25 REHABILITATION AND DECOMMISSIONING

25.1 INTRODUCTION

The proposed southern coal seam methane (CSM) water supply pipeline (the proposed pipeline) will involve land disturbance activities and installation of water supply infrastructure across a number of different land tenures.

At the end of mine life and closure of the Wandoan Coal Project (the Project), the pipeline will become surplus infrastructure and will be decommissioned. Decommissioning options for the pipeline are discussed in Section 25.2.2.

25.2 REHABILITATION AND DECOMMISSIONING STRATEGIES

Impacts to environmental values associated with the proposed pipeline will generally be localised, temporary and predominantly associated with construction of the pipeline. The pipeline will be constructed underground for the majority of its length and therefore, operation of the pipeline will not typically result in any additional landform instability or impacts beyond those associated with construction.

25.2.1 REHABILITATION STRATEGIES

Objectives

The objectives for rehabilitation of construction works areas for the pipeline are:

- to ensure that the post construction landform is stable
- to encourage establishment of permanent and stable vegetation cover in areas disturbed during the construction of the pipeline
- to ensure that the post construction landform is stable with low rates of soil erosion
- to ensure that water quality downstream of the construction work area is maintained and not adversely affected as a result of the construction works.

In order to achieve the above mentioned rehabilitation objectives, a detailed pipeline rehabilitation plan comprising rehabilitation strategies, actions and program will be developed prior to the construction phase. This plan will respond to site specific environmental values such as vegetation and soil types and will be based on the following broad (phase specific) rehabilitation strategies. Monitoring programs and maintenance activities will also be included in the rehabilitation plan.

Pre-construction phase: planning and design

- land surface will be managed to meet their original landform
- access and construction tracks will be designed with a cross fall and will incorporate adequate drainage and surface water control strategies/devices to prevent erosion

- wherever possible, the size of construction works areas in steep terrain will be minimised to avoid excessive earthworks and land disturbance and limit the potential for slope instability
- staged vegetation clearing and development will be undertaken to minimise the area of land which is subject to disturbance activities at any one time
- where practicable through detailed design, existing vegetation within the proposed pipeline easement will be retained
- appropriate locations and size of areas required for stockpiling construction material will be pre-determined at the planning and design phase
- where possible, materials stockpiles and laydown areas will be located within areas which have already been disturbed and are clear of vegetation
- construction works personnel will be provided with training regarding minimising land disturbance and the need for erosion and sediment control.

Construction phase: progressive rehabilitation

- rehabilitation works will be conducted on a progressive basis
- progressive re-vegetation of disturbed areas or stockpiles will be undertaken as soon as practicable
- all disturbed areas will be sown with an appropriate mix of revegetation species (i.e. pasture seed on farm lands through which the pipeline passes, native seed in road reserve areas, tube stock in creek and drainage line crossings). Species utilised in revegetation will be suited for particular landforms and soil types, where practicable
- deep ripping will be undertaken in areas which have been subject to extensive compaction (e.g. trench edges, access tracks, stockpile and layover areas). These areas will be ripped and rehabilitated on a progressive basis when they are no longer required for construction works
- drainage, sediment and erosion controls structures will be implemented as soon as possible, following the removal of vegetation and initial land disturbance. These controls/structures will be implemented and maintained as required to control surface runoff from all disturbed areas
- vegetation removed for construction works will be mulched where practicable and stockpiled and subsequently utilised in rehabilitation activities for disturbed areas. Mulch provides ground surface cover which aids in reducing erosion potential and will also incorporate a seed bank of native vegetation assisting in passive revegetation
- topsoils and subsoils which are excavated from the trench as a result of construction activities will be stored in separate stockpiles adjacent to the work area. Surface water runoff will be directed around stockpile areas using diversion bunds and catch drains as appropriate
- excavated topsoils and subsoils will be replaced in the trench according to the order in which they were removed (i.e. subsoils first followed by a cover of topsoil)
- materials stockpiles (topsoil, gravel, spoil etc) will be low mounds, no greater than 3m in height

- runoff control structures such as contour banks, diversion banks and grassed waterways) will be implemented to control erosion in disturbed areas where the ground is left bare before rehabilitation
- local landform features, such as gullies and drainage lines, will be reinstated as part of rehabilitation works. Specific detail regarding rehabilitation of these areas will be included in the rehabilitation plan.

Operational phase — monitoring and maintenance

- monitoring programs (to be detailed in the rehabilitation plan) will be implemented to ensure that landforms are stable and vegetation cover is establishing in disturbed areas
- erosion and sediment control devices/structures will be established and maintained as required to minimise sediment runoff from disturbed areas
- where monitoring programs indicate that rehabilitation is failing, rehabilitation maintenance works (to be detailed in the rehabilitation plan) will be implemented in a timely manner. Monitoring of the rehabilitation maintenance works will then be conducted to ensure that maintenance works are successful
- once rehabilitation is deemed to be successful, the pipeline easement will be subject to regular vegetation inspection and maintenance activities. For ease of access to the pipeline in case of emergency repair, the easement will be maintained with vegetation at ground and shrub layers only. Large trees will not be allowed to establish in the pipeline easement
- weed management will be undertaken as specified in Chapter 17A Terrestrial Ecology and will form part of the maintenance program.

25.2.2 CONCEPTUAL DECOMMISSIONING STRATEGIES

Generally, when considering decommissioning of a pipeline, both the environmental and commercial costs associated with different decommissioning strategies are required to be assessed. For the purposes of this assessment, decommissioning is considered to be the time when the proposed pipeline is no longer operated for the purpose of water supply to the Project. Decommissioning is considered to include the following:

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

Leading industry practice recognises that removing pipelines, particularly underground pipelines is unlikely to be a commercially or an environmentally viable option. Therefore, it is unlikely that removal will be considered for this pipeline; it will probably be either abandoned (after capping) or sold/dinated for beneficial re-use. The three options are discussed in more detail below.

Abandonment

If the proposed pipeline were to be abandoned, it would be physically disconnected from the point of supply, drained, and sealed (capped) at both ends. The proposed pipeline would not be pressurised, would not be subject to any maintenance program and would be left to corrode and biodegrade in-situ. All above ground structures associated with the proposed pipeline such as markers, signage, pump stations and housing would be removed. Additionally, maintenance within the pipeline easement would be discontinued and the easement relinquished.

The proposed pipeline will be constructed below ground at a sufficient depth so as not disrupt land use activities such as agriculture and horticulture. Therefore, abandonment of the pipeline in-situ is unlikely to impact on future land use activities. If this option selected, then over a long period of time minor subsidence could occur along the pipeline corridor leading to small potential erosion sites. Generally, abandonment of buried pipelines in situ is environmentally preferable to the disturbance associated with the removal of pipelines, which involves excavation and the removal of established vegetation.

Removal

If the proposed pipeline were to be removed, it would be physically disconnected from the point of supply and drained. The proposed pipeline would be excavated and the disturbed land rehabilitated. All above ground structures associated with the pipeline such as markers, signage, pump stations and housing would be removed. Additionally, the pipeline easement would be relinquished.

Beneficial re-use

Preliminary pipeline design has assumed that the pipeline will have a pipeline life of 30 years to coincide with the proposed life of the Project. However, following closure of the Project, the pipeline may still be in sufficiently good condition to be re-used in situ for other beneficial a uses.

The condition of the proposed pipeline infrastructure would need to be tested to ensure that it would be suitable for the proposed re-use. The WJV may contemplate lease, sale or donation of the pipeline infrastructure to a third party interested in re-using the infrastructure. If this decommissioning option were actioned, easement relinquishment would not be undertaken.

25.3 REFERENCES

Australian Pipeline Industry Association Ltd, 2005. Code of Practice – Onshore Pipelines. Australian Pipeline Industry Association Ltd, Kingston, Australian Capital Territory.