

Section 1

Introduction

PREAMBLE

This section introduces the proposal by YTC Resources Limited to develop and operate the Hera Project and includes:

- *an outline of the scope and format of the document;*
- *relevant information about the Proponent, YTC Resources Limited;*
- *relevant background to the Project, including a review of the history of mining and exploration in the area surrounding the Project Site;*
- *an overview of the approved activities within the Project Site;*
- *an overview of the Hera Project resources and reserves;*
- *information on the approvals process; and*
- *identification of the personnel involved in the project design, document preparation and specialist consultant investigations.*



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1.1 SCOPE

This *Environmental Assessment* has been prepared by R.W. Corkery & Co. Pty. Limited to support an application for project approval by YTC Resources Limited (the “Proponent”) to develop and operate the Hera Project. The Hera Project would comprise an underground mine, a run-of-mine pad, temporary Waste Rock Emplacement, a Processing Plant and associated site offices, a Tailings Storage Facility, a Mine Camp and associated infrastructure for mining and ancillary activities. The application is made possible by virtue of the fact that mining is a permissible land use (with consent) within the (Zone 1(a) General Rural) of the prevailing *Cobar Local Environment Plan 2001*.

The Hera Project is classified as a Major Project in accordance with Paragraph 5 of Schedule 1 of *State Environmental Planning Policy (Major Development) 2005*, given capital expenditure would be greater than \$30 million. As such, project approval is required under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This document has been prepared in satisfaction of that requirement and in accordance with Section 75H of the EP&A Act. A copy of the application for project approval is included as **Appendix 1**.

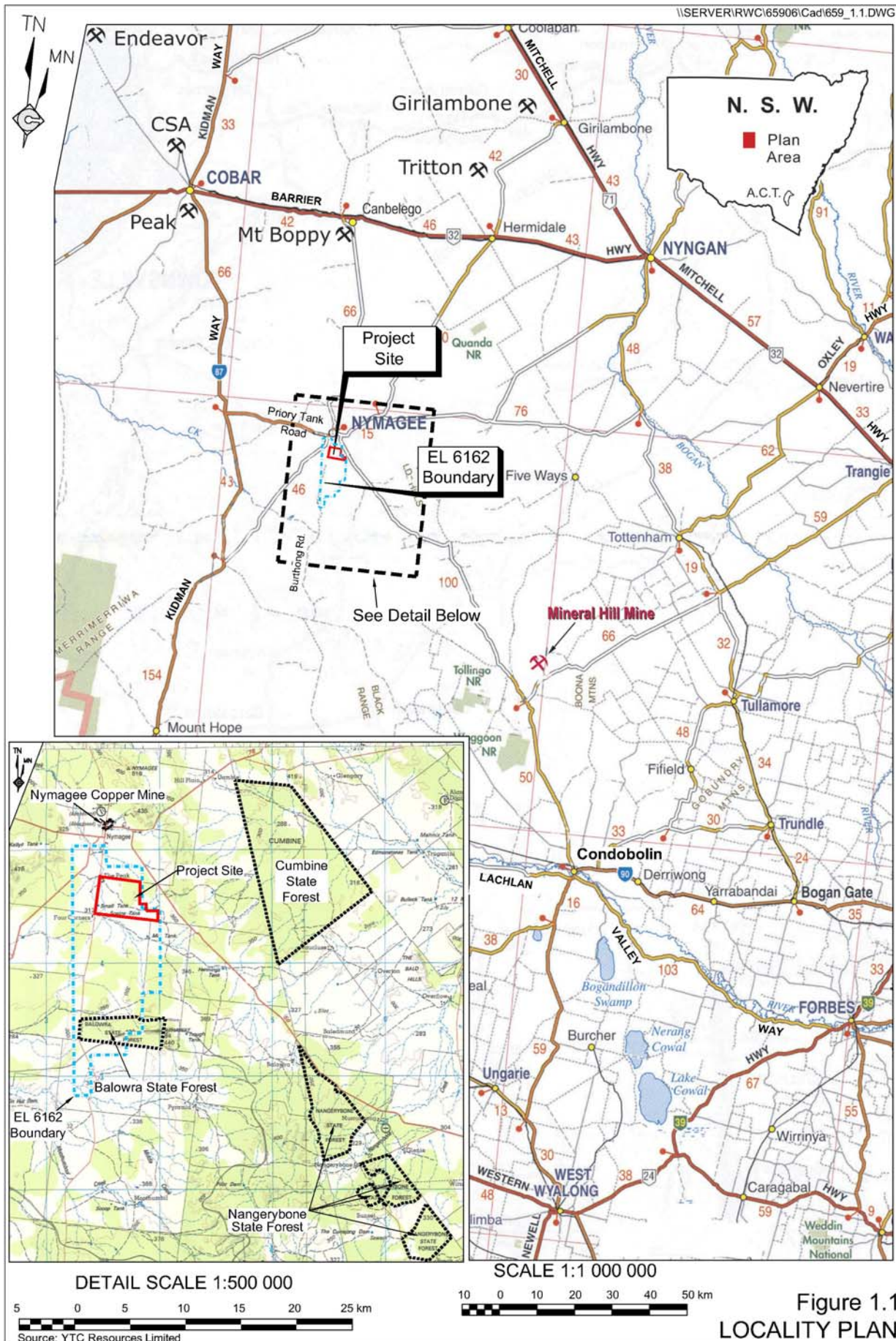
Figure 1.1 presents the location of the Hera Project, located approximately 100km southeast of Cobar in western New South Wales and approximately 4km south of the village of Nymagee.

This *Environmental Assessment* addresses all relevant issues identified within the Director-General’s requirements from the NSW Department of Planning and Infrastructure dated 23 November 2010, as well as the requirements of relevant government agencies (see Section 3 and **Appendix 2**) and reasonable public and community expectations. Information provided in this document is provided to a level of detail sufficient to allow the determining authority to determine the application. Emphasis has therefore been placed on comprehensively addressing the key environmental issues and limiting coverage of issues that are not central to determination of the application for project approval.

The issues addressed in this *Environmental Assessment* include the following.

- Background on the development of the Hera Project including a description of activities covered by existing approvals.
- A detailed description of the Project.
- A description of the consultation undertaken during preparation of this *Environmental Assessment*.
- Identification and analysis of the environmental risks associated with the Project.
- A description of the environment within and surrounding the Project Site, mitigation measures that would be implemented and an assessment of the residual risks associated with the Project.
- A statement of the commitments made by YTC Resources Limited with respect to the development and operation of the Hera Project and management of environmental issues.
- A conclusion justifying the Project in terms of Ecologically Sustainable Development.





1.2 FORMAT OF THE REPORT

The *Environmental Assessment* has been structured to address the general requirements and key issues nominated by the NSW Department of Planning and Infrastructure and contained within the Director-General's Requirements (DGRs) and the requirements of other relevant government agencies, including Department of Climate Change and Water NSW, Industry & Investment NSW, NSW Office and Water, Roads and Traffic Authority and Cobar Shire Council.

The *Environmental Assessment* has been compiled in a single volume and has been structured as follows.

- Section 1:** introduces the Hera Project, the Proponent and provides relevant background information. Information on the approved activities within the Project Site, as well as the approvals process is provided together with information on the management of investigations conducted to allow preparation of the *Environmental Assessment*.
- Section 2:** describes the Proponent's objectives and proposed mining, processing, product despatch, hours of operation, infrastructure and services, water and waste management, rehabilitation activities and proposed biodiversity offset strategy. This Section also describes the feasible alternatives considered by the Proponent throughout the design of the Hera Project.
- Section 3:** provides a description of the process used to identify and prioritise the key issues for assessment with reference to the DGRs, stakeholder consultation through the project planning stages and a general environmental risk analysis undertaken to establish the specific environmental risk(s) posed by issues identified.
- Section 4:** presents the environmental setting of the Hera Project, including information on topography, meteorology, geology, land ownership and land use. The section describes the existing environment, proposed management, assessment of potential impact and maintenance/monitoring requirements for the key issues identified in Section 3.
- Section 5:** provides a draft statement of commitments compiled by YTC Resources Limited in relation to environmental management and monitoring for the entire Hera Project.
- Section 6:** evaluates the Project in terms of biophysical, economic and social considerations, and the goals and guidelines of Ecologically Sustainable Development. A conclusion relating to the acceptability of the Hera Project based on the above is presented as a conclusion to the *Environmental Assessment*.
- References:** lists the various source documents referred to for information and data used during the preparation of the *Environmental Assessment*.
- Glossary:** explains the technical terms, acronyms, symbols and units used throughout the *Environmental Assessment*.



Appendices: provide additional project-related information and are organised as follows.

- **Appendix 1** – YTC Resource Limited’s application for project approval.
- **Appendix 2** – A copy of the Director-General’s Requirements and a tabulated summary of the requirements of the consulted government agencies, including information on where each requirement is addressed in this document.
- **Appendix 3** – A copy of the Part 5 approval for Category 3 Exploration Activity, dated 2 April 2007, granted by the then Department of Primary Industries for construction of an exploration decline and extraction of a bulk sample. For completeness, Appendix 3 also includes, on the Project CD, the *Review of Environmental Factors* that accompanied the application for Part 5 approval
- **Appendix 4** – A risk screening and preliminary hazard analysis completed in accordance with the requirement of *State Environmental Planning Policy 33 – Hazardous and Offensive Development*.
- **Appendix 5** – A copy of the *Hera Project Mineral Resource Estimate* dated July 2011.

1.3 THE PROPONENT

The Proponent for the Hera Project is YTC Resources Limited, an Australian Securities Exchange (ASX) listed exploration and mining company based in Orange, New South Wales. The Company complies with the continuous disclosure requirements of the ASX and users of this document are referred to the Proponent’s website (www.ytcresources.com) for the most up to date information.

In June 2009, the Proponent announced the acquisition of the Hera Project in Central NSW from CBH Resources Limited. At the same time the Proponent acquired 80% interest in the adjacent Nymagee Joint Venture, also from CBH Resources Limited.

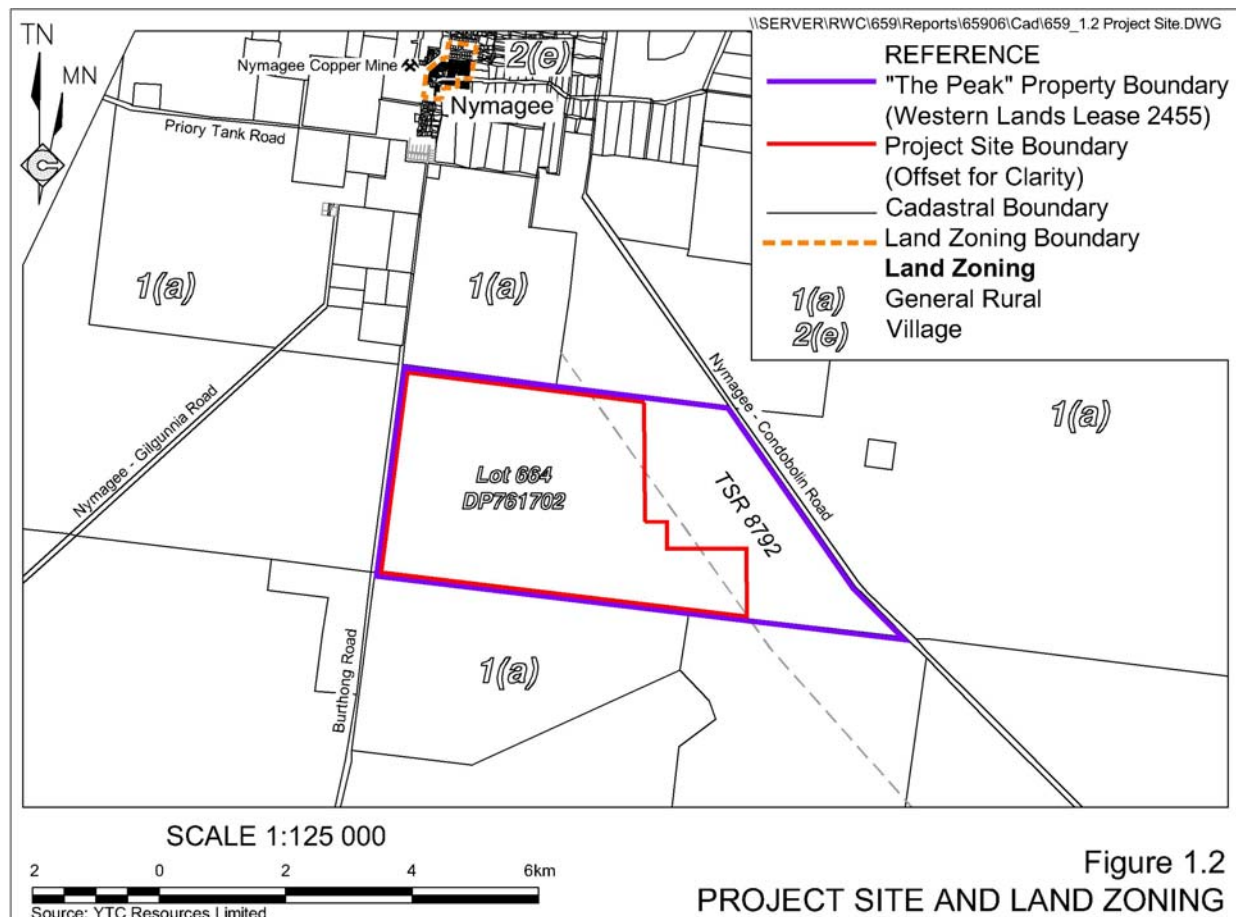
In September 2009, the Proponent raised A\$25 million through a Placement and Share Purchase Plan. The proceeds of this capital raising exercise were used to fund the acquisition and advance the Hera Project through a Definitive Feasibility Study. It also funded an exploration program designed to extend the Hera resource and to discover a new “Cobar Style” gold and base metals deposit.

The Proponent is committed to continue the development and operation of the Project in a manner that achieves environmentally responsible outcomes. The Proponent recognises that the mining, processing, loading and transportation of ore material and associated activities should not be achieved to the detriment of the local community or the environment. Rather, the Proponent intends, as a responsible corporate citizen, to develop, operate and progressively rehabilitate the Project Site in a manner that minimises the potential for adverse Project-related environmental impacts while providing economic and other benefits for all stakeholders, including the surrounding community, government, Cobar Shire Council and the Proponent’s shareholders.



1.4 THE PROJECT SITE

For the purposes of this document, the application area for the Project is referred to as the 'Project Site'. The Project Site encompasses all areas of proposed Project-related disturbance and is located wholly within 'The Peak' property (Lot 664, DP 761702) (**Figure 1.2**). 'The Peak' property is held by the Proponent under Western Lands Lease No. WLL2455, granted under the *Western Lands Act 1901* and managed by the Crown Lands Division of the NSW Department of Primary Industries.



WLL2455 comprises approximately 2 128ha of land and is bounded by Burthong Road to the west and the Nymagee-Condobolin Road to the east. Access to the Project Site would continue to be from Burthong Road.

The eastern section of WLL2455 is the subject of a Travelling Stock Reserve (**Figure 1.2**). The Proponent intends to make an application to the Crown Lands Division of the NSW Department of Primary Industries to cancel a section of that reserve to enable implementation of the Preferred Biodiversity Offset Strategy (see Section 2.17.3). Crown Lands Division has indicated that it will consider that application once the following has been received.

- Concurrence from the Darling Livestock Health and Pest Authority - The Proponent has commenced negotiations with the Authority. Initial feedback, however, is that the Authority will not support closure of the required section of TSR8792. The Proponent is, however, investigating avenues to effect a change in this situation. This issue is discussed further in Section 2.17.3.

- An appropriate management plan has been approved by the Office of Environment and Heritage – As noted in Section 4.2.45, the *Biodiversity Management Plan* would be prepared prior to the commencement of ground disturbing activities that are not already approved.

1.5 PROJECT-SPECIFIC TERMINOLOGY

Table 1.1 provides the key project-specific terminology referred to throughout the *Environmental Assessment*. A glossary of all other mining and environment-related terminology is presented in Section 8.

Table 1.1
Project Terminology

Terminology	Description
Project Site	The area relevant to the application for project approval.
Light Vehicle Access road	A proposed unsealed road that would permit site access from Burthong Road via the Mine Camp to the Surface Facilities Area. Principally for light vehicle access.
Main Site Access Road	A proposed unsealed road that would permit site access for both heavy and light vehicles from Burthong Road directly to the Surface Facilities Area.
Surface Facilities Area	That section of the Project Site that would include the surface facilities to support the underground mining operation, including the Box Cut, temporary Waste Rock Emplacement, Processing Plant, site offices and associated infrastructure,
Box Cut	An excavated area providing an entry point into the underground mine.
Temporary Waste Rock Emplacement	Location of initial stockpiling of waste rock extracted from the proposed underground mine awaiting return underground during backfilling activities.
Run-of-Mine (ROM) Pad	Hardstand area providing for the storage of the ore material from the underground mine prior to processing.
Processing Plant Area	Area that incorporates the ore crushing, grinding and processing infrastructure to produce the gold-silver doré, the bulk copper-zinc-lead concentrate products, and the tailings as a by-product.
Tailings Storage Facility	A facility used to store the tailings material generated by the processing operations.
Mine Camp	An accommodation facility used to house the proposed mine workforce, with a capacity to house up to 80 people.

1.6 BACKGROUND TO THE PROJECT

1.6.1 Introduction

The Hera deposit is a high grade gold and base metal deposit comprising sub-vertical and sub-parallel base metal and gold lenses.



The Hera deposit was discovered by Pasminco in 2001 and advanced to pre-feasibility status by Triako Resources Limited in the period 2002 to 2006. The Hera Project was then acquired by CBH Resources Limited following the takeover of Triako Resources Limited in 2006.

On 18 June 2009, the Proponent announced it had reached agreement to purchase a 100% interest in the Hera Project and a 90% interest in the adjacent Nymagee Joint Venture, from CBH Resources Limited.

This section provides an overview of the mineral authorities held by the Proponent, a description of the geology and mineralisation within and surrounding the Project Site and an overview of the resources and reserves that underpin the Project.

1.6.2 Existing Mineral Authorities

The Project is wholly contained within Exploration Licence EL6162 which covers an area of approximately 140km² (see **Figure 1.1**). The licence was granted on 26 November 2003 and is not due for renewal until November 2011.

In April 2007, the then NSW Department of Primary Industries approved the construction of an exploration decline for the purposes of bulk sampling as a Category 3 exploration activity under Part 5 of the *Environmental Planning and Assessment Act 1979*. The approved activities are described in more detail in Section 1.5.

1.6.3 Historic and Surrounding Mining Operations

No significant historical mining activities have been undertaken within the Project Site. However, the Kershaw North Shaft is listed as having been worked from 1903 to 1906 (Suppel and Gilligan, 1993) although no production was recorded from this site.

In addition, several large quartz veins exposed at the surface have been the subject of prospecting activities through extraction of shallow pits. Some of this material may have been removed for use as smelter flux at the Nymagee Copper Mine.

The Nymagee Copper Mine, located approximately 4.5km to the north of the Project Site (**Figure 1.1**), was operated between 1881 and 1917 and produced approximately 420 000t of ore at a grade of 5.8% copper. The ore was mined from a series of steeply dipping ore shoots striking sub-parallel to the thinly bedded turbidite host sequence.

Historic mining operations at Nymagee consisted of a number of vertical access shafts sunk on or adjacent to the outcropping lodes. Mining was conducted on eight major levels to a total vertical depth of approximately 300m below surface. Additionally, a number of shallow open pits and cave zones down to the first underground level were established to supply ore. Surface infrastructure consisted of smelter and processing operations. These facilities have largely been removed, however, a large slag pile remains. The Proponent maintains an 80% interest in a Joint Venture over the Nymagee Copper Mine and surrounding tenements, and is currently actively exploring the area for further copper mineralisation.



Mt Boppy Gold Mine, approximately 65km north of Hera deposit (**Figure 1.1**), operated as an underground mine from 1899 to 1916 and at the time was one of the largest gold producers in Australia. Approximately 450 000oz of gold at 16g/t has been extracted from the deposit by underground mining methods. Australia's first CIP plant was built at Mt Boppy in 1975 to re-treat the historic tailings.

Mt Boppy mine was re-opened by Polymetals Group Pty Ltd, converting it from underground to open cut operations in 2002. It has since produced 67 420oz of gold from 500 000t of ore.

Finally, there are five active mining operations and one inactive mining operation within a 135km radius of the Project Site (**Figure 1.1**). These are as follows.

- Peak Gold Mines.
- CSA Mine.
- Endeavor Mine.
- Tritton and Girilambone Copper Mines.
- Mineral Hill Mine.
- Mt Boppy Mine (currently inactive).

1.6.4 Exploration Operations

Previous exploration over EL6162 includes extensive geochemistry, geophysics and drilling. The southern half of EL6162 has been tested with regional stream sediment and lag sampling and the entire licence area has been tested with a detailed aeromagnetic and radiometric survey.

Prior to the Proponent acquiring the Project, approximately 137 drill holes were drilled in the vicinity of the Hera deposit. In the period November 2009 to April 2011 the Proponent completed a further 64 drill holes to provide further information in relation to the mineralisation within the deposit.

1.6.5 Hera Deposit Mineralisation

Mineralisation at the Hera deposit consists of a number of sub-parallel lenses of intensely anastomosing veins and clast-supported to matrix-supported breccias containing pyrrhotite, sphalerite, galena, pyrite, chalcopyrite and gold, with minor to trace cubanite and niccolite.

Host sandstones, siltstones and possible minor volcanics (dacites) are pervasively silicified and sericitised, with varying green chlorite and biotite alteration, and commonly contain disseminated, non-magnetic pyrrhotite, typically aligned parallel to cleavage. Quartz veining is common and several zones of milky white quartz veins, up to 1m thick, are spatially associated with sulfide mineralisation.



The sulfide lenses strike approximately 340° true and dip steeply to the west (>80°). Based on drilling, the top of the sulfide ore occurs approximately 22m below surface and appears to plunge moderately to the south at approximately 45°, extending along strike for at least 550m (**Figure 1.3**). These lenses are typically narrow lenses with variable widths and strong lateral continuity along strike. Main Lens contains the majority of resources with additional mineralisation hosted by Hays South, Hays North and Far West Lenses

Drilling to date has outlined a number of lenses of sulfide and occasionally gold mineralisation. Of these the Main Lens (North and South), Hays Lens (North and South) and Far West Lens have been identified as hosting economic mineralisation (**Figure 1.3**).

Further economic mineralisation within the structures may occur, however, drill densities are currently insufficient and further drilling and interpretation will be conducted throughout the life of the Project.

An east-west striking fault (the Offset Fault) has been interpreted to offset the Main Lens mineralisation by approximately 25m (**Figure 1.3**).

The following presents further relevant information in relation to mineralisation associated with the Hera Project.

- Strike - approximately 340° true.
- Strike length – 600m with potential for extensions along strike.
- Depth – 160m to 470m below surface, with potential for deeper extensions.
- Host rock – Generally homogeneous dacitic volcanoclastics and siltstone/sandstone. Bedding dips to west at 60° to 70° and strikes 340° to 350° true.

Significant gold grades are not always associated with base metal mineralisation but can be associated with quartz veining outside the main base metal mineralised zone.

1.6.6 Identified Resources and Reserves

A Joint Ore Reserves Committee-compliant mineral resource estimate for the Hera Deposit was completed by YTC Resources Limited in June 2010 and updated in July 2011. The July 2011 Estimates at a cut-off of A\$125 per tonne is presented in **Table 1.2**. A full copy of the July 2011 resource estimate is provided in **Appendix 5**.

Table 1.2
Mineral Resource Estimates for Hera Deposit

Category	Weight of ore in tonnes	Au g/t	Ag g/t	Pb %	Zn %	Cu %	Au_Eq g/t
Indicated	2 113 000	4.2	17.0	2.8	3.9	0.2	9.2
Inferred	330 000	3.5	14	2.3	3.3	0.1	7.5
TOTAL	2 444 000	4.1	16.7	2.8	3.8	0.2	8.6

Source: YTC Resources Limited

In addition to the above, **Table 1.3** presents the sulphur content of each of the identified lenses.



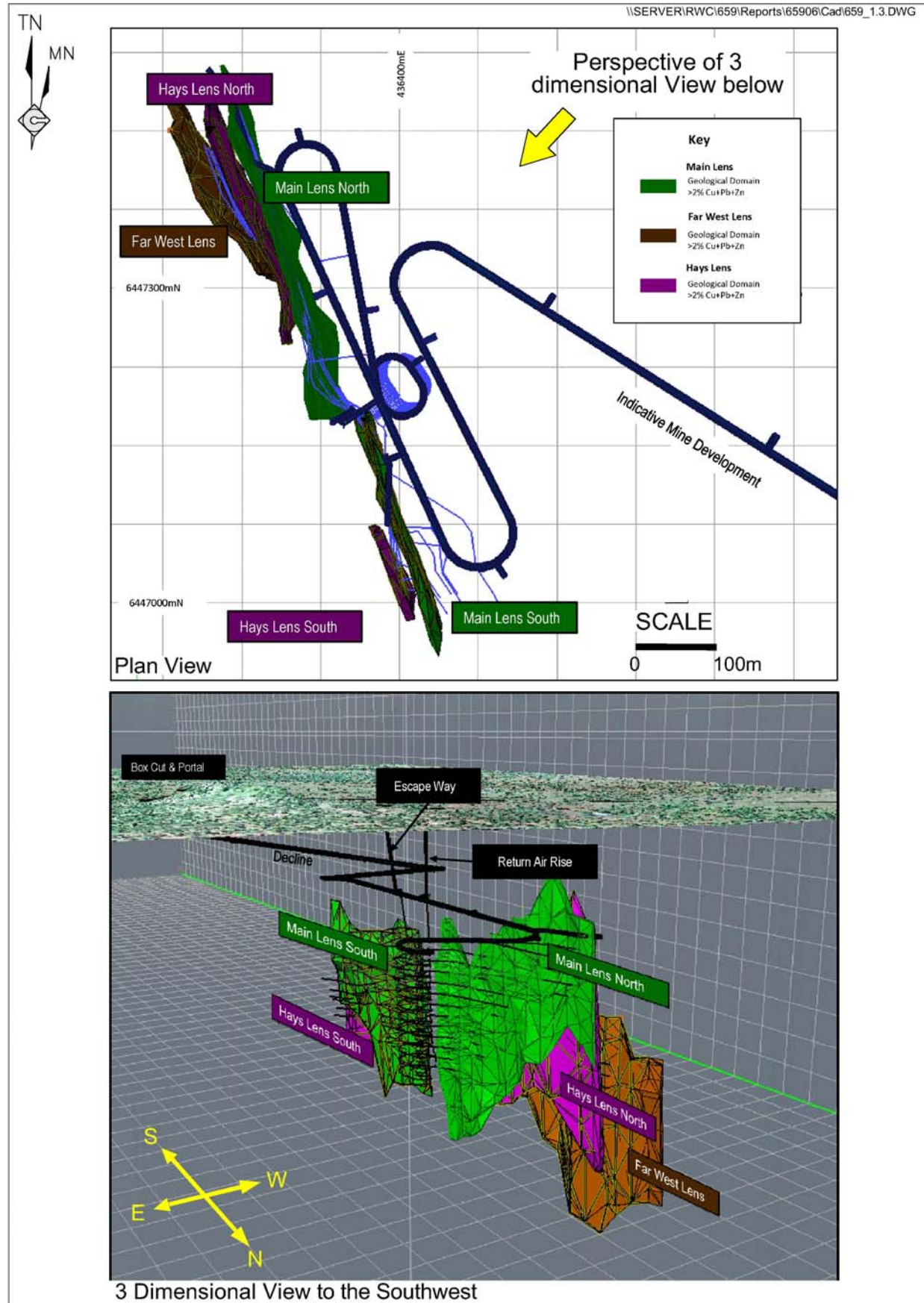


Figure 1.3
HERA DEPOSIT MINERALISATION

Source: YTC Resources Limited



Table 1.3
Sulfur Content of Identified Lenses

Lens	Average Sulfur Content
Main Lens	3.5%
Far West Lens	3.08%
Hays North	2.78%
Hays South	2.0%
Source: YTC Resources Limited	

1.7 EXISTING APPROVED OPERATIONS

1.7.1 Introduction

The former holder of EL6162, Triako Resources Limited, applied for and was granted approval under Part 5 of the EP&A Act for the establishment and operation of an exploration decline and associated activities within the Project Site to extract a bulk sample of 20 000t. A *Review of Environmental Effects* entitled “Exploration Decline at the Hera Deposit within Exploration Licence 6162” and referred to hereafter as RWC (2006) , was prepared to support the application for approval. The proposed activities were approved and **Appendix 3** provides a copy of that document and the approval letter.

This sub-section provides an overview of the approved operations and activities, as they were proposed in RWC (2006). It should be noted that the approved activities have not yet commenced, however, the Proponent proposes to commence the approved activities prior to the receipt of project approval..

For the purposes of this document, the approved activities have been consolidated with the proposed activities and the project design is described fully in Section 2. The Proponent would undertake the Project in accordance with the activity descriptions and operational safeguards contained in Section 2.

1.7.2 Site Establishment Activities

Figure 1.4 presents the approved areas of disturbance. In summary, the approved activities would disturb approximately 11.7ha.

Vegetation clearing will be undertaken following an initial pre-clearing fauna inspection. Larger vegetation will be removed using a bull dozer and be broken up into manageable sections and stockpiled. Topsoil will be pushed into stockpiles for use during subsequent rehabilitation adjacent to the area of disturbance using a bulldozer or front-end loader. Sub-soil would not be separately removed.



1.7.3 Approved Site Infrastructure

The following site infrastructure has been approved (see **Figure 1.4**).

- Laydown and offices area.
- Site access road.
- Box cut and portal.
- A temporary Waste Rock Emplacement.
- Ore stockpile area.
- Settling ponds and settling basins.
- Two ventilation rises to provide fresh air to the deeper sections of the exploration decline.
- Waste disposal trench.

RWC (2006) proposed a range of operational safeguards that will be adopted to manage potential environmental impacts associated with the approved activities. The following sub-sections provide an overview of relevant components of the approved activities.

1.7.4 Box Cut and Decline Establishment

Approval was granted for the construction of a box cut, portal and an exploration decline (**Figure 1.4**). The box cut would be constructed through conventional drill and blast mining techniques. The box cut will have a maximum depth of approximately 17.5m depth, a ramp into the box cut with a slope of approximately 1:7 (V:H) and side batters of approximately 60°. The highwall above the portal would also be formed to a 45° angle. The portal face would be at approximately 72°.

Blasting will be required from a depth of approximately 1m below surface and will typically fragment to a maximum of 2 300 m³ per blast. An excavator and haul trucks would be used to excavate the fragmented waste rock from the box cut and transport it to the approved temporary Waste Rock Emplacement (see Section 1.7.5). These works would take approximately 3 to 4 weeks to complete.

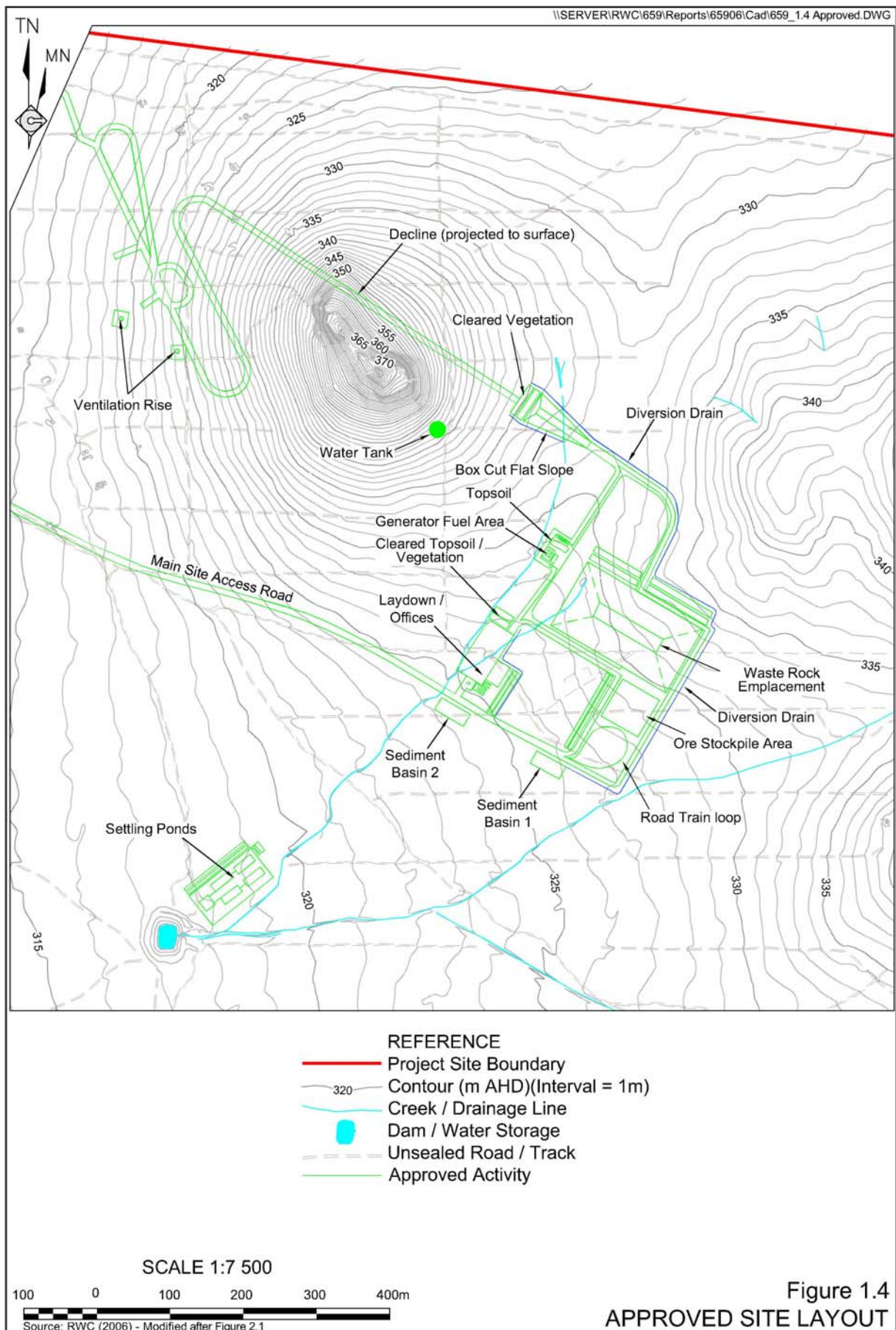
The decline will be constructed using typical underground mining methods, namely jumbo drill and blast, with broken material loaded onto underground haul trucks for transport to the temporary Waste Rock Emplacement.

The exploration decline has been designed to provide drill sites for further infill drilling as drilling progresses downwards. There would be two sublevels developed from the decline to provide bulk ore samples for subsequent analysis and testing.

1.7.5 Waste Rock Emplacement

Waste rock from the box cut and decline will be transported to the Temporary Waste Rock Emplacement (**Figure 1.4**). This material will be temporarily stored within the emplacement before being transported back underground for use during backfilling operations.





Potentially acid forming waste rock will be placed within the emplacement in a manner that will ensure that potentially low pH leachate is not able to flow from the emplacement. In addition, a perimeter spoon drain will be constructed and all surface water from the emplacement area directed to one of the two identified sediment basins.

1.7.6 Ore Stockpile Area

Ore material will be transported to the Ore Stockpile Area using underground haul trucks. When there is sufficient volume of ore to warrant transport, the ore will be loaded into road trains by a front-end loader for transport off site.

The base of the Ore Stockpile Area pad would likely be bedrock, and any localised areas of weathered material will be compacted by onsite machinery. A spoon drain will be formed around the perimeter of the Ore Stockpile Area and all surface water runoff will be directed to the sediment basin located adjacent to the stockpile area. This sediment basin would be sized appropriately to capture runoff from a years worth of average rainfall.

1.7.7 Ventilation Rises

Approval was granted for the construction of two ventilation rises required to provide a supply of fresh air to the deeper sections of the exploration decline (**Figure 1.4**). A raise-borer will be used for the construction of the rises, with all waste rock transported to the temporary Waste Rock Emplacement via the decline.

The ventilation rises would have fans installed to remove exhaust air from the decline and workings and concurrently draw fresh air in via the decline. Air blown through the ventilation shaft would be diluted with fresh air and as such the gas levels would be maintained below occupational health and safety statutory requirements.

1.7.8 Generator Area and Fuel Bay

The primary fuel storage tank (50 000L) would either be located within an earth bund or adjacent to the bunded area should a self-contained tank be used. The generators will also be contained with an earth bund. The bund would be lined with an appropriate impermeable liner and sized to contain at least 110% of the volume of the largest containment vessel (ie. 55 000L capacity minimum), or 25% of the total volume stored with the bund, whichever is larger. A concrete pad for refuelling would be constructed adjacent to the fuel storage area. The bund and the concrete pad would be drained to a common lined sump, which would be pumped out as required.

The generators would be skid mounted and located adjacent to the fuel bay, with all drainage directed to the common, lined sump. There would be a primary generator and a back-up generator. In addition to the generators, there would be a compressor located in the same area to supply compressed air to underground.



1.7.9 Magazine

The magazine for the storage of the explosives, boosters and detonators will be constructed with earthen bunds between the various storages and would be securely fenced and locked to meet all relevant government agencies safety requirements. The material for the bunding will be sourced from the disturbance footprint of the magazine and supplemented with waste rock from the box cut, if required.

A WorkCover licence will be obtained for the storage of explosives at the magazine and the magazine will be managed in strict accordance with this licence, including the minimisation of fire risk through bunding and clearing in the immediate vicinity.

1.7.10 On-site Services

Approval has been granted for the following services.

- Use of one or more site generators for supply of electricity to the decline and office area via underground cables.
- Sourcing of operational water from a combination of dewatered groundwater and surface water run-off captured in Three Gates Tank. An additional licence will be required under *Water Act 1912* or the *Water Management Act 2000* to extract water from the approved decline.
- Trucking in of portable water as required.
- Setting up of telephone, data and fax communications on site using cables installed along the Site Access Road.
- Sewage management and installation of a septic tank (leach or irrigation) for ablutions, subject to Cobar Shire Council approval and agreed service of the septic tank, including emptying on an as needs basis.

1.7.11 Non-production Waste Management

Non-production waste would be managed in a manner, reflecting the relative remoteness of the site, a lack of recycling services in the area and the short term nature of the proposed exploration activities. Management of non-production waste would be as follows.

- Oil and grease – to be removed off site by a licensed waste oil recycling contractor.
- Waste tyres – to be removed off site by the mining contractor.
- Scrap metal – to be removed off site by a scrap steel merchant.
- Small quantities of general waste (paper and putrescibles) for disposal in an on-site waste trench designed and constructed to prevent leachate migration into groundwater.



1.7.12 On-site Mobile Equipment

The following mobile equipment is approved to be used.

- Surface equipment for box cut establishment:
 - pneumatic drill and compressor;
 - excavator for box cut mining; and
 - two dump trucks for box cut mining.
- Site establishment throughout the life of the approved activities:
 - front-end loader for waste rock and ore stockpile forming;
 - front-end loader for truck loading and water management structure construction;
 - grader (Cat 12H or 14H or equivalent) for road maintenance;
 - two power generators (800 kVA); and
 - various light vehicles.
- Underground equipment:
 - one to two jumbo drill rigs for underground development;
 - two Load Haul Dump units for loading dump trucks;
 - two haul trucks for transportation of waste rock and ore to the surface;
 - ancillary equipment for various mine services; and
 - various light vehicles.

1.7.13 Transportation and Site Access

The following transportation and site access activities are approved activities.

- Internal transportation.
 - Construction and use of a site access road providing road train access for transportation of the bulk ore sample.
 - Construction and use of a light vehicle access road to the ventilation rises.
 - Construction and use of access road to the magazine for light vehicles and explosives trucks.
 - Construction and use of internal light vehicle and haul roads around the surface infrastructure areas, eg. decline to Waste Rock Emplacement, ore stockpile and workshop.
- External transportation to and from Cobar via Priory Tank Road and Kidman Way during site establishment as follows.
 - low loaders (up to 4 movements per day) to deliver large mobile equipment and infrastructure such as transportable buildings;



- heavy vehicles (up to 6 movements per day) to deliver consumables, fuel and other stores as required; and
- light vehicles (up to 20 movements per day) for personnel transport.
- External transportation to/from Cobar via the above noted route during the operational phase of the activities as follows.
 - Road trains of approximately 50t capacity to transport the bulk ore sample off site to a maximum 1000t bulk ore per day equating to 20 truck movements per day during daylight hours;
 - Fuel truck – approximately two movements per week;
 - Supply truck – approximately two movements per week;
 - Explosives truck at a rate of approximately two movements per fortnight; and
 - Transport of personnel and small store items using light vehicles – up to 14 movements per day.

1.7.14 On-site Water Management

1.7.14.1 Introduction

The objectives of the approved water management system are to minimise the interaction of clean and potentially sediment-laden or “dirty” water. The following describes the approved water management system.

1.7.14.2 Dewatered Groundwater

Groundwater dewatered from the decline would be pumped to a series of settling ponds located adjacent to the Three Gates Tank pond (see **Figure 1.4**) for subsequent use underground in drilling, with the excess water if any, stored in the settling ponds for evaporation.

In the unlikely event that a prolonged or large rainfall event caused the settling ponds to overflow, the water would be diluted by the rainfall and any overflow would still be within the catchment of Three Gates Tank. Overflow would then be even further diluted as it reaches that dam and is not anticipated to impact on water quality.

The settling ponds, would be excavated to bedrock and would have a relatively impermeable floor. The total capacity of the settling ponds would be approximately 3 750 m³.

1.7.14.3 Surface Water Runoff – Clean Water

A number of diversion banks would be constructed to minimise interaction between clean surface water runoff and dirty water from areas of disturbance. Two appropriately sized clean water diversion banks would be constructed. The diversion banks would be in the form of a trapezoidal channel with batters of 1:3 to 1:6 (V:H), and would be grassed to minimise potential erosion.



1.7.14.4 Surface Water Runoff – “Dirty” Water

A number of catch banks would be constructed to capture potentially dirty water from the approved areas of disturbance and direct the water to the sediment basins. Two sediment basins, appropriately sized, would be constructed to hold this dirty water. Water would usually evaporate from these sediment basins, however, during large or prolonged rainfall events, the sediment basins may overflow with water reporting to the Three Gates Tank. Given the water management structures that would be implemented to remove the majority of sediment from the water prior to it reaching Three Gates Tank, the quality of the overflow water would be consistent with the quality of overflow water from the other dams within “The Peak” property.

An important feature of the management of the sediment basins would be the progressive emptying of water from the basins within 20 days of the cessation of a rainfall event in order to retain the significant storage within the basins, and hence maintain their effectiveness during substantial rainfall events. Furthermore, each basin would be cleared of accumulated sediment once 25% of its capacity has been reduced.

1.7.15 Anticipated Project Timeframe, Hours of Operation and Employment

The anticipated timeframe for the approved activities is 12 to 14 months. The approved hours of operation are presented in **Table 1.4**.

Table 1.4
Approved Hours of Operation

Activity	Hours
Box Cut Excavation	7:00am to 6:00pm / 7 days a week
Site Establishment	7:00am to 6:00pm / 7 days a week
Exploration Decline	24 hours / 7 days a week
Underground Exploration / Bulk Sampling	24 hours / 7 days a week
Campaign Ore Transport	7 days a week ¹
Note 1: Daylight hours	
Source: RWC (2006) - Table 2.7	

The following presents the anticipated employment associated with the approved activities.

- Mining and Earthmoving Contractor – an estimated crew of 20 to 22 personnel, including three shifts of four people, an electrician, leading hand, project manager and additional support personnel working in 10 to 12 hour shifts.
- The Proponent – five to seven personnel dedicated to the proposed activities, primarily in geological and managerial positions, resulting in total employment of approximately 25 to 29 people on site.
- Specialised sub-contractors to undertake specific tasks on site as required.



1.7.16 Rehabilitation and Revegetation

The following presents the approved rehabilitation and revegetation activities.

- All disturbed areas - sampling of material and surface water for contaminants and other parameters to identify if remedial works are required and implementation of those works if required.
- Exploration Decline / Box Cut Portal – backfilling to the pre-existing and surface using waste rock.
- Ventilation Rises – removal of all surface infrastructure removed and the covering of holes with concrete slabs to the relevant standard.
- Waste Rock Emplacement Area – to be battered to create final profiled batters of 1:4 (V:H).
- Laydown Area and Ore Stockpile – to be shaped using stockpiled topsoil and weathered rock and available top soil, including establishment of micro-climates to allow vegetation growth.
- Offices, Workshop, Generator Area, Fuel Bay and Magazine – removal and disposal of surface infrastructure, followed by profiling of disturbed footprint to a relatively flat surface, including establishment of micro-climates to allow vegetation growth.
- Roads – ripped and spread with topsoil where no longer required for agricultural purposes.
- Settling Ponds – banks pushed in to recreate a relatively flat landform, contour ripped to minimise erosion opportunities and covered with topsoil.
- Water Management Structures – to be re-profiled to a shallow depression, then contour-ripped and covered with top-soil.
- Diversion banks and catchment drains – to be retained in their existing grassed and stable condition as part of the final landform.

Once reshaped, areas requiring revegetation would be revegetated or where soils are limited, using pastures species, with White Cypress Pine.

Finally, the rehabilitated areas would be rehabilitated to a final land use of agriculture, principally grazing.

1.7.17 Management Issues

A Plan of Management for environmental issues, was incorporated in RWC (2006). The Plan, comprising a number of Environmental Management Plans (EMPs) identified below, detailed the manner in which environmental issues associated with the approved activities would be managed.

- EMP1: Vegetation Clearing.
- EMP2: Soil / Overburden Stripping and Management.



- EMP3: Hydrocarbon Management.
- EMP4: Waste Management.
- EMP5: Water, Erosion and Sediment Management.
- EMP6: Rehabilitation.
- EMP7: Bushfire Control.
- EMP8: Complaints Management.

1.8 APPROVALS PROCESS AND PROJECT TIMETABLE

It is noted that following the election on 26 March 2011, that the incoming government committed to repeal Part 3A of the *Environmental Planning and Assessment Act 1979*. That process is currently underway. The Proponent understands that under the transitional provisions currently in place, that the current application for project approval will continue to be assessed and determined under Part 3A of the Act.

The indicative timing of the major project approvals process, with the activities completed and activities yet to be completed are presented in **Table 1.5**.

1.9 MANAGEMENT OF INVESTIGATIONS

The preparation of this document has involved a study team managed by Mr Mitchell Bland (BSc(Hons), MEconGeol, LLB(Hons)), Principal Environmental Consultant with R.W. Corkery & Co Pty. Limited. Dr Nagindar Singh (BSc, MSc, PhD) of the same Company has assisted with the preparation of the document. Peer review of the document was undertaken by Mr Rob Corkery (BSc(Hons), MAppSc), Principal with the same Company.

The following representatives of the Proponent assisted with the preparation of components of this document.

- Mr Rimas Kairaitis (BAppSc(Hons)), CEO and Director, YTC Resources Limited.
- Mr Dean Fredericksen (MSc(Hons)), Hera Project Manager.
- Mr Sean Pearce (BE(Mining), MProf Acct), General Manager – Hera Project.
- Steve Kendrick, Project Manager, GR Engineering Perth.



Table 1.5
Approvals Process

Activity	Indicative Timing
1. <i>Preliminary Environmental Assessment</i> is prepared and submitted to the Department of Planning and Infrastructure and distributed to the relevant government agencies.	Completed - 25 August 2010
2. A Planning Focus Meeting is convened for all relevant government agencies.	Completed - 2 September 2010
3. The Proponent writes to the Department of Planning and Infrastructure lodging its Application for Project Approval.	Completed - 14 September 2010
4. The Department of Planning and Infrastructure receives the written requirements of the government agencies consulted and issues the Director-General's Requirements for the Project.	- 23 November 2010
5. The Proponent undertakes consultation with the local and wider community – which continues throughout the entire process.	Ongoing. Meetings held on the following dates. - 16 August 2010. - 15 December 2010 - 16 May 2011.
6. An <i>Environmental Assessment</i> is provided to the <i>Department of Planning and Infrastructure</i> for consideration and assessment of adequacy by the Department and other government agencies (prior to it being placed on public exhibition).	Completed July 2011
7. The <i>Environmental Assessment</i> is lodged with modifications reflecting the comments provided by the various government agencies. The Department of Planning and Infrastructure will place all documents on public exhibition and notify neighbours and other stakeholders about the Project and the exhibition period.	Completed - September 2011
8. Review of the <i>Environmental Assessment</i> during the exhibition period by the community and government agencies.	<i>Timing not indicated</i>
9. The Department of Planning and Infrastructure seeks from the Proponent, a response / clarification of issues raised in the submissions from government agencies and the community.	<i>Timing not indicated</i>
10. The Proponent provides a response to the issues raised and, if necessary, a revised Statement of Commitments.	Variable, depending on issues raised
11. The Department of Planning and Infrastructure prepares its assessment report based on all documentation submitted by the Proponent, government agencies and the community. If considered appropriate by the Minister, the application will be referred to a Planning Assessment Commission.	<i>Timing not indicated</i>
12. Determination by the determining authority.	<i>Timing not indicated</i>
13. Completion of required management and other plans and documents, including a Mining Operations Plan.	Within 3 months of receipt of project approval*
note *: Estimated timing only	



The following specialist consultancies, comprising a multi-disciplinary team, were commissioned to undertake assessments in the disciplines noted. Each specialist assessment investigated the existing environment, identified key issues that may potentially impact on the existing environment, developed the appropriate operational safeguards to mitigate impacts and the assessed of actual environmental impacts following implementation of the proposed operational safeguards.

- Ecology and Heritage – OzArk Environmental and Heritage Management Pty Ltd.
 - Mr Phil Cameron (BSc, AssDipAppSc).
 - Dr Jodie Benton (PhD, BA(Hons)).
- Surface Water and Soils – SEEC.
 - Mr Mark Passfield (BSc(Hons), Eng. Geology & Geotechnics, CPESC).
- Groundwater – The Impax Group.
 - Mr James Morrow (BEngEnv(Hons)).
- Traffic and Transportation – Traffic Solutions Pty Ltd.
 - Mr Craig Hazell (AssocDipEng).
- Noise and Blasting – Spectrum Acoustics.
 - Mr Neil Pennington (BSc, BMath(Hons)).
- Air Quality and Greenhouse Gas – ENVIRON Australia Pty Ltd.
 - Scott Fishwick (BSc).

These assessments addressed the Director-General's requirements, issued on 23 November 2010, and were prepared in accordance with the appropriate Policies, Guidelines and Plans as set out in the correspondence received from the NSW Department of Planning and Infrastructure.

