8 LAND USE

8.1 INTRODUCTION

This chapter outlines issues associated with land use of the Mining Lease Application (MLA) areas and the gas supply pipeline for the Project.

The main topics addressed include land tenure, native title, current land use, land use and planning provisions, contaminated land, land suitability and agricultural lands, stock routes, sensitive environmental areas and Matters of National Environmental Significance (MNES).

8.2 METHODOLOGY OF ASSESSMENT

8.2.1 NATIVE TITLE

Current and historical title searches obtained from the Department of Natural Resources and Water (NRW) were conducted in relation to the properties that underlie the MLA areas and gas supply pipeline area to determine whether native title has been extinguished on the basis of tenure.

8.2.2 LAND USE AND PLANNING PROVISIONS

The impact assessment of the Project on land use and statutory planning was undertaken through a desktop analysis of:

- the provisions of the Planning Scheme for Taroom Shire 2006 and the Central Queensland Regional Growth Management Framework 2002, to determine the land use and planning provisions applicable to the Project Area
- the provisions of the Taroom Stock Route Network Management Plan, 2005 to 2009, to determine the composition of the stock route network in the Project Area and the Project's impact on same
- the 'interactive resource and tenure maps' administered by the Department of Mines and Energy, to determine mineral and petroleum tenements within the vicinity of the Project Area
- SmartMaps provided by the Department of Natural Resources and Water (NRW) and title searches to determine the tenure and allotments comprising the MLA areas and native title implications
- State Planning Policy 1/92 and the guidelines The Identification of Good Quality Agricultural Land.

8.2.3 CONTAMINATED LAND

To investigate the potential for contamination within the Project area, a Stage 1 Environmental Site Assessment (Stage 1 ESA) was undertaken in accordance with the following:

- National Environment Protection Council Service Corporation, 1999, National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council Service Corporation, Adelaide
- Queensland Environmental Protection Agency, 1998, Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland, Queensland Government, Queensland
- Australian Standards, 2005, AS4482.1-2005 Guide to the Sampling and Investigation of Potentially Contaminated Soil – Part 1: Non-volatile and Semi-volatile compounds
- Queensland Government's Coordinator General, 2008, Wandoan Coal Project – Terms of Reference for an Environmental Impact Statement.

The Stage 1 ESA land contamination investigation involved a desktop review, referred to as a Limited Stage 1 Environmental Site Assessment (ESA). The aim of the Stage 1 ESA was to identify past and present potentially contaminating activities. The following sources of information were utilised during this investigation:

- historical aerial photography
- current and historical titles
- records held by local council
- records held by local historical societies
- search of the Environmental Protection Agency's (EPA) Environmental Management Register (EMR) and Contaminated Land Register (CLR)
- anecdotal information provided by property owners, where forthcoming.

Potential land contamination from the construction and operation of the mine was also investigated based on the activities proposed for the Project.

8.3 EXISTING ENVIRONMENT

8.3.1 TENURE

Mineral and Petroleum tenements

The mining tenure Mineral Development Licence (MDL) 221 (11,160 ha), was initially granted on the 3 December 1996 and has been subsequently renewed until 31 December 2011. Since November 2004, MDL 221 has been held by the Wandoan Joint Venture (WJV). The WJV also holds MDL 222 (12,218 ha), MDL 223 (3,458 ha) and MDL 224 (3,014 ha), as shown in Figure 8-1-V1.3. Note that figures with numbering ending in V1.3 refer to figures contained in Volume 1, Book 3 of the EIS.

MDL 221 and 222 are subject to mining lease applications MLA 50229, MLA 50230 and MLA 50231, submitted to the Department of Mines and Energy and the subject of this EIS. The MLAs are described as:

- MLA 50229 – Wandoan No. 1 at 17,211 hectares, overlaying MDL 222 and surrounds
- MLA 50230 – Wandoan No. 2 at 11,101 hectares, overlaying MDL 221 and surrounds
- MLA 50231 – Wandoan No. 3 at 3,795 hectares, overlaying MDL 221 and surrounds.

A number of existing petroleum and mining leases are located in the vicinity of the MLA areas (refer also to Figure 8-1-V1.3):

- Petroleum Lease 171 (Roma Petroleum NL) within MLA 50230, and Petroleum Lease 209 (Origin Energy CSG Limited) to the south
- Petroleum Lease 101 (Origin Energy CSG Limited) to the west of the MLA areas
- Mining Lease 50179 (Volclay International Pty Ltd) to the south of the MLA areas
- Mining Lease 5900 and Mining Lease 5901 (Unimin Australia Limited)
- development, exploration, appraisal and coal seam gas (CSG) Wells. CSG Well exploration number 58380 (Wubagul 1) is located within the MLA boundaries. All other CSG wells are located outside the boundaries to the south or to the north east of the Wandoan Township.

It is also noted that petroleum lease PL 176 (tenement holder Santos QNT Pty Ltd) exists along the proposed gas pipeline alignment.

Property tenures

The MLA areas are comprised of allotments of the following tenures (refer also to Figure 8-2-V1.3 and Appendix 8-2-V1.4):

MLA 50229:

- freehold tenure: 24 allotments
- leasehold tenure: 16 allotments
- Reserves: 2 allotments
- Licenses: 2 allotments
- unallocated State land: 1 allotment.

MLA 50230:

- freehold tenure: 35 allotments
- leasehold tenure: 5 allotments
- Reserves: 2 allotments
- Permit to occupy: 1 allotment.

MLA 50231:

- freehold tenure: 11 allotments
- leasehold tenure: 3 allotments
- Reserves: 1 allotment
- Permit to occupy: 1 allotment.

Allotments associated with the gas supply pipeline are comprised of the following tenures:

- freehold tenure: 10 allotments
- leasehold tenure: 2 allotments
- State land: 1 allotment.

In reference to other aspects of tenure, various local and State-controlled roads, together with watercourses, exist in the MLA areas and the proposed gas pipeline route.

8.3.2 NATIVE TITLE

Registered Native Title Claims

At the time of preparation of the EIS, the Iman People #2 native title claim (National Native Title Tribunal Claim No QC 97/55) is the only native title claim affecting the MLA areas and gas supply pipeline area. This claim is a 'registered claim' for the purposes of the *Native Title Act 1993* (Cth) (NT Act).

The registration of the Iman People #2 native title claim means that it has passed a basic procedural merit assessment to attain 'registered' status. This status is important as it allows the claimant to participate in the "right to negotiate" process under the NT Act.

Mining Lease Applications (MLA) Areas

The WJV has undertaken a native title extinguishment assessment of the MLA Areas, to determine whether native title has been extinguished on the basis of land tenure.

In relation to MLA 50230, at present there is one relatively small lot (Lot 46 on SP 127543) on the eastern boundary of the lease where it cannot be determined that native title has been extinguished on the basis of tenure. The WJV is of the view that native title has been extinguished in relation to the remaining area underlying MLA 50230 on the basis of current or historical tenure grants. The WJV intends to revise the boundaries for MLA 50230 so that Lot 46 on SP 127543 is not included within the mining lease area. Once this is done, it means that native title will, by operation of law, be deemed to be extinguished over all of MLA 50230.

In relation to the area the subject of MLAs 50229 and 50231, the WJV is of the view that native title has been extinguished over most of the area in question due to past grants of freehold or forms of leasehold which are deemed to have extinguished native title.

The area within the MLA 50229 and 50231 which appear not to be subject to an extinguishing land tenure are as follows:

MLA 50229:

- Lot 40 on CP899702
- Lot 71 on FT503.

MLA 50231:

- Lot 58 on FT1013
- Some boundary watercourses, namely portions of Wandoan Creek and Woleebee Creek, which act as property boundaries.

These combined areas make up a relatively very small part of the overall MLA Areas.

Gas supply pipeline

A preliminary native title extinguishment assessment for the gas supply pipeline area has been undertaken, to determine whether native title has been extinguished on the basis of land tenure.

On the basis of current title searches, and limited historical title searches, the WJV is of the preliminary view that native title has been extinguished in relation to the majority of the pipeline route area. The WJV is currently continuing the native title extinguishment analysis to finalise the position on extinguishment.

Native title issues will be addressed fully once the WJV has established the preferred power supply option for the Project.

8.3.3 LAND USE AND PLANNING

The Project MLA and gas pipeline areas are located within the local government boundary of the Dalby Regional Council. Prior to local government amalgamations on 15 March 2008, it was formerly under the jurisdiction of Taroom Shire local government area.

This section details the existing land use in the Project area and the former *Planning Scheme for Taroom Shire 2006* provisions relevant to land use planning in the Project area.

Existing land use

The Project is located within a predominantly rural area of Dalby Regional Council. Of significance, the Wandoan Township is located to the east of the proposed MLA areas and adjacent to the State-controlled Leichhardt Highway.

The rural areas of the Regional Council, and the areas in the vicinity of the MLA areas and gas pipeline, are predominantly used for rural pursuits, typically grazing and agriculture. In support of the rural pursuits, it is noted that there are a number of rural homesteads located on properties contained within, and surrounding, the Project, as shown in Figure 8-3-V1.3.

As discussed above, various petroleum and mining leases, together with development, exploration, appraisal and coal seam gas wells are located in the vicinity of the MLA areas and the Project gas supply pipeline. The proposed gas supply pipeline will connect into Santos' Scotia Plant located on Lot 22 on RP 847424 (associated with PL 176) and the Peat-Scotia lateral gas pipeline (refer also to Figure 8-1-V1.3).

Two significant State Forests are also located approximately 22km to the south-west of the MLA areas.

Wandoan Township is a service centre for the grazing, cropping, and timber activities in the region. The Wandoan Township is characterised by:

- urban and residential development, typically to the north of North Street
- scattered industrial development in the vicinity of Royd Street
- commercial development clustered in the vicinity of Zupp Road and Royd Street.

Figure 8-4-V1.3 depicts the rural zoning of the allotments comprising the Project area, per the Planning Scheme for Taroom Shire Planning Scheme 2006. Land uses described above generally accord with that shown in Figure 8-4-V1.3.

Both within and surrounding the township are a number of sensitive receptors, including:

- residential development (including farm homesteads)
- tourist accommodation, such as Wandoan Accommodation Park (Leichhardt Highway) and the Bushlander Motel (Henderson Road)
- Grosmont State School (Grosmont Road)
- Wandoan State School (Primary and Secondary, on North Street)
- Wandoan Hospital (Henderson Road)
- community facilities, including child care facilities (for example Wandoan Kindergarten, Waterloo Street).

Infrastructure supporting activities in the township and surrounding rural areas include:

- Jackson–Wandoan Road identified as District Road 4302 and located within the boundaries of MLA 50230 and MLA 50231
- Taroom Aerodrome located approximately 40 km north of the township
- Wandoan Airstrip (for private light aircraft) located on the northern side of Wandoan
- various stock route infrastructure (refer to Section 8.3.8)
- Wandoan wastewater treatment plant located east of Golden Street (north-east of the township)
- two groundwater bores supplying the town's water supply, located within and south of Wandoan Township.

Planning Provisions (existing and future development)

Regional Planning Framework

The Central Queensland Regional Growth Management Framework 2002 (CQRGMF) provides a 'strategic' regional approach to the planning of the Project area. The CQRGMF does not regulate explicit land use outcomes on a given allotment. Refer to Appendix 8-1-V1.4 for further detail.

Local Government Planning Framework

Prior to local government amalgamations, the Project area was under the jurisdiction of Taroom Shire Council. Until a planning scheme is adopted by the Dalby Regional Council that applies to the entire Dalby Regional Council local government area, the Planning Scheme for Taroom Shire 2006 (Planning Scheme) continues to apply to regulating land use in the former Taroom Shire Council area.

The Planning Scheme includes:

- measures to regulate development applications for individual land uses, in the form of land use (development) definitions, land use 'zones', tables of assessment, and accompanying zone Codes (which regulate aspects of use) (parts 2, 4 and 5 of the Planning Scheme)
- Desired Environmental Outcomes (DEO), to enable the strategic direction for the Planning Scheme to be established (part 3 Strategic Direction of the Planning Scheme).

- The Project area is located within the Rural Zone under the Planning Scheme.

Within the Project area, existing lawful land uses are recognised under Chapter 1, part 4 of the *Integrated Planning Act 1997* (IPA) and through their inclusion in a suitable zone in the Planning Scheme, for example the inclusion of an existing pastoral use in the Rural Zone. It is only through future assessable, self assessable or exempt development (under either the Planning Scheme or IPA) that the existing land use pattern will change.

At the local government level, strategic planning for future land uses is reliant on the Planning Scheme DEO, with support from the Planning Scheme measures, for example a Zone Code or inclusion of an allotment in an appropriate zone. Of relevance to the Project area, the following are noted with regards to the Planning Scheme DEO:

> *3.1 The Environment*
>
> *In Taroom Shire, ecological systems, the unique natural environment… and items and places of cultural and heritage significance are protected and enhanced by development.*

- Development is managed to minimise any adverse impacts on air and water quality, to prevent land degradation, loss of habitat and biodiversity and to protect riparian areas, ridgelines and escarpments.
- Protected areas…, local items and places of cultural significance (including areas along water courses) are identified to ensure their environmental, landscape values and historic significance are protected and enhanced through compatible development.

> *3.2 Economic Development*
>
> *The economy of Taroom Shire is enhanced and diversified through the sustainable use of natural resources (including land and mineral resources) and through a wide range of other economic activities that respect the hierarchy of the urban centres Taroom and Wandoan…*

- Taroom and Wandoan… [are] the principal places for administrative services, business, industry and commerce within the Shire…
- Productive rural land, rural industries and natural features (including mineral and extractive resources and… Reserves, Conservation Parks) are protected…
- The Shire's industrial areas in… Wandoan are consolidated and protected...

> *3.3 Community and Services*
>
> *Development… is consistent with community expectations and needs, and contributes to community wellbeing through the enhancement of core community elements (including the built environment, services, facilities and infrastructure).*

- The settlement pattern is logical and sequenced and the built environment contributes to the overall rural amenity and character...
- People are connected to public spaces (including recreational areas) and community services through an appropriate land use structure…, particularly within the urban centres…' (Taroom Shire Council Planning Scheme 2006, s.3.1).

> The Planning Scheme states '*each desired environmental outcome is sought to be achieved to the extent practicable having regard to each of the other desired environmental outcomes'* (Taroom Shire Council Planning Scheme 2006, s.3.1).

For the purposes of impact assessment, taking a balanced, objective view of the above DEO it can be concluded that the future strategic land use patterning in the Project area may involve:

- enhancement and diversification of the Taroom Shire – including by the protection and winning of mineral and extractive resources within the Planning Scheme's Rural Zone
- consolidation of retail, industrial and commercial activities in the Planning Scheme Commercial and Industrial zones in Wandoan township
- retention of the agricultural context to the Wandoan township, via the Planning Scheme's Rural Zone, and the maintenance of rural amenity
- protection of significant environmental and cultural features and attributes, where not otherwise protected through inclusion in the Planning Scheme Open Space and Recreation Zone.

In accordance with the 'Do Nothing Scenario', as defined in Chapter 1 of the EIS, if the Project were not constructed, the future strategic land use pattern in and surrounding the Project area is expected to replicate that which is generally:

- indicated in the DEO
- depicted in Planning Scheme Zoning Map Sheet 1 of 4 and Planning Scheme Zoning Map Sheet 3 of 4 (refer also to Figure 8-4-V1.3).

8.3.4 CONTAMINATED LAND

A description of the existing environment associated with contaminated land is provided in the technical report attached in 8-1-V1.5. In summary the results of the study indicate that a range of potentially contaminating activities has occurred, or currently occur on lands associated with the MLA areas, surrounding land areas, and the proposed gas supply pipeline corridor area. A site inspection and soil sampling program has been recommended in the technical report TR 8-1-V1.5 to confirm the potential extent of the contamination issues identified. The contaminants of concern with relation to the identified potential contaminating activities are as follows:

- agricultural – organochlorine and organophosphorus pesticides (OC/OPP), and herbicides
- operation of stock dips – organo chloride/organic phosphorus pesticides, arsenic
- petroleum storage – total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX), and lead
- burial of waste – heavy metals, TPH and BTEX
- operation of a wastewater treatment plant – heavy metals, phenols and pathogens
- operation of a water treatment plant – heavy metals.

In addition to the above, property lots affected by the MLAs and surrounding areas were searched for listings on the QLD EPA's Environmental Management Register (EMR) and

Contaminated Land Register (CLR) for notifiable activities. No properties were listed on the CLR and properties listed on the EMR are displayed in Table 8-1 below.

Table 8-1: Summary of sites listed on the EMR

Lot and plan details	Environmental Management Register	Contaminated Land Register
MLA 50230		
Lot 8 FT218	Included on register. Notifiable Activity: Livestock dip or spray race – operating a livestock dip or spray race facility.	Not included on register
Lot 60 FT218	Included on register. Notifiable Activity: Livestock dip or spray race – operating a livestock dip or spray race facility.	Not included on register
Gas Pipeline		
Lot 48 FT815	Included on register. Notifiable Activity: Livestock dip or spray race – operating a livestock dip or spray race facility.	Not included on register

8.3.5 LAND SUITABILITY AND AGRICULTURAL LANDS

Chapter 9 Geology, Mineral Resources, Overburden and Soils, Section 9.3.7 and Figure 9-10-V1.3 discuss land suitablility and agricultural lands, with further reference to the associated technical report.

Chapter 11 Water Supply and Management and the associated technical report further address geomorphology associated with watercourses.

8.3.6 STOCK ROUTES

Under the *Land Protection (Pest and Stock Route Management) Act 2000* (LP Act), the integrity of stock route networks (SRN) must be maintained by the Project.

Under chapter 3, part 3 of the LP Act, the former Taroom Shire local government has prepared the Stock Route Network Management Plan, 2005 to 2009. The Management Plan is intended to *'improve the management of the SRN so that the impacts of stock on the resources of the SRN are minimised'* (Stock Route Network Management Plan, 2005 to 2009).

Figure 8-5-V1.3 depicts the location of the following stock routes in relation to the Project MLA and gas pipeline areas, and their interrelationship with the broader SRN:

- unnamed stock route located adjacent to the Leichhardt Highway (Stock route number: M423 [inactive minor stock route])
- Jackson–Wandoan Road (Stock route number: U708 [inactive stock route])
- Bundi Road (Stock route number: U734 [inactive stock route])
- Camping and Water Reserve R.15 (Lot 58 on FT1013).

8.3.7 SENSITIVE ENVIRONMENTAL AREAS AND MNES

Sensitive environmental areas and Matters of National Environmental Significance (MNES) are discussed in Chapter 17A Terrestrial Ecology, and specifically summarised in Attachment J of the technical report in TR 17A-1-V1.5. Discussion on the existing environment associated with MNES and potential impacts are provided in Chapter 17A Terrestrial Ecology and the technical report.

8.4 DESCRIPTION OF PROPOSED DEVELOPMENT

With relation to the land use, planning provisions and contaminated land, this chapter examines how the Project MLAs and gas pipeline areas will impact upon the existing tenures, potential native title issues, planning provisions, known and potential areas of land contamination and stock routes.

8.5 POTENTIAL IMPACTS

8.5.1 TENURE

Mineral and Petroleum tenements

The MLAs have been applied for over areas which are also subject to existing authorities to prospect for petroleum (ATPs), and one petroleum lease:

- ATPs 606 (Origin Energy CSG Limited), 768 (BNG (Surat) Pty Ltd), 692 (Origin Energy CSG Limited) and 651 (Queensland Gas Company Limited) overlap with MLA 50231
- ATPs 852 (Pure Energy Resources Limited), 606 (Origin Energy CSG Limited) and 768 (BNG (Surat) Pty Ltd) overlap with MLA 50229
- ATPs 606 (Origin Energy CSG Limited), 692 (Origin Energy CSG Limited) and 810 (Arrow Energy Ltd) overlap with MLA 50230. A small part of MLA 50230 also overlaps with PL 171, in the southern section of the MLA. The holder of PL 171 is Roma Petroleum NL
- The petroleum tenements overlap with approximately 75% of the MLA areas.

There are specific provisions in the *Mineral Resources Act 1989* (MR Act), contained in Part 7AA, which deal with the grant of mining leases for coal which overlap with certain petroleum tenements.

If a coal mining lease is sought within the area of an existing ATP (and the consent of the ATP holder has not been obtained), then the parties must use reasonable attempts to consult regarding the development of the coal resource and any petroleum under any future petroleum lease. The ATP holder has the right to lodge submissions in response to the mining lease application within the timeframes prescribed under the MR Act.

If a coal mining lease is sought within the area of an existing petroleum lease, the parties must use reasonable attempts to reach a coordination arrangement regarding coal mining under the proposed mining lease and petroleum production under the petroleum lease.

The implications of overlapping petroleum tenures for the Project are:

- as MLA 50230 overlaps with PL 171, under the MR Act, the mining lease cannot be granted over the area subject to the petroleum lease unless and until a coordination

arrangement has been negotiated with Roma Petroleum NL and the Minister has approved the arrangement

- due to there being ATPs overlapping the MLAs, the WJV is required to consult with the ATP holders regarding the development of the coal resource and how it might impact on the ATP holders' planned petroleum operations.

Property tenures

The Project mining leases when granted will effectively overlay the land for the duration of the Project and will not change their property tenure. No reconfiguring of allotments or alteration to tenures of allotments comprising the Project MLA areas are proposed as part of this Project. Accordingly, no impacts from the Project on property tenures were identified.

The gas pipeline is proposed to be developed in an easement on the associated land title. As access to the pipeline may be required for maintenance purposes over the life of the mine, some restrictions may be placed on the properties affected by the easement. These restrictions include, but are not limited to:

- constraints on the subdivision of properties
- ensuring that construction on or near land affected by the easement continues to allow reasonable access to the easement.

The majority of the pipeline easement is proposed to be co-located with the eastern boundary of the Surat Basin Rail easement and property boundaries abutting local road reserves, to minimise impact on affected properties.

8.5.2 NATIVE TITLE

If it cannot be determined that native title has been extinguished over the entirety of the MLA areas and the gas supply pipeline area, then the Project has the potential to impact native title rights and interests (if they are eventually found to exist in the area, which can only be conclusively determined through the native title claim process in the Federal Court). However, if there is the potential for native title rights and interests to be impacted, the WJV will comply with the proper legal processes in relation to native title for the mining leases and the gas supply pipeline.

The WJV has requested that the State initiate the "right to negotiate" process under the NTA in respect of the mining leases. Pursuant to this process, the WJV will engage in negotiations with the Iman People #2 and the State with a view to reaching agreement pursuant to which the mining leases may be granted.

8.5.3 LAND USE AND PLANNING PROVISIONS

Mining Lease Application (MLA) Areas

The majority of the impacts associated with the Project will be those impacts that occur as a result of Project construction and operations (for example, impacts on air quality, vibration). However, the Project will result in impacts on existing land uses in the Project area, including:

- significant physical and visual impacts from the change of the use of the land from rural pursuits (or general rural landscape) to an operating mine
- moderate impacts where existing rural management practices on allotments surrounding the MLA areas change as a result of mining activities. In particular, where grazing or agricultural pursuits will be restricted from occurring up to existing cadastral boundaries (for example, from buffer/fencing restrictions associated with mine operations)
- moderate effects on the way daily activities are carried out, such as having to use new stock routes for cattle movement or altered domestic travel patterns due to closed and realigned roads.

The construction and operation of the mine will result in potential impacts on land use, mainly through a change in land use from agricultural activities to mining, and from potential environmental impacts. Further information on potential environmental impacts associated with land use can be found in the following chapters of Volume 1:

- soils (Chapter 9)
- air quality (Chapter 13)
- noise (Chapter 15)
- vibration (Chapter 16)
- visual amenity (Chapter 19)
- social (Chapter 21)
- economic impacts (Chapter 22)
- decommissioning (Chapter 25).

The above potential impacts experienced by existing land uses may also influence the development of future land uses in the Project area, if left unmitigated.

Gas supply pipeline

The construction of the proposed gas supply pipeline has the potential to impose predominantly short-term impacts on existing land uses. However, the operation and maintenance of the pipeline will have minimal impact on existing land uses, due to the placement of the proposed pipeline underground, and in an easement predominantly adjoining that of the proposed Surat Basin Rail corridor.

Potential impacts from the construction of the pipeline on existing land uses include, but are not limited to:

- the temporary interruption in use of agricultural lands for cropping and grazing activities, for example as a result of trenching and materials lay-down areas

- the effects on the way daily activities are carried out such as use of alternative stock routes for cattle movement, altered domestic travel patterns from temporarily or partially closed roads, and interruptions to private property access
- short term environmental impacts to land uses, particularly sensitive receptors, located in the vicinity of the pipeline alignment, including impacts associated with visual amenity, noise vibration, and air quality.

The construction phase of the pipeline will result in potential impacts on land use, mainly through physical disruptions to land use activities, and from potential environmental impacts. Further information on potential environmental impacts of the pipeline can be found in the following chapters of Volume 1:

- Air Quality (Chapter 13)
- Noise (Chapter 15)
- Vibration (Chapter 16)
- Visual Amenity (Chapter 19)
- Social (Chapter 21)
- Economic Impacts (Chapter 22).

Impacts will be minimal once construction works are completed, particularly given that routine scheduled maintenance is not likely to have a significant impact on land uses. Therefore, the potential impacts are generally localised to the construction phase of the pipeline.

8.5.4 CONTAMINATED LAND

Land contamination can potentially occur from construction and operation activities of the mine. Sources of waste that could contaminate land, water and air resources if not appropriately managed are described below:

Demolition of existing infrastructure

Some existing infrastructure within selected areas of the MLAs, will have to be demolished and disposed of prior to commencement of mining operations. Demolition of structures built prior to 1990 has the potential to contaminate land with asbestos containing materials (ACM). Lead base paints may also be present on the surface of some building materials.

Mining of areas historically contaminated

Mining of areas where there have been or are cattle dips or chemical storages such as fuel tanks and pesticides can disperse chemicals to other ground areas or water resources.

Mine water

Groundwater can be potentially contaminated due to runoff from overburden, coal seams and infrastructure areas to generate saline pit water. Water runoff from coal stockpiles will also be contaminated from sediments.

Waste rock (overburden) and acid generating material

As documented within Chapter 9 Geology, Mineral Resources, Overburden and Soils, overburden and interburdens material situated close to the coal seam have a higher sulphur content and have the potential to be acidic after oxidation. However, based on the overburden samples collected to date, the Acid Neutralising Capacity is anticipated to

neutralise any acid produced by overburden and interburden material. Therefore the potential impact from acid production is considered low.

Tailings generation and storage

Tailings (both fine and coarse) from the coal handling and preparation plant can potentially contaminate land and water resources as the leachate contains elevated concentrations of heavy metals, a low pH and an elevated salinity.

Vehicle washdown

Wash water generated from vehicle washdown areas will contain hydrocarbons and sediment. If wash water containing hydrocarbons and sediment is not appropriately contained it can potentially cause soil and groundwater impacts.

Chemical storage

Chemicals stored on site have the potential to contaminate land and runoff from rain events from losses of containment. Chemicals to be stored on site include:

- diesel, unleaded petrol, detergents, motor oils, lubricants, solvents, and adhesives at the Mine Industrial Area (MIA)
- sodium hydroxide, coagulant (Nalco Ultrion), sodium hypochlorite, herbicides and pesticides at the water treatment plant.

As chemicals will be stored in accordance with AS1940:2004 Storage and Handling of Flammable and Combustible Liquids, the potential for a chemical release from a storage area is considered to be low.

Maintenance activities

Maintenance facilities will be located within the MIA. Land contamination can potentially occur from:

- losses of containment of petroleum hydrocarbons, oils and lubricants
- the use of solvents for cleaning.

8.5.5 LAND SUITABILITY AND AGRICULTURAL LANDS

Potential impacts associated with land suitability and agricultural lands are discussed in Chapter 9 Geology, Mineral Resources, Overburden and Soils, Section 9.5.6 and the associated technical report.

8.5.6 STOCK ROUTE IMPACTS

The stock route infrastructure within the Project area forms part of the overall network covered by the Taroom Stock Route Network Management Plan, 2005 to 2009 and administered by Dalby Regional Council and NRW.

The closure and realignment of parts of the existing SRN will be required as part of the Project, including (in reference to Section 8.3.6):

- two stock routes on State-controlled roads
- one stock route on a local government road
- one stock route on a Reserve.

Figure 8-5-V1.3 outlines the preliminary realignment of the stock route network infrastructure.

Potential impacts due to the closure and realignment of stock routes include:

- loss of individual SRN components
- loss of grazing lands/watering points associated with the closed SRN components
- an according modification of the length and width of the overall SRN.

The WJV has initiated consultation with NRW in relation to the impacts on these stock routes and proposed realignment.

8.6 MITIGATION MEASURES

8.6.1 TENURE

Mineral and Petroleum Tenements

Given the Project's impact associated with the overlap of the proposed MLAs with existing petroleum tenements, the following actions are proposed:

- the WJV has entered into discussions with each of the ATP holders to discuss the development of the coal resource and how it might impact on the ATP holders' planned petroleum operations. These discussions may result in agreements with some or all of the ATP holders who have tenements overlapping the MLAs, but it is not mandatory under the MR Act for the WJV to have agreements in place
- the WJV will enter into negotiations with Roma Petroleum NL in order to reach a coordination arrangement.

Regarding the gas supply pipeline, the route was initially selected to avoid, where possible, existing petroleum and mineral tenements. Hence, much of the impact of the proposed gas supply pipeline on mineral and petroleum tenements has already been mitigated. During the detailed design process, the finalised pipeline alignment will be developed to accommodate tenement requirements so as to prevent or minimise potential sterilisation of a resource, in consultation with the only identified tenement holder impacted (Santos QNT Pty Ltd, tenement holder for PL 176).

Property tenures

There will be no impact by the Project on the tenure of allotments comprising the MLA areas or allotments adjoining the mining lease areas. Accordingly, no mitigation measures are required.

Regarding the gas supply pipeline, where an easement within a property is required to facilitate the pipeline construction, the WJV will:

- enter into an agreement with the land owner and tenement holder (where applicable) regarding the easement
- agree with the land owner and tenement holder (where applicable) about compensation and its form.

8.6.2 NATIVE TITLE

Where it can be determined that native title has been extinguished over particular areas, then native title will not be a relevant consideration for those areas and no mitigation measures will be required.

However, where it cannot be determined that native title has been extinguished over particular areas, and the Project therefore has the potential to impact native title rights and interests, the impacts will be mitigated through following the appropriate "future act" process under the NTA.

For areas within the MLA areas where it cannot be established that native title has been extinguished on the basis of tenure, the WJV will follow all proper processes under the NTA to address any native title issues. The WJV has asked the State to initiate the "right to negotiate" process under the NTA, which will involve consultation with the Iman People #2 and the State regarding the grant of the mining leases. As indicated in Section 8.3.2, native title is extinguished for MLA 50230.

In relation to the gas supply pipeline, further assessment will be undertaken in relation to underlying tenures to finalise the native title position. However, if it cannot be determined that native title has been extinguished on the basis of tenure for the whole pipeline area, the WJV will follow the relevant future act requirements under the NTA.

8.6.3 LAND USE AND PLANNING

There is minimal ability to mitigate the Project's land use impacts for the MLA areas. However, the WJV will adopt suitable measures to mitigate environmental impacts, identified as arising from the construction and operation of the Project. Reference should be made to other chapters in this regard.

Upon mitigation measures for land use based environmental impacts being incorporated into the Project, it is anticipated that future land uses can be generally developed in accordance with the strategic directions envisaged by the Planning Scheme (refer to Section 8.3.3 for further detail).

Details regarding the land rehabilitation measures incorporated into the Project are outlined in Chapter 25.

Regarding the gas supply pipeline, it will be located underground, and impacts on land uses are expected to be limited to the construction phase. The pipeline's impacts on land uses will be negligible during the operational phase, and generally associated with routine pipeline maintenance only.

The measures required to mitigate impacts on land uses arising from construction and operation of the pipeline include, but are not limited to:

- implementing a traffic management plan to control traffic, where work will occur adjacent to roads
- ensuring all land trenched for the pipe laying is back-filled with original excavated material and rehabilitated to allow for the use of that land to continue upon completion of construction

- managing potential environmental impacts (such as noise and air emissions), particularly where located in close proximity to sensitive receptors (refer to other chapters for details of mitigation measures for these impacts).

8.6.4 CONTAMINATED LAND

To reduce potential for land and water contamination posed by waste, a waste management plan will be used to manage potential contamination from the Project. Mitigation measures for the identified impacts are as follows:

Historical land uses

The extent of potential contamination impacts will be progressively investigated where mining activities are to be undertaken. A soil sampling program will be implemented as outlined in Appendix E of the Limited Stage 1 Environmental Site Assessment – Mining Lease Application Areas, Wandoan Queensland, as given in 8-1-V1.5. Based on the findings of the soil sampling program mitigation measures will be established including actions to be undertaken when suspected contamination is encountered during construction or operation. Where identified contaminated land is to be disturbed as a results of mining activities, the impacted soil is to be excavated, capped and managed under a Site Management Plan (SMP) The site will also require listing on the EMR via communication with the EPA.

Demolition of existing infrastructure

Prior to the commencement of construction activities, a hazardous materials survey will be undertaken of all relevant infrastructure to be demolished. This assessment will identify the presence of such materials and act as a basis to establish a hazardous materials management plan.

Mine water

Mine water management will be managed using the proposed water management system described in detail in Chapter 11 Water Supply and Management.

Acid generating material

To prevent land contamination from potentially acid forming overburden, such materials will be selectively placed and covered with acid neutralising overburden as discussed in more detail in Chapter 9 Geology Mineral Resources, Overburden and Soils.

Tailings generation and storage

Tailings from the coal handling and preparation plant (CHPP) will be managed using tailings storage dams or in-pit storage. Water will be decanted from these facilities and returned to the CHPP for reuse through the mine water management system. The process will be managed in accordance with mine water management plan. Further details are provided within Chapter 6 Project Operations.

Vehicle washdown

To prevent land contamination from wash water, washdown facilities will be constructed in accordance with AS 1940:2004 Storage and Handling of Flammable and Combustible Liquids. The facility will be designed to collect sediment and hydrocarbon materials. The hydrocarbon effluent will be stored in drums and collected by a licensed waste collector.

Fuel and other chemical storage

All fuel and chemicals storage areas will be designed to meet AS 1940:2004 Storage and Handling of Flammable and Combustible Liquids. If rain water is contained within these bunds, the water will be analysed and a determination made as to how to manage the collected water.

To reduce the potential impact in the event of a fuel or chemical release, emergency spill response equipment will be stored in appropriate areas. Location of the spill response equipment will be selected based on a risk assessment. Operators will be appropriately trained to operate these facilities.

Maintenance activities

The facilities containing maintenance activities will be also designed to meet AS 1940:2004 Storage and Handling of Flammable and Combustible Liquids. Spill kits will also be provided to manage small losses of containment.

8.6.5 LAND SUITABILITY AND AGRICULTURAL LANDS

Mitigation measures associated with land suitability and agricultural lands are discussed in Chapter 9 Geology, Mineral Resources, Overburden and Soils, Section 9.6 and the associated technical report.

8.6.6 STOCK ROUTES

The closure and realignment of parts of the existing SRN will be required as part of the Project.

Discussions will occur with Dalby Regional Council, DNRW and Department of Main Roads (for SRN components that will impact on a State-controlled road) to finalise the closure and realignment of the SRN components and thus the composition of the SRN local to the Project area. Figure 8-5-V1.3 will form the basis for future discussions with these agencies.

The WJV will assist the above entities where required, to facilitate the amendment of the Taroom Stock Route Network Management Plan, 2005 to 2009 (or other such plan prepared by Dalby Regional Council) under section 114 of *the Land Protection (Pest and Stock Route Management) Act 2000.*

The WJV will also ensure that the closure and realignment of stock route components for the Project will have no significant net loss on the overall operational integrity of the SRN local to the Project area.

8.6.7 SENSITIVE ENVIRONMENTAL AREAS AND MNES

Sensitive environmental areas and Matters of National Environmental Significance (MNES) are discussed in Chapter 17A Terrestrial Ecology, and specifically summarised in Attachment J of the technical report in TR 17A-1-V1.5. Discussion on the mitigation measures that will include areas associated with MNES is provided in Chapter 17A Terrestrial Ecology, Section 17A.5, and the technical report.

8.7 RESIDUAL IMPACTS

As indicated in Section 8.6.3, there is limited ability to mitigate the Project's direct land use impact, that is, a change of use from rural uses to a mine use. Therefore, the residual impact of the Project on land use will remain significant.

The extent of any pre-existing agricultural contamination will be investigated progressively where mining activities are to be undertaken.

8.8 REFERENCES

Department of Local Government and Planning (2002) Central Queensland Regional Growth Management Framework.

Department of Mines and Energy (2008) Interactive resource and tenure maps, viewed 16 September 2008, <http://www.dme.qld.gov.au/mines/tenure_maps.cfm>

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Taroom Shire Council (2006) Planning Scheme for Taroom Shire 2006.

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