1 INTRODUCTION

This assessment addresses the potential environmental impacts of the proposed western coal seam methane (CSM) water supply pipeline (the proposed pipeline), which is one of three water supply options being considered for the supply of raw water to the Wandoan Coal Project (the Project). This assessment forms Volume 3 of the Environmental Impact Statement (EIS) that has been produced for the Project.

1.1 WANDOAN COAL PROJECT

The Project comprises the following major components:

- establishment of open cut mining of thermal coal and ancillary mine infrastructure
- one of three options for the development of a raw water supply pipeline to meet Project operational raw water requirements, being:
  - southern coal seam methane (CSM) water supply pipeline and associated infrastructure (Volume 2 of the EIS)
  - western CSM water supply pipeline and associated infrastructure (Volume 3 of the EIS)
  - Glebe Weir raising and associated pipeline infrastructure (Glebe Option) (Volume 4 of the EIS).

The Project is situated west of the Wandoan township within Dalby Regional Council.

The Project will include on-site coal handling and processing, which will require a constant and reliable water supply. It is anticipated that water requirements at the Project will be typically less than 8,400 ML/a for the first 15 years, peaking at up to 9,100 ML/a for processing of 30 Mt/a run of mine (ROM) coal in Year 15. However, to allow for any expansion of the Project at some future time, the capacity of the pipeline has been sized to allow for raw water demand to increase to 11,400 ML/a.

1.2 PROPONENT PROFILE

The Proponent for the Project (including the proposed pipeline) is the Wandoan Joint Venture (WJV).

For further information on the WJV, refer to Chapter 1 Introduction of Volume 1 of the EIS.

1.3 THE PROPOSED CSM WATER SUPPLY PIPELINE

A potential water resource to meet the operational requirements of the Project has been identified from CSM extraction wells located around Santos's Fairview and Origin Energy's Spring Gully CSM extraction fields, approximately 100 km to the west of the mining lease application (MLA) areas.

Coal seam methane (CSM) development involves extraction of methane from coal seams by reducing groundwater pressure that keeps the methane adsorbed to the coal. Water is the primary by-product of coal seam methane extraction and this water is often rich in salts and other constituents that render it unsuitable for many direct beneficial uses, and some treatment may be required.

However, in order to beneficially re-use CSM by-product water and secure a water supply for the Project, the WJV has assessed the option of constructing the western water supply pipeline to transport the water from Origin Energy's Reverse Osmosis (RO) Plant at Spring Gully to the raw water storage dam on the MLA areas.

A study area between the MLA areas and the RO Plant was identified and preliminary pipeline routes investigated, with the preferred pipeline route used as the basis for this assessment (See Figure 1-1-V3.3). Note that figures/documents with numbering ending in V3.3, for example, refer to figures/documents contained in Volume 3, Book 3 of the EIS. Opportunities for co-location of the proposed pipeline were identified, with co-location immediately adjacent to road reserves examined where possible. Route assessments were conducted using a 50 m wide corridor. Chapter 2 Project Need and Alternatives provides further discussion on pipeline route selection.

The proposed pipeline will be approximately 91 km long from raw water collection point adjacent to the existing Reverse Osmosis (RO) Plant to the raw water storage dam on the MLA areas. The proposed pipeline will be buried, with a single pump station located at a point of supply nominated by the CSM water provider, likely to be adjacent to the Spring Gully RO Plant, operating for around 20 hours per day.

The majority of the pipeline will be constructed using a section trench and backfill method over a period of approximately nine months. Where feasible, horizontal directional drilling will be used to bury the pipeline under watercourses.

The proposed maximum width of the construction corridor will be up to 20 m along the entire route to allow construction activities to be carried out in a safe and effective manner. Rehabilitation activities will be undertaken along the corridor at the completion of construction works, leaving a 10 m wide easement access adjacent to the pipeline to provide sufficient room for use by security and maintenance vehicles.

An assessment of the potential effect of the proposed western CSM water supply pipeline on the surrounding environment, and proposed mitigation measures, are included within Volume 3 of the EIS prepared for the Project.

1.4 POLICIES OF THE WJV

A summary of Xstrata's policies on sustainable development, environment, community, health and safety, and other relevant policies is provided in Chapter 1 Introduction of Volume 1. Appendix 1-1-V1.4 contains a copy of Xstrata's Sustainable Development Policy which includes each of the outlined policies.

1.5 ENVIRONMENTAL IMPACT ASSESSMENT PURPOSE, PROCESSES AND METHODOLOGY

1.5.1 PURPOSE

The purpose of an EIS is to report the findings of an environmental impact assessment to all interested stakeholders, community groups and relevant decision makers. The EIS includes available information regarding potential significance of environmental effects of the proposed development.

The EIS forms part of application submission for an environmental authority (EA) as described under the *Environmental Protection Act 1994* and any relevant planning applications as described under the *Integrated Planning Act 1997.*

The EIS aims to describe the management, monitoring, planning and strategies to minimise adverse impacts and manage beneficial impacts through production of a draft Environmental Management Plan (EM Plan), as described in Chapter 27.

For further information on the aims and objectives of the EIS, refer to Chapter 1 Introduction of Volume 1.

1.5.2 APPROVALS PROCESS

The Project was declared a significant project for which an EIS is required by the Coordinator-General under Section 26(1)(a) of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 21 December 2007. The Project EIS process will be managed by the Department of Infrastructure and Planning on behalf of the Coordinator-General.

Further information on the EIS approvals process, including the process steps, timing and decisions for relevant stages under the SDPWO Act, are described in Chapter 1 Introduction of Volume 1. Chapter 3 of this volume provides further likely approvals for the pipeline.

The contents of the assessment in Volume 3 take into account the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), and terms of reference issued by the Coordinator-General under the SDPWO Act. The western CSM water supply pipeline was referred to the Australian Government Minister for the Environment, Water, Heritage and the Arts under the EPBC Act in June 2008. On 21 July 2008, the Federal Minister for the Environment determined that the proposed pipeline was a controlled action under the EPBC Act, with controlling provisions applying under Sections 18 and 18A Listed threatened species and communities.

The western CSM water supply pipeline environmental impact assessment has therefore been prepared in accordance with the requirements of the EPBC Act and the Bilateral Agreement between the Australian and Queensland governments as a volume of the overall Project EIS. Attachment J of the Terrestrial Ecology Technical Report in TR 17A-1-V3.5 provides a summary regarding Matters of National Environmental Significance.

1.5.3 SCOPE OF THE EIS

The scope of the EIS is to examine the potential significance of direct and indirect environmental, social and economic impacts, given the mitigation measures associated with the Project, including the proposed western CSM water supply pipeline. The Terms of Reference (ToR) for the Project, as attached in Appendix 1-1-V3.4, define the scope of each element to be addressed in the EIS. Appendix 1-2-V3.4 includes a check-list cross-referencing where each element of the Terms of Reference is addressed in the EIS.

1.5.4 STRUCTURE OF THE EIS

Given the scale of the Project, and requirements of the EPBC Act, the EIS associated with the Project has been divided into four inter-related environmental impact assessments. This Volume provides an impact assessment of the proposed western CSM water supply pipeline.

For further information on the overall structure of the EIS, refer to Chapter 1 Introduction of Volume 1.

1.5.5 GENERAL EIS METHODOLOGY

The EIS methodology is a systematic analysis of the proposed development in relation to the existing environment. The overall methodology of EIS preparation is:

- basis of assessment
- impact assessment and mitigation
- significance of environmental issues.

Basis of assessment

The impact assessment examined the existing environmental issues of the proposed pipeline alignment for each element of assessment and then determined the potential impacts associated with the proposal during the construction and operational phases.

Impact assessment and mitigation

The preparation of the EIS was an iterative process, linking into the pipeline alignment, scheduling and design development processes.

A broad initial description of the pipeline was prepared and desktop surveys of the existing environment undertaken. An assessment of potential pipeline route options in the study area was undertaken based on a selection of identified regulatory, planning, environmental, social and economic criteria in order to identify the preferred pipeline route (refer to Chapter 2 Needs and Alternatives). Based on the preferred pipeline route, with refinement for a pipeline alignment, the potential impacts of the pipeline on the receiving environment were identified with mitigation measures established where necessary.

Significance of environmental issues

In assessing the significance of potential issues or effects, the probability, duration, magnitude and intensity of the impacts were considered in relation to the existing environmental conditions and significance. Detailed methodologies utilised for the assessment of each environmental element are included in the relevant technical reports and chapters.

Where no impact or a positive impact was predicted, the pipeline design remained unchanged. In the case where significant adverse impacts were predicted, mitigation measures were proposed to avoid or minimise impacts. Where feasible, these measures were incorporated into the pipeline design.

For further information on the methodology of the EIS, refer to Chapter 1 Introduction of Volume 1.

1.5.6 SUBMISSIONS

Anyone may make a submission to the Coordinator-General regarding the EIS. All responses will be given consideration by the Coordinator-General prior to preparing an evaluation of the EIS.

For further information on the submissions process, refer to Chapter 1 Introduction of Volume 1.