ROW</b>	Turn off area from the access tracks to the construction ROW. It is a disturbed area outside the construction ROW but within the construction footprint.
<b>Acid Sulphate Soil (ASS)</b>	Soils which form when sulphate-rich soils or sediment are exposed to oxygen. Drainage or other disturbance which causes oxidation results in the release of acidic leachates from the soil.
<b>Alignment</b>	The NGP pipeline route from the tie-in point on the Amadeus Gas Pipeline at Warrego, to the tie-in point on the Carpentaria Gas Pipeline at Mount Isa.
<b>Alignment Corridor</b>	1km wide planning corridor in which the pipeline route will be situated.
<b>Ambient noise</b>	The sum of the noise from all sources, near and far, in a given environment.
<b>Amenity</b>	A feature that increases attractiveness or value, especially of a piece of real estate or a geographic location.
<b>Anabranch</b>	A stream that branches from a main river then reunites with it.
<b>Annual Return</b>	An annual return is a report that describes environmental management activities at the project site for the previous 12 months. Refer to the fact sheet Annual Return and Fee – Mining, Gas and Petroleum (Level 2), November 2010.
<b>Anthropogenic</b>	Caused by humans or human activity.
<b>Anti-social behaviour</b>	Activities that cause harm to an individual or their community, including public disorder, public nuisance (i.e. rowdy behaviour), violence, vandalism and littering.
<b>ANZECC/ ARMCANZ</b>	The Australian and New Zealand Environment and Conservation Council and the Agriculture and Resource Management Council of Australia and New Zealand.
<b>Aquifer</b>	Rock or sediment in a formation, group of formations or part of a formation that is saturated and sufficiently permeable to transmit economic quantities of water to wells and springs.
<b>Aquitard</b>	A body of rock or stratum of sediment of low permeability that retards, but does not prevent, the flow of groundwater between aquifers.
<b>Archaeological place</b>	Under the terms of the Heritage Act (NT), a place pertaining to the past occupation by Aboriginal or Macassan people that has been modified by the activity of such people and in or on which the evidence of such activity exists <sup>1</sup> .
<b>Arterial</b>	In relation to rural roads, those which form the principle avenue of connection for movements between major regions, capital cities and key towns (as defined by the Local Roads Advisory Committee 2006). Arterial roads carry high volumes of vehicular and heavy vehicle movements and provide the key pathway for the transport of people and goods.
<b>Authority Certificate</b>	Issued by the AAPA, it is a legal document that protects sacred sites from damage by setting out the conditions for using or carrying out works proposed by a proponent on an area of land and/or sea. It indemnifies the holder against prosecution under the Northern Territory Sacred Sites Act (NT) provided the work has been carried out in accordance with the conditions of the Certificate.



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Term	Meaning
<b>Average Minimum Background Noise Level</b>	Assessed as the background noise level per standard time interval that was exceeded for ninety per cent of the interval, defined in AS1055 as the rating background noise level.
<b>A-weighted</b>	Filtering a sound level so that a microphone output approximates the frequency response of a human ear to the sound.
<b>Background noise</b>	The noise ordinarily present and continuous at a given location, excluding extraneous noise and the noise source of interest. Commonly measured using the statistical parameter, LA90, the A-weighted noise level that was exceeded for ninety per cent of the monitoring period.
<b>Biodiversity</b>	The variety of all life forms on earth – the different plants, animals and micro-organisms, their genes, and the terrestrial, marine and freshwater ecosystems of which they are a part..
<b>Biological integrity</b>	Of water means the water's ability to support and maintain a balanced, integrative, adaptive community of organisms having a species composition, diversity and functional organisation comparable to that of the natural habitat of the locality in which the water is situated (as defined in the EPP (Water); Qld Government 2014)
<b>Bioregion</b>	Bioregions are large, geographically distinct areas of land with common characteristics such as geology, landform patterns, climate, ecological features and plant and animal communities.
<b>Blasting</b>	An action using or detonating explosives that may emit a loud, intense sound.
<b>Bund</b>	An embankment constructed around an area to prevent the inflow or outflow of liquids. Also called Bunding.
<b>Borrow pit</b>	Surface excavation for the extraction of materials such as sand or clay.
<b>Carbon Dioxide Equivalent (CO<sub>2</sub>eq)</b>	A measure used to compare the emissions from various greenhouse gases based on their global warming potential.
<b>Catchment</b>	A water intake area or all parts of a drainage basin.
<b>Cathodic protection system</b>	Application of an electrical current to the pipeline exterior to prevent the electrochemical corrosion.
<b>Central Land Council</b>	A Council of 90 Aboriginal people elected from communities in the southern half of the Northern Territory, to represent the interests of Indigenous communities living in this region. It is a statutory authority under the Aboriginal Land Rights (Northern Territory) Act 1976 ( <i>Cth</i> ). It also has functions under the Native Title Act 1993 ( <i>Cth</i> ) and the Pastoral Land Act ( <i>NT</i> ).
<b>Clear and grade</b>	The preparation of the right of way for vehicular movement, trenching and other construction activities, involving clearing vegetation and other obstacles from the right of way, grading topsoil to the edge of the right of way, and creating a safe working surface (and slope) for construction.
<b>Combustible</b>	Capable of igniting or burning.
<b>Community values</b>	Aspects of the social and physical environment in which the members of the community value, including the area's natural assets, community lifestyle, social networks, scenic areas and recreational facilities.
<b>Compressor station</b>	A compressor station is a facility which helps the transportation process of natural gas from one location to another.
<b>Confined Aquifer</b>	An aquifer that is overlain by a confining bed. The confining bed has a significantly lower hydraulic conductivity than the aquifer.
<b>Construction footprint</b>	Area encompassing all construction activities conducted as part of the NGP project. Includes the construction ROW within which the pipeline will be installed, compressor station sites, pipeline facilities sites, transport routes, access tracks, laydown areas, turn-around areas, construction camps and water storage.
<b>Construction ROW</b>	30m wide corridor in which construction activities required for installation of the pipeline will be undertaken.
<b>Constructors</b>	The pipeline construction company engaged by Jemena – McConnell Dowell

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Term	Meaning
<b>Cultural heritage</b>	The aesthetic, historic, scientific, social or spiritual value for past, present or future generations. It includes tangible culture (e.g. objects), intangible culture (e.g. language and knowledge) and natural heritage (e.g. landscapes).
<b>Cultural Heritage Management Plan</b>	Sometimes called a Cultural Heritage Conservation Management Plan, it outlines protocols and procedures to be implemented throughout the project to ensure protection of heritage values impacted by its works.
<b>Decibel (weighted) dBA</b>	The measurement of sound pressure level in which the amplitude of the sound signal is negatively weighted in frequencies below 1000 Hz in accordance with a weighing scale known as the 'A' weighing scale. This scale was established to closely simulate human perception of the relative level of pure tone sounds.
<b>Declared fish habitat areas (DFHA)</b>	Coastal fish habitats; none exist within or near the Project area (as defined in the EPP Water; Qld Government 2014)
<b>Decommissioning</b>	The process by which a pipeline is made inoperative at the end of its useful life. This involves dismantling and decontaminating the pipeline safely to the satisfaction of the regulator.
<b>Dispersive habits</b>	Spreads or scatters
<b>Dissolved Oxygen (DO)</b>	The amount of oxygen dissolved in water.
<b>Drainage pattern</b>	The pattern formed by drainage lines, gullies, streams and rivers.
<b>Easement</b>	A right held by the proponent to make use of the land (in this case, for the installation and operation of a pipeline).
<b>Ecological Sustainable Development (ESD)</b>	Development that improves the quality of life in a way that maintains the ecological processes on which life depends.
<b>Economic Impact Assessment</b>	Provides information on the potential economic impacts of the project at regional, state and national levels. It also indicates strategies for capitalising on economic benefits while at the same time mitigating any possible negative impacts.
<b>Ecosystem</b>	A biological community of interacting organisms and their physical environment.
<b>End of Line (EOL) compressor</b>	The EOL compressor on the NGP is the Mount Isa Compressor Station (MICS) located at Mount Isa. The EOL compressor receives gas from the NGP and pressurizes the gas for conveyance into the Carpentaria Gas Pipeline.
<b>Environmental Authority</b>	Licence or Approval issued under the Environmental Protection Act 1994 ( <i>Qld</i> ) to conduct specified Chapter 5A activities and Chapter 4 Environmentally Relevant Activities.
<b>Environmental Management Register</b>	A land use planning and management register, controlled by Queensland's Department of Environment and Resource Management. The EMR provides information on historic and current land use – including whether the land has been or is currently used for a notifiable activity, or has been contaminated by a hazardous contaminant.
<b>Environmentally Relevant Activities</b>	Activities prescribed under the Environmental Protection Act 1994 ( <i>Qld</i> ) that have the potential to cause environmental harm. They require assessment and approval under environmental legislation.
<b>Environmentally Sensitive Area</b>	An area which contains a natural feature, such as the habitat of a rare species, and which is protected by environmental state legislation. These areas are grouped into category A and B environmentally sensitive area, which can be found in the Environmental Protection Regulation 2008 and category C areas as determined by DERM. Examples are national parks, an area of critical habitat or major interest identified under a conservation plan or nature refuges.
<b>Ephemeral</b>	Watercourses or wetlands which are dry for the most of the year and flow, or fill, only immediately following rainfall.
<b>Erosion</b>	The wearing or removal of land surface by the action of external forces (e.g. wind or water).
<b>Existing access tracks</b>	Existing tracks which will be used to access the construction ROW. Tracks may need to be graded and widened.
<b>Family outstation</b>	A small community of mostly Aboriginal people (usually <100) in permanent or semi-permanent residence with water supply and permanent accommodation (as

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Term	Meaning
	defined by Northern Territory Government Bushtel 2016).
<b>Floodout</b>	An area where a drainage channel becomes subdivided, indistinct or disappears completely and water is dispersed across a plain (as defined by Duguid et al. 2005)
<b>Floodplain</b>	An area of low-lying ground adjacent to a river, formed mainly of river sediments and subject to flooding.
<b>Frequency (Hz)</b>	A combination of sound pressure and frequency determine perceived loudness.
<b>Genetic diversity</b>	The total number of genetic characteristics in the genetic makeup of a species.
<b>Geographical Information Systems (GIS)</b>	A system designed to capture, store, manipulate, analyse, manage and present all types of geographically referenced data. GIS is the merging of cartography, statistical analysis and database technology.
<b>Geomorphology</b>	The description and interpretation of landforms.
<b>Geotechnical</b>	Studies to investigate subsurface conditions and materials and to determine the relevant physical/mechanical and chemical properties of these materials.
<b>Grading</b>	Levelling of the right of way using graders, backhoes or bulldozers.
<b>Greenhouse gases</b>	Gases such as carbon dioxide (CO <sub>2</sub> ), water vapour (H <sub>2</sub> O), nitrous oxide (N <sub>2</sub> O), ozone (O <sub>3</sub> ) and methane (CH <sub>4</sub> ) which, when dispersed in the atmosphere, tend to trap heat and warm the planetary surface.
<b>Gregarious</b>	Sociable
<b>Ground-truth</b>	The collection of ground-truth data enables calibration of remote-sensing data, and aids in the interpretation and analysis of what is being sensed.
<b>Groundwater Dependent Ecosystems</b>	Groundwater-dependent ecosystems (GDEs) are a vital yet poorly understood component of the natural environment. An ecosystem is when living organisms benefit from one another via symbiotic relationships. A groundwater-dependent ecosystem is when its nourishment relies on groundwater input.
<b>Habitat</b>	The natural home or environment of an animal, plant, or other organism.
<b>Hazchem</b>	Abbreviation used for the hazardous chemical substances coding system used in the Australian Code for the Transportation of Dangerous Goods by Road and Rail. The system is defined in the Australian Standard AS 1216 and uses a classification and labelling system adopted by the United Nations.
<b>HAZOP</b>	Abbreviation used for a Hazard and Operability study for above ground facilities.
<b>Heavy vehicle</b>	A truck, transport or other vehicle with a gross vehicle weight above a specified level (for example: over 8 t).
<b>Heritage</b>	The cultural inheritance of individuals and/or groups. It can include places, objects and indigenous languages that have aesthetic, architectural, historical, scientific, technological or social significance of other special value for future generations as well as for the community today. Used to refer to sites protected under the Heritage Act (NT) and Aboriginal Sacred Sites Act (NT)
<b>Heritage place</b>	Under Section 5 of the Heritage Act (NT), a place declared by the Minister to be a heritage place.
<b>Heritage values</b>	The social value assigned by communities and groups to places objects and stories relating to the past.
<b>Highly disturbed waters</b>	Waters where 'the biological integrity of an aquatic ecosystem is measurably degraded and of lower ecological value than waters' defined above (as defined in the EPP (Water); Qld Government 2014)
<b>High ecological value water</b>	Waters where 'the biological integrity of an aquatic ecosystem is effectively unmodified or highly valued' (as defined in the EPP (Water); Qld Government 2014)
<b>Historical site</b>	A site containing evidence of human occupation during the historical period that has not been declared a heritage place under the Heritage Act (NT).
<b>Horizon</b>	A soil horizon is one of the series of distinct layers found in a vertical cross-section of any well-developed soil. The properties of horizons are used to

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Term	Meaning
	distinguish between soils and are critical for determining land-use potential.
<b>Hydraulic</b>	Of or relating to water or other liquid in motion; operated, moved, or effected by water or liquid.
<b>Hydrocarbon</b>	A class of organic chemical compounds consisting primarily of the elements hydrogen and carbon. Petroleum hydrocarbons are complex mixtures of hydrocarbons ranging from light gas to heavy oil compounds. Some common petroleum hydrocarbons include methane, ethane, propane, butane, naphtha, condensate, crude oil and asphaltenes.
<b>Hydrostatic testing (hydrotesting)</b>	A pipeline testing process used to test welds and pipeline integrity in high pressure hydrocarbon pipelines. The process involves filling the newly constructed pipeline with pressurised water or other medium, enabling the detection of leaks.
<b>Important population</b>	An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: key source populations either for breeding or dispersal, populations that are necessary for maintaining genetic diversity, and/or populations that are near the limit of the species range.
<b>Indigenous</b>	In Australia, the term Indigenous is used to refer to Australian Aboriginal and Torres Strait Islander people.
<b>Indigenous Land Use Agreement (ILUA)</b>	An agreement between native title holders or claimants and other interested parties about how land and waters in the area covered by the agreement will be used and managed in the future.
<b>Inherent risk</b>	The risk without any mitigation measures
<b>Intermittent (as in watercourse)</b>	Watercourses or wetlands which are alternatively wet and dry. They usually flow annually but cease to flow for weeks or months of each year. Intermittent streams can contain permanent pools of water which sustain life during dry periods.
<b>Intermittent noise</b>	A noise whose sound pressure level suddenly drops to the background level several times during the period of observation, the time during which the level remains at a constant value different from that of the background level being of the order of 1s or more.
<b>L10</b>	Noise level exceeded for 10% of the measurement period. This represents the upper intrusive noise level and is often used to represent traffic/ music noise.
<b>L90</b>	Noise level exceeded for 90% of the measurement period. This represents the background noise level excluding nearby sources. Also known as LBG.
<b>Lacustrine (as in wetlands)</b>	Large, open, water-dominated systems > 8 ha in size. Usually lakes and can include modified or artificial (i.e. man-made) weirs and dams (DEHP 2016).
<b>Landholder Line List</b>	A standard pipeline industry document that, through consultation, records all landholder access and construction requirements.
<b>Landowner</b>	A general term used to refer to the legal owner or manager of a parcel of land. It may be a private landowner, Government or private utility, or a Government Agency responsible for management of a particular parcel of Crown land (e.g. National Parks or Forestry areas).
<b>Leq</b>	Energy averaged noise level over the measurement period. This measure is commonly used when comparing the criterion noise level under the Environmental Noise Regulations and for comparison with relevant standards for air conditioning noise.
<b>Line List</b>	A document for construction contractors which itemises the management procedures to be undertaken and which contains site-specific or property-specific information for field reference.
<b>Lmax</b>	Maximum instantaneous noise level during a measured period.
<b>Low consequence dam</b>	As defined in the Queensland Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (DEHP 2013), a low consequence dam is one that is:

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Term	Meaning
	<ul style="list-style-type: none"> <li>• In a location that people are not routinely present in the failure path and loss of life is not expected</li> <li>• In a location such that contamination of surface and/or groundwater used for human consumption could affect the health of less than 10 people</li> <li>• In a location where contaminants are unlikely to be released to areas of Significant Values or Moderate Values</li> <li>• Or contaminants may be released to those areas but would be unlikely to meet any of the minimum thresholds</li> <li>• Third party assess in the failure path of would be expected to require less than \$1 million in rehabilitation, compensation, repair or rectifications costs.</li> </ul>
<b>Macassan</b>	People from Makassar (now Sulawesi) who visited the north of Australia, fishing for sea cucumber, and trading with aboriginal people. Macassan archaeological sites are located throughout northern Australia.
<b>Macroinvertebrate</b>	An invertebrate large enough to be seen without magnification.
<b>Macrophyte</b>	An plant, usually aquatic, that is large enough to be seen with the naked eye.
<b>Mainline valve (MLV)</b>	Valves located at intervals along the pipeline length to allow isolation of gas for inspection, testing and maintenance.
<b>Maximum Allowable Operating Pressure</b>	Refers to the wall strength of a pressurised cylinder such as a pipeline or storage tank and how much pressure the walls may safely hold in normal operation.
<b>Microchiropteran</b>	Of bats, small or micro bat species.
<b>Migratory species</b>	Species which perform cyclical movements between two distinct geographical areas, one of which is usually the area in which they breed.
<b>Mining Lease (ML)</b>	A lease granted pursuant to the Mineral Titles Act 2010 ( <i>NT</i> ) to mine
<b>Mitigation</b>	The action of reducing the severity, seriousness, or painfulness of something.
<b>Moderately disturbed water</b>	Are waters where 'the biological integrity of an aquatic ecosystem is adversely affected by human activity to a relatively small but measurable degree' (as defined in the EPP (Water); Qld Government 2014)
<b>Mortality</b>	The state of being subject to death.
<b>New access tracks</b>	Tracks which will be constructed and used to access the pipeline construction ROW. Tracks will be reinstated and rehabilitated on completion of construction, excepting those that access pipeline facilities and/or requested for retention by the landholder.
<b>Nocturnal</b>	Active at night
<b>Northern Land Council</b>	A Council of Aboriginal people elected from communities in the northern half of the Northern Territory, to represent the interests of Indigenous communities living in this region. It is a statutory authority under the Aboriginal Land Rights (Northern Territory) Act 1976 ( <i>Cth</i> ). It also has functions under the Native Title Act 1993 ( <i>Cth</i> ) and the Pastoral Land Act ( <i>NT</i> ).
<b>Operational footprint</b>	The area that may be impacted on directly or indirectly by the Project during the operations phase. The operational footprint encompasses compressor stations, pipeline facilities and permanent access tracks. The zone of impact for emissions, such as air and noise, is also part of the operational footprint.
<b>PM<sub>2.5</sub> and PM<sub>10</sub></b>	Small airborne particulate matter that can be inhaled deep into the lungs of people, causing respiratory disorders. Particulate matter can include carcinogenic chemical compounds, such as combustion products (DEH 2005).
<b>Padding</b>	Fine-grained material placed in the trench to protect the pipeline coating from damage.
<b>Palustrine (as in wetlands)</b>	Primarily vegetated non-channel environments of < 8 ha in size. They include billabongs, swamps, bogs, springs and soaks (DEHP 2016)
<b>Particulate matter</b>	Minute airborne particles.
<b>Perched water table</b>	Water table that is positioned above the normal water table for an area because of the presence of an impermeable rock layer.



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Term	Meaning
<b>Perennial</b>	Lasting for an indefinite amount of time. In relation to watercourses; permanently flowing water courses, or those that flow for the majority of the time except in extremely dry years. In relation to wetlands; perennial refers to those that hold permanent water, although water levels may fluctuate depending on the season.
<b>Permeability</b>	The capacity of a material to transmit fluid.
<b>Petroleum Pipeline Licence (PPL)</b>	A licence granted under the Petroleum and Gas (Production and Safety) Act 2004 ( <i>Q/d</i> ) for the right to construct a pipeline to transport petroleum on land subject to the licence.
<b>Pipeline Licence (PL)</b>	A licence granted under the Energy Pipelines Act ( <i>NT</i> ) for the right to construct and operate a pipeline for conveyance of energy-producing hydrocarbons.
<b>Pigging</b>	A process for cleaning or inspecting line pipes without stopping the flow of the product in the line. The pig is inserted into the pipe and the pressure-driven force of the product forces it along the line.
<b>Pipeline</b>	The buried steel gas transmission pipeline will be up to 42 inch (DN1050) in nominal diameter.
<b>Planning Corridor</b>	20 km wide corridor within which a preferred pipeline corridor is chosen based on a range of considerations including constructability, land tenure requirements and environmental factor.
<b>Pipeline route</b>	The location of the pipeline alignment from the tie-in point on the Amadeus Gas Pipeline at Warrego, to the tie-in point on the Carpentaria Gas Pipeline at Mount Isa.
<b>Population fragmentation</b>	A form of population segregation. It is often caused by habitat fragmentation. Population fragmentation causes inbreeding depression, which leads to a decrease in genetic variability in the species involved.
<b>Pre-fill</b>	Pre-fill water is a small volume of water that is introduced into a section of the pipeline following construction, to flush out dirt, dust and debris. This is undertaken prior to hydrostatic testing.
<b>Probable Maximum Flood</b>	The flood resulting from probable maximum precipitation and, where applicable, snowmelt, coupled with the worst flood-producing catchment conditions that can be realistically expected in the prevailing meteorological conditions.
<b>The Project</b>	The Northern Gas Pipeline Project encompasses all activities that will occur in association with planning, constructing, operating and decommissioning the Northern Gas Pipeline.
<b>Project footprint</b>	The area that may be impacted on directly or indirectly by the Project during the planning, construction, operations and decommissioning phases.
<b>Proliferation</b>	Rapid increase in the number or amount of something
<b>Purging</b>	Removing all air from the pipeline, using gas
<b>Putrescibles</b>	Material that is likely to become putrid.
<b>Qualitative</b>	An assessment based on descriptions or distinctions and quality or characteristic rather than on some quantity or measured
<b>Quantitative</b>	An assessment based on the amount or number of something.
<b>Radiation contours</b>	In relation to heat flux; represents the measured distance of impact for a given heat flux, the area within which there will be a significant risk of injury or fatality in the event of a worst case pipeline failure (as defined in AS2885).
<b>Ramsar</b>	An international treaty for the conservation and sustainable use of wetlands. The treaty was adopted in the Iranian city of Ramsar in 1971.
<b>Receptor</b>	A land-use, human being, flora/fauna species, building, residence, community, watercourse or water feature which can be impacted by the Project.
<b>Recharge</b>	Water flowing into an aquifer.
<b>Recharge Area</b>	An area in which there are downward components of hydraulic head in the aquifer. Infiltration moves downward into the deeper parts of an aquifer in a

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Term	Meaning
	recharge area.
<b>Rehabilitation</b>	Rehabilitation is the process of restoring a site or area's environmental attributes by returning an area to its pre-disturbance state. The process may include initial stabilisation, followed by regeneration, revegetation or restoration, depending upon the defined scope of works. Commonly the main objective of rehabilitation is either reinstatement of, or improvement on, the pre-existing condition.
<b>Reinstatement</b>	Reinstatement is the process of re-establishing a pre-existing physical condition, and usually involves bulk earth works and structural replacement of pre-existing attributes of a site, such as soil surface topography, drainage, culverts, fences and gates, etc. Reinstatement is the first stage of rehabilitation.
<b>Remnant vegetation</b>	Remnant vegetation means vegetation, part of which forms the predominant canopy of the vegetation— a. covering more than 50% of the undisturbed predominant canopy; and b. averaging more than 70% of the vegetation's undisturbed height; and c. composed of species characteristic of the vegetation's undisturbed predominant canopy.
<b>Right Of Way (ROW)</b>	The area cleared for the construction of the pipeline. The NGP ROW will be reinstated and rehabilitated following completion of construction – no permanent access is required along the pipeline route.
<b>Riparian</b>	Pertaining to, or situated on the bank of, a body of water, especially a watercourse such as a river.
<b>Riparian vegetation</b>	Riparian vegetation occurs along freshwater watercourses. It is defined as a distinct, closed forest community that creates suitable conditions for a range of aquatic species by providing dense shade that regulates water temperatures, maintains dissolved oxygen concentrations and reduces algal bloom
<b>Riverine (as in wetlands)</b>	All wetlands and deep water habitats within a channel which may periodically or continuously contain moving water (DEHP 2016).
<b>Sacred Sites</b>	Sacred sites are places within the landscape that have a special meaning or significance under Aboriginal traditions, and derive their status from association with Aboriginal social and cultural traditions. Aboriginal sacred sites are recognised and protected under the Aboriginal Land Rights (Northern Territory) Act 1976 ( <i>Cth</i> ) and the Northern Territory Aboriginal Sacred Sites Act ( <i>NT</i> ).
<b>Salinity</b>	The total content of dissolved solids in groundwater, commonly expressed as parts of dissolved solids per million parts of solution (ppm), or milligrams of dissolved solids per litre of solution (mg/L). The significance of salinity depends on its nature as well as the amount of the dissolved solids.
<b>Saturation</b>	The extent or degree to which the voids in rock contain water; usually expressed as a percent related to total void or pore space.
<b>Scraper stations</b>	An above-ground facility used to launch and receive PIGs into and from the pipeline system. Scraper stations will be located at the SOL and EOL facilities, and an intermediate scraper station will be located at MLV2
<b>Sediment basin</b>	Basin constructed for the purposes of capturing runoff from areas disturbed as a result of construction activities. Basins are sized to hold water, allowing for the settling of suspended sediment matter.
<b>Sedimentation</b>	The tendency for particles in suspension to settle out of the fluid in which they are entrained and come to rest against a barrier. This is due to their motion through the fluid in response to the forces acting on them: these forces can be due to gravity, centrifugal acceleration, or electromagnetism.
<b>Seismic</b>	Relating to an earthquake or to other tremors of the Earth, such as those caused by large explosions.
<b>Sensitive vegetation types</b>	Those considered significant under the <i>Northern Territory Vegetation Clearing Guidelines</i> . These vegetation types are either unique to the region and/or have high biodiversity values.
<b>Sites of Conservation Significance (SOCS)</b>	Areas of important or unique habitat, or areas with significant biodiversity values

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Term	Meaning
<b>Slightly disturbed waters</b>	Waters where 'the biological integrity of an aquatic ecosystem has effectively unmodified biological indicators, but slightly modified physical, chemical or other indicators' (as defined in the EPP (Water); Qld Government 2014)
<b>Social Impact Assessment</b>	Includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planning interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.
<b>Sodic</b>	Having high sodium content. Used as an indicator of soil salinity.
<b>Sodicity</b>	The level of exchangeable sodium cations in the soil, typically expressed as a percentage (ESP). It relates to likely dispersion on wetting and hence ability to be eroded and transported in stormwater. An ESP of greater than 6% is sodic and greater than 15% is strongly sodic.
<b>Solvents</b>	A substance in which another substance is dissolved, forming a solution.
<b>Sound Attenuation</b>	The reduction in the intensity or in the sound pressure level of sound which is transmitted from one point to another.
<b>Sound Power Level</b>	The total sound energy radiated from a source per unit of time. Ten times the logarithm to the base 10 of the ratio of a given power to a reference power.
<b>Stakeholders</b>	Groups, companies or individuals who may be potentially affected, or have a particular interest in a proposal/development. Stakeholders may include local residents, government agencies, Aboriginal groups/Land Councils/Councils of Elders, local businesses, relevant business and industry groups, community groups, potential competitors and politicians/elected representatives.
<b>Statistical Local Area (SLA)</b>	The smallest level of geography/general purpose spatial unit contained in the Australia Standard Geographical Classification (ASGC) in non-census years.
<b>Start of Line (SOL) compressor</b>	The SOL compressor on the NGP is the Phillip Creek Compressor Station (PCCS) located at Warrego. The SOL compressor receives gas from the Amadeus Gas Pipeline and pressurizes the gas for conveyance by the NGP.
<b>Steady-state noise</b>	A noise having negligibly small fluctuations of sound pressure level within the period of observation.
<b>Stringing</b>	Laying the pipe adjacent to the pipeline trench
<b>Sub-catchment</b>	An area within a catchment drained by one or more tributaries of the main water body.
<b>Substrate</b>	The underlying base to something, e.g. the streambed.
<b>Subterranean (as in Groundwater Dependent Ecosystems)</b>	Underground caves containing water. Includes karst (carbonate) landscapes which often contain sinkholes and springs (DEHP 2016).
<b>Temporary construction camps</b>	Temporary camps established adjacent to the construction ROW which will be used to accommodate pipeline construction personnel.
<b>Third party interference</b>	Interference with pipeline infrastructure from external parties, including private development (e.g. fencing, construction, landscaping), roadworks, excavation and installation of new services. It includes accidental and intentional (e.g. sabotage) interference.
<b>Threatening processes</b>	A threatening process is defined as a key threatening process if it threatens or may threaten the survival, abundance or evolutionary development of a native species or ecological community.
<b>Topography</b>	The study of the Earth's surface, relief, shape and features.
<b>Topsoil</b>	The upper most layer of soil where most plant nutrients are found.
<b>Total dissolved solids (TDS)</b>	The concentration of common dissolved salts found in water and reported by volume (mg/L). Used as an indicator of water quality.
<b>Total suspended solids (TSS)</b>	The concentration of filterable particles in water (retained on a 0.45 m filter) and reported by volume (mg/L). Used as an indicator of water quality.



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Term	Meaning
<b>Toxicity</b>	The degree of poison or ill effects that a substance produces.
<b>Traditional Aboriginal Owners</b>	<p>The Aboriginal Land Rights (Northern Territory) Act 1976 (Cth) defines 'traditional Aboriginal owners' in relation to land, means a local descent group of Aboriginals who:</p> <ul style="list-style-type: none"> <li>a) Have common spiritual affiliations to a site on the land, being affiliations that place the group under a primary spiritual responsibility for that site and for the land; and</li> <li>b) Are entitled by Aboriginal tradition to forage as of right over that land.</li> </ul>
<b>Trench blocks (trench breakers)</b>	Impermeable barriers placed in the trench during pipe laying to prevent erosion along the pipeline in the backfilled trench. They are generally installed adjacent to watercourses and in sloping terrain, and are designed to allow water to seep up and out of the backfilled trench, where it is diverted away from the pipeline construction area by erosion control berms.
<b>Trench plug</b>	Short section of trench left unexcavated to allow passage of stock or wildlife across the trench.
<b>Trench spoil</b>	Soil excavated from the pipeline trench.
<b>Trench water</b>	Water (usually shallow groundwater, rainwater or runoff) in the pipeline trench.
<b>Trenching</b>	A narrow excavation made below the surface of the ground, to a depth of typically 1,800 mm.
<b>Turbidity</b>	A measure of the cloudiness of water which is determined by the amount of light scattered by suspended particles. Used as an indicator of water quality.
<b>Vehicle turnarounds</b>	Areas outside the Construction ROW which will be used to turn around vehicles (extra footprint). Vehicle turnarounds are part of the construction footprint.
<b>Wastewater</b>	Water used in a process to carry unwanted materials away, or process water that can no longer be used or is surplus to the process. The NGP Project will produce wastewater from sewage treatment at construction camps, and the pipeline hydrostatic testing.
<b>Water Table</b>	Level below which the ground is saturated with water.
<b>Watercourse</b>	<p>As defined by the Water Act (NT), watercourse means a river, creek or other natural watercourse (whether modified or not) in which water is contained or flows (whether permanently or from time to time). Includes:</p> <ul style="list-style-type: none"> <li>• a dam or reservoir that collects water flowing in a watercourse</li> <li>• a lake or wetland through which water flows</li> <li>• a channel into which the water of a watercourse has been diverted</li> <li>• part of a watercourse</li> <li>• an estuary through which water flows.</li> </ul>
<b>Waterway</b>	<p>As defined by the Fisheries Act 1994 (Qld), waterway includes a river, creek, stream, watercourse or inlet of the sea.</p> <p>This definition includes freshwater and tidal waters and both permanent and ephemeral flowing waterways. It does not include isolated water bodies (some lagoons or wetlands), although it does include channels along which fish would be expected to move, if they connect water bodies to waterways during times of flow.</p>
<b>Wetland</b>	Areas of permanent or temporary surface water or waterlogged soil including floodplains, lakes, billabongs and swamps. They may be dry for extended periods but waterlogging or inundation reoccurs for a sufficient duration that they provide aquatic habitat (as defined by Duguid et al. 2005). They support distinct vegetation communities that rely on either permanent or seasonal surface water supply. These areas often support a shallow water-table.
<b>Works Approvals</b>	Approval required from the Northern Territory Heritage Branch to undertake works on a place or object declared to be a heritage place or object under the Heritage Act (NT), or any Aboriginal or Macassan archaeological site or place (regardless of whether they are listed).

