24 HEALTH AND SAFETY

24.1 INTRODUCTION

This chapter examines the health and safety implications for the construction, operational and decommissioning phases of the proposed western coal seam methane (CSM) water supply pipeline (the proposed pipeline) which forms part of the Wandoan Coal Project (the Project). The process for identifying the health and safety risks associated with the pipeline is also described. The necessary controls to minimise risks to the health and safety of Project personnel and to the public have been established for the key health and safety hazards identified.

24.2 METHODOLOGY OF ASSESSMENT

24.2.1 METHODOLOGY

The potentially affected populations (including the workforce, contractors and the community) have been identified as part of the environmental assessment process.

The elements of the proposed development have been examined to identify those that potentially have health and safety implications for the construction and operational workforce, as well as the community. Other studies included in this environmental impact study (EIS) have also been considered in order to identify aspects of the proposed pipeline that may also pose a risk to health and safety. Consultation with the community (refer Chapter 4) and local and regional health service providers and agencies has also been undertaken to identify relevant issues.

More detail on specific issues can also be found in the following chapters of this EIS:

- Chapter 13 Air Quality
- Chapter 15 Noise
- Chapter 16 Vibration
- Chapter 21 Social
- Chapter 23 Hazard and Risk.

Because occupational health and safety issues affecting a workforce are generally well understood and well managed under the workplace health and safety legislation and codes of practice applicable to the construction industry, this assessment does not generally discuss in detail the occupational health and safety issues except where they might differ significantly from normal industry risks or require specific management strategies for effective control.

Health issues are generally taken to refer to longer term or chronic health issues, whereas safety issues are taken to refer to more acute issues relating to single incidents. However, there is considerable crossover between these categories.

24.2.2 LEGISLATION

The principal legislative requirements that will apply to the Project that are relevant to health and safety are workplace health and safety legislation and dangerous goods legislation which ensures that dangerous goods are handled, stored and used safely.

The relevant legislation and corresponding requirements are listed below:

- *Workplace Health and Safety Act 1995*
- *Explosives Act 1999*
- *Dangerous Goods Safety Management Act 2001.*

Relevant guidelines under these acts have also been considered.

The health and safety of workers building the proposed pipeline will be regulated under the Workplace Health and Safety Act (WHSA).

The *Explosives Act 1999* and associated regulations establish the requirements for handling, storage, transport and manufacture of explosives. The Australian Standard AS2187: Explosives — Storage, Transport and Use is called up by the Explosives Regulation 2003. Explosives may be needed in a limited number of instances if the proposed pipeline has to be laid through areas with a significant amount of surface rock.

The *Dangerous Goods Safety Management Act 2001* (DGSMA) is relevant to construction of the proposed pipeline outside the mining lease application (MLA) areas, because this is not considered to be a site activity under section 10(2) of the *Coal Mining Safety and Health Act 1999* (CMSHA), which regulates health and safety for the mining operation.

The process to achieve compliance with the above legislation is outlined in the following sections.

24.2.3 WANDOAN JOINT VENTURE HEALTH AND SAFETY POLICY

The Wandoan Joint Venture (WJV) has a Sustainable Development (SD) Management System to ensure the health and safety of Project personnel, contractors and site visitors. A copy of the Policy under which the SD Management System has been developed is shown in Appendix 1-1-V1.4. Note that figures with numbering ending in V1.4 refer to appendices contained in Volume 1, Book 4 of the EIS.

24.3 EXISTING ENVIRONMENT

The existing environment in the vicinity of the proposed pipeline corridor is characterised by predominantly rural activities, with small communities and scattered rural residences present. Residents are served by small-scale health facilities. A detailed demographic profile of the local population comprising those sections of the population including children and the elderly that are especially sensitive to environmental health factors, is presented and discussed in Chapter 21 Social.

There is a single general practitioner who works in Wandoan two days per week and also provides public outpatients services at the Wandoan Outpatients Clinic on those days. The clinic also provides a range of community health services. Other more extensive health services are located in Miles (64 km away to the south) and Taroom (56 km away to the north). Toowoomba and Rockhampton provide full hospital facilities.

There is an ambulance station located in Wandoan and staffed by a single officer. There are also ambulance stations located at Taroom (staffed by two offices) and at Miles (staffed by four officers).

There is no expectation that the construction of the proposed pipeline will add significantly to the existing health service load in the region. Provisions made as part of the overall Project will ensure that services are adequate to address the needs of construction activities without affecting the local community.

The risks associated with the need for long-distance travel between the scattered residences and communities in rural areas are expected to be a significant feature of the existing health and safety environment in the region.

24.4 DESCRIPTION OF PROPOSED DEVELOPMENT

Relevant aspects of the proposed pipeline construction and operation that could impact on the health and safety of the workforce or on the general community if not appropriately managed include:

24.4.1 CONSTRUCTION PHASE:

- transport of personnel, equipment and materials to and from construction sites
- clearing vegetation and stripping topsoil
- transport, storage and use of dangerous goods on-site
- construction of the pipeline
- transport of waste off-site
- equipment maintenance.

24.4.2 OPERATIONAL PHASE:

- pipeline inspection and maintenance activities.

24.4.3 DECOMMISSIONING PHASE:

Once Project mining operations have exhausted the targeted coal reserve, the mine and associated infrastructure, including the proposed pipeline, will be decommissioned. During this phase, the pipeline will be drained and sealed off at each end.

Decommissioning will include the following options:

- abandonment – where the pipeline is physically disconnected from the point of supply, and sealed (capped) at both ends
- removal – where the pipeline is removed in entirety from the pipeline easement
- beneficial re-use – where sale or donation of the infrastructure to a third party occurs for other beneficial use.

Industry best practice recognises that removing pipelines, particularly underground pipelines, is unlikely to be a commercially or environmentally viable option. Therefore, it is unlikely that this decommissioning option will be considered for this pipeline and that either abandonment (after capping) or beneficial re-use options will be undertaken.

All above ground structures and pumps will be removed.

24.5 POTENTIAL IMPACTS

The focus of this section is on the implications of the construction and operation of the proposed pipeline for health and safety workforce and community values. This section provides details on occupational health and safety issues for the workforce where:

- the risks faces by the proposed pipeline workforce differ significantly from normal industry risks
- the proposed pipeline workforce requires specific management strategies for effective control
- there might be implications for public health systems.

24.5.1 CONSTRUCTION PHASE

Employees and contractors

No activities are envisaged during the construction phase that would be likely to have any unusual impact on the health and safety of the construction workforce and that are not adequately handled by the applicable legislation and codes of practice and by the WJV health and safety systems. The proposed pipeline workforce will potentially be exposed to typical construction project health and safety risks including exposure to noise, dust, heat, and physical injury.

The hazard and risk assessment (refer Chapter 23 Hazard and Risk) noted that travel related accidents and injuries, accidents involving traffic where the proposed pipeline corridor crossed roads or followed road reserves, and the risk of snake bite, are likely to be significant issues requiring management during construction. The risk of trenches collapsing and engulfing construction workers was also identified.

Community

During the construction phase, some members of the community in the immediate vicinity of the Project area will potentially be exposed to increased levels of:

- dust
- noise and vibration
- traffic on local roads, including heavy vehicles.

In general, however, and except for the transport of equipment and goods on public roads, and the short distances where the proposed pipeline corridor passes through towns or close to residences, most activities will be relatively remote from sensitive receptors. Exposure to dust and noise will therefore be limited by significant separation distances, and will only continue for a short period in any one area.

During the construction phase, dust will be generated mainly from traffic and civil works. Dust has a very small potential to affect the health of individuals susceptible to respiratory conditions.

Some noise and vibration will be generated during the construction phase by vehicle traffic on public roads and earthworks. This may be greater if blasting is required for trenching in areas where there is surface rock. A complete assessment of potential impacts is included in Chapter 15 Noise in relation to noise, and Chapter 16 Vibration with respect to vibration. These types of impacts are not likely to generate any direct health effects, but might

potentially cause impacts such as general loss of amenity. Work will not generally occur outside the hours of 6:30 am to 6:30 pm.

Increased traffic and changes in traffic conditions where the proposed pipeline corridor crosses or follows road reserves has the potential to increase the risk of traffic accidents on public roads. The local community will be kept informed of the likely changes in traffic during the course of the construction program through means such as newsletters and advertisement in local papers (refer Chapter 4 Community Consultation).

Overall, residual health impacts are expected to be very low for most members of the public as a result of the construction phase, but there is the potential for short term effects for some people using public roads, or living close to the proposed pipeline corridor.

Details of potential impacts from Project construction activities to the health and safety values of the community and other stakeholders are described fully in the following chapters:

- Chapter 13 Air Quality
- Chapter 15 Noise
- Chapter 16 Vibration
- Chapter 21 Social.

24.5.2 OPERATIONS

Employees and contractors

Inspection and maintenance activities during the operations phase of the proposed pipeline may pose a risk to the safety of personnel.

The only credible sources of significant health and safety impacts that may result during operation are likely to be:

- working in inspection pits — snake and insect bites and potential for drowning and asphyxiation.

Community

No impacts on community health and safety are envisaged during the operational phase of the proposed pipeline.

24.5.3 DECOMMISSIONING

No significant credible health and safety risks can be envisaged for the decommissioned proposed pipeline.

24.6 MITIGATION MEASURES

24.6.1 WJV HEALTH AND SAFETY POLICY

The WJV's objective is to eliminate work related injuries and occupational diseases from their operations and to be recognised as a leader in occupational health and safety management. The WJV is committed to providing and maintaining a healthy and safe environment for employees and contractors at its operations through appropriate leadership and systems, and continually improving its occupational health and safety

performance. As part of its Health and Safety Policy, the WJV requires that health and safety are primary considerations in all its operations.

24.6.2 WJV SAFETY AND HEALTH MANAGEMENT SYSTEM

The WJV Health and Safety Policy commits to meeting the requirements of the WHSA by committing the company to:

- implementing and maintaining Occupational Health and Safety Management Systems
- complying with relevant legal and other health and safety requirements as a minimum
- complying with company policies and standards
- managing occupational health and safety through a continual process of identification, assessment and management of risks
- promoting the involvement of employees and contractors in developing systems and improvements
- defining and setting occupational health and safety performance targets and measure our performance against industry peers
- conducting regular internal and external audits to continually improve systems and performance
- communicating company policies and achievements to employees, contractors, visitors and the wider community.

24.6.3 HEALTH CONTROLS

The following health controls will be implemented for the construction, operation and decommissioning phases of the Project.

Dust

Dust generation will be minimised for project personnel and the public by:

- the progressive rehabilitation of disturbed areas once pipelaying is complete
- the watering of disturbed areas, roads and stockpiles that have the potential to impact sensitive receptors during construction during windy conditions
- providing employees with personal protective equipment (PPE) to limit dust inhalation.

It is not expected that dust levels will be an issue as indicated in Chapter 13 Air Quality.

Heat

The effects of heat will be managed by providing suitable working environments, equipment and protective clothing, making workers aware of the signs and symptoms of heat effects including dehydration, and ensuring that adequate hydration levels are maintained.

Noise and vibration

Noise and vibration levels will be monitored as indicated in Chapter 15 and Chapter 16 Vibration, Work will not generally occur outside the hours of 6:30 am to 6:30 pm.

Exposure of workers to noise and vibration will be limited by the use of equipment complying with relevant emission standards, and if necessary by the use of suitable PPE where high noise levels can not be prevented.

Dangerous goods and waste

Dangerous goods will be stored in accordance with relevant standards, but only relatively small inventories of materials other than diesel will be held. Details are provided in Chapter 23 Hazard and Risk. Material Safety Data Sheets for all dangerous goods used or stored on the site will be maintained in a register accessible to all personnel. Appropriate controls will be established during the preparation of the operations risk register and implemented for the safe use of each item in the inventory.

Waste from portable toilets will be pumped out as required by a licenced waste contractor. Overall, waste streams are expected to be minor and there is unlikely to be any health effects.

Pests and disease

The construction and operation of the proposed pipeline is not expected to result in any change in the number of pest species present, or in any change in the populations of any existing pest species that might impact on the health of Project personnel or the public.

Snakes

Employees will be made aware of the risk of snakes, and will be provided with appropriate training and first aid equipment with which to deal with snake bite.

24.6.4 SAFETY CONTROLS

Traffic and journey accidents

The conditions of employment for all WJV personnel will include a requirement limiting the distances travelled to and from work sites to minimise the risk of journey accidents caused by fatigue as well as ensuring that employees are fit for work. Induction and ongoing awareness training sessions will include the risk of traffic accidents and the need to drive with care at all times. Contractual arrangements, monitoring, and awareness training will be used to ensure compliance with this requirement.

Local residents will be kept aware of any changes expected in traffic during the construction period. WJV will liaise with the Queensland Police Service to ensure that the driving habits of the workforce do not unduly increase the risk to the rest of the community. An assessment of the risks to the community and mitigation measures recommended is contained in Chapter 12 Transportation.

Moving equipment and vehicles

Plant and equipment used during construction pose a risk to personnel that might resulting in injury through collision, crushing, trapping and other forms of physical contact or uncontrolled release of energy.

These risks can be kept to acceptable levels by putting key controls in place. Procedures and rules for use of equipment and safe driving on site, including speed limits, together with standard vehicle safety fittings such as flags, and reversing beepers will assist in reducing the likelihood of collision. Site induction and driver training programs will ensure vehicles are driven in a safe manner and that site driving rules are understood. Vehicle inspection checks will also be undertaken as part of the Project's regular maintenance program.

Fuel Storage and handling

Diesel fuel will be stored and transported in accordance with AS 1940-2004: The Storage and Handling of Flammable and Combustible Liquids. The risk of fire is very small, and it is unlikely that any other significant health effects would arise.

Confined spaces

Working in confined spaces has the potential to cause injury or death through the presence of toxic materials, a lack of oxygen, movement of equipment or material, or a release of energy. In the case of the proposed pipeline, this is most likely to be the result of unexpected flooding due to a failure or incorrect operation, or possibly entrapment in a tight spot or by falling items. Confined space procedures will be followed by anyone entering a confined space. These procedures will be enforced under the WJV Occupational Health and Management System, and will be supported by appropriate training. This will be adequate to keep the risk to personnel entering confined spaces within acceptable limits.

Unstable structures such as trenches and stockpiles have the potential to collapse and entrap or engulf personnel. Specific risks may be covered under confined space safety management procedures, but will otherwise be covered by relevant requirements and guidelines under WHSA detailing the risks and safety measures that must be taken when working in these areas.

Inspection pits and valve pits may comprise confined spaces during operation, and entry to these must be controlled in accordance with relevant regulations and confined space procedures.

24.6.5 DECOMMISSIONING AND REHABILITATION

No residual health and safety risks are envisaged for the decommissioned proposed pipeline.

24.7 RESIDUAL IMPACTS

Potential health and safety of the Project workforce and the community are expected to be adequately managed following the application of the specific management and mitigation strategies identified in this chapter, including full implementation of the WJV Occupational Health and Management System.

Residual impacts on the health and safety of the public are expected to be very small and well within acceptable limits as a result of the management and mitigation strategies proposed.

24.8 REFERENCES

AS 1940-2004: The storage and handling of flammable and combustible liquids.

AS 2187.2-1998: Explosives – Storage Transport and Use.