

ATLAS-CAMPASPE

Mineral Sands Project

ENVIRONMENTAL IMPACT STATEMENT

SECTION 1 › INTRODUCTION

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1 INTRODUCTION

This document is an Environmental Impact Statement (EIS) for the Atlas-Campaspe Mineral Sands Project (herein referred to as the Project). The Project includes the development of a mineral sands mining operation (herein referred to as the Atlas-Campaspe Mine), together with the construction and operation of a rail loadout facility located near the township of Ivanhoe (herein referred to as the Ivanhoe Rail Facility).

The proposed Atlas-Campaspe Mine is located approximately 80 kilometres (km) north of Balranald, New South Wales (NSW) and 270 km south-east of Broken Hill, NSW (Figure 1-1). The proposed Ivanhoe Rail Facility is located approximately 135 km north-east of the proposed Atlas-Campaspe Mine, and is approximately 4.5 km to the south-west of the township of Ivanhoe (Figure 1-1).

Product (mineral concentrates) generated as a result of operations at the proposed Atlas-Campaspe Mine would be trucked to the Ivanhoe Rail Facility for transfer to train wagons, which would then be railed to the existing Broken Hill Mineral Separation Plant (the MSP) (Figure 1-1).

The Project would integrate with currently existing/approved Cristal Mining Australia Limited (Cristal Mining) operations in western NSW, including (Figure 1-1):

- **the MSP** – located in Broken Hill approximately 270 km north-west of the proposed Atlas-Campaspe Mine;
- **Snapper Mine** – located approximately 105 km to the west of the proposed Atlas-Campaspe Mine; and
- **Ginkgo Mine** – located approximately 100 km to the west of the proposed Atlas-Campaspe Mine.

At the MSP, the mineral concentrates from the Atlas-Campaspe Mine would be separated and treated to produce valuable minerals including ilmenite, leucoxene, rutile and zircon. Process wastes generated as a result of processing mineral concentrates at the MSP would continue to be backloaded to the Snapper and Ginkgo Mines until the Development Consents at the existing operations expire (approximately Year 12 of the Project).

At that time, the MSP process waste generated as a result of processing mineral concentrates from the Atlas-Campaspe Mine would be transported in sealed containers via the Orange – Broken Hill railway to the Ivanhoe Rail Facility for subsequent road transport in sealed containers to the Atlas-Campaspe Mine for unloading, stockpiling and placement behind the advancing ore extraction areas.

A description of the existing/approved Cristal Mining operations in western NSW is provided in Section 2.1.

1.1 PROJECT OVERVIEW

1.1.1 Purpose of this Report

This EIS has been prepared to accompany a Development Application (DA) made for the Project in accordance with Division 4.1 of Part 4 of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act).

This EIS considers the potential environmental impacts of the Project in accordance with the Director-General's Requirements (DGRs) issued by the NSW Department of Planning and Infrastructure (DP&I) on 19 March 2012 (Attachment 1), and clauses 6 and 7 of Schedule 2 of the NSW *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulation).

The DGRs were issued in accordance with the requirements of clause 3 of Schedule 2 of the EP&A Regulation. A summary of the DGRs is provided in Section 1.2.

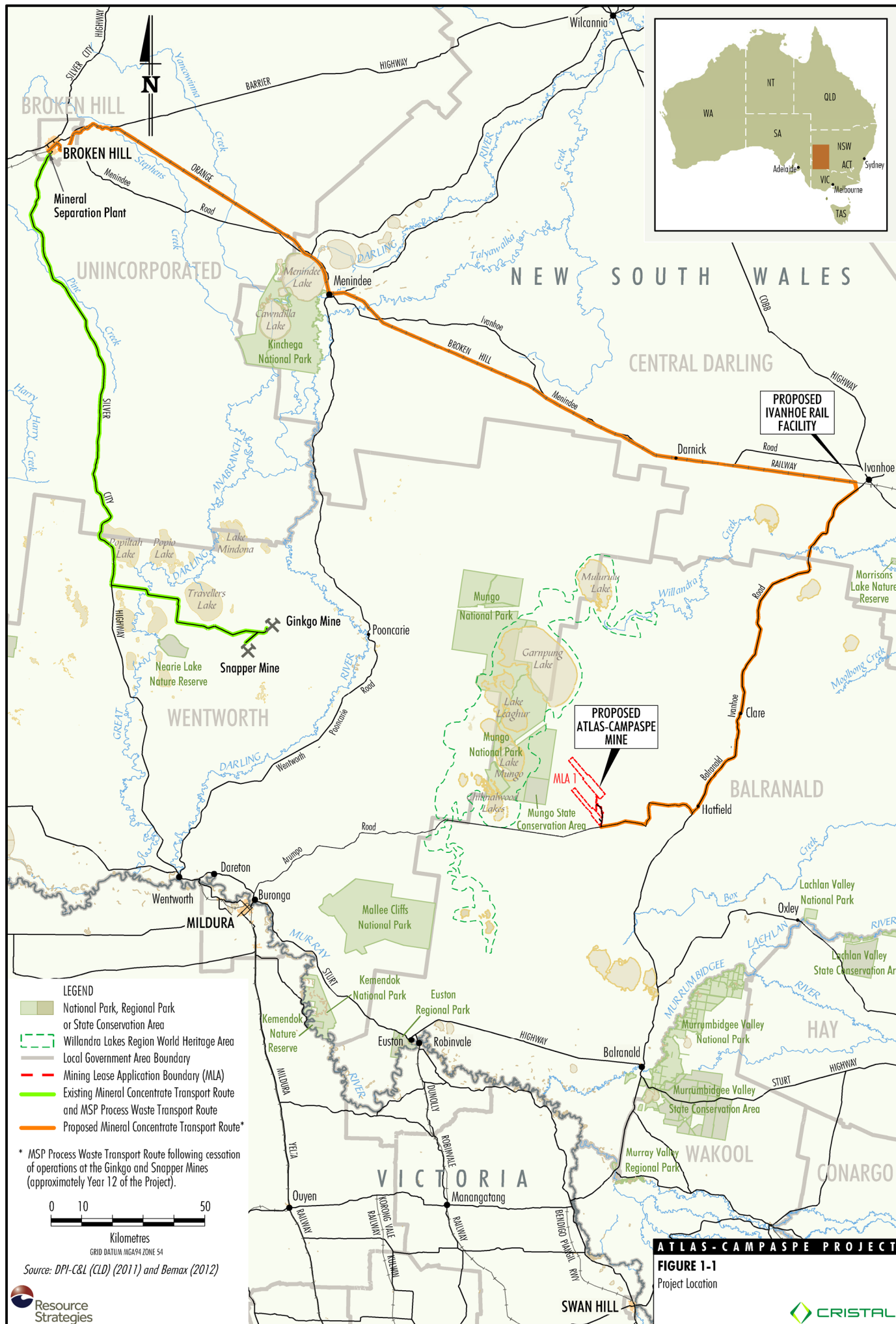
1.1.2 Project Summary

The Project would involve two main development components (Figure 1-1):

1. Construction and development of infrastructure for mining operations at the Atlas and Campaspe deposits (the proposed Atlas-Campaspe Mine).
2. Construction and operation of the Ivanhoe Rail Facility.

The proposed life of the Project is approximately 20 years, commencing approximately 1 July 2013 or upon the grant of all required approvals.

Table 1-1 provides an overview of each of the main Project development components.



**Table 1-1
Project Summary**

Project Component	Summary Description
Life of Project	Approximately 20 years (commencing approximately 1 July 2013 or upon the grant of all required approvals).
Mineral Resource	Approximately 109 million tonnes (Mt) of mineral sands ore to mined over the life of the Project.
Employment	An average construction workforce of approximately 150 people with a short-term peak construction workforce of up to 300 people. At full development, an operational workforce of approximately 200 people including a mixture of direct Cristal Mining employees and contractors.
Mineral Concentrate Transport	Road haulage of mineral concentrates from the proposed Atlas-Campaspe Mine to the proposed Ivanhoe Rail Facility for unloading, stockpiling and subsequent loading to trains for rail transportation to the MSP.
MSP Process Waste Transport ¹	Unloading of MSP process waste in sealed storage containers (transported via the Orange – Broken Hill railway) from train wagons at the Ivanhoe Rail Facility, and subsequent road transport in sealed storage containers to the Atlas-Campaspe Mine for unloading, stockpiling and placement behind the advancing ore extraction areas.
Atlas-Campaspe Mine	
Construction/Development Components	<p>Initial construction activities would be undertaken 24 hours per day, seven days per week. The initial construction period (Year 1 of the Project) would be focussed on the development of the following infrastructure components:</p> <ul style="list-style-type: none"> • site access roads and internal access roads; • on-site accommodation camp and sewage treatment plant; • water supply infrastructure (including groundwater borefield and localised dewatering systems, reverse osmosis [RO] plant and associated pump and pipeline systems); • power supply infrastructure (including diesel generators, electricity distribution station and transmission lines); • fixed infrastructure areas (including administration/office buildings and car parking facilities, workshop and stores, services corridor and laydown areas); • dry mining unit (DMU) assembly; • mineral processing infrastructure (including primary gravity concentration unit, salt washing facility and wet high intensity magnetic separation [WHIMS] circuit); • materials handling infrastructure (including pumps and pipelines for mineral sands ore, heavy mineral concentrate [HMC] and process wastes, and towers and stackers for stockpiling mineral concentrates); • off-path sand residue dams and process water storages; and • roadworks along the mineral concentrate transport route.
Mining Operations	<p>Conventional (non-dredge) mining methods would be utilised at the Atlas-Campaspe Mine, both for overburden removal and for ore extraction. The general sequence of mining operations would be as follows:</p> <ul style="list-style-type: none"> • Vegetation clearance and soil stripping. • Overburden removal ahead of ore extraction areas using conventional truck and shovel methods (e.g. excavators and haul trucks). • Mineral sands ore extraction and placement in a DMU using conventional dry mining equipment (e.g. dozers and loaders). • Overburden replacement including progressive backfilling of mine voids behind the advancing ore extraction areas or in overburden emplacements adjacent to the mine path. • Placement of process wastes (i.e. sand residues, coarse rejects and MSP process waste¹) following mineral processing to either the active mining area (behind the advancing ore extraction area) or in off-path sand residue dams. No MSP process wastes would be placed in off-path sand residue dams at the Atlas-Campaspe Mine. • Overburden and soil replacement including profiling of the final landform in preparation for rehabilitation activities. • Progressive rehabilitation behind the advancing mining operation.

¹ Following cessation of operations at the Ginkgo and Snapper Mines (approximately Year 12 of the Project).

Table 1-1 (Continued)
Project Summary

Project Component	Summary Description
Atlas-Campaspe Mine (Continued)	
Processing and Stockpiling	Processing of mineral sands ore would operate at the Atlas-Campaspe Mine up to 24 hours per day, seven days per week.
Primary Gravity Concentration Unit	Primary separation of the valuable minerals from ore would occur in the primary gravity concentration unit. No chemical reagents are used in the separation process. The HMC recovered by the primary gravity concentration unit would be processed further at the HMC treatment facility.
HMC Treatment Facility (salting washing, WHIMS and RO plant)	The HMC would be washed with desalinated water (from the RO plant) in the salt washing facility prior to processing in the WHIMS circuit. The WHIMS circuit is a preliminary treatment stage which separates the HMC into ilmenite-rich, leucoxene-rich and non-magnetic (containing rutile-rich and zircon-rich) mineral concentrates. The WHIMS circuit relies on magnetic separation and requires no chemical reagents.
Mineral Concentrate Stockpiling	The mineral concentrates from the WHIMS circuit would be stockpiled in the mineral concentrate stockpile areas at the Atlas-Campaspe Mine by product stackers.
Process Wastes	Process wastes comprise sand residues (including a small proportion of clays) and coarse reject materials from on-site processing; and MSP process waste.
Sand Residues and Coarse Rejects	Approximately 102.5 Mt of sand residues (including minor quantities of coarse rejects) would be produced over the life of the Project. Sand residues (and coarse materials) would be pumped from the reject bin at the primary gravity concentration units to either the overburden emplacement cells behind the advancing ore extraction area or in off-path sand residue dams.
MSP Process Wastes	<p>Up to approximately 50,000 tonnes per annum (tpa) of MSP process waste would be produced by the Project and require disposal. The additional MSP process wastes produced by the Project would be combined with the existing/approved MSP process wastes produced from the Ginkgo and Snapper Mines and continue to be transported to the Ginkgo and Snapper Mines in accordance with existing/approved operations up until cessation of those operations (approximately Year 12 of the Project).</p> <p>From approximately Year 12 of the Project, MSP process waste in sealed containers (transported via the Orange – Broken Hill railway) would be unloaded from trains at the Ivanhoe Rail Facility, and temporarily held in a designated area prior to loading onto haulage vehicles for the return trip to Atlas-Campaspe Mine.</p> <p>MSP process waste would be transported via road in sealed storage containers from the Ivanhoe Rail Facility to the Atlas-Campaspe Mine for subsequent unloading, stockpiling and placement behind the advancing ore extraction areas. No MSP process wastes would be placed in off-path sand residue dams at the Atlas-Campaspe Mine.</p>
Brine	Brine from the RO plant would also be disposed with process wastes behind the advancing mining operations.
Water Management	<p>The water management system would be developed progressively over the life of the Project to meet the following objectives:</p> <ul style="list-style-type: none"> maintain separation between runoff from areas undisturbed by mining and water generated within active mining areas; collect and preferentially re-use surface water runoff from disturbed areas for dust suppression or processing make-up requirements (when available); capture and contain on-site any potentially contaminated mine site water; and provide a reliable source of water to meet supply requirements.
Mine Dewatering	<p>The Atlas and Campaspe deposits are located predominately above the existing regional groundwater table with the exception of small portion which would require dewatering during the life of the Project.</p> <p>Water captured in the ore extraction areas comprising incident rainfall and runoff and infiltration from active mining areas (and groundwater inflows), would be allowed to settle in an in-pit collection sump for dewatering and re-use by pumping to process water storages.</p> <p>A groundwater borefield (refer below) and localised dewatering systems would be developed at the Atlas deposit. Localised dewatering systems (including bores, spearfields and trenches) would also be used adjacent the Campaspe mine path where the orebody lies below the groundwater table.</p>

Table 1-1 (Continued)
Project Summary

Project Component	Summary Description
Atlas-Campaspe Mine (Continued)	
Groundwater Borefield	<p>A groundwater borefield would initially be developed at the Atlas-Campaspe Mine to supply water for construction (e.g. moisture conditioning of earthworks and dust suppression) and for potable water supply (via treatment at the RO plant).</p> <p>Upon commencement of mining and processing operations at the Atlas-Campaspe Mine, the borefield would be expanded progressively (e.g. installation of additional production bores) to supply the DMUs, primary gravity concentration units and HMC treatment facility. The total number of bores in use would vary over the life of the Project and would be dependent on the yield of each individual production bore and localised, temporary dewatering requirements.</p>
Final Voids	At the cessation of mining, a final void would remain at the north-western extent of both the Atlas and Campaspe footprints. The final voids would be partially backfilled with overburden material pushed down from the void batters and adjacent overburden replacement areas within the mine path.
Rehabilitation	The disturbance areas for the Project would be progressively rehabilitated and revegetated as mining proceeds and infrastructure is decommissioned.
Electricity Supply and Distribution	Electricity at the Atlas-Campaspe Mine would be supplied by four 1,000 kilovolt-ampere (kVA) diesel generator sets. An electricity distribution station would be located at the Atlas-Campaspe Mine. Power would be reticulated at 22 kilovolt (kV). A relocatable step-down substation would then be located adjacent to the active mining area as mining advances.
Ivanhoe Rail Facility	
Construction /Development Components	<p>Construction of the Ivanhoe Rail Facility would be undertaken during the Project initial construction phase and take approximately 12 months. The Ivanhoe Rail Facility would comprise:</p> <ul style="list-style-type: none"> • a rail siding; • site access road and internal haul roads/pavements; • hardstand areas, including stockpiles/sealed container storage areas; • a retention basin, drains, pumps, pipelines and other water management equipment and structures; • site office, ablutions and car parking facilities; • perimeter fencing; • extension to existing 11 kV powerline; • night-lighting; and • landscaping, including retention of existing vegetation along the site access road.
Road Haulage Movements	Up to a maximum 24 haulage vehicle trips (i.e. 48 haulage vehicle movements) per day, with approximately 19 haulage vehicle trips (i.e. 38 haulage vehicle movements) per day on average over the life of the Project.
Unloading and Stockpiling	<p>Haulage vehicles would enter via the access road off the Balranald-Ivanhoe Road. A turn-around loop at Ivanhoe Rail Facility would enable the haulage vehicles to turn-around, unload and exit using the same access road.</p> <p>Mineral concentrate emptied from the haulage vehicles would be dumped directly onto a mineral concentrate stockpiles within the hardstand area.</p>
Loading of Train Wagon Containers	A front end loader would be used to reclaim mineral concentrate from the stockpiles and load directly into containers on train wagons. A forklift would be used to remove and replace covers on the train wagons.
Train Movements	Based on train lengths of up to 600 metres (m), up to a maximum of three trains per week over the life of the Project. No more than one train load of mineral concentrate from the Atlas-Campaspe Mine would be railed to the MSP in any 24 hour period.
Water Management	<p>During construction, temporary sedimentation controls (e.g. evaporation/sediment sumps and silt fences) would be installed for sediment containment.</p> <p>A retention basin would collect rainfall runoff from hardstand and infrastructure areas during operations. The retention basin would be designed, constructed and operated in accordance with the relevant requirements of <i>Managing Urban Stormwater: Soils & Construction</i> (NSW Department of Environment and Climate Change [DECC], 2008a).</p> <p>Waters collected in the retention basin would be utilised for dust suppression of mineral concentrate stockpiles at the Ivanhoe Rail Facility or allowed to evaporate.</p>
Electricity Supply and Distribution	Electricity at the Ivanhoe Rail Facility would be supplied via the local network.

The activities associated with the two main development components of the Project are summarised below.

Atlas-Campaspe Mine

- ongoing exploration activities;
- sequential development and operation of two separate mineral sands ore extraction areas within the Mining Lease Application (MLA) 1 area;
- use of conventional mobile equipment to mine and place mineral sands ore into DMU¹ at a maximum ore production rate of up to 7.2 million tonnes per annum (Mtpa);
- mineral processing infrastructure including the primary gravity concentration unit, salt washing facility and a WHIMS circuit;
- mineral concentrate stockpiles and materials handling infrastructure (e.g. towers and stackers);
- progressive backfilling of mine voids with overburden behind the advancing ore extraction areas or in overburden emplacements adjacent to the mine path;
- placement of sand residues and coarse rejects (and MSP process wastes²) following mineral processing to either the active mining area (behind the advancing ore extraction area) or in off-path sand residue dams;
- development of a groundwater borefield at the Atlas deposit and localised dewatering systems (bores, spearfields and trenches) at both the Atlas and Campaspe deposits, including associated pump and pipeline systems;
- RO plant to supply the salt washing facility and potable water;
- progressive development of water storage dams, sediment basins, pumps, pipelines and other water management equipment and structures;
- administration/office buildings, car parking facilities, workshop and stores;
- on-site accommodation camp;
- sewage treatment plant;

- diesel powered generators, electricity distribution station and associated internal electricity transmission lines (ETLs);
- site access road, internal access roads and haul roads;
- roadworks along the proposed mineral concentrate transport route to the Ivanhoe Rail Facility;
- road transport of mineral concentrates along the mineral concentrate transport route to the Ivanhoe Rail Facility;
- road transport of MSP process waste² in sealed storage containers from the Ivanhoe Rail Facility to the Atlas-Campaspe Mine for subsequent unloading, stockpiling and placement behind the advancing ore extraction areas;
- development of soil stockpiles and laydown areas;
- monitoring and rehabilitation; and
- other associated minor infrastructure, plant, equipment and activities.

Ivanhoe Rail Facility

- development of a rail siding for:
 - loading of train wagons with mineral concentrate for rail transport to the MSP via the Orange – Broken Hill railway; and
 - unloading of MSP process waste in sealed storage containers (transported via the Orange – Broken Hill railway) from train wagons²;
- site access road and internal haul roads/pavements;
- hardstand areas for mineral concentrate and MSP process waste² unloading, stockpiling/sealed container storage and loading;
- a retention basin, drains, pumps, pipelines and other water management equipment and structures;
- site office and car parking facilities;
- extension to existing 11 kV powerline;
- monitoring, landscaping and rehabilitation; and
- other associated minor infrastructure, plant, equipment and activities.

¹ Mining would use conventional open pit methods and would not involve dredge mining.

² Following cessation of operations at the Ginkgo and Snapper Mines (approximately Year 12 of the Project).

1.1.3 Land Tenure, Development Application Area, Tenements and Zoning

Land Tenure and Development Application Area

The Project is situated within the Western Division of NSW, which encompasses 42 percent (%) of NSW (some 3.25 million hectares [ha]) in the far west of the state. The majority of the Western Division is Crown land, administered under the NSW *Western Lands Act, 1901* and any Crown lands under the NSW *Crown Lands Act, 1989*. The Catchment and Lands Division of the NSW Department of Primary Industries (DPI) is responsible for administering the Western Lands Leases and Crown lands under these Acts.

The Project Development Application area consists of the proposed Atlas-Campaspe Mine (including roadworks along the mineral concentrate transport route) and the proposed Ivanhoe Rail Facility, and includes those lands listed in the real property descriptions provided in support of the Development Application (Attachment 2).

Relevant land tenure information for parcels of land within the Development Application area for the Project (excluding road reserves) is summarised in Table 1-2 and is provided on Figures 1-2a and 1-2b.

Cristal Mining will either acquire the relevant leases or enter into agreements with the leaseholders for the ownership of the leases at and in the vicinity of the Atlas-Campaspe Mine and the Ivanhoe Rail Facility for the Project.

Where necessary, Cristal Mining will seek a Crown Lands Licence in consultation with DPI's Crown Lands Directorate (DPI-CLD) (within the Catchment and Lands Division) for any works to be undertaken outside of MLA 1.

Tenements – Exploration and Mining

The proposed Atlas-Campaspe Mine would be located within a portion of Exploration Licence (EL) 5359. Cristal Mining would lodge an MLA with the NSW Division of Resources and Energy (DRE) (within the NSW Department of Trade and Investment, Regional Infrastructure and Services [DTIRIS]) for the Atlas-Campaspe Mine.

Cristal Mining will continue to apply for renewal of the existing EL with the DTIRIS as required.

Land Zoning

The proposed Atlas-Campaspe Mine is located in the Balranald Local Government Area (LGA), while the proposed Ivanhoe Rail Facility is located in the Central Darling LGA (Figure 1-1).

A description of the land zoning under the *Balranald Local Environmental Plan 2010* (Balranald LEP) and the *Central Darling Local Environmental Plan 2004* (Central Darling LEP) is provided in Section 6.5.2 and Attachment 6.

1.1.4 Proponent

The Project is being developed by Cristal Mining Australia Limited³ (ABN: 60 009 247 858), which is wholly owned by Cristal Australia Pty Ltd. Cristal Australia Pty Ltd is a wholly-owned subsidiary of The National Titanium Dioxide Company Limited (Cristal).

The registered and principal office for Cristal Mining is:

Cristal Mining Australia Limited
53 Quill Way
HENDERSON WA 6166

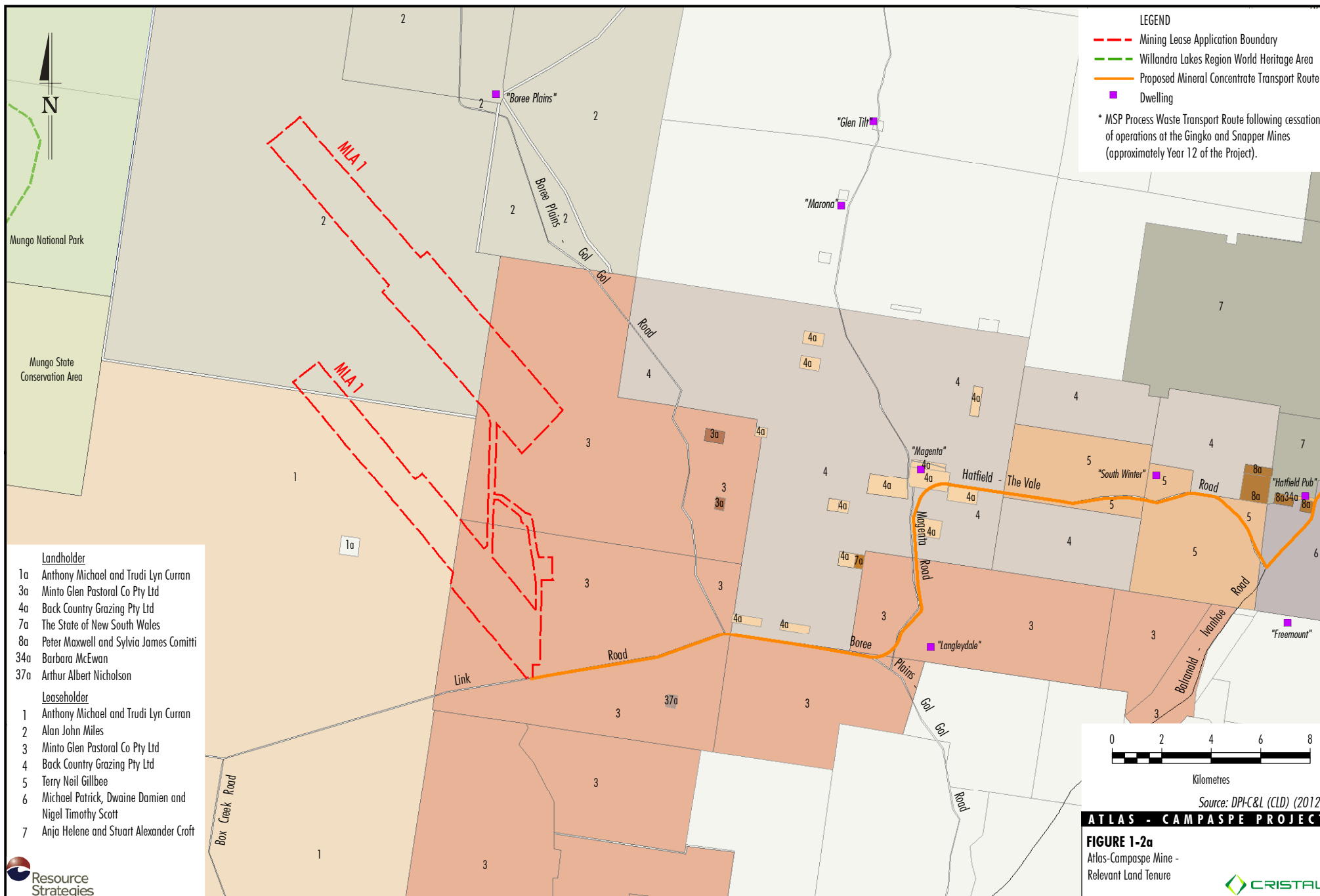
1.2 DIRECTOR-GENERAL'S REQUIREMENTS

The DGRs for the Project were issued by the DP&I on 19 March 2012 (Attachment 1).

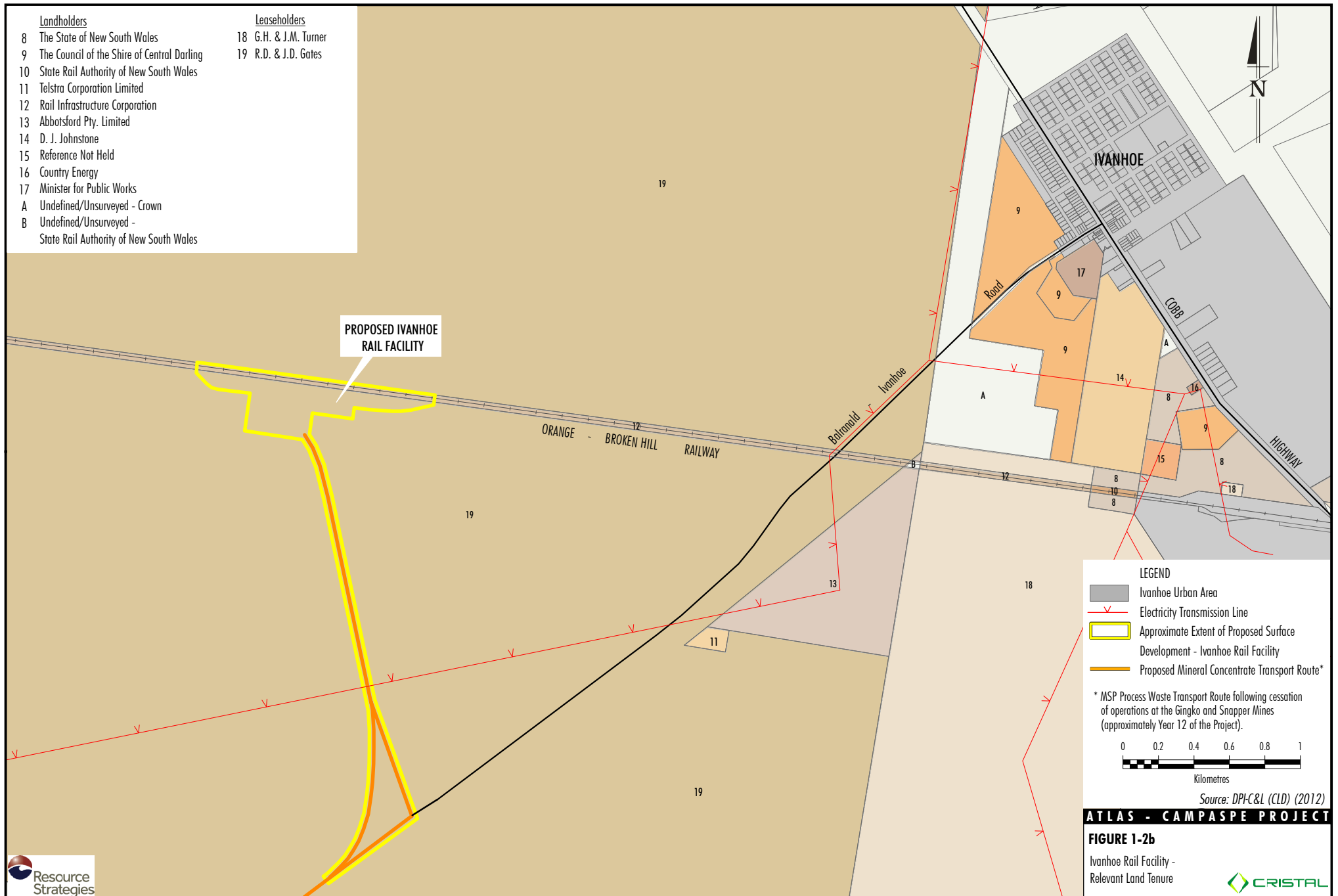
A summary of the DGRs is provided in Table 1-3 which also provides the relevant sections of the EIS where the DGRs are addressed. Table 1-4 provides the content requirements of an EIS as outlined in the EP&A Regulation, and where these have been addressed in the EIS.

In addition, a summary and index indicating where controlling provisions under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) have been addressed in the EIS is provided in Appendix C.

³ Prior to 1 October 2012, Cristal Mining was known as Bemax Resources Limited (Bemax).



Landholders	Leaseholders
8 The State of New South Wales	18 G.H. & J.M. Turner
9 The Council of the Shire of Central Darling	19 R.D. & J.D. Gates
10 State Rail Authority of New South Wales	
11 Telstra Corporation Limited	
12 Rail Infrastructure Corporation	
13 Abbotsford Pty. Limited	
14 D. J. Johnstone	
15 Reference Not Held	
16 Country Energy	
17 Minister for Public Works	
A Undefined/Unsurveyed - Crown	
B Undefined/Unsurveyed - State Rail Authority of New South Wales	



**Table 1-2
Land Tenure Summary**

Property Number	Lot/DP	Leaseholder*	Property	WLL
Atlas-Campaspe Mine (excluding roadworks along the mineral concentrate transport route)				
1	4727/767893	A.M. & T.L. Curran	Wampo	1849
2	616/761603	A.J. Miles	Boree Plains	2604
3	613/761600	Minto Glen Pastoral Company Pty Ltd	Carawatha	2609
	614/761601		Iona	2611
Ivanhoe Rail Facility (excluding rail easement)				
19	931/761988	R.D. & J.D. Gates	Woolahra	3339

* A full list of land tenure including surrounding leaseholders and landholders (including roadworks along the proposed mineral concentrate transport route and the rail easement) is available in Attachment 2.

DP = Deposited Plan.

WLL = Western Land Lease.

**Table 1-3
Director-General's Requirements – Reference Summary***

Summary of EIS Requirements	EIS Reference
General Requirements	
The EIS must include:	
• Form requirements in clause 6 of Schedule 2 of the EP&A Regulation.	Front of EIS and Attachment 2
• Content requirements in clause 7 of Schedule 2 of the EP&A Regulation.	Refer to Table 1-4
• Description of the Project, including the amount of ore to be mined, its mineralogy and staging of the Project.	Section 2
• Project need and justification.	Section 6.9 and Appendix I
• Interaction of the Project with existing, approved and proposed mining operations in the vicinity of the site.	Sections 2.1 and 4, and Appendices A to O
• Plans of proposed building works.	Section 2
• Consideration of relevant environmental planning instruments.	Section 6.5 and Attachment 6
• Risk assessment of the potential environmental impacts of the Project.	Section 4 and Appendix O
• Description of the existing environment.	Section 4
• Assessment of the potential environmental impacts of all stages of the Project, including cumulative impacts.	Section 4
• Description of the measures to avoid, minimise and/or offset the potential impacts of the Project including contingency plans.	Sections 4, 5, 6.7 and 7
• Consolidated summary of all proposed environmental management and monitoring measures.	Section 7
Key Issues	
• Land Resources.	Section 4.3 and Appendix H
• Water Resources.	Sections 4.4 and 4.5 and Appendices F and G
• Biodiversity.	Sections 4.6 and 4.7 and Appendices A, B and C
• Heritage.	Sections 4.8 and 4.9 and Appendices C and E
• Air Quality.	Section 4.10 and Appendix K
• Greenhouse Gases.	Section 4.11 and Appendix K
• Noise and Vibration.	Section 4.12 and Appendix J
• Traffic and Transport.	Section 4.13 and Appendix D
• Visual.	Section 4.14
• Waste.	Sections 2.8 and 2.12 and Appendices H and L

Table 1-3 (Continued)
Director-General's Requirements – Reference Summary*

Summary of EIS Requirements	EIS Reference
Key Issues (Continued)	
• Hazards.	Section 4.15 and Appendix N
• Social and Economic.	Sections 4.16, 4.17 and 6.9 and Appendix I
• Rehabilitation.	Section 5
Plans and Documents	
• Relevant plans, architectural drawings and diagrams.	Sections 1, 2 and 4
Consultation Requirements	
• Describe consultation with relevant local, State or Commonwealth government authorities, service providers, community groups and affected landowners.	Section 3.1 and Attachment 4
• The consultation process and the issues raised must be described in the EIS.	Section 3.1
References	
• Relevant guidelines, policies and plans.	Section 8

* The complete version of the DGRs is presented in Attachment 1.

Table 1-4
Content Requirements of an EIS – Clause 7 of Schedule 2 of the EP&A Regulation

Summary of Clause 7 of Schedule 2 of the EP&A Regulation	EIS Reference
The EIS must include:	
• Summary of the EIS.	Executive Summary
• Objectives of the Project.	Sections 1.1 and 6.9.1
• Analysis of any feasible alternatives to the Project, including the consequences of not carrying out the Project.	Sections 6.9.2 and 6.9.6
• Description of the Project.	Section 2
• Description of the environment likely to be affected by the Project.	Section 4
• The likely impact on the environment of the Project.	Section 4
• Description of the measures proposed to mitigate any adverse effects of the Project on the environment.	Sections 4, 5, 6.7 and 7
• A list of any approvals that must be obtained under any other Act or law before the Project may lawfully be carried out.	Section 6 and Attachments 5 and 6
• Compilation (in a single section of the EIS) of the measures proposed to mitigate any adverse effects of the Project on the environment.	Section 7
• Justification of the Project, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development (ESD).	Section 6.9

1.3 PROJECT CONSULTANTS

This EIS was prepared by Resource Strategies Pty Ltd with specialist input provided by the following organisations:

- Cristal Mining (*project design, alternatives and justification, preliminary hazard analysis, environmental risk assessment, background data, resource economics, consultation, rehabilitation, final landform, agricultural impact statement, land contamination assessment as well as environmental monitoring and management, EPBC Act controlling provisions*);
- Australian Museum Business Services (*flora and fauna assessments*);
- GTA Consultants (*road transport assessment*);
- Niche Environment and Heritage Pty Ltd (*Aboriginal and non-Aboriginal cultural heritage assessment*);
- GEO-ENG (*hydrogeological and water supply assessment*);
- Evans & Peck (*surface water assessment*);
- Ogyris Ecological Research (*soils, rehabilitation capability and agricultural resources assessment*);
- Gillespie Economics (*socio-economic assessment*);
- Wilkinson Murray (*noise assessment*);
- Katestone Environmental Pty Ltd (*air quality and greenhouse gas assessment*);
- Radiation Advice & Solutions (*mineral concentrate and process waste materials assessment*); and
- Ashurst (*legal review*).

In addition to the above, peer review was undertaken by the following specialists (Attachment 3):

- Mr Colin Pardoe (*Aboriginal and non-Aboriginal cultural heritage assessment*); and
- Dr Noel Merrick (*hydrogeological and water supply assessment*).

1.4 DOCUMENT STRUCTURE

The EIS comprises a main text component and supporting studies, which include Appendices A through O. An overview of the main text is presented below:

Section 1	Provides an introduction to the Project and the EIS.
Section 2	Describes the various components and stages of the Project.
Section 3	Describes the consultation undertaken in relation to the EIS and ongoing community involvement.
Section 4	Details the environmental assessment for the Project including a description of the existing environment, an assessment of potential impacts and a description of measures that would be implemented to avoid, minimise, mitigate, offset, manage and/or monitor the potential impacts of the Project.
Section 5	Describes the rehabilitation strategy for the Project.
Section 6	Outlines the statutory provisions relevant to the Project, describes the alternatives considered and provides a Project justification.
Section 7	Provides a summary of the proposed environmental management, mitigation, monitoring and reporting in relation to the Project.
Section 8	Lists documents referenced in Sections 1 to 7 of this EIS and relevant guidelines, policies and plans considered during the preparation of the EIS.
Section 9	Defines abbreviations, acronyms and terms used in Sections 1 to 7 of this EIS.

Attachments to the main text are also provided as follows:

Attachment 1	Director-General's Requirements.
Attachment 2	Development Application Area and Real Property Descriptions.
Attachment 3	Peer Review Letters.
Attachment 4	Community Information.
Attachment 5	Water Licensing Addendum.
Attachment 6	Planning Instruments Addendum.

Appendices A through O contain supporting documentation, including a number of specialist reports:

Appendix A	Flora Assessment.
Appendix B	Fauna Assessment.
Appendix C	EPBC Act Controlling Provisions.
Appendix D	Road Transport Assessment.
Appendix E	Aboriginal and Non-Aboriginal Cultural Heritage Assessment.
Appendix F	Hydrogeological and Water Supply Assessment.
Appendix G	Surface Water Assessment.
Appendix H	Agricultural Impact Statement.
Appendix I	Socio-Economic Assessment.
Appendix J	Noise Assessment.
Appendix K	Air Quality and Greenhouse Gas Assessment.
Appendix L	Mineral Concentrate and Process Waste Materials Assessment.
Appendix M	Land Contamination Assessment.
Appendix N	Preliminary Hazard Analysis.
Appendix O	Environmental Risk Assessment.