9. Land

9.1 Introduction

This chapter addresses the land aspects of the Project. It describes the existing geological and geomorphological environment, and describes existing land use and land contamination. Potential impacts to land and management measures are discussed.

The potential impacts and associated mitigation measures identified in this chapter contribute to a number of components of the project risk assessment undertaken in Chapter 5, including land, surface water, ground water, air and noise. The project risk assessment includes consequence, likelihood and residual risk ratings for land impact after management measures are implemented.

More detailed land assessment is provided in the following technical appendices:

- Appendix I – Surface Water Hydrology;
- Appendix J – Surface Water Quality;
- Appendix K – Hydrogeology;
- Appendix T – Air Quality ;
- Appendix U – Noise and Vibration; and
- Appendix Y– Reclamation Plan.

9.2 Existing Environment

9.2.1 Land Tenure

Mining and associated operations will primarily occur on Mineral Leases MLN 1070, MLN 1071 and MLN 1127 covering 5,365ha. A small portion of EL 29886 will be inundated due to a raising of the raw water dam (RWD).

The three Mineral Leases are located in Northern Territory Parcel Numbers 4366 and 4389 as recorded in the Northern Territory Land Information System records. These parcels are vested in the Barnjarn Aboriginal Corporation as Aboriginal freehold land granted under the Northern Territory *Aboriginal Land Act 1979* (Appendix Q). The land is controlled by the Jawoyn Association under Northern Territory enhanced freehold title. Vista Gold has been and continues to be involved in consultation with the Traditional Owners representative, the Jawoyn Association. This began in 2006 with Vista Gold's assumption of responsibility for the mine site. There is an ongoing agreement between the Jawoyn Association and the company with regards to the mine site.

9.2.2 Geology

Background on the geological setting at Mt Todd was obtained from the Edith River Region 1:100,000 Geology (Needham *et al*. 1986) and Katherine 1:250,000 Geology (Kruse *et al*. 1994) and its explanatory notes (Kruse *et al*. 1994a, and Tetra Tech 2013). The Mt Todd deposit is located in the Early Proterozoic Pine Creek Geosyncline (Figure 9-1).

Quaternary alluvial deposits are associated with existing drainage lines in the region. To the east of Mt Todd on the Arnhem Plateau, the Statherian Kombolgie Formation unconformably overlies the Orosirian rocks of both the Edith River Group and the Cullen Batholith. Locally, the Edith River Group comprises the Plum Tree Creek Volcanics and Phillips Creek Sandstone. Locally, rocks of the Cullen Batholith comprise the Yinberrie Leucogranite and the underlying Tennysons Leucogranite.

The Orosirian Finnis River Group unconformably underlies the Edith River Group. Locally the Finnis River Group comprises the Tollis Formation and Burrell Creek Formation. The rocks of the Finnis River Group adjacent to the Cullen Batholith have been metamorphosed to hornfels.

The Batman Pit is located within the Burrell Creek Formation and the rock types comprise greywackes (locally metamorphosed to hornfels at depth and to the west of the pit), shales and felsic tuff. Dolerite and lamprophyre dykes also intersect the pit. Beneath the pit, both the Yinberrie Leucogranite and underlying the Tennysons Leucogranite are interpreted as the basement rocks (Tetra Tech 2013). Both of these units outcrop to the west of the site. The subsurface inner contact aureole associated with the leucogranite (the extent of the hornfels metamorphism of the Burrell Creek Formation) has been confirmed by drilling, interpreted from aquifer properties and observed in outcrop.

The Batman Deposit shares some characteristics with intrusion-related gold systems, especially the association of gold with bismuth and reduced ore mineralogies. This makes the deposit unique in the Pine Creek Geosyncline. The mineralisation within the Batman Deposit is directly related to the intensity of the north-south trending quartz sulfide veining. The lithological units impact on the orientation and intensity of mineralisation (Tetra Tech 2013). Sulfide minerals associated with the gold mineralisation are pyrite, pyrrhotite, and lesser amounts of chalcopyrite, bismuthinite, and arsenopyrite. Galena and sphalerite are also present but appear to be post-gold mineralisation and are related to calcite veining, bedding, and the east-west trending faults and joints (Tetra Tech 2013).

9.2.3 Topography, Land Systems and Soils

The main natural topographic feature of the mine site (Figure 9-2) is Mt Todd with an elevation of 230m Australian Height Datum (AHD).

As a result of previous mining, the primary anthropogenic features of the site include (plates 2-1 to 2-6):

- the Batman Pit with a depth of 114m and surface area of 40ha;
- the WRD with a height of 24m and footprint of 70ha;
- TSF1 with a height of 16m;
- low grade ore stockpile (LGO1) and scats stockpile; and
- the HLP.

The two main land systems identified in the project area are (Figure 9-3):

- Baker land system:
  - hills, and strike ridges on persistent Burrell Creek Greywacke, sandstone and siltstone in the west of the area enclosing the Batman Pit and extending north and south, and Mt Todd and similar rises in the east.

- Bend land system:
  - undulating hills on lower Proterozoic sediments (Burrell Creek Formation) occupying the north-south central portion the area including the waste rock dump, tailings storage facility and heap leach pad, and the eastern portions of the lease.

Soils vary from sandy and loamy red and yellow earths to lateritic and yellow podsolic soils on gently undulating land, often over compacted clay sub-soils. Heavier textured grey soils are found on the floodplains and levees of the Daly River system while stony and skeletal soils occur in the hills (Kerle 1996).

Soil pH levels sampled as part of the 1992 EIS were reportedly very low. Analysis confirmed pH levels ranged from 4 - 4.2. It was concluded the acidic nature of the soil means they are below the optimum range for establishment of vegetation (Miller and Associates 1990).

Salt levels were low with sodium and chloride concentrations averaging 10ppm. Levels of nitrogen (N), phosphorous (P) and potassium (K) were reported as generally low. Nitrogen levels are generally low corresponding to the low levels of organic matter in the skeletal nature of soil. Phosphorus levels are very low as would be expected under the observed acidic conditions (Miller and Associates 1990).

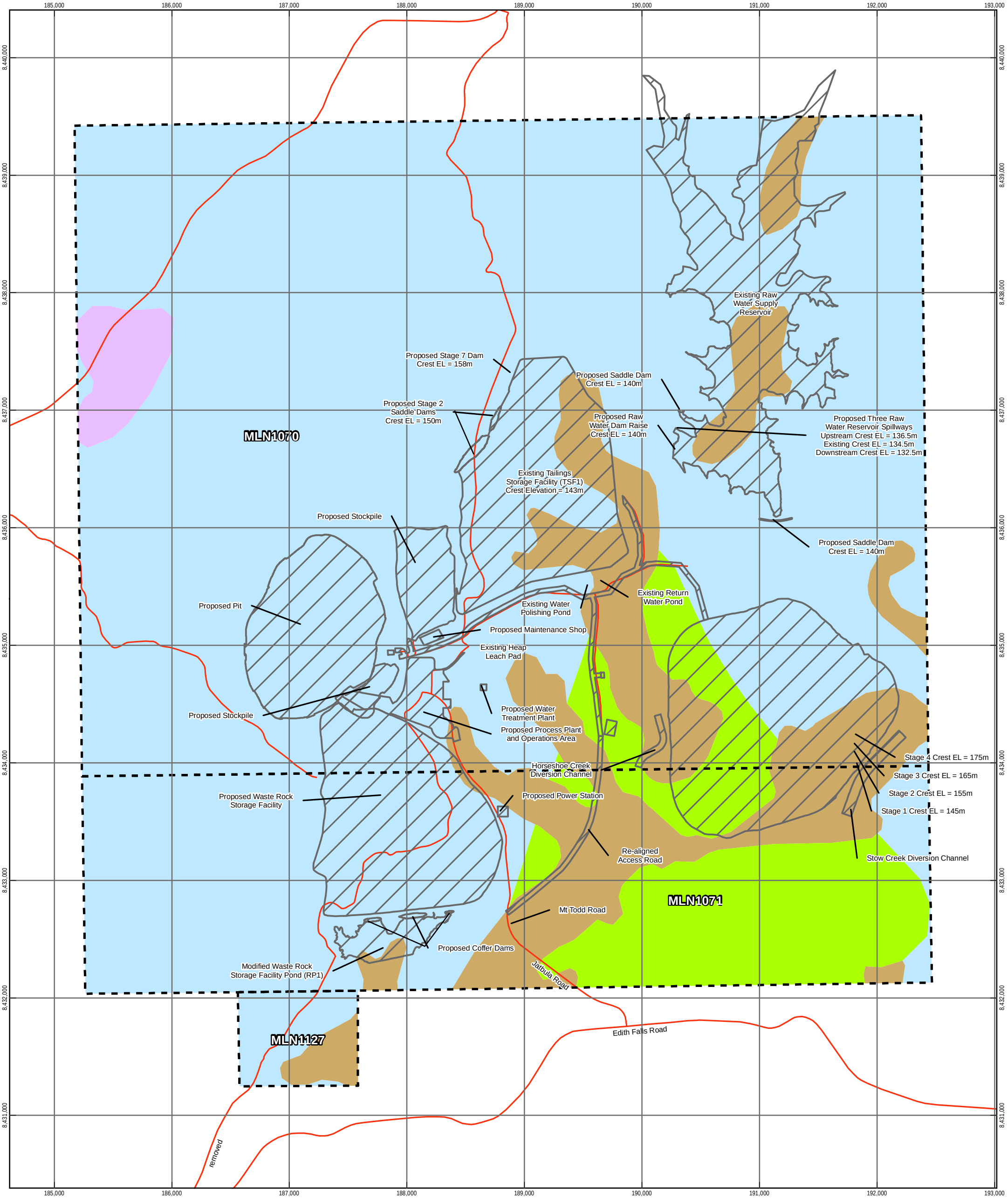
Potassium levels vary. Low levels were reported from soils tested from Bend and Baker land units. Medium levels were observed on alluvial soils types associated with rivers land system.

Calcium / magnesium ratios were found to be low. A generally high percentage of exchangeable aluminium ions in the soil indicated potential for aluminium toxicity affecting plants. This is due to the low pH values. Levels of magnesium ranged from low to adequate.

Prior to mining, levels of copper, zinc and boron were interpreted as being potentially limiting for plant growth. Iron and manganese were reported as non-limiting, given the acidic natural of the soils).

Based on drill core data, sources of clay are available on-site, although there is uncertainty around the quantity and quality of clay available. The clay borrow area, or a number of smaller borrow areas, will likely be in the vicinity of the previous borrow area, to the south east of TSF1.

Sources of clay have also been identified over a large strike length from Emerald Springs to South of Katherine. Some of the identified sources are on EL28321 held by Vista Gold. Options for the supply and or purchase of clay will continue to be investigated with the ultimate source(s) being subject to a separate approvals process.



LEGEND

- Mt Todd Mineral Leases
- Mine Infrastructure
- Access Roads

Formation

- Burrell Creek Formation (Greywacke, -Pfb)
- Cenozoic Materials (Alluvium, Qa)
- Tollis Formation (Greywacke, -Pbt)
- Yenberrie Granite (Greisen, -Pgc>y)

1:30,000 @ A3

0 250 500 750 1,000

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Grid: Map Grid of Australia 1994, Zone 53

N

Vista Gold Australia Pty Ltd
Mt Todd Gold Project

Job Number	43-21801
Revision	1
Date	24 May 2013

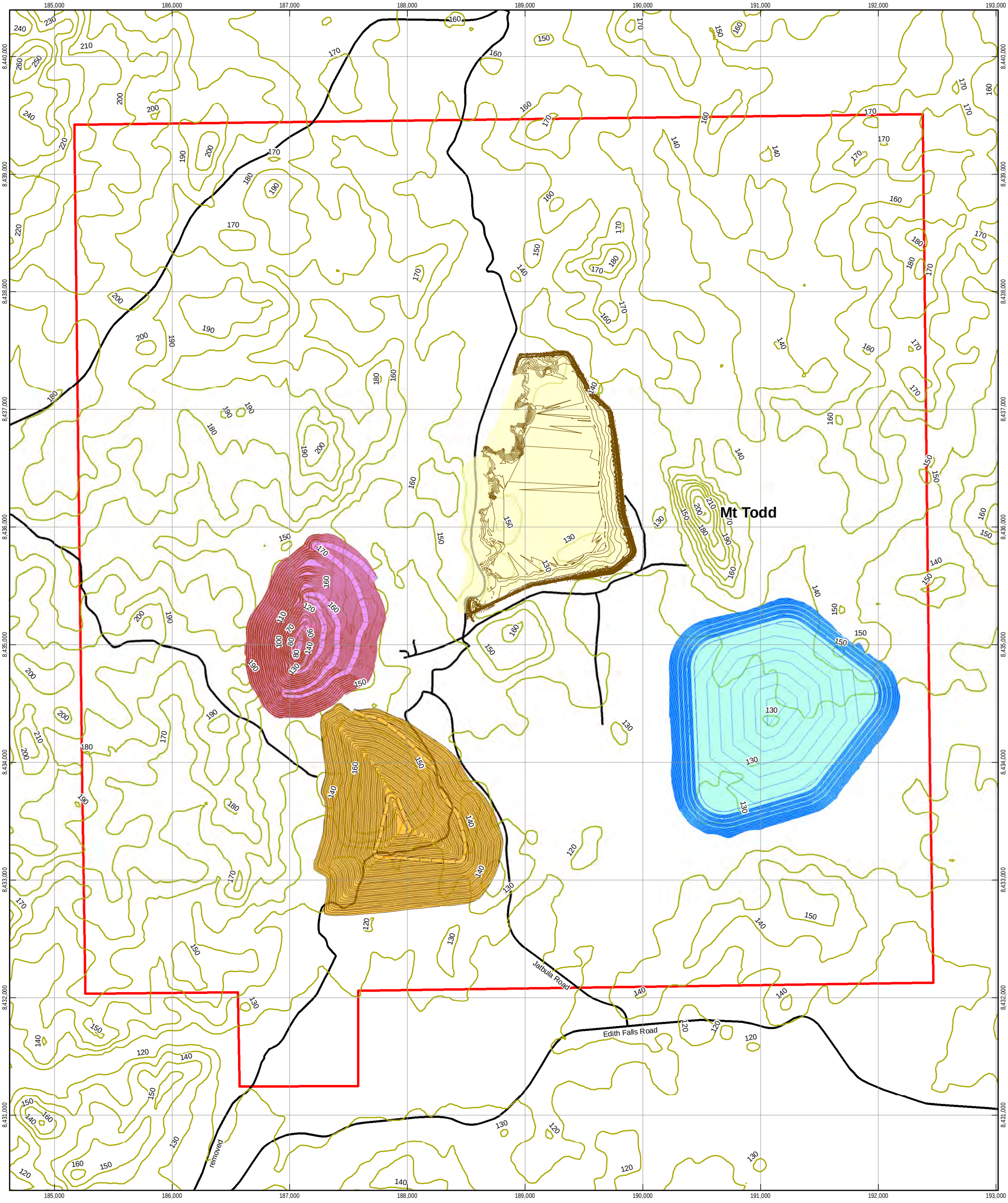
Geology of Mineral Leases

Figure 9-1

G:\43\21801\GIS\Maps 30000 TPA\EIS\Land\4321801_1301E.mxd

66 Smith Street Darwin NT 0800 Australia **T** 61 8 8982 0100 **F** 61 8 8981 1075 **E** drwmail@ghd.com **W** www.ghd.com.au

Data source: Tetra Tech - Mine Infrastructure (2013). NTME - Geology Formations (2012). Vista Gold - Mineral Leases (2011). GHD - Access Roads (2011). Created by: CM



LEGEND

- Contours AHD (10m interval)
- Access Roads
- Mount Todd Mineral Leases
- Proposed Batman Pit
- Proposed Waste Rock Dump
- Modified Tailings Storage Facility 1
- Proposed Tailing Storage Facility 2

1:50,000 @ A3

0 0.25 0.5 0.75 1

Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Grid: Map Grid of Australia 1994, Zone 53

N

Vista Gold Australia Pty Ltd
Mt Todd Gold Project

Job Number 43-21801
Revision 1
Date 13 Jun 2013

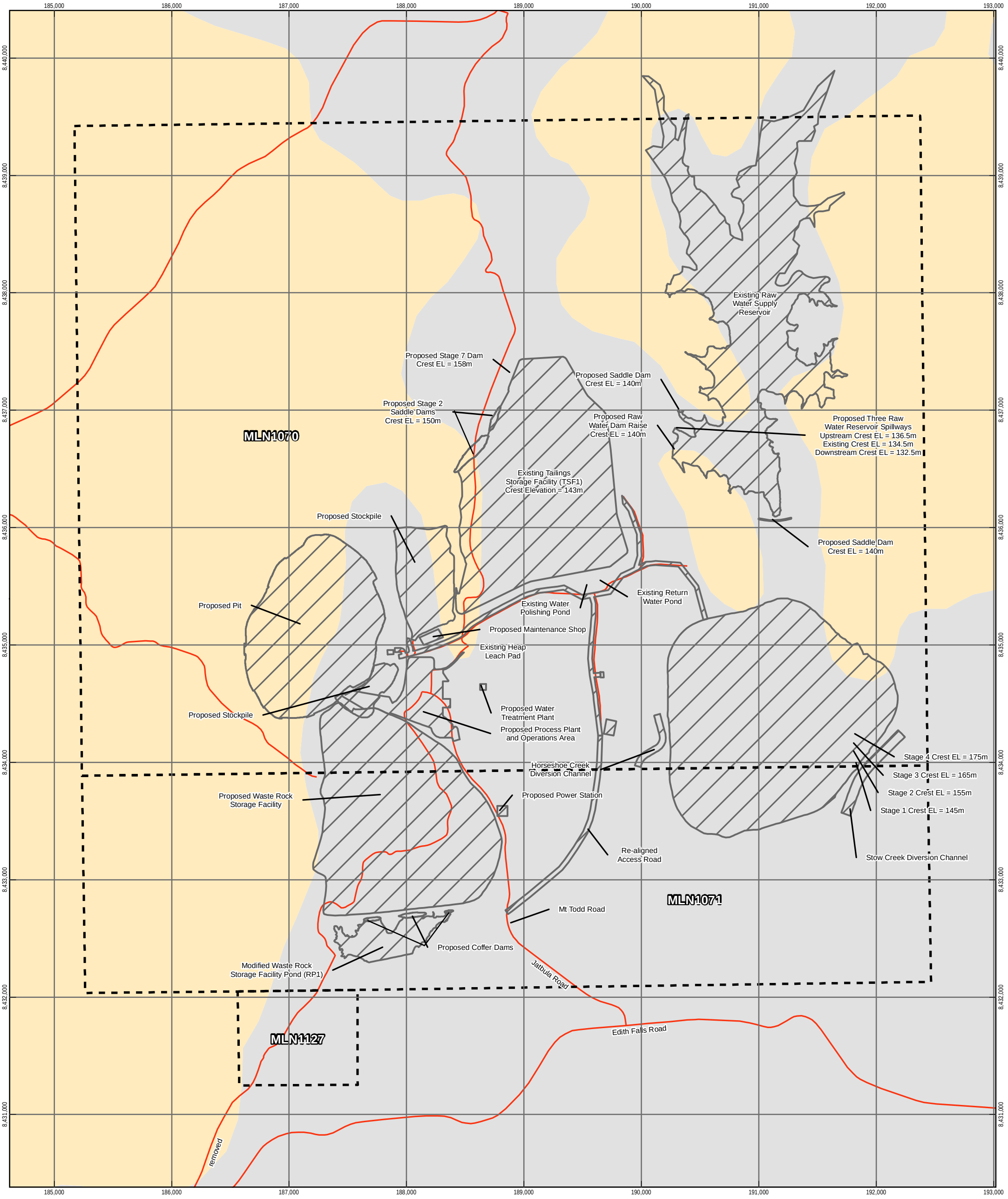
Topography

Figure 9-2

G:\43\21801\GIS\Maps 30000 TPA\EIS\Land\4321801_1303E.mxd

66 Smith Street Darwin NT 0800 Australia T 61 8 8982 0100 F 61 8 8981 1075 E drwmail@ghd.com W www.ghd.com.au

Data source: Tetra Tech - TSF1, TSF2, WRD, Batman Pit (2013), Mineral Lease (2011). CSIRO - Contours (2012). GHD - Access Roads (2011). Created by: CM



LEGEND

- Mt Todd Mineral Leases
- Mine Infrastructure
- Access Roads

Land System

- Baker
- Bend

1:30,000 @ A3

0 250 500 750 1,000

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Grid: Map Grid of Australia 1994, Zone 53

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Vista Gold Australia Pty Ltd
Mt Todd Gold Project

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Land Systems

Figure 9-3

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66 Smith Street Darwin NT 0800 Australia T 61 8 8982 0100 F 61 8 8981 1075 E drwmail@ghd.com W www.ghd.com.au

Data source: Tetra Tech - Mine Infrastructure (2013). NTME - Geology Formations (2012). Vista Gold - Mineral Leases (2011). GHD - Access Roads (2011). Created by: CM

9.2.4 Land Contamination

Mt Todd mine site is a brownfield / disturbed site. The area is part of a historic mining district and has been mined for over a century. Recent mining for gold started in 1996. A combination of technical difficulties and a reduced global market price for gold caused cessation of mining in 2000.

Mining infrastructure remains on site. Potential sources of land contamination include the WRD and associated retention pond, TSF1, HLP, LGO1, scats stockpile, ROM pad, process plant and pad area, and Batman Pit. Dust from earlier mining may also have caused some level of land contamination. Waste rock, tailings and dust from mining are capable of producing AMD.

Waste Rock Dump and Retention Pond 1

The existing WRD is a source of AMD (MWH 2006). Retention Pond 1 (RP1) partially contains seepage from the WRD. Sulfides are visible in the waste rock and oxidise as demonstrated by leachate water quality and the presence of secondary salts on weathered rocks.

No engineered cover is present on the WRD to manage infiltration and no liner is evident beneath the dump. The WRD consists of up to four lifts using a combination of end and paddock dumping.

Chapter 12 discusses existing conditions associated with AMD from the WRD and RP1.

Tailing Storage Facility 1

TSF1 contains tailings from previous mining operations. There is no surface cover (other than a partial water cover) and no liner under the facility to prevent seepage of leachate.

Field investigations show that AMD is discharging from TSF1 into the groundwater system and Horseshoe Creek. The current understanding of AMD in TSF1 is:

- the presence of sulfidic minerals, low neutralisation potential ratios (NPR) and high net acid production potential demonstrate the potential for AMD generation from the tailings materials (Earth Systems 2011a); and
- a downward migrating oxidation front is observed due to the lack of residual alkalinity and carbonate dissolution to neutralise acid production. TSF1 is seasonally recharged and the deeper tailings (>3m) are continually saturated causing limited oxidation and acidity (Earth Systems 2011b).

Chapter 12 contains further information on the existing condition of TSF1.

Heap Leach Pad

The HLP has an area of 334ha and is underlain by a high density polyethylene liner. No cover exists on the HLP. Material in the HLP is likely to be metalliferous. Metals and low pH conditions are observed in the surface water and seepage stored in the HLP ponds (Tetra Tech 2012). It is proposed to reprocess this material through the process plant during mining operations.

Chapter 12 contains further information on the existing condition of the HLP.

Low Grade Ore Stockpile 1

LGO1 has no liner or cover. The geochemical characteristics of LGO1 material have not been determined. Water chemistry in RP2 indicates that LGO1 is a source of AMD.

Chapter 12 contains further information on the existing condition of LGO1.

Scats Stockpile

The stockpile located to the west of TSF1 consists of uniform gravel-sized mill rejects, called scats. The scats stockpile appears to be mildly oxidised on the surface. Drainage on the eastern side of the stockpile reports to TSF1. The stockpile has no liner or cover. Like LGO1, it is likely, based on site geochemical results, that it is PAF. LGO1 will be processed as a component of future mining operations.

Chapter 12 contains further information on the existing condition of the scats stockpile.

ROM Pad

The ROM pad is located to the east of Batman Pit. It was used to stockpile ore for feed to the primary crusher. It has a footprint of 9ha and is estimated to contain 1.3Mm^3 of material. It contains ore and is considered to be a source of AMD. Future mining will expand this stockpile.

Chapter 12 contains further information on the ROM Pad.

Process Plant and Pad Area

Water chemistry in Batman Creek, RP5 and RP6 (MWH 2006) indicates that AMD discharge is occurring from the existing process plant and pad area. The material in this area is either PAF or water comes from another up-gradient source. The future WTP and equalisation pond will be located in this area. The proposed layout of the process plant and pad area is shown in Plate 9-1.

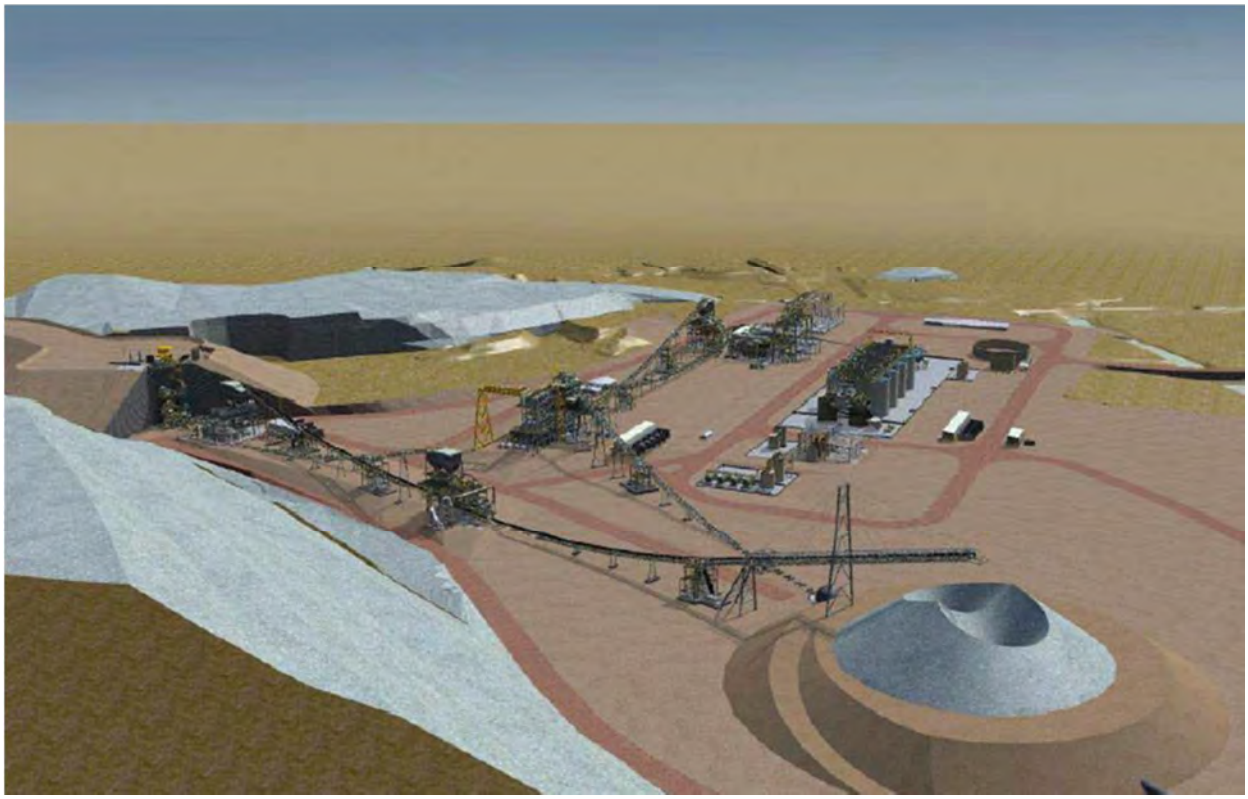


Plate 9-1 Proposed Plant Layout (Vista Gold 2013)

Other Contamination

There is no data on the occurrence of any hydrocarbon or other chemical spills during previous mining. There was no significant rehabilitation following previous mining. The number of potential sources of

land contamination and the presence of contaminants in surface and groundwater suggest that there has been, and there is potential for, significant land contamination.

9.2.5 Land Use

The Mt Todd mine is a brownfield site, managed under a NT Government care and maintenance program. The program was adopted from 2000 and has continued over the last thirteen years. Vista Gold acquired concession rights in 2006. An overview of the site history is provided in Chapter 1.

The Yinberrie Hills Site of Conservation Significance (SOCS) encloses the Mineral Leases and was placed on the Interim List for the Register of National Estate. The Yinberrie Hills is listed under the EPBC Act as habitat for the nationally endangered Gouldian finch, *Erythrura gouldiae.* It is one of the few known major breeding sites for the Gouldian finch (Chapter 14). This area is managed by Jawoyn Rangers and DLRM for nature conservation and Aboriginal land uses.

The nearest community is at Werenbun approximately 6.5km to the southeast of the site. It has eight houses, approximately 30 residents and an open air community school.

Nitmiluk (Katherine Gorge) National Park is located to the south east of the mineral leases. Edith Falls (Leliyn) is attractive to tourists. It provides camping and the opportunity to swim and take walks. The park is owned and managed by the Jawoyn jointly with the Parks and Wildlife Commission of the Northern Territory having day to day responsibility for implementing management.

9.3 Potential Impacts

9.3.1 Land Tenure

The land tenure will remain Aboriginal freehold land. Mineral Leases apply for a majority of the project site. A small portion of EL 29886 will be inundated due to raising of the raw water dam.

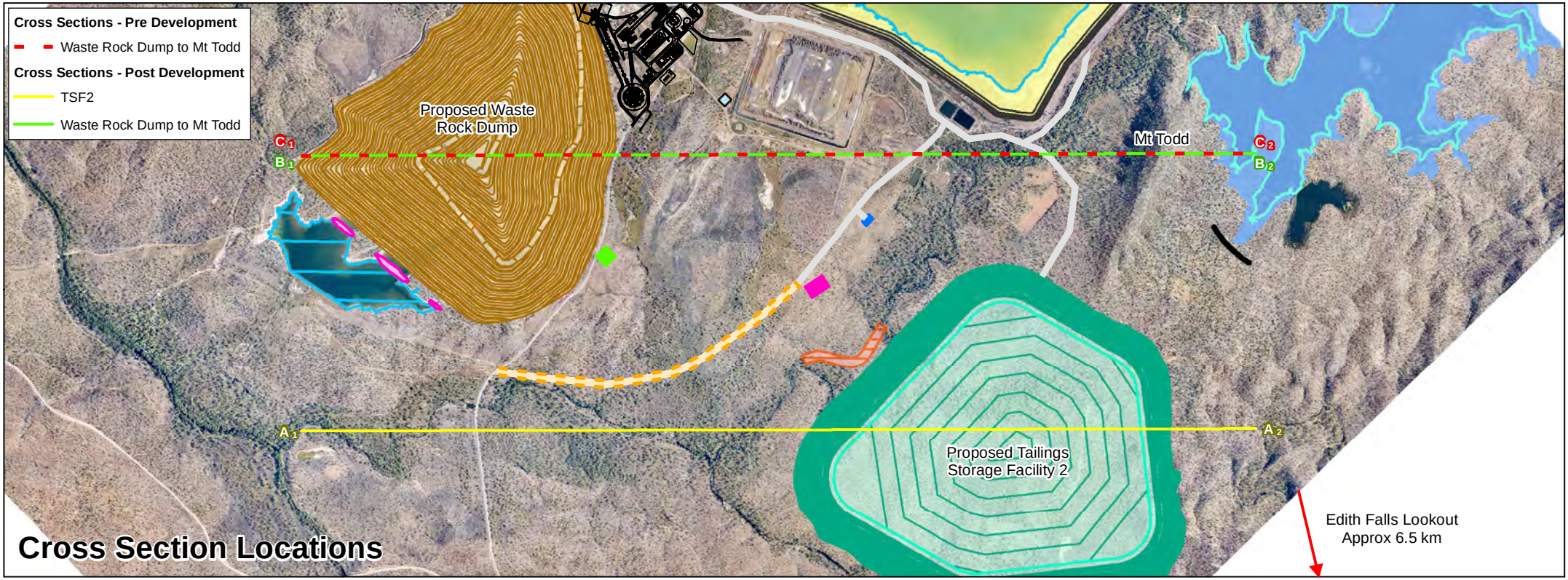
9.3.2 Topography

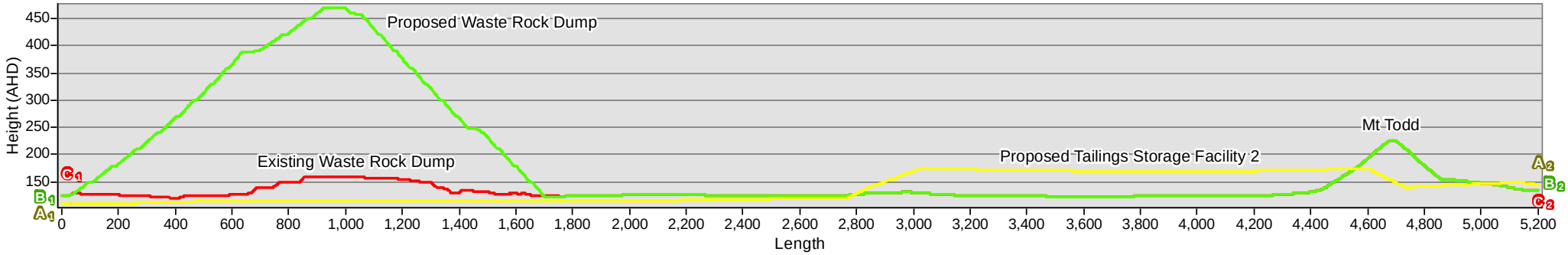
Geology, topography and land systems of the site will be influenced by the proposed mining including:

- mining of Batman Pit to a depth of approximately 528m and surface area of approximately 137ha;
- expansion of the WRD to a height of approximately 350m and a footprint of approximately 217ha;
- raising of TSF1 to approximately 34m;
- construction of a new TSF2, approximately 300ha in area and up to 80m high;
- construction and processing of a new low grade ore stockpile with a footprint of 47ha; and
- possible establishment of clay borrow area(s).

All geological and topographic changes will be confined to the Mineral Leases, a relatively small proportion of the Yinberrie Hills SOCS.

The topographic changes in the mineral leases are significant and primarily related to the WRD. Figure 9-4 shows a plan and elevation of the mine site focussed on the key topographic features. Plate 9-2 provides a view of looking from Edith Falls towards the mine site. Plate 9-3 shows the same view with a photomontage of the WRD overlain. The proposed ultimate profile of the WRD will be the dominant anthropogenic feature in the landscape.





Waste Rock Dump TSF2 at Ultimate Boundary (all units in metres)

1:30,000 @ A4

0 250 500 750 1,000

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Grid: Map Grid of Australia 1994, Zone 53

LEGEND

- Process Plant
- Power Plant
- Proposed Haul Road
- Re-aligned Access Road
- Coffer Dams
- ANFO Facility
- Explosives Magazine
- Diversion Channels
- Indicative Raw Water Dam
- TSF1
- Water Treatment Plant
- Proposed Saddle Dam (Raw Water Dam)
- Retention Pond 1
- TSF2 Footprint (Year 12)
- Waste Rock Dump Footprint (Year 10)

Vista Gold Australia Pty Ltd
Mt Todd Gold Project

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Date	20 Jun 2013

Indicative Landform Changes

Figure 9-4

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66 Smith Street Darwin NT 0800 Australia T 61 8 8982 0100 F 61 8 8981 1075 E drwmail@ghd.com W www.ghd.com.au

Data source: Vista Gold - Imagery (2012). Tetra Tech - Process Plant, Power Plant, Proposed Haul Road, Re-aligned Access Road, Coffer Dams, ANFO Facility, Explosives Magazine, Diversion Channels, Indicative Raw Water Dam, TSF1, Water Treatment Plant, Proposed Saddle Dam, Retention Pond 1, TSF2, WRD (2013). GHD - Cross Sections, 3D Model (2013). Created by: CM

Plate 9-2 View from Edith Falls lookout towards the project area. Mt Todd is in the distant right

Plate 9-3 View from Edith Falls lookout towards the project area with a photomontage of the WRD overlain

9.3.3 Soils

Mining activities cause land disturbance, pre-disposing areas of exposed ground to erosion risk. Activities potentially impacting soils and their susceptibility to erosion include:

- stripping of in-situ soil resources in mining disturbance areas;
- alteration of soil structure during preparation for infrastructure and hardstand areas e.g. mine facilities area, stockpile areas, waste rock dump, roads, tailing storage facilities and haul roads;
- increased erosion and sediment movement due to exposure of soils to wind and water during construction of mine infrastructure;
- soil erosion resulting from the construction of diversion drains;
- soil migration to surface waters;
- traffic and physical disturbance creating dust; and
- alteration of physical and chemical soil properties (e.g. structure, fertility, permeability and microbial activity) during soil stripping and stockpiling operations.

All areas of soil disturbance will be in the Mineral Leases and have no direct impact on the majority of the Yinberrie Hills SOCS, Werenbun or the adjacent National Park.

Water may collect sediments during overland flow and as it passes through the proposed creek diversions. Suspended sediments would be deposited as stream flow velocity reduces further downstream. Deposited sediments can cause adverse effects on aquatic ecosystems. Benthic communities can be smothered and light transmission through water can decrease, resulting in a lowered ability for aquatic plants to function, causing negative impacts for organisms that rely on plants for food and shelter (Chapter 10).

Where clay is available on site, and suitable, it will be used in rehabilitation of the site. Removal of the clay has the potential to disturb surrounding soils and result in erosion.

9.3.4 Land Contamination

The Project will involve the storage and handling of fuel (predominately diesel), lubricants, oils, minor quantities of solvents and acids, degreasers and cleaning agents. Facilities associated with the Project with the potential to cause land contamination include:

- proposed process plant;
- proposed mobile maintenance shop;
- proposed gas-fired power station;
- proposed fuel bays; and
- proposed explosive magazines and ANFO facility.

Existing and future structures with the potential to contain contaminated material include:

- Batman Pit;
- WRD;
- HLP;
- TSF1 and TSF2; and

- LGO1 and LGO2.

Potential contaminants include the above-listed fuels and lubricants, and AMD from mined ore and waste rock, retention ponds and tailings dams. AMD is a significant issue on, and potentially off, site (Chapter 12). Details of hazardous material waste management such as residual cyanide from ore processing are discussed in Chapter 21.

9.3.5 Land use

Land use at Werenbun and Leliyn is not expected to be impacted by the Project.

The objectives of land use in the Yinberrie Hills (i.e. nature conservation) may be adversely impacted by dust (Chapters 14 and 16) for the risk of dust to cause population decline and interfere with the recovery of the Gouldian finch in the Yinberrie Hills was considered to be 'High'. The predicted level of dust at ground level is high and based on a conservative scenario of possibly a higher generation of dust than may occur. This uncertainty, together with uncertainties about the potential effects of high dust levels on individual finches, the varying effects of various levels of dust concentration, the possible pattern of dust distribution through the breeding habitats, and the limited knowledge of other potential breeding areas in the Yinberrie Hills indicate that a precautionary approach be taken.

9.4 Management Measures

9.4.1 Land Tenure

The existing agreement between the Jawoyn Association and Vista Gold will be reviewed. Vista Gold will apply for a Special Purpose Lease over the small portion of EL 29886 that will be directly impacted by the inundation of the raised RWD.

9.4.2 Topography

Changes to the topography and land systems of the Mineral Leases are an inevitable and a permanent consequence of mining. The proposed changes resulting from the mining will be significant and primarily relate to the Batman Pit void, TSF1, TSF2 and the approximately 350m high waste rock dump.

These features impose additional limitations including the need to ensure human safety, maintain structural integrity of large man-made structures through time, and to limit potential of future physical and chemical degradation of the site and its surrounds.

At the cessation of mining, the Batman Pit void will partially fill with water and this will provide a permanent source of water. No backfilling of the pit is proposed. A pit safety bund will be constructed around the entire perimeter of the pit to impede human access.

Conceptual rehabilitation plans have been developed for the major structures that will remain on-site following mining. In broad terms rehabilitation includes:

- draining and decontaminating water storage structures that will not be required for water management post mining;
- grading of the external surfaces to create a stable landform;
- installation of a store and release cover using non-acid forming waste rock;

- installation of a plant growth medium cap on some structures;
- revegetation with local native species; and
- monitoring of the effectiveness of the rehabilitation.

Where possible structures will be progressively rehabilitated and integrated with existing topography and landscape features.

The WRD will be the dominant landscape feature visible from off-site. The dump will be progressively built and rehabilitated over the life of the Project. It will remain as a permanent feature in the landscape.

Chapter 23 provides detail on the closure and rehabilitation intentions for each facility. Mining infrastructure will also be removed and is discussed in Chapter 23.

9.4.3 Soils

An EMP in accordance with MMP requirements will include an Erosion and Sediment Control Plan to minimise soil erosion and the discharge of sediments to land and waterways. Appendix Z provides a framework to the EMP. The Erosion and Sediment Control Plan management measures will include:

- minimising disturbance footprints;
- avoiding the clearing of new areas during the Wet Season;
- rehabilitating progressively, where practicable;
- stripping topsoil from areas to be disturbed and reusing immediately or stockpiling where practicable;
- controlling slope gradient;
- constructing diversion channels to direct clean runoff around disturbed areas and into natural drainage lines;
- providing sediment traps on major drainage channels from disturbed areas;
- providing protection in drains (e.g. grass) where water velocity may cause scouring;
- installation of sediment traps, silt fences and hay bales where necessary to control sediment movement;
- regular inspection and maintenance of sediment control structures;
- providing optimal surface conditions to promote revegetation; and
- revegetating final surfaces with fast establishing ground cover.

Soil resources available for rehabilitation works will be quantified. Stripping and re-application schedules and stockpiling inventories will be included in a Topsoil Management Plan. Wherever practicable, recovered topsoil and subsoil will be spread directly onto disturbed areas that have been prepared for rehabilitation. Material will be stockpiled where direct spreading is not practicable. Soil stockpiles will be managed to improve long term viability of the soil resource through implementation of the following management practices:

- soil stockpiles to be located outside of active mining areas;
- stockpiles will be constructed with a rough surface to reduce erosion, improve drainage and promote revegetation;

- inactive stockpiles will be fertilised and seeded to maintain soil structure, organic matter and microbial activity; and
- soil stockpiles will be deep-ripped to establish aerobic conditions prior to re-use in rehabilitation.

Chapters 14 and 16, and Appendices N and T document measures to reduce the potential for dust migration and to monitor the possible consequences of elevated dust levels on the Gouldian finch.

9.4.4 Land Contamination

Standard procedures for the storage, containment, disposal and spill response for potentially hazardous materials will be implemented. All hydrocarbons will be stored and handled in accordance with the bunding requirements of *AS 1940:2004: The Storage and handling of combustible and flammable liquids*. Chemical storage areas will be suitably bunded and constructed to minimise the potential for release to the environment. All chemicals will be stored, handled and used according to provisions in their Material Safety Data Sheets (MSDS). Appropriate training will be provided for employees and regular inspections of storages, tanks and bulk containers, integrity of bunded areas and containment systems will be undertaken.

The major potential source of contamination is AMD. A series of measures have been developed to manage AMD including collection and treatment of water prior to off-site discharge, characterisation and encapsulation of PAF rock in the WRD, monitoring of groundwater quality, and rehabilitation of facilities (WRD and TSFs) containing AMD material. Chapter 12 provides additional detail on these measures.

Operations will comply with the International Cyanide Management Code.

9.4.5 Land Use

It is proposed that the post-mining land use of the project area will be nature conservation, Indigenous land use and possibly tourist accommodation (around the raw water dam). Mitigation procedures and rehabilitation discussed above are expected to eliminate significant risk to these land uses.

The main potential impact on adjacent land use is from dust compromising the objectives of nature conservation in the Yinberrie Hills. Mitigation of this potential impact and the associated monitoring of dust and the Gouldian finch are provided in Chapters 14 and 16 and Appendices N and T.