



# 4

---

## Scoping of Environmental Assessment Report

# CONTENTS

<b>4</b>	<b>Scoping of Environmental Assessment Report</b>	<b>4-1</b>
4.1	Introduction	4-1
4.2	Consultation Process	4-1
4.3	Environmental Scoping Assessment	4-1

## Tables

Table 4-1	Environmental Scoping Assessment
-----------	----------------------------------

# 4 SCOPING OF ENVIRONMENTAL ASSESSMENT REPORT

## 4.1 INTRODUCTION

This section describes the process that has been followed to determine the scope of the Environmental Assessment Report (EAR) for the Isaac Plains East Project (the project). The process included consultation with the Department of Environment and Heritage Protection (EHP) and the Isaac Regional Council (IRC), as well as a review of potential environmental impacts and risks. The objective of the scoping assessment was to ensure that potential environmental risks were identified and assessed at an appropriate level of detail.

## 4.2 CONSULTATION PROCESS

Meetings were held with EHP on 19 January and 15 July 2016. The meeting in July was attended by Chris Loveday (Director, Impact Assessment and Operational Support) and Melissa Wells (Director, Coal) of EHP. An overview of the project was presented, and EHP was provided with an opportunity to raise issues and ask questions about the project. EHP did not raise any specific issues or concerns in relation to the project but emphasised the importance of progressive rehabilitation for the existing Isaac Plains Mine and the project, and consultation with the local community including the Moranbah Cumulative Impact Group (MCIG).

There was also a discussion in relation to the appropriate approval process for the project. EHP provided informal advice indicating that a major Environmental Authority (EA) amendment supported by an EAR, rather than an Environmental Impact Statement (EIS), appeared to be appropriate for the project. However, as noted in Section 2 – Regulatory Framework, the approval process can only be formally confirmed by EHP once an EA amendment application has been lodged.

A meeting was held with representatives of the IRC on 26 July 2016. It was attended by Mayor Anne Baker, Deputy Mayor Geoffrey Bethel, Councillor Peter Freeleagus, Councillor Kelly Veve, Councillor Dale Appleton, Councillor Nick Wheeler, Councillor Gina Lacey, Councillor Lyn Jones, Councillor Jane Pickels, and council officers, Gary Stevenson (Chief Executive Officer), Brian Ashcroft (Director Engineering and Infrastructure) and Aaron Johansson (Director Corporate, Governance & Financial Services), Gert Nel (Manager Environmental Services), Amanda Blines (Manager Brand, Media and Communications), Tricia Hughes (Coordinator Executive Support) and Sheridan Flaherty (Executive Assistance).

An overview of the project was presented, and the IRC was provided with an opportunity to raise issues and ask questions about the project. There was a general discussion about the project and the proponent clarified a number of points about the project and responded to questions. The IRC noted the proximity of the project site to the Peak Downs Highway and the need to understand the potential impacts on the highway. The IRC also noted that there were a number of enquiries to Council from local residents in relation to high overpressure levels felt in Moranbah from a recent blast at Isaac Plains Mine. IRC enquired as to whether the proponent could provide blast schedules to Council so they could respond to any public enquiries in relation to blasts. The IRC was also interested in the existing mine workforce accommodation arrangements and any opportunities in the future for DIDO workers to live locally, should they choose. The IRC also confirmed that the MCIG is currently not active.

## 4.3 ENVIRONMENTAL SCOPING ASSESSMENT

A risk based approach was used to scope the studies included in the EAR. A scoping assessment was undertaken using environmental information from the existing Isaac Plains Mine and an assessment of the project

activities and features of the project site and surrounds, to identify potential environmental risks associated with the project.

The results of this assessment were used to inform the scoping of studies for the EAR. For environmental areas with potentially significant impacts, detailed assessments (including specialist studies, field surveys, modelling) were undertaken to ensure all significant environmental risks were thoroughly assessed. In particular, detailed specialist studies have been conducted for terrestrial and aquatic ecology, groundwater, flood modelling, water balance modelling, air quality, noise and blasting, because of the relatively higher risk ratings for these areas. Environmental areas rated as having lower environmental risk (e.g. rehabilitation, traffic, cultural heritage) were assessed using information from the existing Isaac Plains Mine and other desktop techniques, appropriate to the low level of risk. The results of the assessment are provided in Table 4-1.

**Table 4-1 Environmental Scoping Assessment**

POTENTIAL IMPACTS	SCOPE OF ENVIRONMENTAL ASSESSMENT
<b>Groundwater</b>	
<p>Open cut mining in the project site will result in depressurisation of the geological units surrounding the mined area. Depressurisation has the potential to lower groundwater levels in the vicinity of the project resulting in:</p> <ul style="list-style-type: none"> <li>■ Impacts on local groundwater supply bores as a result of groundwater drawdown;</li> <li>■ Impacts on groundwater/surface water interaction and on surface water features including Smoky Creek and Billy’s Gully;</li> <li>■ Impacts on groundwater dependent ecosystems and stygofauna; and</li> <li>■ Cumulative impacts on the groundwater regime.</li> </ul> <p>The project also has the potential to impact on groundwater quality through the use of hydrocarbons and chemicals and seepage of pit water from the final voids.</p>	<p>A specialist groundwater study was conducted to characterise the groundwater regime and assess potential impacts on groundwater. The study scope included:</p> <ul style="list-style-type: none"> <li>■ A review of the existing information related to the hydrogeology of the project site and adjacent areas;</li> <li>■ Groundwater field investigation including the installation of monitoring bores and aquifer testing;</li> <li>■ Identification and characterisation of the groundwater regime including groundwater resources and use in the vicinity of the project;</li> <li>■ 3D numerical groundwater modelling to provide predictions of the mining effects on groundwater levels in the surrounding aquifers;</li> <li>■ Assessment of the project impacts on groundwater bores and surface water features during the operational and post-mining phases;</li> <li>■ Assessment of the cumulative groundwater impacts with other relevant mining projects;</li> <li>■ Qualitative assessment of potential groundwater quality impacts; and</li> <li>■ Development of a groundwater monitoring program for the project.</li> </ul> <p>Potential groundwater impacts are addressed in Section 6 – Groundwater, and in the <i>Groundwater Report</i> (Appendix B).</p>
<b>Surface Water</b>	
<p>The project site is traversed by Smoky Creek and Billy’s Gully. Encroachment of open cut pits and overburden emplacements on the creeks and their floodplains, as well as the proposed haul road watercourse crossings, have the potential to adversely affect flood flows, water course stability</p>	<p>Flood modelling was undertaken as an integral component of project planning to ensure that the open cut pits and overburden emplacements did not encroach on the creeks traversing the project site and their floodplains. The flood modelling also confirm that the proposed haul road crossing would not have any significant adverse impacts on flood flows.</p>

POTENTIAL IMPACTS	SCOPE OF ENVIRONMENTAL ASSESSMENT
<p>and water quality.</p> <p>Stormwater drainage on the project site has the potential to cause erosion of disturbed areas resulting in elevated suspended sediment levels in water draining from the site and the sedimentation of downstream waterways.</p>	<p>Flood modelling included an assessment of site hydrology and hydraulic modelling of a suite of relevant flood events.</p> <p>Isaac Plains Mine has an existing Erosion and Sediment Control Plan (ESCP) required by the EA. The ESCP will be updated to include specific erosion and sediment controls for the project prior to the commencement of construction. The EAR includes a conceptual site drainage plan which includes controls for sediment in site stormwater runoff.</p> <p>The flood modelling assessment is included in the <i>Flood Modelling Report</i> (Appendix C). The conceptual site drainage plan is described in Section 7 – Surface Water and Mine Water Management.</p>
<b>Mine Water Management</b>	
<p>The Isaac Plains Mine has an established mine water management system, operated in accordance with a Water Management Plan, which has been prepared in accordance with the requirements of the Isaac Plains Mine EA. The mine water management system includes the collection and storage of mine affected water in dams and open cut pit storages for reuse as dust suppression water supply. The mine also has an established release system for the controlled discharge of any excess mine affected water in accordance with the EA conditions.</p> <p>Mine affected water generated by the project will be limited to pit water. Pit water will be pumped to the existing Isaac Plains S3 Pit void for storage and management within the existing Isaac Plains Mine water management system.</p> <p>No additional water supply is required for the project.</p>	<p>Water management system modelling was conducted to confirm that the existing Isaac Plains Mine water management system had sufficient mine affected water storage capacity for mine affected water generated over the life of the project.</p> <p>The water management system modelling is summarised in Section 7 – Surface Water and Mine Water Management and a detailed description is provided in the <i>Water Management System Modelling Report</i> (Appendix D).</p>
<b>Ecology</b>	
<p>The project has the potential to give rise to the following impacts:</p> <ul style="list-style-type: none"> <li>■ Loss of biodiversity values due to clearing of vegetation for the project open cut mining operations;</li> <li>■ Impacts on any groundwater dependent ecosystems that may be present, including impacts due to clearing of vegetation and impacts due to changes in the hydrogeological regime; and</li> </ul>	<p><b>Terrestrial Ecology:</b></p> <p>A specialist terrestrial ecology study was conducted. The study scope included:</p> <ul style="list-style-type: none"> <li>■ Two-season terrestrial ecology field surveys;</li> <li>■ Identification of terrestrial flora and fauna species and habitats within the project site;</li> <li>■ Identification of significant species including their status under relevant Commonwealth or state legislation;</li> <li>■ Assessment of potential impacts on biodiversity values present or likely to be present; and</li> <li>■ Development of mitigation and management measures to</li> </ul>

POTENTIAL IMPACTS	SCOPE OF ENVIRONMENTAL ASSESSMENT
<ul style="list-style-type: none"> <li>■ Loss of biodiversity values due to impacts on the watercourses and aquatic habitats on the project site.</li> </ul>	<p>address any potential significant impacts.</p> <p><b>Aquatic Ecology:</b>                      A specialist aquatic ecology study was conducted. The study scope included:</p> <ul style="list-style-type: none"> <li>■ Review of existing data including the Isaac Plains Mine Receiving Environment Monitoring Program and the results of fish surveys undertaken in the region;</li> <li>■ A field survey of the aquatic habitats on the project site;</li> <li>■ Identification of aquatic flora and fauna species and habitats within the project site;</li> <li>■ Identification of significant species including their status under relevant Commonwealth or state legislation;</li> <li>■ Assessment of potential impacts on biodiversity values present or likely to be present; and</li> <li>■ Development of mitigation and management measures to address any potential significant impacts.</li> </ul> <p>Potential impacts on ecology are addressed in Section 8 – Terrestrial Ecology, Section 9 – Aquatic Ecology, the <i>Terrestrial Ecology Report</i> (Appendix G) and the <i>Aquatic Ecology Report</i> (Appendix H).</p>
<b>Rehabilitation</b>	
<p>The project will give rise to additional land disturbance due to open cut mining operations in the project site and associated minor infrastructure, that will require rehabilitation. The overburden geology in the project site is similar to the existing Isaac Plains Mine and the mining methods and open cut mine landform will be similar to Isaac Plains Mine.</p> <p>The Isaac Plains Mine EA includes conditions related to mine rehabilitation and the Isaac Plains Mine has established rehabilitation strategies and management plans that are consistent with the EA requirements.</p> <p>Given the operational experience at Isaac Plains Mine with similar operations and land disturbance, the established rehabilitation strategies are suitable for application to the project.</p>	<p>The Isaac Plains Mine has established rehabilitation management plans and procedures relating to rehabilitation methods, objectives and completion criteria, and the rehabilitation monitoring program. The existing management plans and procedures are consistent with the requirements of the Isaac Plains Mine EA. The project will adopt the existing management plans and procedures.</p> <p>The rehabilitation strategies for the project are described in Section 5 – Rehabilitation and Mine Closure.</p>

POTENTIAL IMPACTS	SCOPE OF ENVIRONMENTAL ASSESSMENT
<b>Soils and Land Suitability</b>	
<p>The project site adjoins the existing Isaac Plains Mine site to the east. Based on the past soils and land suitability studies undertaken for the Isaac Plains Mine and desktop assessments, the soils and land capability of the project site are similar to the Isaac Plains Mine site. The project site does not contain any Strategic Cropping Land (SCL) and land suitability is limited to beef cattle grazing.</p> <p>The Isaac Plains Mine EA includes conditions related to mine rehabilitation and topsoil management. Isaac Plains Mine has established plans and procedures for rehabilitation and the management of topsoil that are consistent with the EA requirements.</p> <p>Given the operational experience at Isaac Plains Mine is a similar setting, the established procedures for rehabilitation and topsoil management are suitable for application to the project.</p>	<p>A desktop assessment of the soils and land capability of the project site was conducted for the EAR. The assessment included:</p> <ul style="list-style-type: none"> <li>■ Review of available soils and land suitability information to identify soil types and existing land suitability. Data sources included previous Isaac Plains Mine soils and land suitability assessments, government mapping and government soil survey sites within the project site;</li> <li>■ Searches of relevant databases in order to identify any government mapped SCL;</li> <li>■ Assessment of the impacts of the project on land suitability; and</li> <li>■ Identification of suitable soil management measures for the project.</li> </ul> <p>Soils and land suitability are addressed in Section 5 – Rehabilitation and Mine Closure.</p>
<b>Rejects and Tailings</b>	
<p>Combined coarse rejects and dewatered tailings are buried within the overburden emplacements at the existing Isaac Plains Mine in accordance with the Isaac Plains Mine Mining Waste Management Plan. This plan has been prepared in accordance with the requirements of the Isaac Plains Mine EA.</p> <p>The project involves mining the Leichhardt seam that is also mined at the existing Isaac Plains Mine. The geochemistry of the rejects generated by the project is therefore expected to be similar to the existing Isaac Plains Mine rejects. The Isaac Plains Mine EA also requires regular sampling and geochemical testing of rejects material generated at the washplant. The existing rejects management system is therefore suitable for the rejects generated by the project.</p>	<p>Further assessment of the management and storage of rejects and tailings is not warranted as the rejects from the project will be similar to the existing mine. The EAR provides a description of the existing Isaac Plains Mine rejects management system and its application to the project, as no changes are required to the existing management system as a result of the project.</p> <p>The management of rejects is described in Section 5 – Rehabilitation and Mine Closure.</p>

POTENTIAL IMPACTS	SCOPE OF ENVIRONMENTAL ASSESSMENT
<b>Air Quality</b>	
<p>The project will result in dust emissions that could result in dust impacts on sensitive receptors in the area including the Moranbah township and rural residences. There are also a number of other coal mines in the area and the project has the potential to contribute to cumulative dust impacts at sensitive receptors.</p>	<p>A specialist air quality study was conducted. The study scope included:</p> <ul style="list-style-type: none"> <li>■ Review of existing air quality data to determine background air quality;</li> <li>■ Estimation of worst case dust emissions from the project activities;</li> <li>■ Modelling to predict the level of dust impacts in the surrounding area;</li> <li>■ Comparison of predicted dust impacts at sensitive receptors with relevant air quality limits; and</li> <li>■ Development of mitigation and management measures to address any potential significant impacts.</li> </ul> <p>Potential impacts on air quality are addressed in Section 10 – Air Quality and the <i>Air Quality Report</i> (Appendix E).</p>
<b>Noise and Blast Impacts</b>	
<p>The project will result in noise emissions and blast effects that could result in impacts on sensitive receptors in the area including the Moranbah township and rural residences. There are also a number of other coal mines in the area and the project has the potential to contribute to cumulative noise impacts at sensitive receptors.</p>	<p>A specialist noise and blasting study was conducted. The study scope included:</p> <ul style="list-style-type: none"> <li>■ Review of existing data to determine background noise levels at sensitive receptors;</li> <li>■ Determination of worst case operating scenarios for noise impacts on sensitive receptors;</li> <li>■ Modelling to predict the noise levels in the surrounding area;</li> <li>■ Calculation of blast impact levels at sensitive receptors;</li> <li>■ Comparison of predicted noise and blast impact levels at sensitive receptors with relevant limits; and</li> <li>■ Development of mitigation and management measures to address any potential significant impacts.</li> </ul> <p>Potential noise and blasting impacts are addressed in Section 11 – Noise and Vibration and the <i>Noise Report</i> (Appendix F).</p>
<b>Visual Amenity</b>	
<p>The project site is adjacent to the existing Isaac Plains open cut mine which is a dominant feature of the regional landscape. The Moranbah township is more than 7 km from the project site and the nearest residence is approximately 5 km from the mining areas. The long range views from these receptors are also substantially screened by the Isaac Plains Mine and intervening topography and vegetation. Consequently the project is not predicted to give rise to any significant impacts on visual amenity.</p>	<p>A visual assessment was conducted for the project, based on review of aerial photography and topographic mapping, line of sight assessments and site inspections. Further assessment of visual amenity is not warranted, given the low potential for the project to have significant impacts on visual amenity.</p> <p>The impacts of the project on visual amenity are discussed in Section 12 – Other Environmental Issues.</p>

POTENTIAL IMPACTS	SCOPE OF ENVIRONMENTAL ASSESSMENT
<b>Traffic</b>	
<p>The project will not change the size of the workforce or increase the production rate of the Isaac Plains Mine and there is only limited construction work associated with the project. The project is therefore not anticipated to give rise to any significant additional traffic movements. The project will extend the life of the mine by approximately 7 years. The Isaac Plains Mine access from the Peak Downs Highway will not change and the project does not require any new public road works.</p>	<p>Estimated project traffic volumes were compared to existing Peak Downs Highway traffic volumes. The project traffic volumes are significantly below 5% of the existing Peak Downs traffic volumes and the project is therefore not a significant traffic generating development in accordance with the Department of Transport and Main Roads (TMR) <i>Guidelines for Assessment of Road Impacts of Development</i>. Further assessment of traffic and transport is not warranted, given the absence of any potential significant road traffic impacts.</p> <p>The impacts of the project on traffic and transport are discussed in Section 12 – Other Environmental Issues.</p>
<b>Cultural Heritage</b>	
<p>The proponent has an existing Cultural Heritage Management Plan (CHMP) prepared in accordance with the <i>Aboriginal Cultural Heritage Act 2003</i> (ACH Act). The CHMP applies to the Isaac Plains Mine and any expansion of the mine.</p> <p>Historical land use on the project site has been cattle grazing and the potential for significant non-Aboriginal heritage to be present on the site is considered to be low.</p>	<p>Aboriginal cultural heritage is required to be managed in accordance with the ACH Act and an assessment of impacts on Aboriginal cultural heritage is not within the scope of this EAR. Section 12 – Other Environmental Issues describes the status of the project in relation to the requirements of the ACH Act.</p> <p>A limited non-Aboriginal cultural heritage desktop assessment was conducted for the project, in accordance with the low risk of impacts on cultural heritage.</p> <p>It included:</p> <ul style="list-style-type: none"> <li>■ Review of relevant previous non-Aboriginal cultural heritage reports or assessments;</li> <li>■ Search of non-Aboriginal cultural heritage databases;</li> <li>■ Detailed review of high resolution aerial survey and site inspection; and</li> <li>■ Identification of any proposed mitigation measures for impacts to non-Aboriginal cultural heritage (if necessary).</li> </ul> <p>Potential impacts on non-Aboriginal cultural heritage are addressed in Section 12 – Other Environmental Issues.</p>
<b>Non-Mining Waste Management</b>	
<p>The project will produce similar types and quantities of non-mining wastes to the existing Isaac Plains Mine. The Isaac Plains Mine has established non-mining waste management procedures for waste types that will be produced by the project.</p>	<p>The project will continue to operate in accordance with the established Isaac Plains Mine waste management procedures and the relevant Isaac Plains Mine EA conditions. Further assessment of waste management for the project is therefore not warranted.</p> <p>A description of the existing Isaac Plains Mine non-mining wastes and waste management procedures are provided in Section 12 – Other Environmental Issues.</p>

POTENTIAL IMPACTS	SCOPE OF ENVIRONMENTAL ASSESSMENT
<b>Socio-Economics</b>	
<p>The project will extend the life of the Isaac Plains Mine by approximately 7 years and will extend the associated significant employment and economic benefits of the mine by 7 years. Overall, no negative socio-economic impacts are anticipated as a result of the project, given that the project will not change the size of the workforce or the workforce accommodation arrangements.</p>	<p>Further assessment of socio-economics is not warranted, given the very low potential for negative socio-economic impacts. The continuation of positive socio-economic benefits associated with the project are discussed in Section 3 – Project Description.</p>