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ML 100379 (KORELLA NORTH)

AVENIR MAKATEA PTY LTD

Mining Lease Application Form and Supporting Documents

PREPARED BY ARDENT GROUP PTY LTD

Queensland Government

Application for Mining Lease

Mineral Resources Act 1989

Form MMOL-14 Version 7

Permit Application (ID: 10011358) - COMPLETE

Lodged On: 28/11/2023 02:34 PM

PERMIT DETAILS

Permit name:	Korella North
Permit type:	Mining Lease - Minerals
Permit term:	10 Years
Permit subtype:	Mineral - Prescribed
General locality of the application:	Approx 120km north of Boulia
Specific minerals:	Phosphate
Specific infrastructures:	Stock pile ore / overburden,Workshop / machinery / storage,Treatment plant / mill site,Road / access / right of way,rehabilitation / remediation,Flood mitigation works,Environmental dam

PERMIT HOLDER DETAILS

Client name	Percent holding	Authorised
AVENIR MAKATEA PTY LTD	100.000000000000	Yes

Holder address details:

Holder:	AVENIR MAKATEA PTY LTD	**Address:**	59 Railway Street
ACN:	147660044	**Town/City:**	Cloncurry
Email address:	colin@colinrandall.com.au	**State:**	QLD
Business number:	33681033	**Postcode:**	4825
Mobile number:	0412754436	**Country:**	Australia

Applicant or associate disqualified: No

Authorised Holder Representative (AHR) address details:

Name:	Kathleen Gillis	**Address:**	C/- Ardent Group Pty Ltd PO Box 320
		Town/City:	Red Hill
Email address:	kathleen.gillis@ardent-group.com.au	**State:**	QLD
Business number:	0733681033	**Postcode:**	4059
Mobile number:		**Country:**	Australia

PERMIT AREA

Size of area applied for (ha):	118.5600
Size of surface area applied for (ha):	118.5600
Local government area(s):	Cloncurry Shire Council, Cloncurry Shire Council, Cloncurry Shire Council, Cloncurry Shire Council, Cloncurry Shire Council
Has a datum post been inserted?	Yes
Datum post standard used:	GDA2020
Provide coordinates for the datum post:	139.975266°, 21.771385°
When was the land marked out?	21/11/2023
Is surface area within the permit area required?	Whole.
Provide width of access (m):	15.00
Provide any relevant information about access including start and end points:	start point is located at 139.976486, 21.785265 at a point on the Duchess-Phosphate Hill Road. The access crosses the Mount Isa-Phosphate Hill Branch Railway Line before heading north (parallel to both the road and railway line), before turning east at the existing property track and entering the ML boundary.

LAND INFORMATION DETAILS

Does this application involve the surrender of a granted permit in favour of whole or part of this application?	No
Is there any restricted land associated with this permit application?	No
Is the lease area within the surface of reserve?	No
Is the land applied for situated within an area of a greenhouse gas (GHG) permit?	No

Overlapping permits

Permit number	Holder	Status
EPM 28589	AVENIR MAKATEA PTY LTD	APPL

Constrained lands

Type	Brief definition	Details of constraint
Endangered Regional Ecosystems	Where the application overlaps with a regional ecosystem that is endangered, additional requirements for the Environmental Authority may be required. Remnant 2019 regional ecosystems are vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.	For more information please contact the Queensland Herbarium, Department of Environment and Science, Brisbane Botanic Gardens.
RVM category A - vegetation offsets	This layer provides information about vegetation management activities within Queensland for landholders.	For more information please contact Department of Environment and Science.

Land details

Description	Proposed usage	Current usage	Compensation required?
Lot 13 on plan SP309109 - Lands lease	Permit	Grazing	Yes
Lot 51 on plan SP136486 - Lands lease	Access	Transport	Yes

NATIVE TITLE

Native title process:	Right to Negotiate
Determined native title claim:	Yes

PROPOSED DEVELOPMENT PLAN

Are you applying for a prescribed mineral mining lease?	Yes
Do you intend on mining a threshold amount in any 1 or more of the first 5 years of the mining lease or this mining lease is to be part of an existing mining project comprised of prescribed mineral mining leases?	Yes
Are you applying for a critical mineral as prescribed in the Mineral Resources Regulation 2013?	No
Program or plan	Development plan
Duration:	5 Years

OBLIGATIONS

As the authorised holder representative, I understand and agree to the obligations associated with the permit: Yes

PAYMENT DETAILS

Fee type	Details	Amount ($)
APPMLMIN	Mining Lease - Minerals	1,800.94
ADVREVDL	Native title determined land advertisement	0.00
	Total Fee:	1,800.94

UPLOADED DOCUMENTS

Section	File name	Uploaded by	Date uploaded
Financial Capability	Financial capability statement	kathleen.gillis@ardent-group.com.au	28/11/2023 01:55 PM
Financial Capability	Supporting Evidence	kathleen.gillis@ardent-group.com.au	28/11/2023 01:55 PM
Land availability	Adjoining land details	kathleen.gillis@ardent-group.com.au	28/11/2023 02:19 PM
Permit area	Access area file	kathleen.gillis@ardent-group.com.au	28/11/2023 02:24 PM
Permit area	Statement detailing adjoining resource authorities and land parcel details	kathleen.gillis@ardent-group.com.au	28/11/2023 02:24 PM
Permit area	Area file	kathleen.gillis@ardent-group.com.au	28/11/2023 01:29 PM
Permit area	Graphic representation of area	kathleen.gillis@ardent-group.com.au	28/11/2023 01:29 PM

Permit details	Permit term justification statement	kathleen.gillis@ardent-group.com.au	28/11/2023 02:20 PM
Technical capability	Supporting Evidence	kathleen.gillis@ardent-group.com.au	28/11/2023 01:56 PM
Work program	Proposed development plan	kathleen.gillis@ardent-group.com.au	28/11/2023 01:50 PM
AHR	Letter of authority - AHR	kathleen.gillis@ardent-group.com.au	28/11/2023 01:19 PM
Financial Capability	Financial Commitment	kathleen.gillis@ardent-group.com.au	28/11/2023 02:28 PM
General	Company structure	kathleen.gillis@ardent-group.com.au	28/11/2023 01:18 PM
Land availability	Land details	kathleen.gillis@ardent-group.com.au	28/11/2023 02:19 PM
Permit area	Statement dealing permit location	kathleen.gillis@ardent-group.com.au	28/11/2023 02:24 PM
Permit area	Map of boundaries and access	kathleen.gillis@ardent-group.com.au	28/11/2023 01:29 PM
Permit area	Statement justifying the area	kathleen.gillis@ardent-group.com.au	28/11/2023 02:24 PM
Permit area	Surface area justification statement	kathleen.gillis@ardent-group.com.au	28/11/2023 02:25 PM
Technical capability	Other resource commitment statement	kathleen.gillis@ardent-group.com.au	28/11/2023 02:28 PM
Technical capability	Technical capability statement	kathleen.gillis@ardent-group.com.au	28/11/2023 01:56 PM

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FEE Paid: _____ **RECEIPT no:** _____

Disclaimer

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MINING LEASE APPLICATION – SUPPORTING INFORMATION REPORT

AVENIR MAKATEA PTY LTD

KORELLA NORTH

NOVEMBER 2023

AMPL 001

Document Control Sheet

Ardent Group Pty Ltd	
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Project:	AMPL001	**Issue Date:**	28 November 2023
Title:	Mining Lease Application "Korella North"		
Project Manager:	Richard Smith		
Author:	Richard Smith		
Client:	Avenir Makatea Pty Ltd		
Client Contact:	Colin Randall		

Revision Number	Date
Rev A	
Rev B	
Rev C	
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Number of Copies									
Revision Number	**A**	**B**	**C**	**D**	**00**	**01**	**02**	**03**	**04**
Ardent Group File									
Client									
Department									

Contents

1. Introduction

1.1 Project Overview

Avenir Makatea Pty Ltd (AVM) is to submit a Mining Lease (ML) Application for its Korella North Project, located approximately 120km north of the town of Boulia and 170km south of the town of Cloncurry in NW Queensland. The ML Application is made under section 234(1) of the *Mineral Resources Act 1989*, for the purpose of extracting, processing and selling direct application rock phosphate into the local and export markets.

The Mining Lease Application is for a period of 10 years. An independent assessment of the resource indicates that there is a resource of 2.7 million tonnes contained within the area currently defined by previous exploration.

The Korella North project is centred on the outcropping 23m thick Monastery Creek Phosphate Member (MCPM). MCPM is characterised by alternating plies of low cadmium phosphate of various thickness and qualities. The deposit outcrops along a 1500m length and dips to the east under gently sloping cover.

The phosphate contained within MCPM is contained in two main beds that are separated by a chert band. The beds contain groups of higher phosphate content plies, separated by plies of poorer quality phosphate and non-phosphatic sediments.

The Mine can be summarized as follows:

- The overall plan is to mine the beds sequentially within the 3ha open cut mine area to produce a Direct Shipping Ore of 20 % P2O5 rock phosphate.
- The overburden covering MCPH and the MCPH itself is capable of being mined by free digging with one exception. The chert band that separates the upper and lower beds will potentially require drilling and blasting in the same manner as that handled at the Phosphate Hill Mine.
- Individual plies and groups of plies will be mined and stockpiled separately on the Run-Of- Mine stockpile area. The plies when mined will be separated into four stockpiles based on P2O5 quality. A - Greater than 20% , B- 15 to 20% , C- 10 to 15% and D- less than 10%.
- Identification of plies and groups of plies, to be mined to achieve the overall 20 percent P2O5, will require detailed logging of cored drill holes as well as in-pit identification of plies by location/thickness/colour.
- A mining contractor who has the capability to mine, crush and bag will be employed.
- With some 395,000 tonnes of phosphate located within the 3ha open pit area, the plan is to mine and rehabilitate the area over a ten -year period.
- Site establish is expected to take place during Year 1.
- Allowing for contingency for years of low fertilizer demand ie drought years and years of flooding when farmers are unable to get onto paddocks for seeding, phosphate production is planned over a period of 7 years.

- Rehabilitation of the mining lease would take 2 years. Given the need to ensure that sufficient elapsed time/seasons to meet required standards the mine closure and rehabilitation will take two years Infrastructure removal in the first year and rehabilitation of the disturbed areas to follow.
- While further exploration can take place within EPM 28589 to possibly increase resources to enable another Mining Lease application to be prepared, there is no certainty that either the deposit and/or market conditions would be suitable for such an expansion.
- Production schedule for ROM phosphate would be nominally based at 50,000 tonnes plus/minus 10% per annum over 7 years.
- Mining will take place on a campaign basis during the dry season. Crushing/screening/bagging rates, while occurring on a more continuous basis than mining, will be designed to meet fertilizer requirements during the planting seasons for customers primarily within Queensland and the Top End.
- The Korella North mining operation will involve use of a 75 to 100t hydraulic excavator loading into 45 to 50t dump trucks for removal of overburden and phosphate. Supporting equipment will include front end loader, grader, dozer, water cart and associated minor plant.
- Site facilities for the contractor will be located out of sight from the road and on an area that is to the west of the outcropping MCPH.
- On-site facilities, provided by the contractor, will include repair/maintenance, office. An off-mining lease camp site has been selected with the provision of camp facilities at the hamlet of Duchess for contractor accommodation. A small bus will provide transport the 60km from Duchess to Korella North.
- Dust suppression predominantly on haulage roads will be from bore water and collected water in the mine site dam.
- Diversion drains to ensure no flooding of the mine during the rainy season will be located.
- All rainfall within the mining/facilities/crushing screening will be captured in a surface dam for use in road watering. High annual evaporation determines that supply of water from such a storage dam is not sustainable.
- DSO product will be crushed/screened to a top size of 2mm and conveyed from the final screen into an undercover area to protect the final product from wind and rain. Crushing/screening facilities will be either independently powered or electrically powered from a central diesel-powered generator.
- During crushing/screening, dust collection will be practised with bagging of all dust that is typically less than 150 microns.
- DSO dedusted product in the size range 2mm x 0 mm will then be loaded onto 75 tonne capacity side tipping trailers in road train consists.
- The Korella North product storage will be approx. 1000m distance from the dedicated Phosphate Hill to Cloncurry road train route
- DSO dedusted product in the size range 2mm x 0 mm will also be bagged.

- Bagged phosphates will be transported by road trains to Cloncurry for warehousing/collection/transport to customers using the extensive back-loading opportunities provided by this major transport hub.

1.2 Project Proponent

Avenir Makatea Pty Ltd is the wholly owned Australian subsidiary of Chatham Rock Phosphate Limited.

Chatham Rock Phosphate Limited (CRP) is a Vancouver, British Columbia, Canadian registered public company. The Company is listed on the Toronto Stock Exchange, New Zealand Stock Exchange and the Frankfurt Bourse in Germany.

The company has nearly 3,000 shareholders with shareholders spread over Canada, Germany, New Zealand and since July 2021, when Avenir Makatea Pty Ltd was acquired by CRP, Australian shareholders.

CRP is an international company that has since 2005 been a developer of low cadmium phosphate projects.

The original project was on the Chatham Rise offshore in New Zealand waters where it holds a Mining Lease for the recovery of phosphorite nodules from the sea floor. Application for an Environmental Approval is pending.

On the acquisition of Avenir Makatea Pty Ltd (AMPL) CRP acquired the Exclusive Research Permit (exploration lease) held by French Polynesian subsidiary SAS Avenir over the island of Makatea. A Mining Lease Application has been made and is pending.

With the Makatea and Chatham Rise projects having respectively a medium to long term development schedule CRP sought a near term low cadmium phosphate project. ML90209 held by Australian Venus Resources Pty Ltd – AVR - was up for sale and Avenir Makatea Pty Ltd in October 2021 signed a binding agreement with AVR to purchase the lease now called Korella Central.

Since February 2022 AVR has attempted to withdraw from the sale. Currently AVR and AMPL are in the Federal Court where specific performance of the agreement is being contested. A detailed court appearances program culminating in the court hearing in Q1 2024 has been agreed including a mediation session on 17 November 2023 to try and avoid the cost of the full court hearing.

To add to the resources of ML 90209, in December 2021 AMPL applied for an exploration permit to the east and south of the mining lease. A 200 kilometre square area (EPM 28187) designated Korella South was applied for in December 2021 and was granted in August 2023.

In looking for a potential rail loading facility for phosphate from ML 90209 and Korella South an area with rail infrastructure, not covered by existing Incitec Pivot leases, was identified which included an adjacent exposure of the Monastery Creek Phosphate Member that had been explored and in part reported on historically. An area covering three sub blocks was identified and application made on 2 August 2022 for area designated Korella North (EPM 28589) (The Property).

Exploration data in the public domain within EPM 28589 is available from earliest date of 1966. Exploration data from 2007 to 2009 activities of Krucible Metals Limited within EPM 28589 were not in the public domain. This information was made available to AMPL through the good offices of Mr Leon Pretorius of Green Energy Minerals Limited, the owner of the data following his company's acquisition of Krucible Metals Limited.

Since Chatham Rock Phosphate Limited is a Canadian registered company, instead of releasing JORC Resource Statements, it is required to complete a Canadian National Instrument 43-101 Report. A NI 43-101 Report has been prepared for Korella North EPM 28589 by Derisk Geomining Consultants Pty Ltd.

On 1 August 2023 an application was lodged for two additional sub-blocks that are adjacent to EPM 28589. The application was accepted as EPM 28882 and is designated Korella North 2.

Additional details for the project proponent are provided in **Table 1** below.

Table 1 Proponent Details

Company Name	**Avenir Makatea Pty Ltd**
ACN	147 660044
Owner/Parent Company Name	Chatham Rock Phosphate Limited, Vancouver BC Canada registered company
ABN	30 147 660 044
Street Address	59 Railway Street, Cloncurry
Postal Address	PO Box 529, Cloncurry, QLD 4824
Contact Person	Colin Randall
Position	Executive Director
Email Address	colin@colinrandall.com.au
Contact Number	0408 969 424

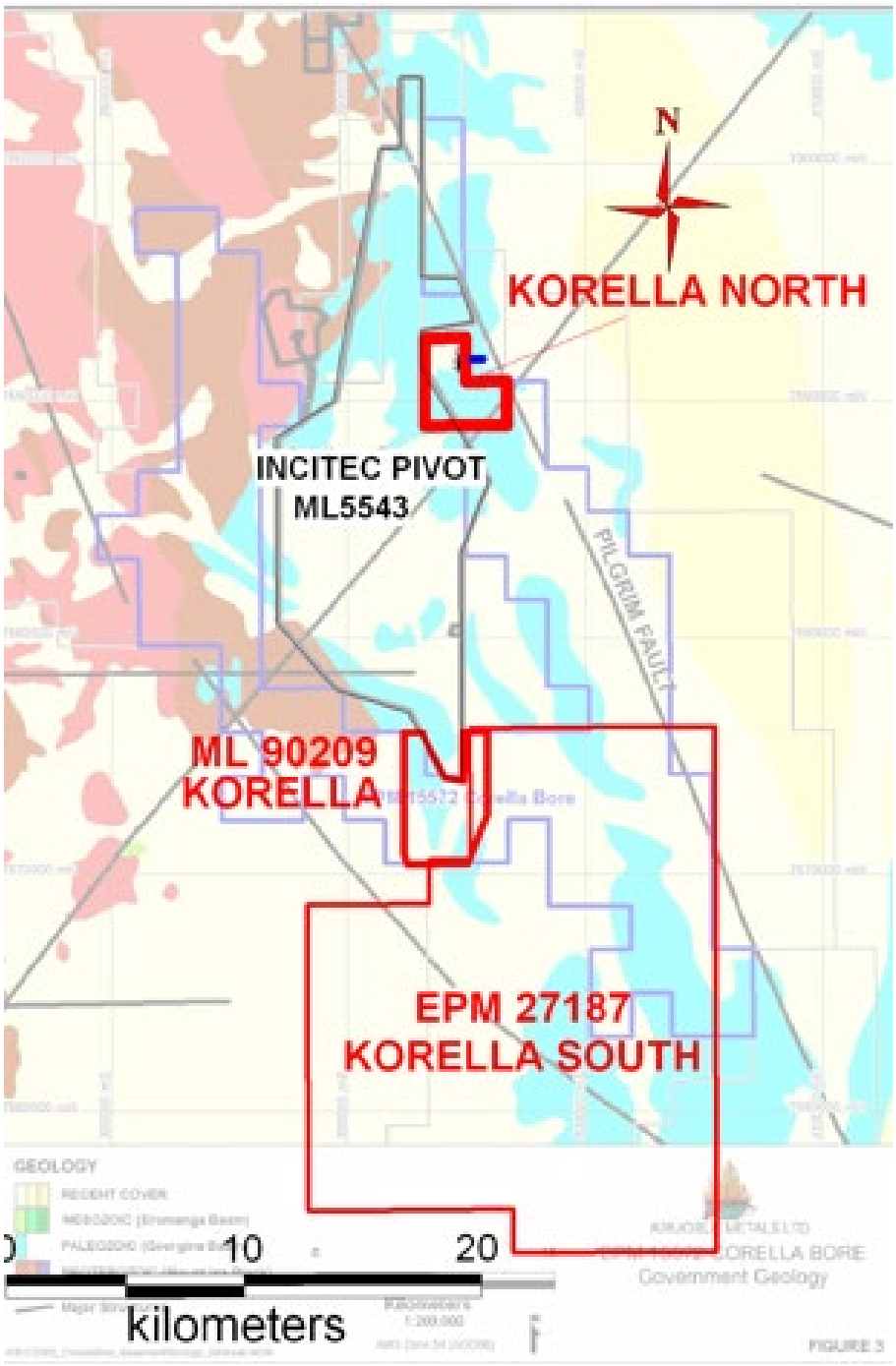
1.3 Project Location

The Project is located in North West Queensland approximately 21°47' S latitude, 139°59' E longitude, approximately 120km north of Boulia and 170km south-west of Cloncurry. The MLA area is within the Cloncurry Shire Council area. The site is located within EPM 28589 that covers an area of approximately 6.6 km2 and within Lot 13 on SP309109 that incorporates Chatsworth Station, owned by MDH Pty Ltd.

EPM 28589 lies to the south of EPM 15072 held currently by AVR and to the east of ML 5543 held by Incitec Pivot. EPM 28882 lies to the west of EPM 28589.

EPM 28589 is north of ML 90209 held by AVR and north of EPM 28187. Access to the project will be via the Duchess to Phosphate Hill Road. Refer to **Figure 1** for location details.

Figure 1 Project Location



1.4 Mining Lease Purpose

This Mining Lease is being applied for the purpose of extracting, processing and selling rock phosphate into the local and export markets. Activities likely to be undertaken on the surface of the ML include the following:

- Mining and processing of phosphate,
- infrastructure to support mining operations,
- stockpiles,
- water storage,
- crushing,screening, bagging area,
- Contractor facilities (laydown areas, storage equipment etc,
- storage sheds,
- power generation, and
- rehabilitation and remediation associated with these activities.

1.5 Mining Lease Term

The term of the proposed ML is 10 years. This considers the defined resource, the expected mining rate and final rehabilitation, allowing for contingencies such as significant weather events, market forces and site logistical issues.

Site establishment is expected to take place during Year 1.

Allowing for contingency for years of low fertilizer demand ie drought years and years of flooding when farmers are unable to get onto paddocks for seeding, phosphate production is planned over a period of 7 years.

Rehabilitation of the mining lease would take 2 years. Infrastructure removal in the first instance and then rehabilitation of the disturbed area. Given the need to ensure that sufficient elapsed time/seasons to meet required standards the mine closure and rehabilitation is planned over the two years.

While further exploration can take place within EPM 28589 to possibly increase resources to enable another Mining Lease application to be prepared, there is no certainty that either the deposit and/or market conditions would be suitable for such an expansion.

Production schedule for ROM phosphate would be nominally based at 50,000 tonnes plus/minus 10% per annum over the 7 years.

Mining will take place on a campaign basis during the dry season. Crushing/screening/bagging rates, while occurring on a more continuous basis than mining, will be designed to meet fertilizer requirements during the planting seasons for customers primarily within Queensland and the Top End.

2. Project Area

2.1 Mining Lease Boundary

The ML application boundary is as shown in **Figure 2**. It is wholly located within EPM 28589.

EPM 28882 is adjacent has also been applied for by the ML applicant.

Boundary of the area of the proposed mining lease to contain all the active areas of the operation which includes the open pit, the out of pit overburden dump, ROM stockpile areas, crushing/screening/bagging operations, undercover product storage, contractors facilities, water storage, water cart filling point and access and transport roads to contain all the active areas of the operation

The existing rail crossing and current access road are outside the area of the ML but are intended to be used to access the ML. The northern part of the current access road and the rail crossing itself are outside EPM 28589.

The surface area of the land to be disturbed and included in the mining lease area is delineated in **Figure 2** and is a total area of 10ha of which the open pit is some 3ha.

The external boundary description is shown in **Table 2**. The boundary of the Mining Lease is defined by GPS coordinates and confirmed on the ground by a registered surveyor – using a Trimble NetR9 Base Station with Trimble R6 Rover (using Real Time Kinematics).

Table 2 External Boundary Description

Point	Latitude	Longitude
1	-21.771385 °	139.975266 °
2	-21.771625 °	139.984508 °
3	-21.781792 °	139.984508 °
4	-21.786436 °	139.977836 °

Figure 2 Project area

2.2 Access Route

Access to the site is currently via an existing property track that currently connects to the Duchess-Phosphate Hill Road. The turn-off for the property track is 2km north of the Mirri cattle yards adjacent to QR Rail crossing #4080 and it is 2km to the western boundary of the proposed ML.

However the proposed, formal access will instead connect to the Duchess-Phosphate Hill Road at a point to the south of the ML. This has been done for practical, future operational reasons and to avoid the ML access entering onto the Phosphate Hill Mining Lease.

The access road is 15 metres wide, as shown in **Figure 2**. The coordinates for the access road are shown in **Table 3.**

Table 3 Access Description

Point	Latitude	Longitude
1	-21.785265 °	139.976486 °
2	-21.785072 °	139.977048 °
3	-21.784639 °	139.977146 °
4	-21.773648 °	139.975270 °
5	-21.773363 °	139.975548 °

2.3 Area Justification

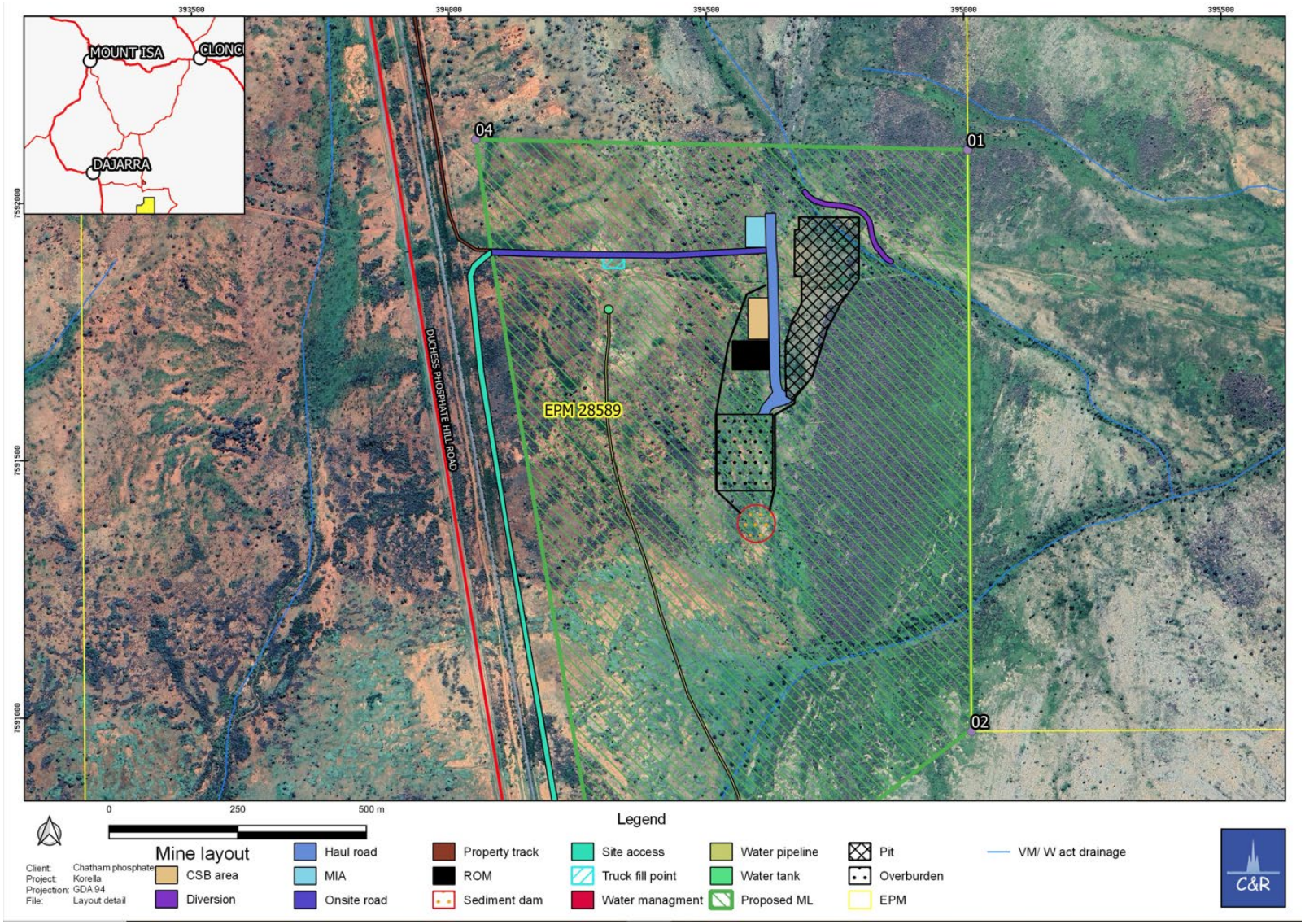
The Mining Lease has been marked out with a full surface area.

The area and shape of the ML has been defined by taking into consideration the known and expected resource (see Section 5.1), local topography and allowance for associated infrastructure. The areas proposed for operations are provided in **Table 4**, and shown in **Figure 3**.

Table 4 Proposed Mine Layout

Element	Area (ha)	Description
Mining Area	3	Open pit 350m x 120 m x 20m deep
Topsoil Stockpiles (Mining Areas)	0.05	Very thin to no topsoil = 5ha x 5cm = 2500 cubic metres Based on stockpiles 5m high Area 500 sq m = 0.05 ha
Topsoil Stockpiles (Infrastructure Areas)	0.05	Very thin to no topsoil = 5ha x 5cm = 2500 cubic metres Based on stockpiles 5m high Area 500 sq m = 0.05 ha
Stockpiling Area - Overburden	1.5	100m x 150m x 20 m high contains 240,000 bcm
Stockpiling Area – Run of Mine Phosphate	0.7	As per layout
Crushing/screening/bagging/storage area	1.5	As per layout
Contractors facilities including laydown areas and storage of equipment	1.25	Repair/maintenance facility, diesel storage, crib room, site office
Water Storage	0.5	Water tank and water storage dam
Roads	0.75	Internal road from open pit to overburden dump and to ROM pad and roads to contractor facilities and bulk storage 500m x 15m
Erosion and Sediment Control Devices	0.25	Diversion drains and ditches 1250m x 2m = 2500 sq m
Power Generation	0.02	Twin generators to power crusher/screening base 2 x 5m x 2m = 20 sqm

Figure 3 Proposed Site Layout



3. Land Tenure and Native Title

3.1 Land Tenure and Native Title

The MLA area is within the Cloncurry Shire Council area. The site is located within EPM 28589 that covers an area of approximately 6.6km2 and within Lot 13 on SP309109 that incorporates the Chatsworth Station held by MDH Pty Ltd.

The MLA is within the Native Title Area held by Yulluna People, the common law holders as determined in Yulluna People # 3 v Queensland [2014] FCA 659 (QUD 189/2010) (28 March 2014)

Details of affected land are provided in **Table 5**. **Table 6** details the adjoining land parcel, which is the same Chatsworth Station that the ML is located over. A map showing the affected land parcels is detailed in **Figure 4**, with adjoining landholders shown in **Figure 5**.

Avenir Makatea has contacted both landholders and compensation matters for both are progressing. Compensation agreements will be filed in due course.

Table 5 Affected Land

Lot	Plan	Land Parcel Name	Current Use	Proposed Use	Owner/ Occupier Name	Owner/ Occupier Address	Compensation Required	Erosion works on land
13	SP309109	Part of Chatsworth Station	Grazing	Mining and Access	Al McDonald Managing Director MDH Pty Ltd	c/- Brightlands Station PO Box 499 Cloncurry, QLD 4824	yes	None
51	SP136486	Part of Mt Isa Phosphate Hill rail corridor	Railway	Access	Dept of Transport and Main Roads (Qld Rail)	16-22 Ramsay St, Cloncurry QLD 4824	yes	None

Table 6 Adjoining Land

Lot/Plan	Tenure	Current Use	Owner/ Occupier Name	Owner/ Occupier Address
13	SP309109	Grazing	Al McDonald Managing Director MDH Pty Ltd	c/- Brightlands Station PO Box 499 Cloncurry, QLD 4824
51	SP136486	Rail	Dept of Transport and Main Roads (Qld Rail)	16-22 Ramsay St, Cloncurry QLD 4824
11	CW802447	Telecommunications	Telstra Corporation Limited	46 Sheaffe Street, Cloncurry QLD 4824
12	WNR802449	Telecommunications	Telstra Corporation Limited	46 Sheaffe Street, Cloncurry QLD 4824

16	SP309110	Grazing	MDH Pty Ltd	c/- Brightlands Station PO Box 499 Cloncurry, QLD 4824
1	SP150176	Mining	Southern Cross Fertilisers Pty Ltd	c/- Kate Sheldon GPO Box 1322, Melbourne VIC 3001
22	SP223509	Grazing	James Cameron Brown / Elizabeth Veronica Brown	Lot 22 Boulia Rd, Duchess Qld 4825
2949	SP223508	Grazing	Alistair Robert Edward McDonald	c/- Brightlands Station PO Box 499 Cloncurry, QLD 4824
2999	PH1926	Grazing	Hacon Holdings Pty Ltd	c/- 'Granada', 1 Alcala Road, Cloncurry QLD 4824
3562	SP261206	Grazing	Dean James Anderson / Jadie Lil-Anne Hirning-Anderson	c/- Westland Station, 13891 Thompson Developmental Road, Tocal QLD 4730
4596	PH26	Grazing	Dean James Anderson / Jadie Lil-Anne Hirning-Anderson	c/- Westland Station, 13891 Thompson Developmental Road, Tocal QLD 4730
5212	SP272847	Grazing	Ian Charles Campbell / Marianna Campbell	c/- Rifle Creek Station PO Box 2517 Mount Isa QLD 4825
5328	SP309108	Grazing	MDH Pty Ltd for the Devonshire Trust	c/- Brightlands Station PO Box 499 Cloncurry, QLD 4824
5354	PH1831	Grazing	William Henry Cameron	c/ - Kheri Station, Selwyn QLD 4824
5364	SP278014	Grazing / Mining	Chinova Resources Cloncurry Mines Pty Ltd	Level 9, 303 Coronation Drive, Milton QLD 4064
5	SW43	Grazing	Donald Francis James McDonald	Lot 5 Selwyn Road, Selwyn QLD 4823
69	SP315523	Grazing	MDH Pty Ltd	c/- Brightlands Station PO Box 499 Cloncurry, QLD 4824
22	SP136485	Rail	Department of Transport and Main Roads	16-22 Ramsay St, Cloncurry QLD 4824

The following land parcels are also adjoining, however are State Land so are not included in the above list:

- Lot 1 on CP909828;
- Lot 345 on PH1350;
- Lot 4 on AP15904;
- Lot 2 on CW69;
- Lot 3 on CW69;
- Lot 4 on CW69; and
- Lot 5 on CP69.

Figure 4 Affected Landholdings

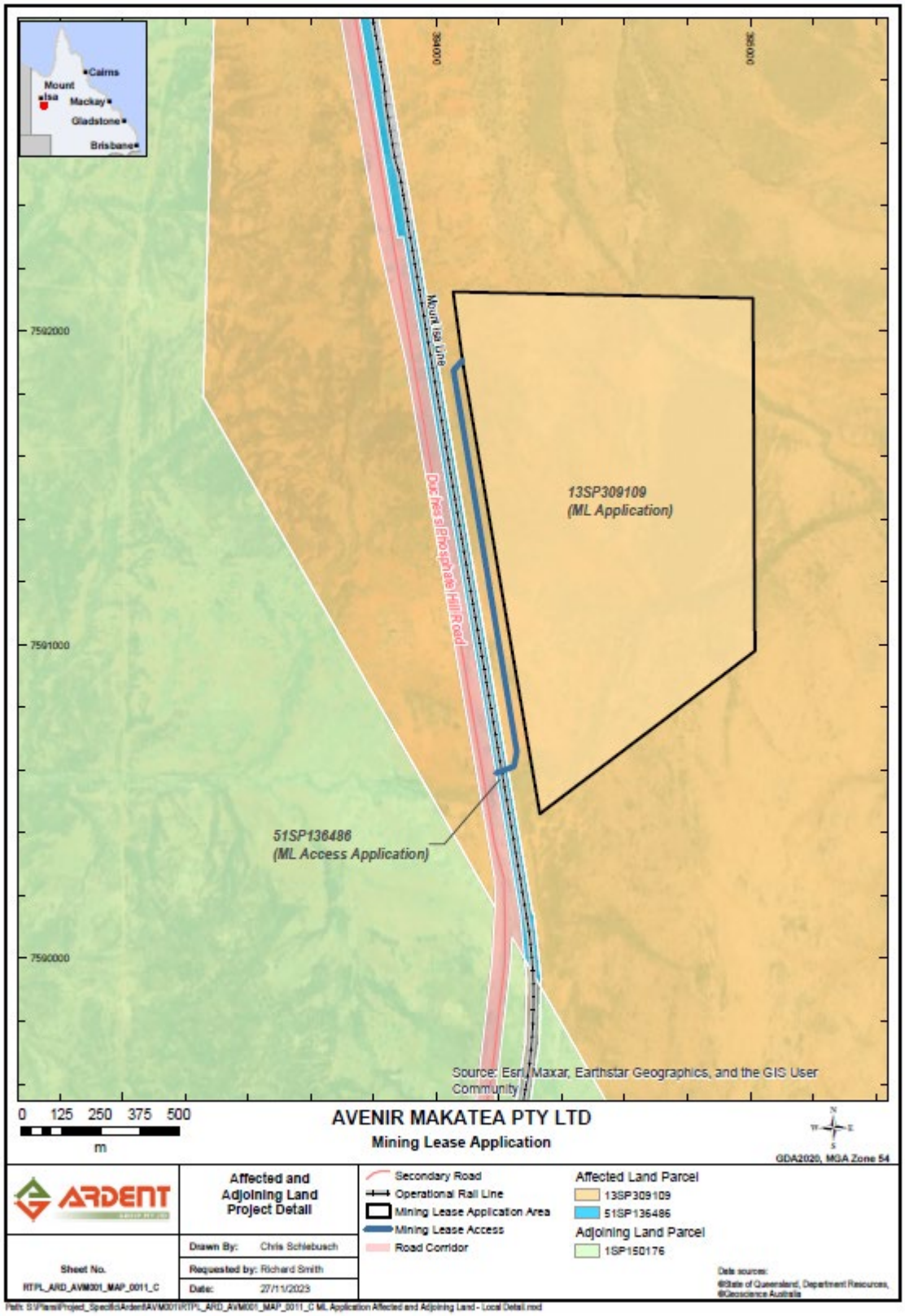
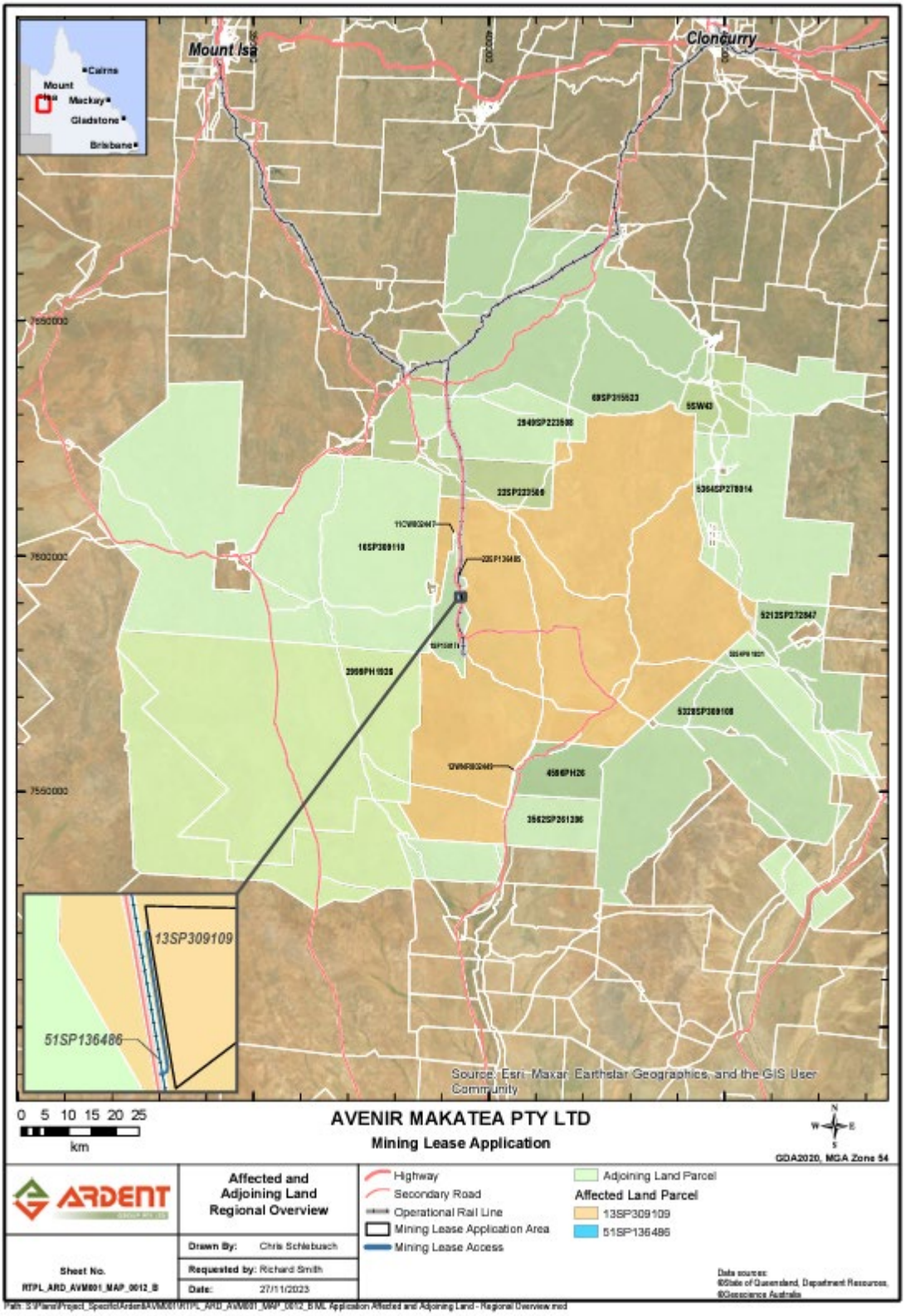


Figure 5 Adjoining Landholdings



4. Resource Assessment

4.1 Regional Geology

The MLA is located within the lower-middle Cambrian rocks of the Duchess Embayment, which is part of the Burke River Outlier, which in turn is part of the Georgina Basin. The Georgina Basin is a large intracratonic sedimentary basin located in central and northern Australia (**Figure 6**). The basin comprises marine and non-marine sedimentary rocks deposited from the Neoproterozoic to the late-Palaeozoic (850 – 350 Ma). Locally, basin sediments can reach a thickness of 4km. The Georgina Basin is bounded on almost all sides by Precambrian rocks.

Figure 6 Georgina Basin

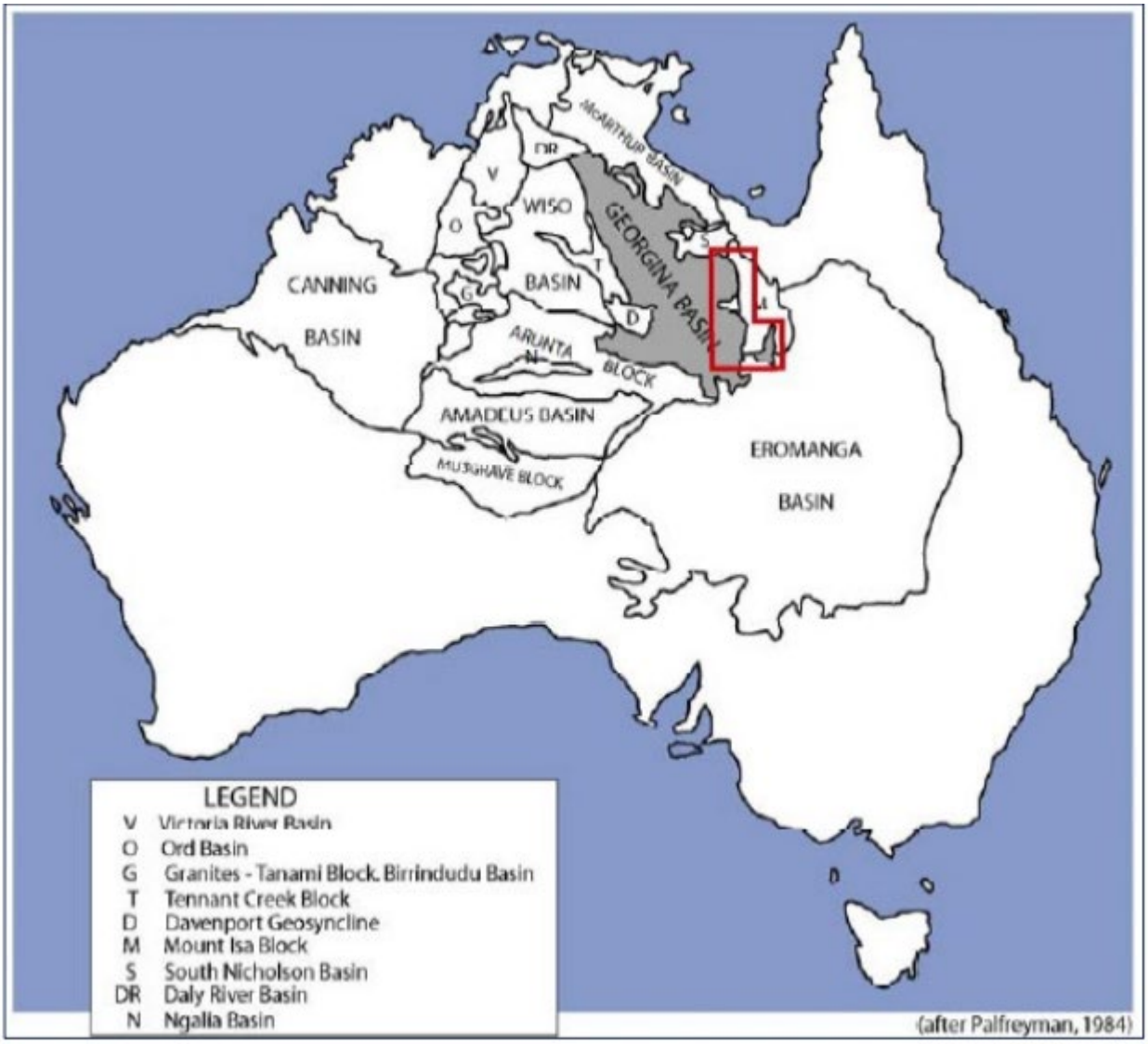
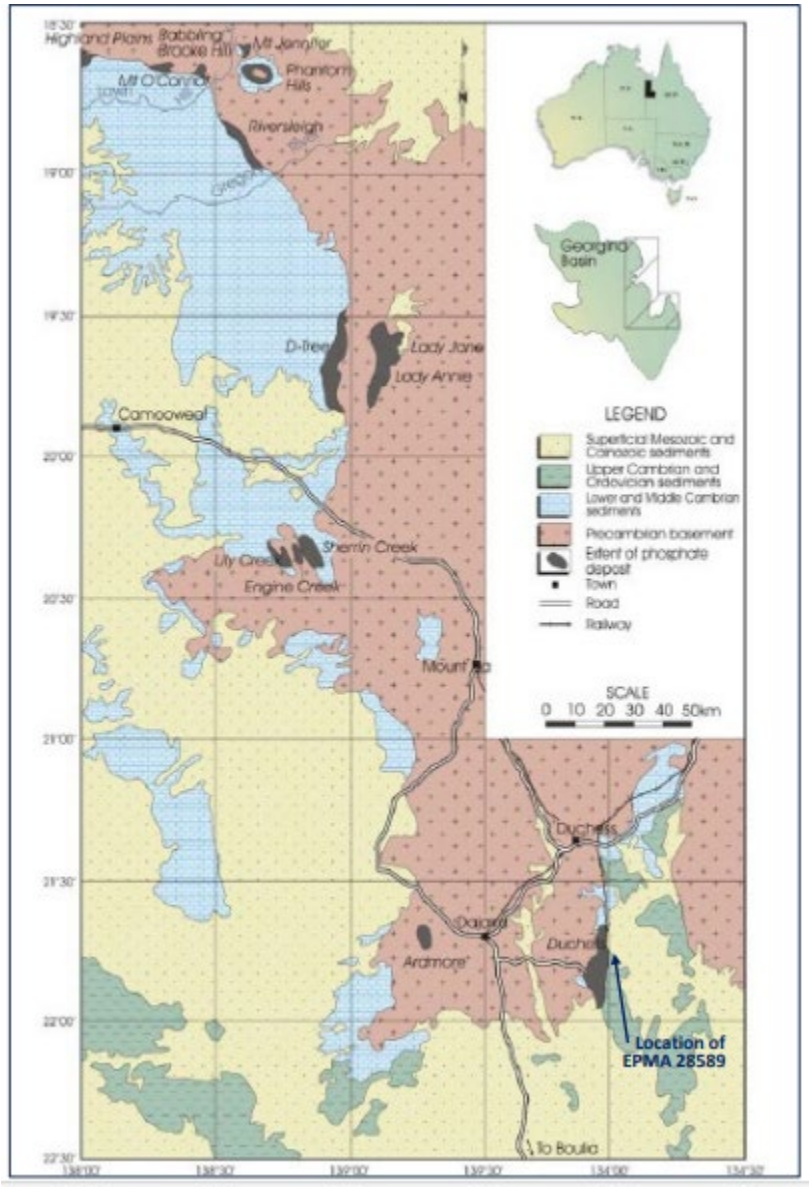


Figure 7 presents the regional geological setting of the eastern portion of the Georgina Basin. The Burke River Outlier is appended to the southeast margin of the Georgina Basin and is approximately 100km long and up to 30 km wide. It consists mostly of lower Palaeozoic sediments that reach a thickness of 1,500m. It represents a shallow depositional basin and is fault bound on all sides except the south, where it merges with the Georgina Basin sediments. The detailed physical relationships between the mostly marine sediments of the Burke River Outlier and the marine and non-marine sediments of the Georgina Basin is obscured by overlying Cretaceous aged sediments of the Great Artesian Basin. The sedimentary sequences comprising the Georgina Basin have been subjected to several deformation events generating locally intense structures, but there is no evidence of metamorphism.

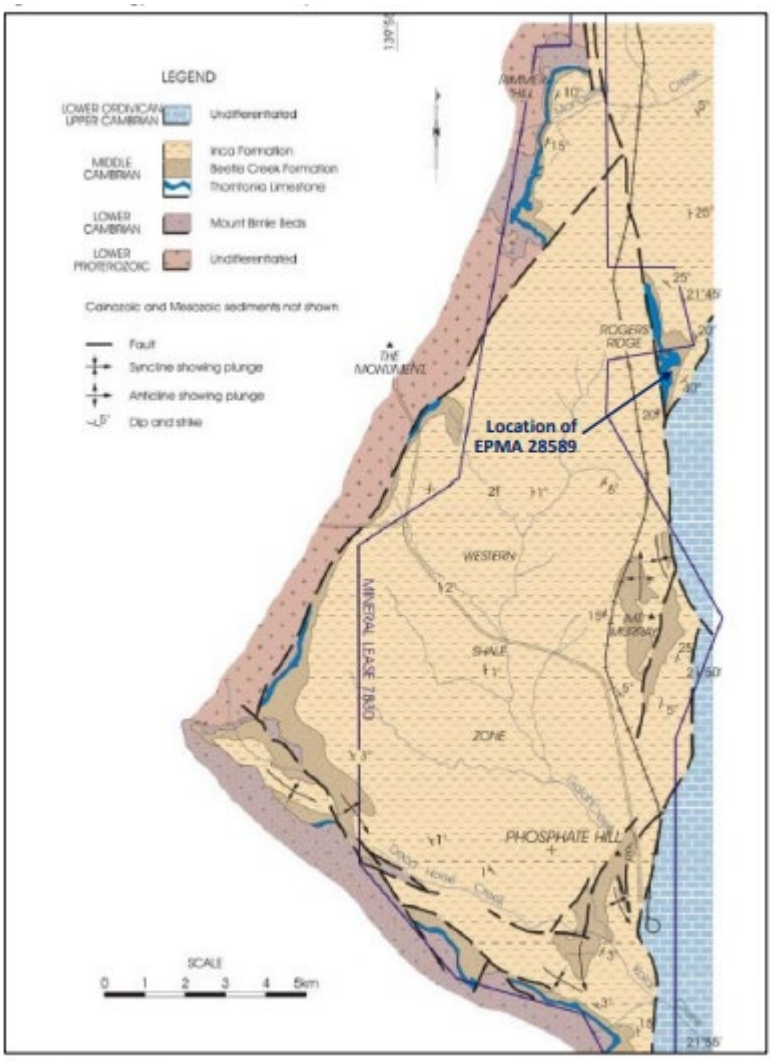
Figure 7 Regional Geology



4.2 Local Geology

The MLA sits along the margin of the Duchess Embayment, which is a small shallow triangular basin located on the faulted western side of the Burke River Outlier (**Figure 8**. The embayment is fault bound on all sides and has been subject to regional folding resulting in broad anticlines and synclines with a dominantly north to northwesterly trend.

Figure 8 Duchess Embayment



Source: Dippel, 2004

The main lithologies relevant to phosphate mineralisation within the embayment include the middle Cambrian Inca Formation, the lower-middle Cambrian Beetle Creek Formation, and the lower-middle Cambrian Thorntonia Limestone. **Table 7** provides a description of these formations. The best phosphate mineralisation is found within the Monastery Creek Phosphorite Member of the Beetle Creek Formation.

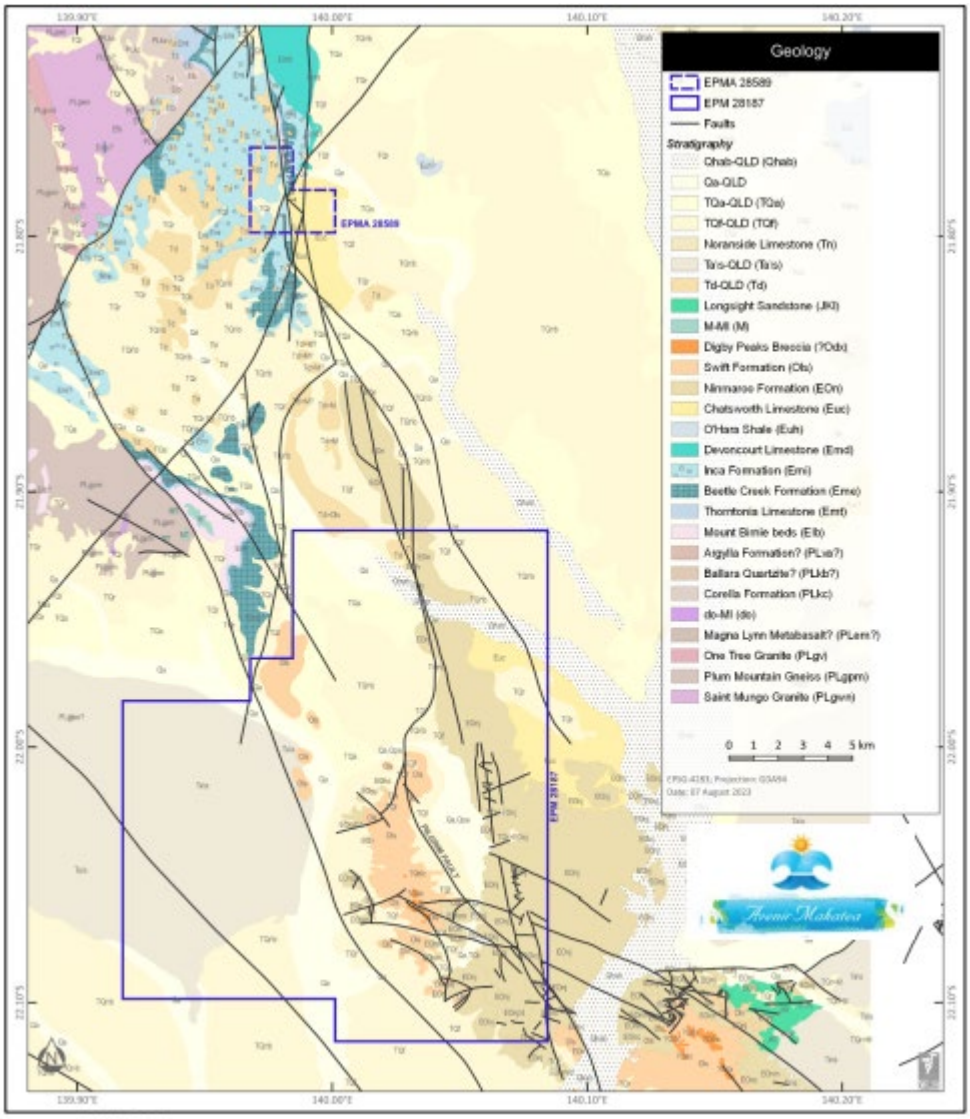
Table 7 Geological Units

Age	Formation	Unit	Description
Middle Cambrian	Inca Formation	Inca Limestone (ILST)	Fetid, cherty dolomitic limestone, minor calcareous shale. Maximum thickness >150 m.
		Inca Shale (IS)	Shale, cherty shale, siltstone, minor chert. Maximum thickness approximately 107 m. Gradational weathering relationship. Base is parallel and angular unconformity.
Lower-Middle Cambrian	Beetle Creek Formation (BCF)	Monastery Creek Phosphorite Member (MCPM)	Phosphorite, phosphatic cherty siltstone, chert, fetid phosphatic limestone. Fresh calcareous and weathered silicic facies. Maximum thickness of 37 m. Base is a gradational contact with LSM.
		Lower Siltstone Member (LSM)	Calcareous/cherty phosphatic siltstone, chert, bituminous dolomitic phosphatic limestone, and minor phosphorite. Maximum thickness >50 m. Base is a parallel unconformity.
Lower-Middle Cambrian	Thorntonia Limestone (TLST)	Chert Member	Silicified carbonate and coquina. Maximum thickness of 12 m.
		Carbonate member	Dolomitic limestone, dolomite, and minor chert. Maximum thickness of 18 m. Base is an angular unconformity.

Source: Dippel, 2004

Figure 9 below illustrates the tenement-scale geology of EPMA 28589 and EPM 28187. Within the northeast corner of EPMA 28589, there is a structurally-bound block of outcropping Inca Formation, Bettle Creek Formation and Thorntonia Limestone immediately east of the Pilgrim Fault that hosts the phosphate mineralisation on the Property.

Figure 9 Local Geology



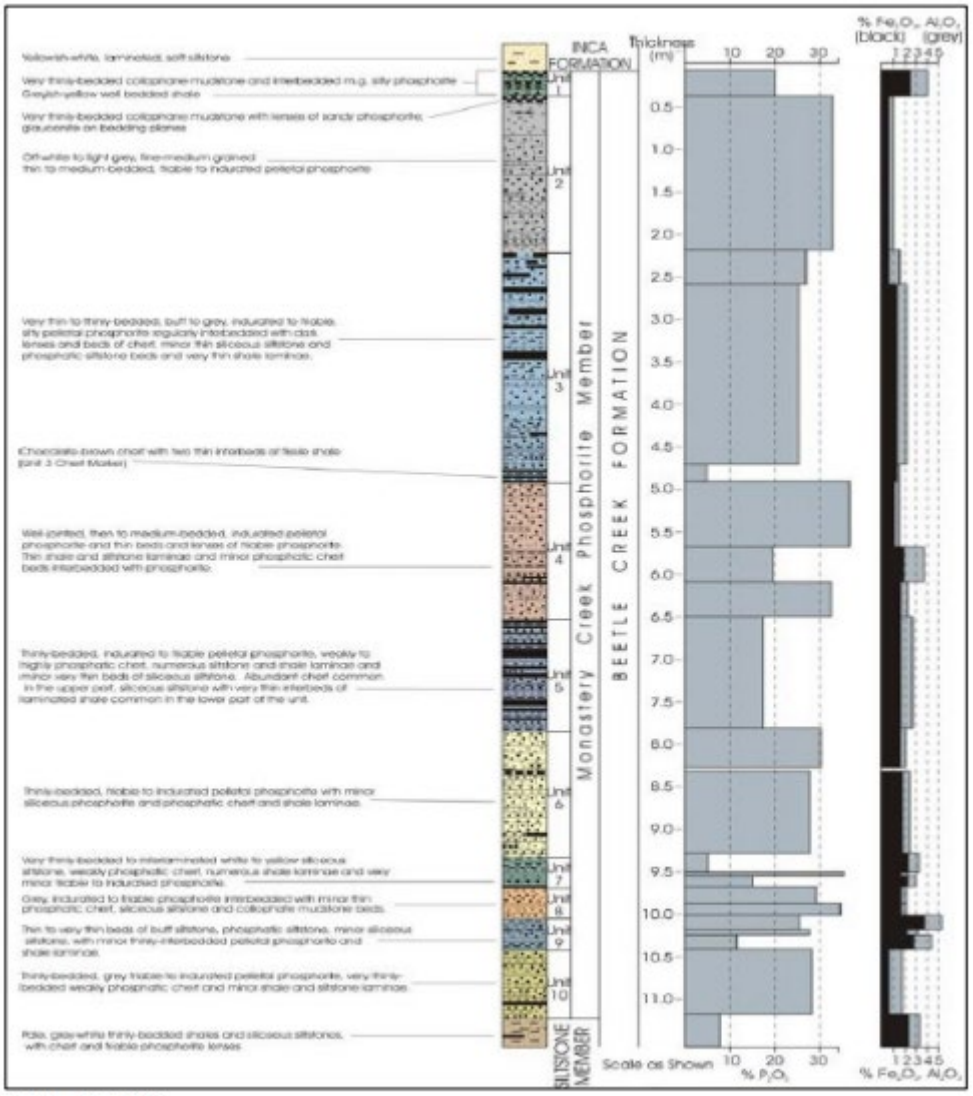
Source: Derisk, 2023

Phosphate deposits are found within the Georgina Basin, along the eastern margin in Qld (refer to **Figure 7**), and in association with the Wonarah High in the Northern Territory. The largest deposit within the Duchess Embayment is at Phosphate Hill, owned and operated by IPL, which is located immediately west of the Property.

The MCPM hosts the phosphate deposits in and around Phosphate Hill, and is bound by the Inca Shale on the hangingwall and the Lower Siltstone Member on the footwall (refer to **Table 7**). The most prospective unit is the Beetle Creek Formation that hosts the Phosphate Hill deposit, currently in production and located immediately adjacent to the Property. The Beetle Creek Formation outcrops on the Property.

The phosphorite beds consist of weathered, siliceous, peloidal and collophane carbonate-fluorapatite with gangue minerals of mostly iron hydroxides, clays, and silica. The beds can be either friable or indurated. The peloidal phosphate consists mostly of ovalitic cryptocrystalline carbonate-fluorapatite pellets that are irregularly shaped (spherical to sub-spherical) and contain contaminants such as iron hydroxides and organic material. At the Phosphate Hill deposit, the MCPM can be subdivided into 10 units, alternating in phosphate grade, with some units containing greater than 30% P2O5 (**Figure 10**). At Korella North, MEPL defined 12 units within the MCPM.

Figure 10 Monastery Creek Phosphorite Member



Source: Dippel, 2004

4.3 Field Work

AMPL lodged the application for EPMA 28589 in August 2022 and has completed the following work during the application period:

- Collation of all available geological, geochemical, geophysical, and drilling data.
- Airborne LiDAR survey to generate high-resolution surface topography. In May 2023 AMPL engaged the survey company Atkinson and Booy Surveys to conduct a drone-based LiDAR survey across the western portion of the Property over the Korella North deposit area to generate accurate surface topography, and to verify the location of all Krucible drillholes. This was completed in agreement with the landholder.
- Preparation of a new Mineral Resource estimate based on the results of the previous work completed by Krucible.
- Preliminary beneficiation assessment and mining study

4.4 Historical Exploration

Exploration in the local district has been undertaken by numerous tenement holders from the mid-1960s focused on a range of commodities including phosphate, uranium, copper/gold, lead/zinc, and REE mineralisation within Cambrian, Mesozoic, and Proterozoic aged rocks.

Exploration activities have included:

- Desktop studies and review of public domain geoscience data and mineral occurrence maps.
- Surface geological mapping.
- Soil, stream sediment, and rock chip geochemistry.
- Shallow trenching.
- Surface-based geophysics.
- Petrography.
- Drilling.
- Metallurgical testwork and open pit mining studies.

The main exploration work relevant to the Property is summarised below.

4.4.1 Previous Ownership and Activities

Mines Exploration Pty Ltd

Mines Exploration Pty Ltd (MEPL) was the exploration subsidiary of Broken Hill South Limited and held a large concession (Authority to Prospect 331M) in the Duchess district in the 1960s that included the Property.

MEPL completed detailed geological mapping, stratigraphic section compilation, scintillometer measurements, and diamond drilling throughout the district during 1966. This work delineated outcropping phosphorite at intervals along a strike length of some 32km and up to 6.5km in width.

The thickness of exposed Beetle Creek Formation that hosts the phosphorite beds varied between 30 m and 107 m. Within that formation, beds of high-grade phosphate up to 12m thick were defined. MEPL completed one traverse referred to as the D10 prospect (now named Korella North) across the Property. This work established that significant phosphate mineralisation was present at D10. However, MEPL did not complete any further work at the D10 prospect.

Krucible Metals Ltd

Krucible held EPM 15572 from September 2007 until January 2014, when it was transferred to Australia New Agribusiness & Chemical Group Limited. The original granted tenement is shown in **Figure 11**, which also shows the location of the Property. Portion of EPM 15572 covering the Property was relinquished in 2018. Krucible completed the following work at the D10 prospect:

- Compilation of historical geological and geochemical data.
- Geological mapping.
- Soil geochemistry and radiometrics.
- Surface trenching.
- Drilling of 23 RC drillholes.

Mines Exploration Pty Ltd – Exploration data

MEPL held a large concession in the Duchess district in the 1960s that included the Property.

MEPL completed one detailed traverse at the D10 prospect, which is now the Korella deposit on the Property. A detailed hand-written geological log was produced and 217 surface rock chip samples were collected from intervals ranging from a minimum of 2.5 cm thick to in excess of 4.0 m, honouring geological contacts. Some individual samples analysed more than 30% P2O5. The geology and geochemistry was collated by MEPL and is summarised in **Table 8**, establishing that significant phosphate mineralisation was present at D10.

Sampling revealed the MCPM was 23.6m true thickness and there were 12 alternating sedimentary horizons within the MCPM comprising higher-grade phosphorite layers within lower-grade phosphatic limestone and chert layers.

Table 8 Geology and Geochemistry

Table 9-1. D10 stratigraphic section and phosphate geochemistry.

Formation	True Thickness (m)	P_2O_5 (%)		Lithology and Unit
Inca Formation	> 7.25	0.5	-	Shale, siltstone, limestone
Beetle Creek Formation, Monastery Creek Phosphorite Member	3.35	12.3	1	Phosphatic limestone
	0.30	20.0	2	Phosphorite
	1.30	8.6	3	Phosphatic limestone
	0.30	18.3	4	Phosphorite
	0.30	7.2	5	Phosphatic limestone and chert
	1.07	20.0	6	Phosphorite
	3.73	8.1	7	Phosphatic limestone and chert
	1.60	23.5	8	Phosphorite
	2.36	5.9	9	Chert and phosphatic limestone
	0.30	18.9	10	Phosphorite
	1.52	27.5		Phosphorite
	6.78	9.7	11	Phosphatic limestone and chert
	0.69	19.3	12	Phosphorite
Beetle Creek Formation, Lower Siltstone Member	1.91	2.7	-	Chert and siltstone
	0.46	12.9	-	Phosphatic limestone and siltstone
	2.51	1.2	-	Chert and limestone
	0.46	10.0	-	Phosphatic limestone
	13.41	1.4	-	Chert and siltstone
	1.37	11.1	-	Chert and limestone
	9.60	3.4	-	Chert and siltstone
Thorntonia Limestone	> 8.76	3.3	-	Limestone

Source: Mines Exploration Pty Ltd, 1967

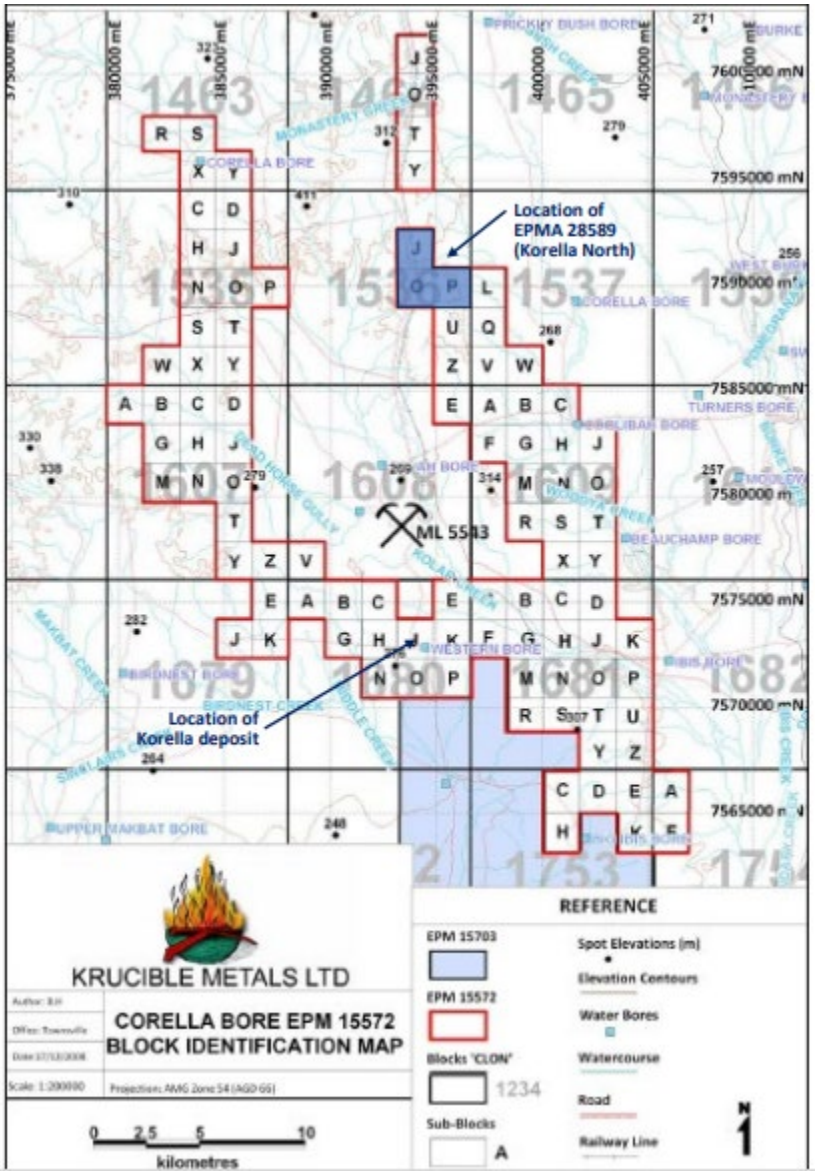
Krucible Metals Ltd – Exploration data

Krucible held a large concession in the Duchess district in the 2000s and 2010s that included both the Korella deposit and the Korella North deposit.

Krucible completed the following work at D10/Korella North, using the prevailing Australian Map Grid (AMG) Zone 54 Australia Geodetic Datum (AGD) 66 coordinates:

- Compilation of historical geological and geochemical data, including the previous exploration undertaken by MEPL.
- Reconnaissance rock chip sampling.
- Geological mapping. • Soil geochemistry and radiometrics.
- •Surface trenching.
- Drilling of 23 RC drillholes.

Figure 11 Krucible Metal Ltd exploration areas



Reconnaissance Geology and Geochemistry

In 2008, Krucible staff field-visited the general area corresponding to the D10 prospect location and collected outcropping rock chip samples that confirmed the presence of elevated phosphate grades above 30% P2O5 (Krucible, 2009). This work was the impetus to complete further exploration.

Geological Mapping

In 2008, Krucible completed surface geological mapping that defined the prospective Beetle Creek Formation over a strike length of approximately 1,200m (**Figure 12**).

Soil Geochemistry and Surface Trenching

In 2008, Krucible completed an initial soil geochemistry program over a strike length of 1,200m on a grid of 100 m by 50 m spacing to try and define a phosphate enrichment corridor at Korella North. Samples were collected as a -2 mm size fraction and sent to ALS Laboratory (ALS) for analyses by method ME-MS41 for all elements available and method Au-AA22 for gold. This initial program yielded numerous analyses >5% P2O5 and indicated a continuous corridor of phosphate enrichment. A follow up soil sampling program was designed on a grid 100m by 25m spacing covering the same area to better define the anomalous zone. This program followed the same sampling procedures as the previous program.

Results confirmed the trend of the phosphatic unit well (**Figure 13**) but the phosphate analyses were lower than the rock chip samples previously collected by both MEPL and Krucible.

Krucible followed up the soil geochemistry program with a surface trenching program in late 2008 comprised of 10 east-west oriented trenches spaced along strike with a spacing that varied from 100 – 300 m. Most of the thin soil profile was removed prior to collection of 1 m samples that were nominally 2 – 3 kg. **Figure 14** illustrates examples of the trenches and shows the systematic and methodical approach to this program. A total of 250 samples were sent to ALS and analysed by method OG62 for Al, Ca, Cu, Fe, Mg, Mn, P, Pb, and Zn. **Table 9** summarises the composited phosphate intervals containing elevated P2O5 and these are shown in **Figure 15**. All intervals are sampled thickness rather than true thickness

Table 9 Phosphate Intervals

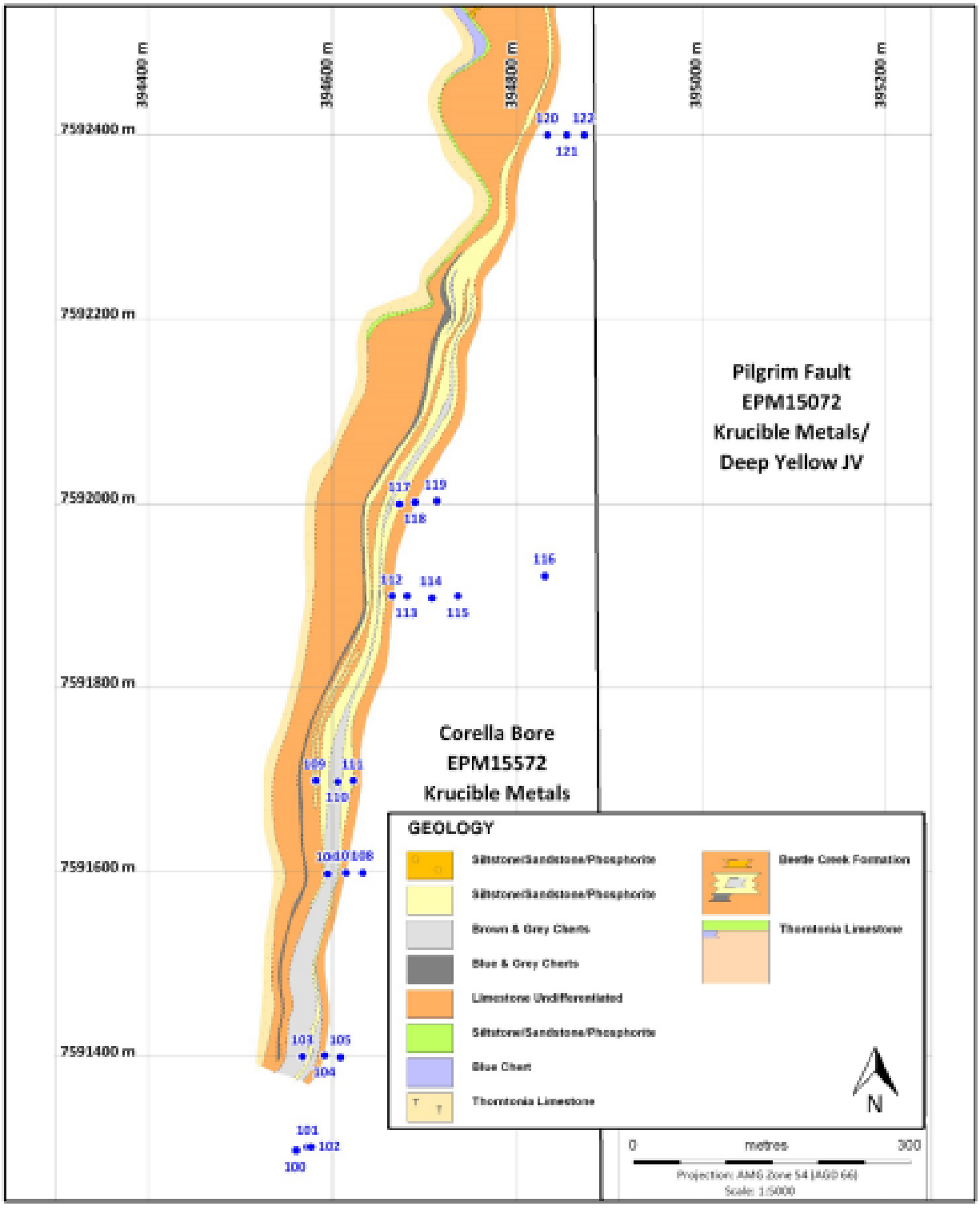
Table 9-2. Elevated P_2O_5 trench intervals.

Trench	Northing (m) *	Easting From (m) *	Easting To (m) *	Interval and P_2O_5 grade
Trench 1	7592600	394706	394702	4 m @ 12.17%
Trench 2	7592300	394788	394779	9 m @ 12.68%
Trench 3	7592200	394751	394749	2 m @ 14.7%
		394744	394741	3 m @ 16.43%
		394732	394728	4 m @ 18.3%
Trench 4	7592100	394728	394726	2 m @ 16.11%
		394723	394717	6 m @ 16.73%
		394705	394703	2 m @ 18.53%
Trench 5	7592000	394672	394664	8 m @ 18.08%
		394660	394657	3 m @ 20.88%
Trench 6	7591900	394657	394644	13 m @ 20.36%
Trench 7	7591700	394618	394601	17 m @ 19.1%
		394591	394584	7 m @ 18.22%
		394583	394580	3 m @ 22.4%
Trench 8	7591600	394603	394599	4 m @ 16.27%
		394596	394591	5 m @ 17.87%
Trench 9	7591400	394584	394581	3 m @ 17.07%
		394578	394575	3 m @ 18.27%
		394578	394558	12 m @ 18.23%
Trench 10	7592600	394857	394840	17 m @ 21.33%
		394834	394828	6 m @ 21.36%

*Source: Krucible, 2010. Note * Coordinates shown in AMG Zone 54 AGD 66 datum.*

Figure 12 Geological mapping - Krucible

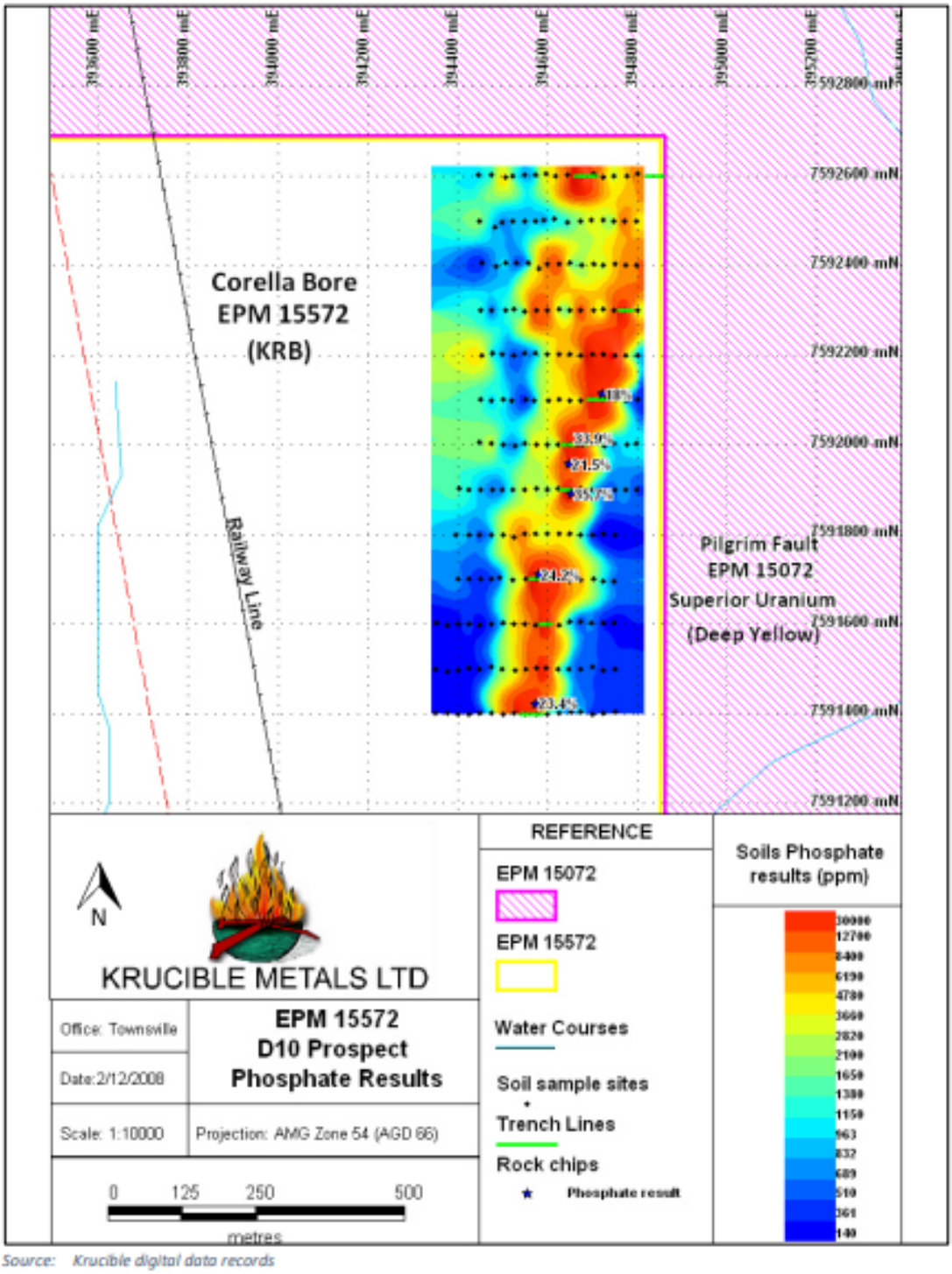
Figure 9-1. Plan view of geological mapping.



Source: Krucible digital data records

Figure 13 Soil geochemistry - Krucible

Figure 9-2. Plan view of contoured soil geochemistry.



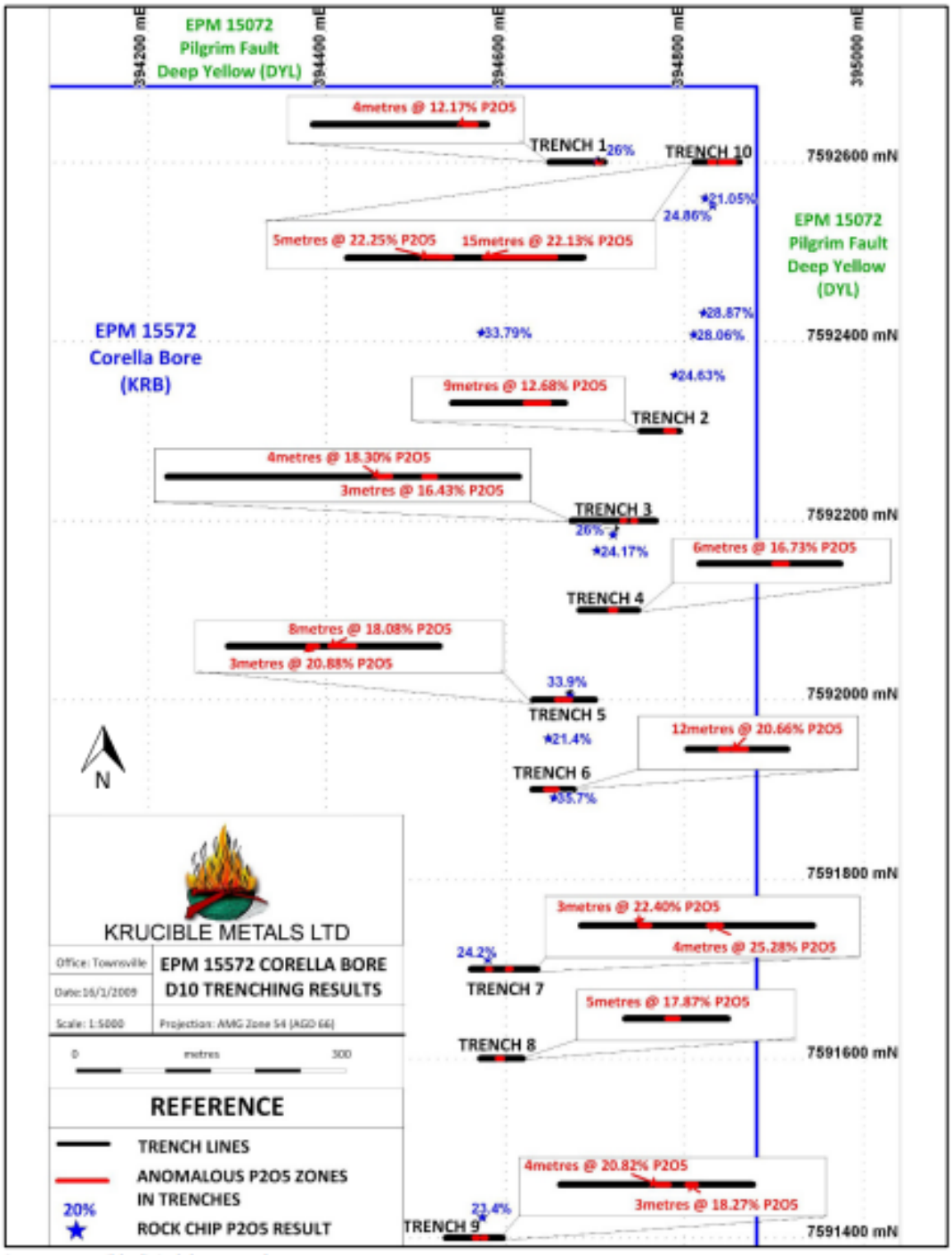
Source: Krucible digital data records

Figure 14 Trench sampling - Krucible

Figure 9-3. Views of trench sampling lines and individual sample.

Source: Krucible digital data records

Figure 15 Corella Bore Trenching Results



Source: Krucible digital data records

Phosphate Characterisation

In 2009, Krucible submitted four trench samples to Amdel Mineral Laboratories (Amdel) for quantitative evaluation of minerals by scanning electron microscopy (QEMSCAN) analysis to characterise the phosphate mineralisation. QEMSCAN can provide information including mineral abundance and species, liberation/locking characteristics of the phosphate-bearing minerals, grain size, and deportment of iron, phosphorus, and calcium.

The QEMSCAN study identified that the major minerals in terms of abundance were apatite, quartz, and kaolinite. Feldspar (anorthorite, albite, orthoclase), pyrophyllite (clay), and goethite (Fe oxide), were also detected. Apatite is the major P-bearing mineral and the study identified a variety of apatite species were detected containing Mg, Al, Na, Si, Cl, F, and Fe impurities. A low density apatite species (assumed to be hydroxyapatite) was also identified. Other P-bearing minerals included crandalite (Al Ca phosphate), P-bearing goethite, and collinsite (Mg Fe Ca phosphate).

Table 10 presents the mineral abundance for the four samples from Korella North. The study also identified that the apatite is predominately exposed. This was confirmed by particle images that showed apatite lining pores and forming rims around other minerals e.g., quartz. Apatite is generally found adjacent to quartz and other silicates.

Table 10 QEMSCAN Mineral Abundance

Table 9-3. QEMSCAN mineral abundance.

Mineral Species	Sample 26242	Sample 26243	Sample 26337	Sample 26338
Pore	0.0	0.0	0.0	0.0
Mn- Carbonate	0.1	0.1	0.0	0.0
P-Goethite	0.0	0.0	0.0	0.0
Crandalite	0.0	0.0	0.0	0.0
Collinsite	0.0	0.0	0.0	0.0
Apatite	64.1	32.2	48.2	65.2
Fluoroapatite	0.0	0.0	0.0	0.0
Chloro-fluoroapatite	0.1	0.1	0.1	0.2
Si-Apatite	0.6	1.0	0.8	0.9
Hydroxyl apatite	0.2	0.2	0.2	0.2
Goethite/Apatite intergrowth	0.0	0.0	0.0	0.0
Apatite Quartz intergrowth	0.1	0.3	0.2	0.2
Apatite-Quartz-Clay intergrowth	0.0	0.0	0.0	0.0
Apatite + Ca Carbonate	0.2	0.0	0.1	0.2
Quartz	24.0	53.5	36.9	23.9
Fe-rich Kaolinite	1.1	1.2	1.1	0.7
Kaolinite	2.6	1.7	2.5	1.8
Biotite	0.1	0.2	0.0	0.0
Pyrophyllite	2.4	2.9	4.1	2.3
Muscovite	0.1	0.1	0.1	0.1
Calcite	0.0	0.1	0.0	0.1
Orthoclase	1.0	1.7	1.4	1.1
Anorthorite	1.4	1.5	1.4	0.9
Albite	1.4	2.5	1.9	1.3
Fe-Oxide (hydroxide)	0.2	0.2	0.4	0.3
Ilmenite/Rutile	0.2	0.5	0.4	0.3
REE & U	0.0	0.0	0.0	0.0
Other	0.1	0.1	0.1	0.1
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: Amdel, 2009

Drilling

There has only been one program of drilling at the Property, completed by Krucible in 2009 using the RC drilling method. AMPL has secured digital data files that provide comprehensive data and information on the drilling program and the relevant Qualified Persons have reviewed this information. Krucible engaged All Terrain Drilling (ATD) to complete the RC drilling program over Korella North. A total of 23 holes (766m) have an 09CBRC prefix and were drilled within the current Property limits. An additional seven holes (242m) with a prefix of 09PFRC were drilled immediately northeast of the Property boundary (**Table 11**).

Figure 12 shows the location of all drillholes. The 09PFRC holes have been used to prepare a geological interpretation of the mineralisation and assays were used to estimate phosphate grades. Almost all drillholes were drilled to the west at an angle of 60° in order to intersect the shallow easterly dipping phosphate mineralisation at a perpendicular angle.

Table 11 Krucible Drilling Summary

Table 10-1. Drilling summary.

Hole Name	Easting (m) [1]	Northing (m) [1]	Elevation (m)	Azimuth (°)	Dip (°)	Length (m)
09CBRC - 100	394561	7591299	305	260	-60	19
09CBRC - 101	394573	7591303	305	260	-60	19
09CBRC - 102	394577	7591303	305	260	-60	19
09CBRC - 103	394568	7591401	307	260	-60	19
09CBRC - 104	394592	7591402	308	260	-60	31
09CBRC - 105	394609	7591400	308	260	-60	46
09CBRC - 106	394595	7591599	309	260	-60	25
09CBRC - 107	394615	7591600	309	260	-60	31
09CBRC - 108	394633	7591600	308	260	-60	40
09CBRC - 109	394582	7591700	310	260	-60	25
09CBRC - 110	394606	7591699	310	260	-60	31
09CBRC - 111	394681	7591900	309	260	-60	31
09CBRC - 112	394708	7591898	312	260	-60	25
09CBRC - 113	394736	7591900	312	260	-60	40
09CBRC - 114	394830	7591922	311	260	-60	43
09CBRC - 115	394673	7592000	311	260	-60	55
09CBRC - 116	394623	7591700	309	260	-60	64
09CBRC - 117	394665	7591900	315	260	-60	22
09CBRC - 118	394690	7592002	314	260	-60	34
09CBRC - 119	394713	7592003	314	260	-60	40
09CBRC - 120	394833	7592400	318	260	-60	21
09CBRC - 121	394854	7592400	317	260	-60	34
09CBRC - 122	394873	7592400	316	260	-60	52
Subtotal = 23						**766**
09PFRC – 001 *	394888	7592601	320	260	-60	26
09PFRC – 002 *	394981	7592801	322	260	-60	28
09PFRC – 003 *	395001	7592802	319	260	-60	34
09PFRC – 004 *	395102	7592757	314	0	-90	37
09PFRC – 005 *	395002	7592866	320	260	-60	22
09PFRC – 006 *	394942	7592601	317	260	-60	40
09PFRC – 007 *	394895	7592399	315	0	-90	55
Subtotal = 7						**242**
TOTAL = 30						**1,008**

Source: Krucible digital data records
*Note: [1] Coordinates shown in AMG Zone 54 AGD 66 datum. *denotes hole collars are outside the Property boundary*

Drilling Conditions

Krucible did not record details about drilling conditions. All drill sites were located on flat or gently undulating terrain that required minimal site preparation to access drill sites. **Figure 16** illustrates an example of typical drilling conditions experienced in the district. ATD fitted a cyclone to the drill rig to collect all dust and cuttings from the drilling process.

Figure 16 Drilling conditions

Drillhole Collar Surveys

Krucible used handheld global positioning system (GPS) units to record the location of the drill collars in 2009 using the AMG Zone 54 AGD 66 datum. All drillhole collars are preserved and AMPL has resurveyed all drill collars using the new MGA Zone 54 GDA 2020 datum 10.4 Downhole Surveys There are no downhole surveys recorded in the Krucible database. As the deepest hole is only 64m in length, the relevant Qualified Persons do not consider the lack of downhole surveys as a material risk.

Sample Recovery

All drilling was completed using the RC percussion method in which sampling was undertaken at nominal 1.0 m intervals. Krucible did not systematically measure the sample recovery. The relevant Qualified Persons understand that all of the sample recovered through the cyclone was subsampled using a riffle splitter at the drill rig to generate a sample for laboratory analysis.

The remainder of the sample for each interval was stored in a large plastic bag and retained. Krucible did not record whether samples were recovered dry, moist or wet. The relevant Qualified Persons note that almost all holes were angled and almost half of the holes were less than 30 m in length.

All pictures of Krucible drilling activities at Korella and Korella North sighted by the Qualified Persons suggest drilling was above the water table. However, the relevant Qualified Persons cannot verify that sample recovery throughout the Korella North drilling was high.

The lack of drilling recovery records reduces the reliability of the drilling data and contributes to the assessment and classification of the Korella North Mineral Resource estimate.

Geological Logging

Detailed lithological logging of all RC holes was undertaken by Krucible recording lithology, silica and carbonate alteration, iron oxide content, and response to dilute acid. In addition, Krucible used a handheld scintillometer to record natural radioactivity in counts per second to assist with defining phosphate enrichment

A sample from every 1.0 m interval was sieved and washed, then stored in a chip tray as a permanent record of the drilling. **Figure 17** shows an example of the chips.

Figure 17 Preserved RC chip samples

Figure 10-3. Example of preserved RC chip samples from Korella drilling in 2008.

Krucible stored all drilling data in Excel spreadsheets and the relevant Qualified Person has reviewed the database against the drill logs.

Relationship of Drilling to Mineralisation

The sedimentary sequence containing the phosphate mineralisation at Korella North is oriented in a north- south direction and dips gently to the east. Almost all drillholes testing the deposit are oriented in a westerly direction and steeply dipping to achieve a high angle intersection through the stratigraphy and mineralisation.

Reliability

The relevant Qualified Persons have reviewed the historical records available documenting drilling methods and procedures used for the drilling programs completed at the Property. Records are incomplete and some documentation is missing. Therefore, it is not possible to independently validate some drilling data. Where the relevant Qualified Persons have identified specific concerns associated with drilling, sampling and recovery information relating to estimation of Mineral Resources, these are specifically addressed in Section 14 of the 43-101 report.

Sample Preparation, Analyses and Security

There has only been one program of trenching and one program of drilling at the Property, completed by Krucible in 2008 and 2009 respectively. Derisk has utilised both the trenching data and drilling date in the Korella North Mineral Resource estimate. AMPL has secured digital data files that provide detailed data and information on the trenching and drilling program, and the relevant Qualified Persons have reviewed this information.

Surface Trenching

- *Sampling Methods* - Krucible marked out east-west trending trench lines and excavated a shallow narrow trench, removing obvious soil material prior to sampling. Samples were collected at 1.0 m intervals and Krucible reported that most samples were from 2 -3 kg in weight. Sampling was undertaken through the interpreted phosphatic zone as well as into both the hangingwall and footwall. Krucible used a handheld scintillometer to record natural radioactivity to assist with defining phosphate enrichment to screen mineralised intervals from unmineralised intervals for analysis.
- *Sample Preparation* - The sample preparation method used by ALS is not documented in detail, but samples were dried, crushed if required, and pulverised using ALS method PUL-23 prior to analysis.
- *Analytical Methods* -A total of 250 samples were sent to ALS and analysed by method ME-OG62 for Al, Ca, Cu, Fe, Mg, Mn, P, Pb, and Zn. The method involves a four-acid digestion followed by either an atomic absorption spectroscopy (AAS) or inductively coupled plasma atomic emission spectroscopy (CP-AES) finish. The P2O5 content is directly calculated from the P content, whereby P2O5 = P x 2.291. Almost all samples submitted to ALS contained highly elevated phosphate contents due to the screening process. There was no relationship between the laboratory and the tenement holders other than a fee-for-service commercial agreement to analyse samples supplied by the tenement holder. The relevant Qualified Persons have not been able to verify what certification or accreditation that ALS held at the time the work was completed.

- *QA/QC Processes* - The relevant Qualified Person understands that Krucible did not implement a specific quality assurance and quality control (QA/QC) procedure to monitor the quality of the trench sampling and analysis program. ALS completed a number of routine QA/QC procedures on all batches it received, including the analysis of duplicate pulps and several different laboratory standards, including blanks. The relevant Qualified Person has reviewed the QA/QC results reported by ALS and considers that the reported results suggest no material concerns in the analytical procedures used by ALS. However, the relevant Qualified Person also notes that the ALS QA/QC procedures are designed to test analytical quality and are not designed to assess sample preparation and subsampling quality.
- *Security* - There are no records describing security arrangements implemented by Krucible for the trench sampling and analysis.
- *Assessment* - The relevant Qualified Person considers that the documentation sighted describing sample preparation procedures, analytical procedures, QA/QC systems and security arrangements used in the surface trenching program undertaken by Krucible at the Property were typical of procedures used generally within the exploration industry. Phosphate is a bulk commodity, often measured in tens of percent, and the relevant Qualified Person considers that concerns with the lack of independent QA/QC systems are not as serious when compared with commodities where economically viable contents are measured in parts per million. The relevant Qualified Person considers that these procedures are adequate to support Mineral Resource estimation.

RC Drilling

- *Sampling Methods* - Krucible sampled all RC drilling intervals at the drill site at 1.0m increments. All returns from drilling were processed via a cyclone mounted to the drill rig. All of the sample from each 1.0m interval was subsampled using a two-stage riffle splitter collecting 25% of the sample in a calico bag for analysis, retaining the remainder of the sample in a large plastic bag (**Figure 18**. Krucible used a handheld scintillometer to record natural radioactivity to assist with defining phosphate enrichment to screen mineralised intervals from unmineralised intervals for analysis. Krucible also collected three samples per hole that were collected using a spear-sampling method from an interval near the start, the middle, and the end of each hole. These samples were collected and analysed in order to collect broad multi-element geochemistry.

Figure 18 RC drill rig sampling - Krucible

Figure 11-1. Photographs of RC drill rig, cyclone, and riffle splitter configuration.

Source: Krucible digital data records

- *Sample Preparation* - The sample preparation method used by ALS is not documented in detail, but samples were weighed on receipt, dried and pulverised using ALS method PUL-23 prior to analysis. 11.2.3 Analytical Methods A total of 593 samples were sent to ALS and analysed by method ME-OG62 for P. The method involves a four-acid digestion followed by an AAS finish. The P2O5 content is directly calculated from the P content, whereby P2O5 = P x 2.291. Almost all samples submitted to ALS contained highly elevated phosphate contents due to the screening process The samples collected for multielement analysis were also sent to ALS but were analysed using a different method ME-MS41. This method involves an aqua-regia digestion followed by an inductively coupled plasma mass spectrometry (ICP-MS) finish. There was no relationship between the laboratory and the tenement holders other than a fee-for-service commercial

agreement to analyse samples supplied by the tenement holder. The relevant Qualified Persons have not been able to verify what certification or accreditation that ALS held at the time the work was completed.

- *QA/QC Processes* - The relevant Qualified Person understands that Krucible did not implement a specific QA/QC procedure to monitor the quality of the drilling sampling and analysis program. ALS completed a number of routine QA/QC procedures on all batches it received, including the analysis of duplicate pulps and analysis of several different laboratory standards including blanks. The relevant Qualified Person has reviewed the QA/QC results reported by ALS and considers that the reported results suggest no material concerns in the analytical procedures used by ALS. However, the relevant Qualified Person also notes that the ALS QA/QC procedures are designed to test analytical quality and are not designed to assess sample preparation and subsampling quality.
- *Security* - There are no records describing security arrangements implemented by Krucible for the trench sampling and analysis.
- *Assessment* - The relevant Qualified Person considers that the documentation sighted describing sample preparation procedures, analytical procedures, QA/QC systems, and security arrangements used in the RC drilling program undertaken by Krucible suggest there were inadequacies in some aspects of this work. Consequently, the relevant Qualified Person considers that drilling-related exploration undertaken by Krucible was not typical of procedures used generally within the exploration industry. Phosphate is a bulk commodity, often measured in tens of percent. The relevant Qualified Person considers that concerns with the lack of drilling documentation and independent QA/QC systems are not as serious when compared with commodities where economically viable contents are measured in parts per million. The relevant Qualified Person considers that these procedures are adequate to support Mineral Resource estimation.

4.5 Data Validation and Transposition

Since the late 2010s, Australia has implemented a new datum called Geocentric Datum of Australia (GDA) 2020. AMPL has transposed all exploration data undertaken by Krucible from the AMG Zone 54 AGD 66 datum to the new Map Grid of Australia (MGA) Zone 54 GDA 2020 datum. **Figure 19** is a compilation of the surface geology, trenching, drillhole data and surface topography presented in the new datum.

The relevant Qualified Person has reviewed this database and considers that the work completed by Krucible is well-documented and appears to have been completed to a standard commensurate with general industry practices. The relevant Qualified Person believes that the database is adequate for the estimation of Inferred and Indicated Mineral Resources according to CIM Definition Standards. However, a more thorough compilation of all past exploration activity, including the documentation describing procedures used in the drilling campaigns is required to raise the confidence in the quality of this data.

5. Resource Assessment

5.1 Resource Estimate

Methodology

The process used by Derisk to prepare the Korella North Mineral Resource estimate comprised the following steps:

1. Digital and hardcopy drillhole data and surface trenching data were extracted from a master database then imported into Microsoft Access software for checking and validation.
2. Digital topographic survey data collected by LiDAR technology was reviewed and imported into the Vulcan software package.
3. Data validation checks were completed, focused on drillhole collar coordinates, trenching interval coordinates, and sampling/analysis data. Once source data was checked, modifications were applied to the master data sets accordingly.
4. Three-dimensional interpretations of lithology were created in Vulcan, based on the drillhole logs, trench mapping, and assays.
5. Statistical analysis of drillhole assay data and trenching assay data was completed and used to establish the optimum composite sample length and the creation of mineralisation domains for estimation based on lithology.
6. Drillhole and trench composites were generated for P2O5, followed by composite statistics and a variographic analysis of the data.
7. A three-dimensional block model was created in Vulcan, with some sub-celling of parent blocks used for volume accuracy, particularly near surface.
8. Estimation search parameters were developed and estimates were generated using the IDS method.
9. Block model validation comprised visual checking of block grades against composite values and other statistical checks.
10. Assignment of the Mineral Resource classification was completed, considering the confidence in the geological interpretation of the mineralisation, drillhole and trench spacing, sample density, and assessments of the integrity and robustness of the sample database.
11. A grade-tonnes distribution was produced to illustrate the sensitivity of the estimate to different cut-off criteria.
12. Criteria to support the reasonable prospects for eventual economic extraction were assessed and an appropriate cut-off criterion was selected for reporting Mineral Resources. The relevant Qualified Person has reviewed and assessed the data inputs, estimation parameters, and reporting criterion for Korella North and reported the Mineral Resource using the 2014 CIM Definition Standards at an effective date of 11 August 2023. 14.2 Resource Inputs 14.2.1 Drillhole and Trench Data Drilling is comprised solely of RC drilling completed by Krucible in 2009. A total of 30 drillholes (1,008 m) have been used in the current resource estimate, although seven of these fall outside of the Property (**Table 12**). In addition, 10 surface trenches completed by Krucible in 2008 have also been included in the resource estimate.

Table 12 Korella North Resource Input Data

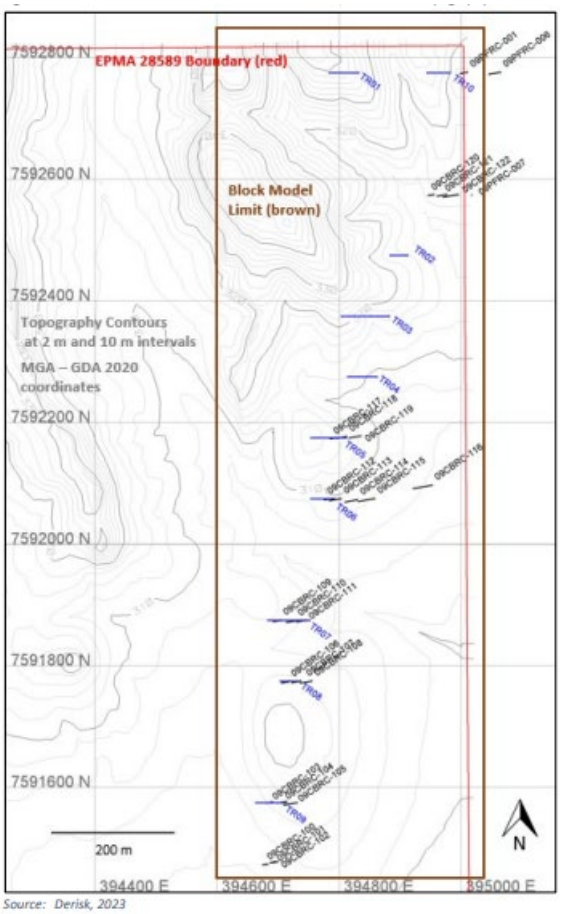
Table 14-1. Korella North resource input data.

Data Type	Prefix	No. of holes or trenches	Total depth/length (m)	Average depth/length (m)	P_2O_5 samples	Radiometric samples
Drilling *	09PFRC	7	242	34.6	131	64
Drilling	09CBRC	23	766	33.3	462	762
Trench	TR	10	499	49.9	254	497
Drilling & Trench	09CBRC & TR	33	1,265	38.3	716	1,259

*Note: * These drillholes fall outside of EPMA 28589 but were used in the interpretation and grade estimation process.*

The drilling data consists of lines spaced from 100 – 400 m apart along strike with most lines containing a fence of three drillholes angled steeply to the west to test the shallow east-dipping MCPM (**Figure 19**). The trench data consists of ten lines spaced 100 – 300 m apart along strike with samples collected at 1.0 m intervals. Drillhole and trench information was originally recorded in the AGD66 Zone 54 grid coordinate system but has been converted to MGA 2020 Zone 54 with the GDA 2020 datum.

Figure 19 Drillhole data



Source: Derisk, 2023

Topography and Drillhole Surveys

A subset of 2.0 m contours and key spot heights from the 2023 LiDAR survey was used to create a topographic surface for the Korella North area. Trenches were draped over the topographic surface to provide more accurate elevations. There are no downhole drillhole surveys.

Geological and Mineralisation Interpretation

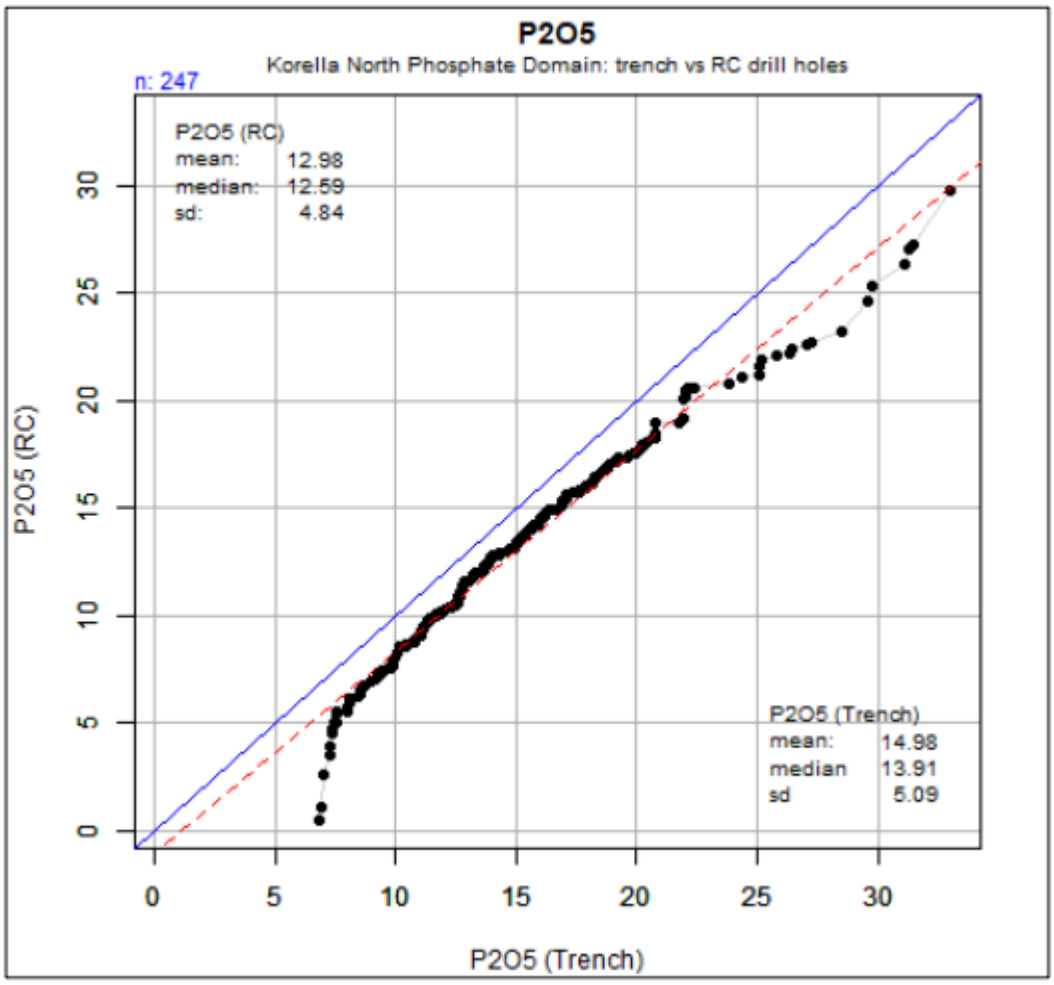
Most phosphate mineralisation is confined to the MCPM of the Beetle Creek Formation. Derisk created a MCPM lithological domain based on surface mapping, MCPM trench mapping and analyses, and drillhole logging data and analyses. Minor adjustments were made to the hangingwall and footwall contacts. In addition, a near-surface weathering-related blanket was created within the MCPM domain to represent an enriched supergene zone based on an analysis of the trench and drillhole geochemistry, as described below.

Data Analysis

Trench and Drillhole Assay Data - All trench and RC samples are 1.0 m in length. Derisk reviewed the phosphate grade distribution within both populations to assess the potential of using the trench data to complement the drillhole data to estimate the Mineral Resource. **Figure 20** is a quantile-quantile plot (Q-Q plot) comparing the RC and trench analyses and clearly shows that the trench data (mean of 14.98% P2O5) is higher grade than the RC data (mean of 12.98% P2O5).

Figure 20 Q-Q plot of RC data vs trench data

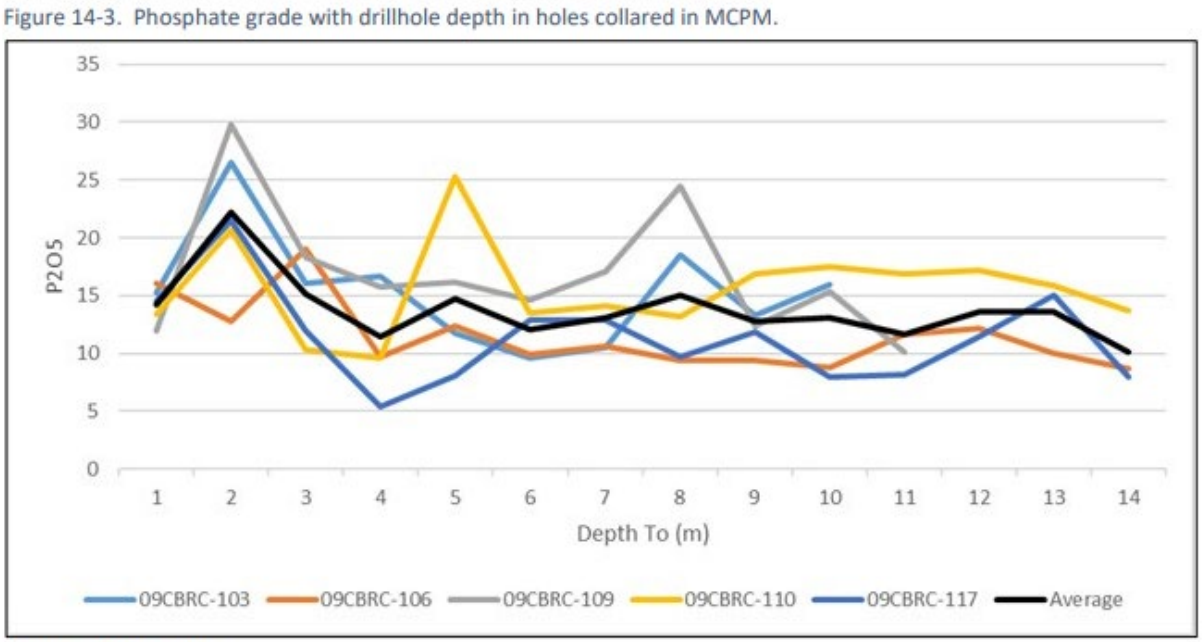
Figure 14-2. Q-Q plot of RC data vs trench data for P_2O_5.



Source: Derisk, 2023

Five RC drillholes are collared in the MCPM and an analysis of phosphate grade with depth in these holes suggests there is a thin surface enrichment blanket (**Figure 21**). Derisk elected to create a 3 m thick surface within the MCPM in order to constrain the higher-grade trench samples and very shallow drillhole intervals.

Figure 21 Phosphate grade with drillhole depth



Source: Derisk, 2023

Sample Recovery

No statistical analysis of sample recovery was undertaken because there were no drilling records documenting recovery for the RC drilling. The relevant Qualified Person acknowledges that the lack of sample recovery statistics is a potential risk area to the Mineral Resource estimate, however phosphate is a bulk commodity and the risk is considered to be relatively low.

Compositing

All RC samples and all trench samples are 1.0 m in length and Derisk adopted a 1.0 m composite length. Derisk created a hangingwall waste domain corresponding with the Inca Formation (Domain 10) and a footwall waste domain corresponding with the Lower Siltstone Member (Domain 30). Within the MCPM, Derisk created two domains i.e., a fresh MCPM horizon (Domain 20) and a thin near surface weathered MCPM horizon (Domain 21).

Table 13 presents P2O5 statistics for all domains and **Figure 22** presents cumulative probability plots. These clearly illustrate that the small number of RC composites lying within the weathered MCPM domain are higher grade than the RC samples within the fresh MCPM, and that the weathered surface blanket is enriched in phosphate.

Table 13 P205 statistics for all domains

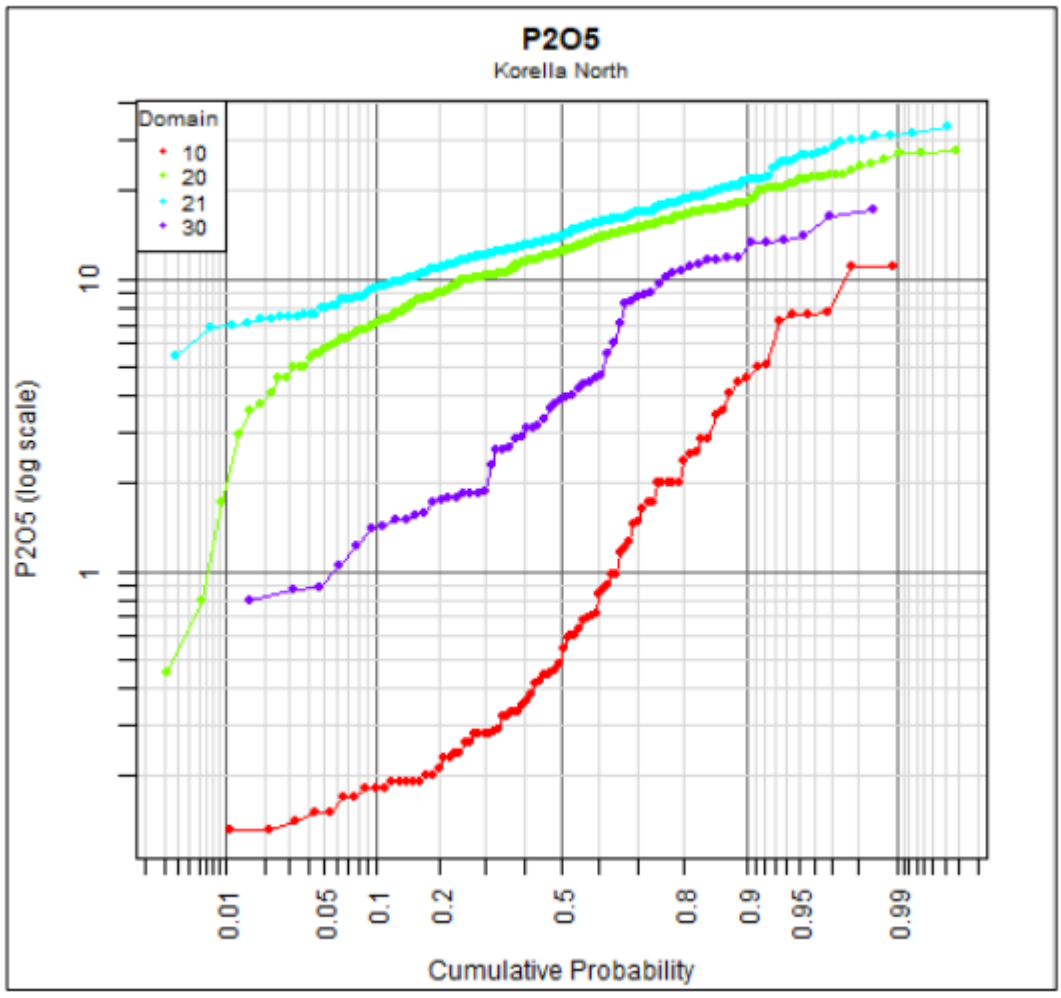
Table 14-2. Composite statistics for P_2O_5 by domain.

Domain	Description	Data Type	No. Composites	Minimum (%)	Maximum (%)	Mean (%)	Coefficient of Variation
10	Hangingwall	All	90	0.1	11.0	1.5	1.5
20	MCPM Fresh	RC	316	0.5	27.3	12.8	0.4
21	MCPM Weathered *	RC	20	5.4	29.8	15.8	0.4
		Trench	247	6.8	33.0	15.0	0.3
		All	267	5.4	33.0	15.0	0.3
30	Footwall	All	63	0.8	17.4	5.7	0.8

*Note: * This domain is 3 m thick and parallel with the surface topography*

Figure 22 Cumulative probability plot in each domain

Figure 14-4. Cumulative probability plot for all P_2O_5 data in each domain.



Source: Derisk, 2023

Grade Capping

A review of the phosphate analyses was undertaken to determine if grade capping of high grades was warranted. Based on this review, and in the absence of any extreme high grades, no grade capping was applied to the composite data.

Variography

Structured variograms are present for all assay data using all domains, however when assessed for Domain 20 and 21 the variograms structure become shorter. Downhole ranges for the RC drilling are only 2 m and extend to 6 m for trenches, which are less perpendicular to the geological dip i.e., a partially down dip orientation. Downdip variograms indicate a range of 75 m. This also fits the wider spaced strike (north-south) direction where the minimum drillhole spacing is 100 m. The relatively short variograms structures suggest there is reduced opportunity to be selective without greater drill definition than currently provided at 100 m by 30 m centres. This is slightly at odds with visual assessment of the samples that indicates a central band of lower grade. Further work will be required to better understand the internal grade variations within the MCPM.

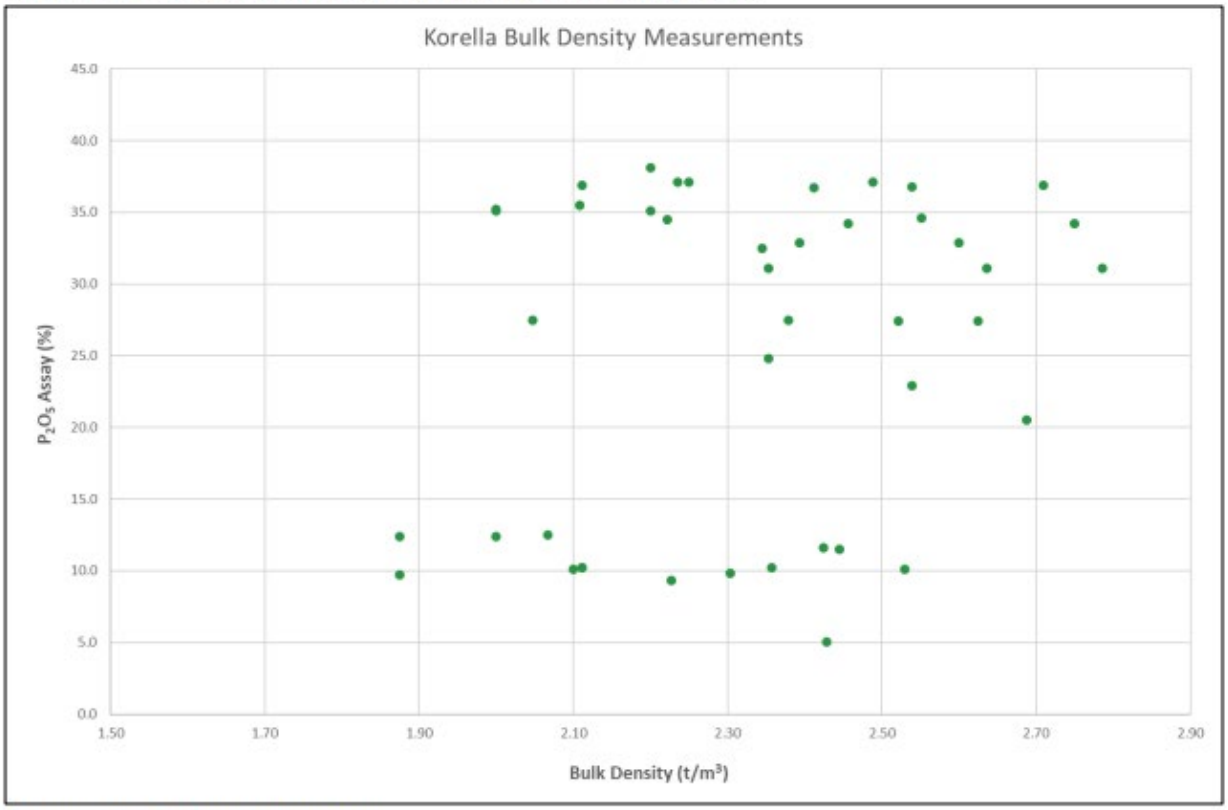
Bulk Density

No direct bulk density (BD) determinations have been measured from any samples at Korella North. However, Krucible measured BD on diamond drill core from the Korella deposit 20 km to the south, which is in the same formation as Korella North. A total of 43 measurements of whole core from five diamond drill holes were documented by Krucible at Korella. Core lengths ranged from 10.0 – 19.0 cm and BD was measured using a water displacement method.

Krucible wrapped the core in cling wrap prior to water immersion to prevent disintegration of the sample. **Figure 23** presents a scatter plot of measured BD versus phosphate grade. Each length of core was nominally assigned the average phosphate grade of the sample interval it came from and as such may not be accurate if the material making up the sample interval was heterogeneous.

Figure 23 Korella Bulk Density measurements

Figure 14-5. Cumulative probability plot for all P_2O_5 data in each domain.



Source: Krucible digital data records

The BD data shows the samples cover two distinct grade populations i.e., 5 – 12% P2O5 and 20 – 38% P2O5. No obvious relationship is visible between BD and phosphate grade except that the average BD of the higher- grade samples overlaps but is higher than the average BD of the lower-grade samples. **Table 14** summarises the BD statistics and indicates a mean of 2.33 t/m3 .

Table 14 Korella bulk density statistics

Table 14-3. Korella bulk density measurement statistics.

Number	Minimum (t/m^3)	Maximum (t/m^3)	Mean (t/m^3)	Mode (t/m^3)	Median (t/m^3)	Standard Deviation
43	1.87	2.79	2.33	2.11	2.35	0.24

Source: Krucible digital data records

The relevant Qualified Person makes the following observations:

- BD measurements made on competent pieces of core can potentially result in a bias if there is also substantial material that is friable and cannot be measured the same way. Typically, this can lead to a BD that is too high.
- The use of cling wrap to protect the core from disintegration during water immersion can sometimes result in air bubbles being retained inside the cling wrap, leading to an inaccurate BD measurement.
- BD estimates used for other Georgina Basin phosphate deposits hosted in the MCPM or local equivalents typically report a lower mean BD than 2.33 t/m3 (Qualified Person personal knowledge). The relevant Qualified Person notes that BD estimates for the phosphate mineralisation of four other deposits in the Georgina Basin range from 1.70 – 2.25 t/m3 . The relevant Qualified Person considers that it is appropriate to apply a mean BD of 2.0 t/m3 to lack of direct BD measurements at Korella North represents a technical risk if the actual BD is less than 2.0 t/m3 , and an opportunity if the actual BD is greater than 2.0 t/m3 .

Resource Estimation

Block Model Set-up

The Mineral Resource estimate for Korella North was prepared on the assumption that the mineralisation will be amenable to open pit mining methods. The block model is in the MGA 2020 Zone 54 with the GDA 2020 datum grid with dimensions listed in **Table 15**. The parent block size is smaller than is supported by the drillhole spacing. It does not reflect any assumptions of selectivity and was selected principally to allow some cross strike resolution given the shallow easterly dip and slight changes in strike direction. Subblocks of 1 m vertically were adopted to provide reasonable topography and Domain 21 volume resolution and accuracy.

Table 15 Block Model Extents

Table 14-4. Block model extents.

	East	North	RL
Minimum MGA Coordinate	394600	7591450	260
Maximum MGA Coordinate	395040	7592850	360
Model Extent (m)	440	1,400	100
Block Size (m)	5	10	2
Subblock Size (m)	5	10	1

Source: Derisk, 2023

The block model dimensions were restricted by the topographic surface based on block centroids below this surface. Blocks beyond the EPMA boundary were discarded. Geological domains 10, 20, and 30 were assigned based on the modelled surfaces for the top and bottom of Domain 20. Domain 21 was assigned for all Domain 20 blocks within 3 m of the LiDAR topography survey model. 14.4.2 Estimation Parameters

Domain wireframe models reflect surface mapping as well as drilling and trench intercepts. Also, there are slight changes in strike direction and modelled dip. Simple unfolding was used to improve the sample selection for all estimation. This was applied using locally assigned search orientations based on the top and bottom surfaces for Domain 20. For the near surface enrichment (Domain 21), a horizontal orientation was assumed due to the thinness of the domain. Block phosphate grades were estimated using IDS and Vulcan software. Phosphate was estimated into Domains 20 and 21 in a single search pass with parameters listed in **Table 16** and orientations as described above. IDS used a 1 to 10 flattening anisotropy for Domain 20 and an isotropic anisotropy for Domain 21.

Table 16 Phosphate grade estimation search parameters

Table 14-5. Phosphate grade estimation search parameters.

Domain	X Search (m)	Y Search (m)	Z Search (m)	Minimum No. of Composites	Maximum No. of Composites	Maximum Composites Per Hole	Maximum Composites Per Octant	Maximum Drill holes
20	300	90	25	3	16	4	4	4
21	300	90	90	3	16	4	4	4

Source: Derisk, 2023

Model Validation

Validation of the estimation was undertaken by visual checks of the model versus drillhole composite grades, and analysis of model versus composite statistics (**Table 17**). These checks indicate that the block model fairly represents the grades observed in the drillhole composites. **Figure 24**, **Figure 25** and **Figure 26** present three cross sections through the model comparing block model grades with drillhole and trench composite grades.

Table 17 Model validation

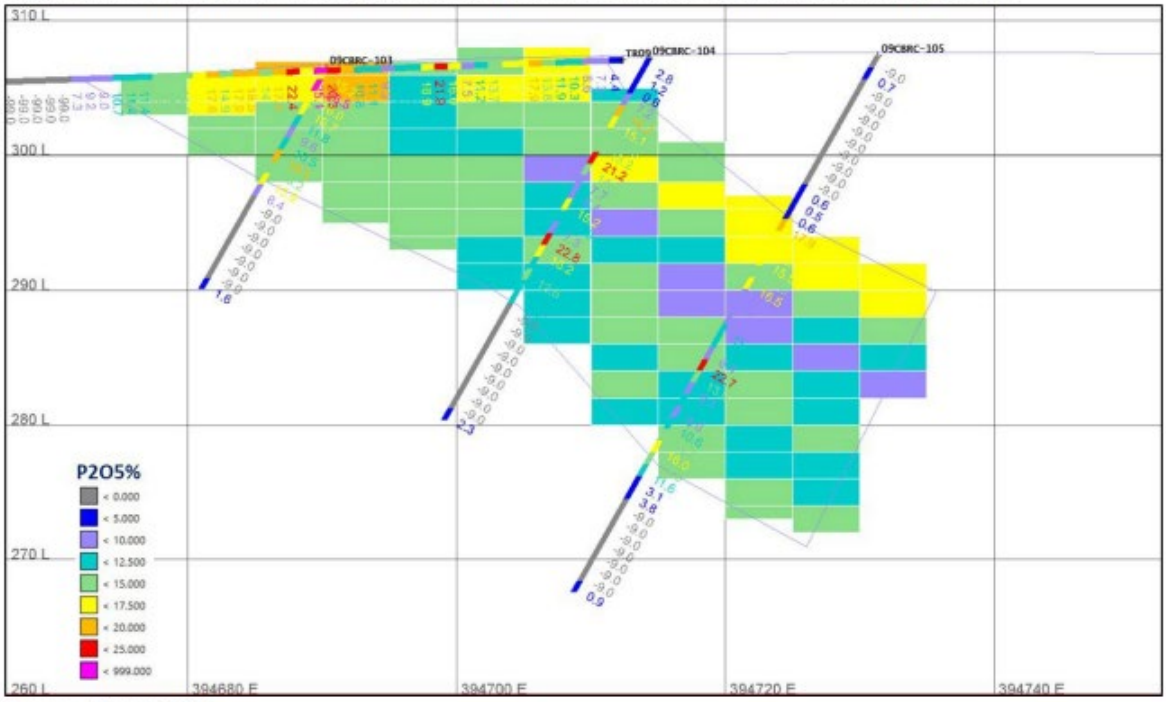
Table 14-6. Phosphate grade estimation validation – composites vs block model statistics.

Domain and Description	Composites – P_2O_5			Model – P_2O_5			Difference (%)
	Minimum (%)	Maximum (%)	Mean (%)	Minimum (%)	Maximum (%)	Mean (%)	
20 MCPM Fresh	0.5	27.3	12.8	2.9	24.0	12.6	-1.3%
21 MCPM Weathered	5.4	33.0	15.0	7.8	28.6	14.7	-2.1%

Source: Derisk, 2023

Figure 24 Cross section 1

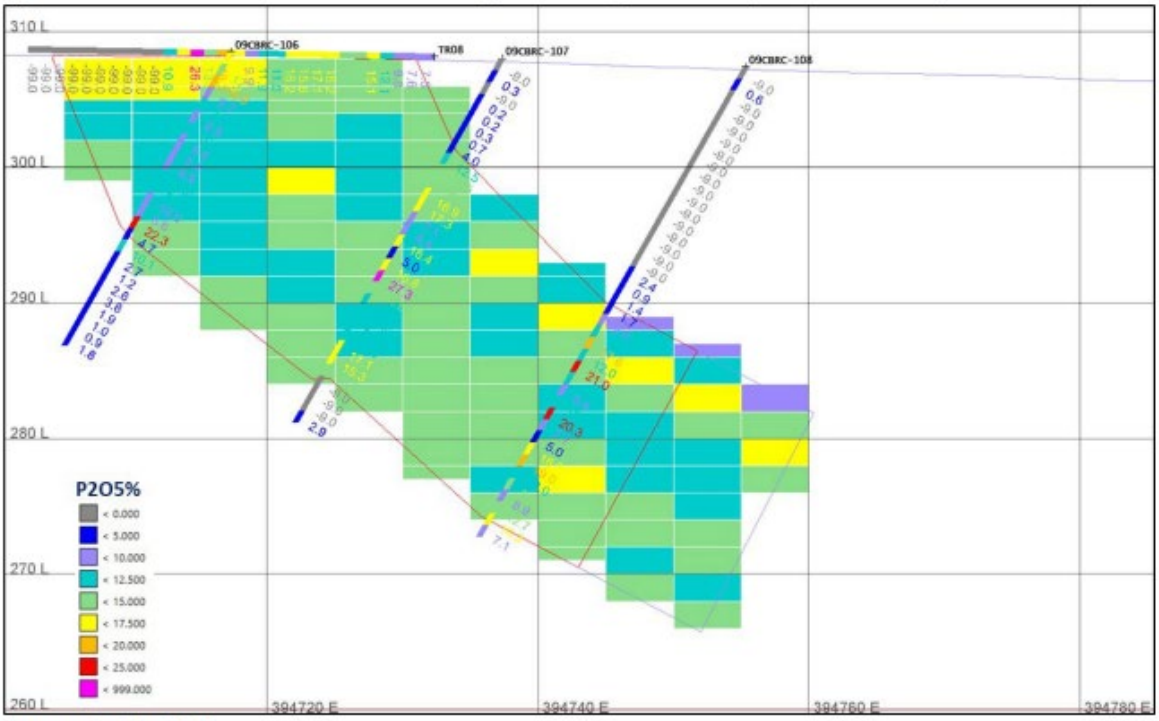
Figure 14-6. Cross section at 7591575 mN showing trench data, drillhole data, and block model grades.



Source: Derisk, 2023

Figure 25 Cross section 2

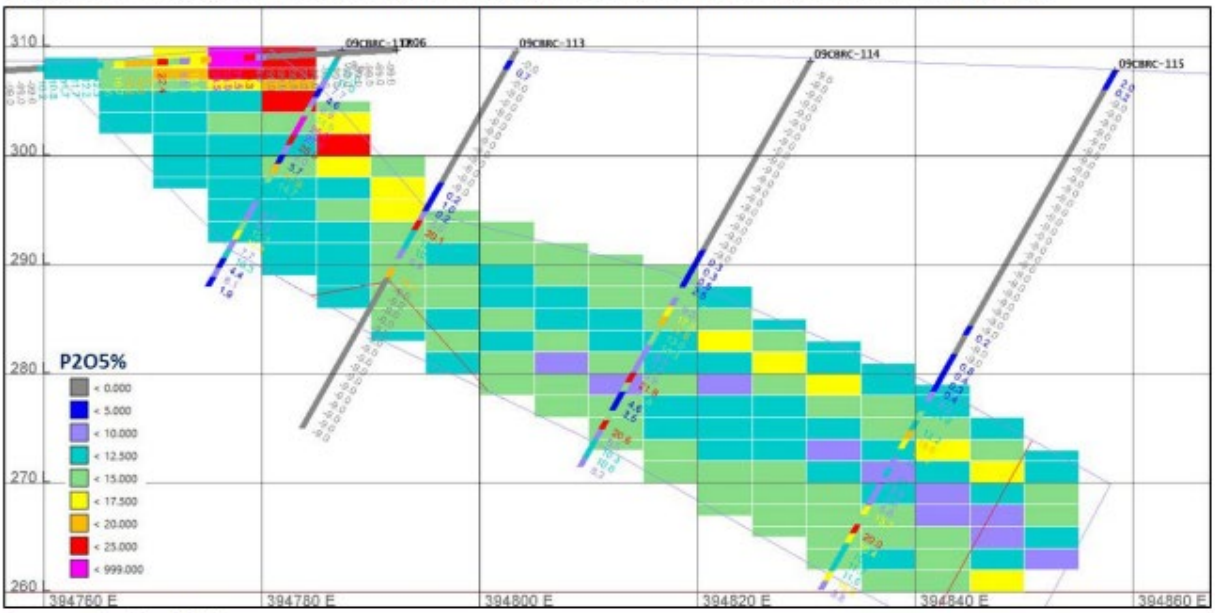
Figure 14-7. Cross section at 7591780 mN showing trench data, drillhole data, and block model grades.



Source: Derisk, 2023

Figure 26 Cross section 3

Figure 14-8. Cross section at 7592075 mN showing trench data, drillhole data, and block model grades.



Source: Derisk, 2023

Classification

Classification of the estimate considered a range of factors including geological and mineralisation controls and interpretation, trench and drilling density, and data input quality.

Some of the deficiencies associated with some of the data inputs include:

- Uncertainties associated with data collection protocols for the RC drilling campaign.
- Uncertainties associated with QA/QC protocols and systems used for the RC drilling and trenching campaigns.
- Lack of direct BD measurements. The CIM definition Standards define Indicated and Inferred Resources as follows:
- “An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation”.
- “An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve”.

The relevant Qualified Person considers that there is adequate confidence to classify two areas as Indicated Resources where the drilling and trench data are at a spacing of approximately 100 m by 30 m, with extrapolation of 10 m down dip and 25 m along strike.

Inferred Resources have been classified for the drill defined areas with up to 400 m spacing, with mapping and trenching support, and extrapolation of 25 m down dip and 50 m along strike. This assessment is based on the relevant Qualified Persons experience with similar sediment-hosted phosphate deposits in the Georgina Basin.

Figure 27 illustrates a plan view of the model extents and resource classification and highlights that the resource is constrained by the EPMA boundary at the northern end.

Figure 28 shows estimation statistics for Indicated vs Inferred Resources and highlights that the data density and spacing supporting Indicated Resources is significantly better than the density and spacing of Inferred Resources.

Figure 27 Plan view of the model extents and resource classification

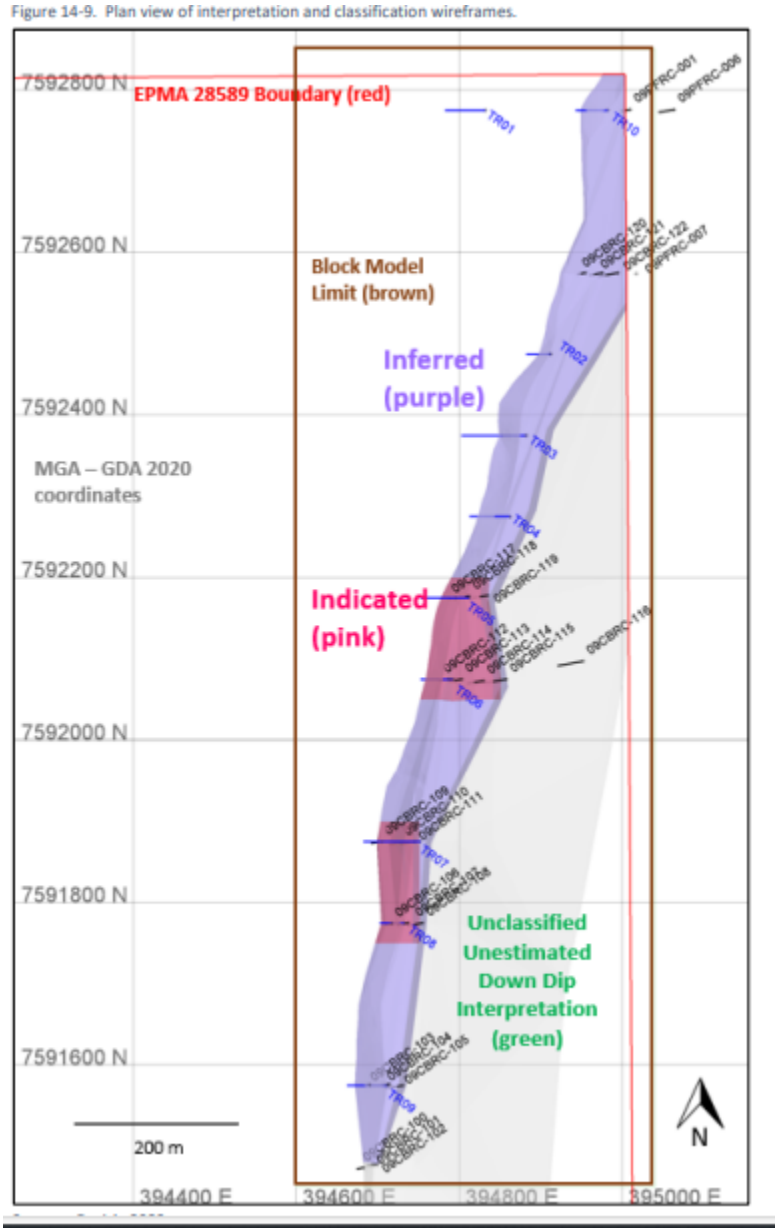
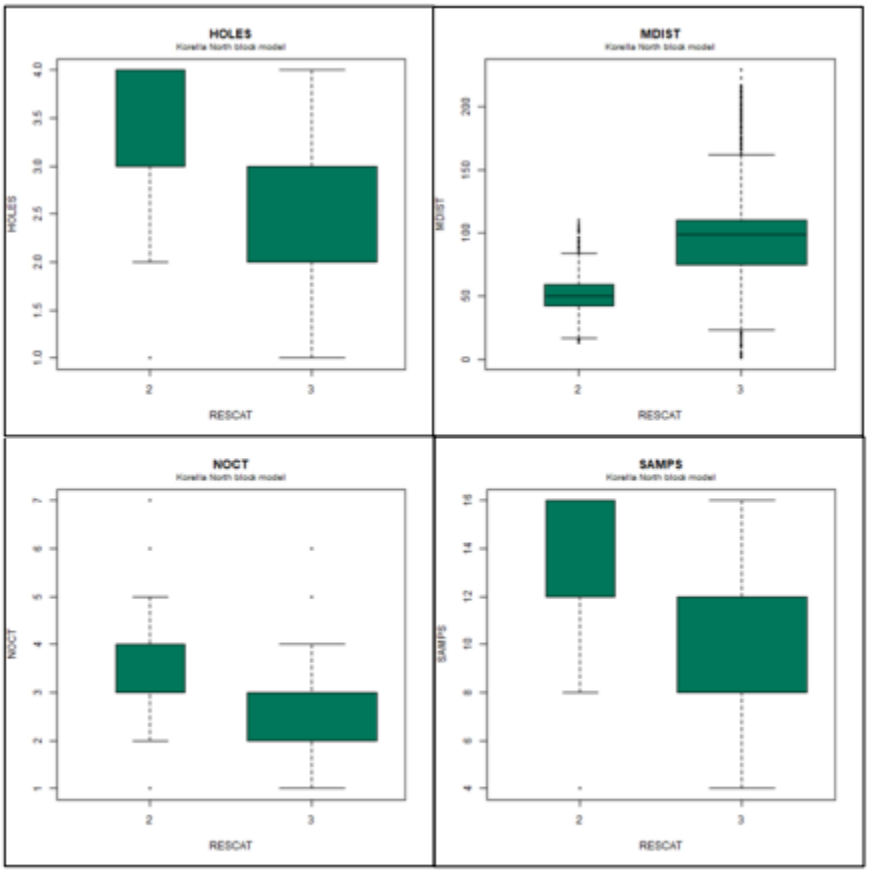


Figure 28 Estimation statistics for Indicated vs Inferred Resources

Figure 14-10. Estimation statistics for Indicated (Rescat=2) and Inferred (Rescat=3) Resource classification.



Source: Derisk, 2023

Notes: Top LHS – The number of holes and trenches used in the block estimate
Top RHS – The mean distance of all samples used in the block estimate
Bottom LHS – The number of octants around the block centroid contributing composites to the estimate
Bottom RHS – The number of composites used in the block estimate

Mineral Resource Estimate

Grade – Tonnes Relationship

The Korella North Mineral Resource has been estimated using a constrained methodology within the main rock type that hosts phosphate mineralisation. This approach means that it is possible to create grade-tonnes tables (**Table 18**) that show the sensitivity to changes in the cut-off criterion used to report the Mineral Resource estimate. As the cut-off criterion rises from 0% to 10% P2O5, there is little change in tonnes and grade, however once the cut-off criterion rises above 10% P2O5, the resource tonnage falls rapidly

Table 18 Block model estimate

Table 14-7. Block model estimate using various cut-off criteria.

Cut-off (P_2O_5 %)	Indicated		Inferred	
	Tonnes (M)	P_2O_5 grade (%)	Tonnes (M)	P_2O_5 grade (%)
0	0.7	12.8	2.2	12.8
8	0.6	12.8	2.2	12.8
9	0.6	12.9	2.2	12.9
10	0.6	13.1	2.1	13.0
11	0.5	13.4	1.8	13.3
12	0.4	14.0	1.4	13.9
13	0.3	14.8	0.9	14.6
14	0.2	15.6	0.5	15.5
15	0.1	16.4	0.3	16.4

Source: Derisk, 2023

Cut-off Criterion for Reporting

The relevant Qualified Person has reviewed the Korella North Mineral Resource estimate in the context that there must be reasonable prospects for eventual economic extraction. The Mineral Resource model is restricted to 260 mRL, about 50m below surface as well as 25m down dip extrapolation. These constrain the estimates to areas potentially suitable for open pit mining.

AMPL has advised Derisk that it is assessing the opportunity to establish a selective open pit mining and beneficiation operation with the objective of producing a direct shipping product grading 20% P2O5 for an international client.

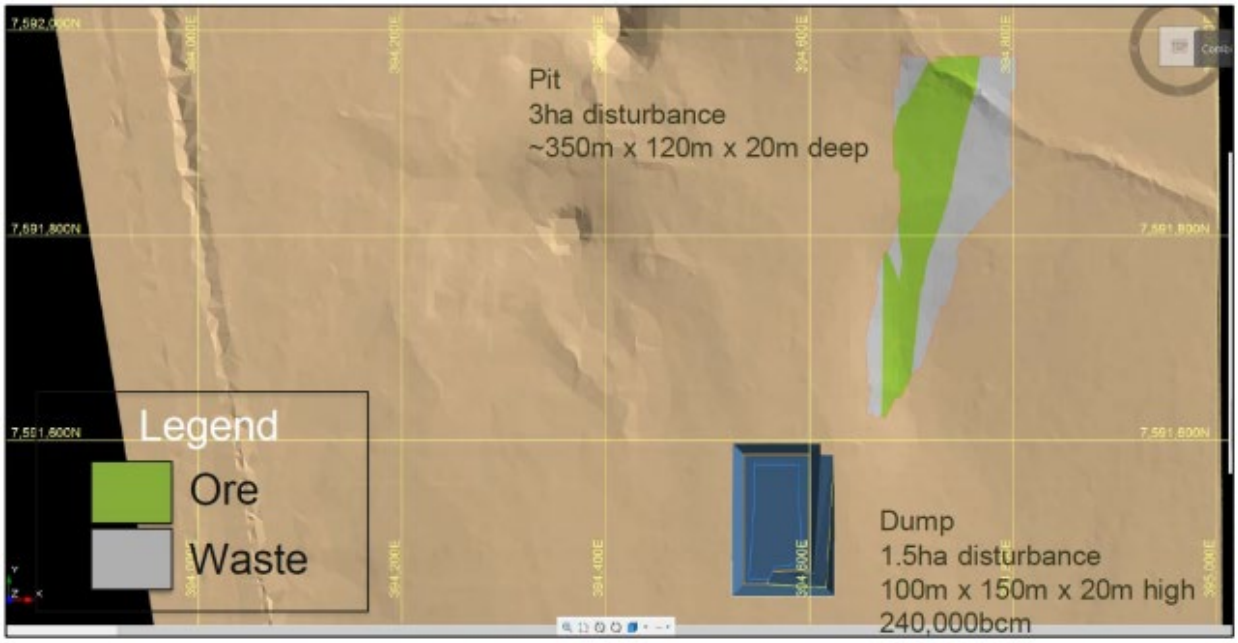
The Company plans to selectively mine and separate individual units within the MCPM to generate several different grade-based stockpiles to facilitate blending and/or beneficiation using the Tomra ore sorting technology. The grade ranges planned include material >30% P2O5 , material grading from 20 – 30% P2O5, material grading from 15 – 20% P2O5, and material grading from 10 – 15% P2O5.

AMPL engaged a mining contractor to complete a conceptual mining design based on assumptions of 3.5m benches, 77t trucks, 100t excavator, and a maximum disturbance area of 5 hectares to demonstrate there are reasonable prospects for economic extraction of phosphate from Korella North.

This conceptual work identified that there is potential for a direct shipping operation at Korella North (**Figure 29**).

Figure 29 Korella North conceptual pit and dump area design

Figure 14-11. Korella North conceptual pit and dump area design.



Source: Golding, 2023

Based on the results of the conceptual mining study and supported by the preliminary beneficiation testwork completed by the Company at its Korella deposit, the relevant Qualified Person considers it is appropriate to apply a cut-off criterion of 10% P2O5 for reporting at Korella North. **Table 19** presents the Korella North Mineral Resource estimate reported at a cut-off criterion of 10% P2O5. The relevant Qualified Person concludes that the factors assessed and documented in the preceding sections demonstrate that there are reasonable prospects for eventual economic extraction. Furthermore, the relevant Qualified Person is not aware of any non-technical issues such as environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that are likely to prevent the reporting of a Mineral Resource for Korella North.

Table 19 Korella North Mineral Resource estimate

Table 14-8. Korella North Mineral Resource as at 11 August 2023 reported using a cut-off criterion of 10% P_2O_5.

Classification	Tonnes (M)	P_2O_5 grade (%)	Contained P_2O_5 (t)
Measured	-	-	-
Indicated	0.6	13.1	80,000
Measured plus Indicated	0.6	13.1	80,000
Inferred	2.1	13.0	275,000

Notes: 1. In situ resources reported at a cut-off criterion of 10% P_2O_5.
2. Figures have been rounded to reflect the relative uncertainty in the estimate.

6. Mine Plan

6.1 Mining Schedule

The mining schedule is set out in **Table 20** and is based on:

YEAR 1 – CONSTRUCTION OF SITE FACILITIES/ROADS/ DRAINAGE

- 5ha of disturbance

YEARS 2 -8 - PRODUCTION

- In Year 2 – Topsoil removed from the full footprint of both the open pit (3ha) and overburden dump
- (1.5ha). ROM stockpile area base created using vehicle compacted ROM phosphate.
- Production in subsequent years proceeds by deepening the open pit with no expansion of the footprint of the open pit

YEARS 9-10 – MINE CLOSURE AND REHABILITATION

- In Year 9 – The overburden dump is placed back into the open pit.
- In Year 10 – Removal of all surface infrastructure and rehabilitation of the surface.

PRODUCT YIELD

- Based on current data the product yield for 20% P2O5 phosphate from ROM production is estimated at 50% in Year 1 and 60% in Years 2-8

OPEN PIT DIMENSIONS

- 3ha disturbance. Approximately 350m x 120m x 20m deep

OUT OF PIT OVERBURDEN DUMP

- 1.5ha disturbance. 100m x 150m x 20m high. 240,000 bcm.

Table 20 Production Schedule

Year	Cumulative ROM Production (t)	Cumulative Product (t)	Cumulative Area Disturbed (Ha)
1	Construction of site facilities	0	5
2	21,544	10,772	9.5
3	85,070	48,888	9.5
4	163,064	97,684	9.5
5	229,510	137,552	9.5
6	296,186	177,557	9.5
7	350,334	210,046	9.5
8	395,626	237,221	9.5
9	Mine closure/rehabilitation	-	5
10	Rehabilitation	-	0

6.2 Mine Operations

The mining operation to take place over a period of 7 years.

Mining operations to be on a campaign basis during the dry season from generally March to December each year. Generally mining will take place for a period of approx. three months each year, on average 10 weeks per annum.

Mining and crushing operations will take place during daylight hours on 5 days a week basis.

Transport of product off site while generally aimed to correspond with daylight only basis on 7 day week basis will need to be available on a 24 hour basis to match with delivery to domestic customers during their required hours of delivery. The potential to supply to customers in bulk as far away as Kununnura in WA and Wangaratta in Victoria requires a flexible loading program.

Annual tonnages aligned to reaching nominated RL as shown in **Table 21** below.

OVERALL MINE PLAN

- Pit – 3ha disturbance – 350m x 120m x 20 m deep
- Out of pit overburden dump - 1.5ha disturbance – 100m x 150m x 20 m high – 240,000 bcm

Figure 30, **Figure 31** and **Figure 32** details the mine plan stages.

Table 21 Annual tonnages aligned to RL

	ORE		WASTE	TOTAL
RL	bcm	Tonnes *	bcm	bcm
307.5	10,772	21,544	6,236	17,008
304.0	31,763	63,526	22,346	54,109
300.5	38,997	77,994	28,836	67,833
297.0	33,223	66,446	16,098	49,321
293.5	33,338	66,676	11,700	45,038
290.0	27,074	54,148	5,153	32,226
286.5	22,646	45,292	6,078	28,724
	197,813	**395,625**	**96,448**	**294,260**

*Assuming density of 2.0

- 3.5m benches, 5m berms
- 77 tonne class trucks CAT777
- 100 tonne class excavator
- 13m wide 10% ramp
- Ore Density 2.0
- 5 ha pit and dump disturbance

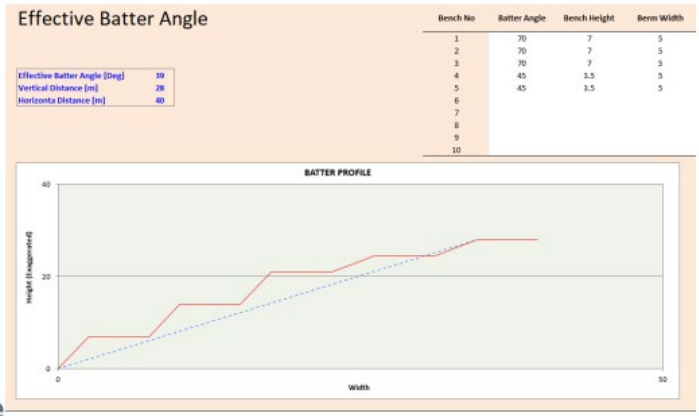


Figure 30 Years 1-2

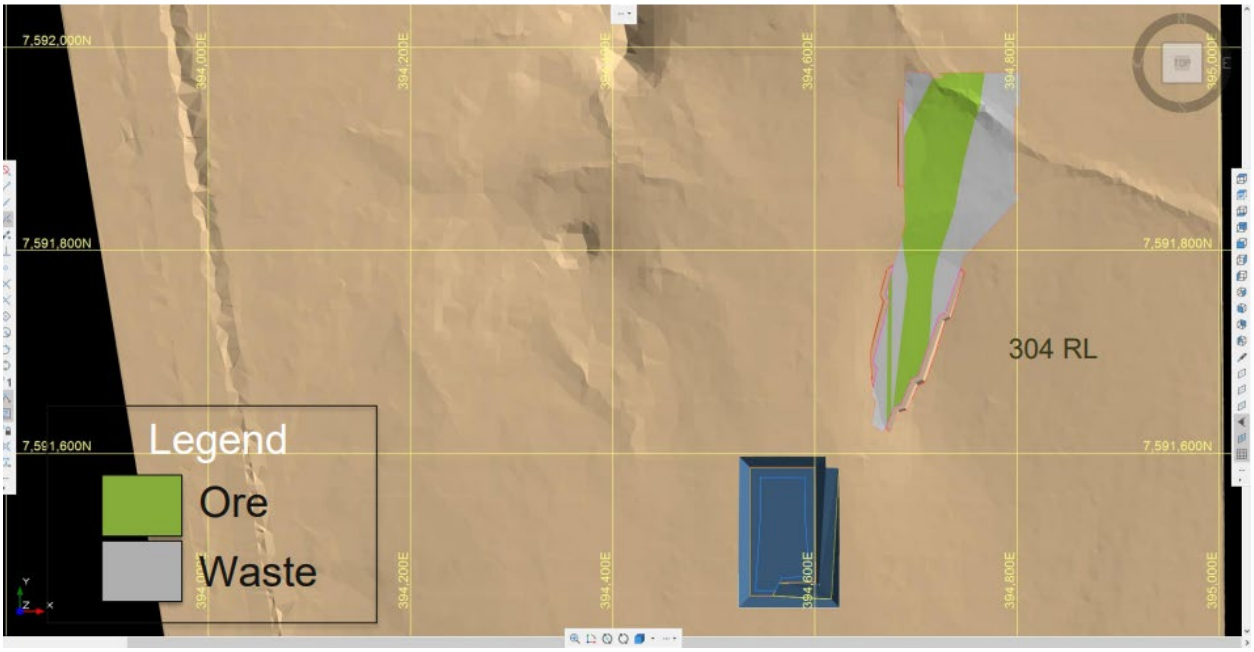


Figure 31 Years 3-4

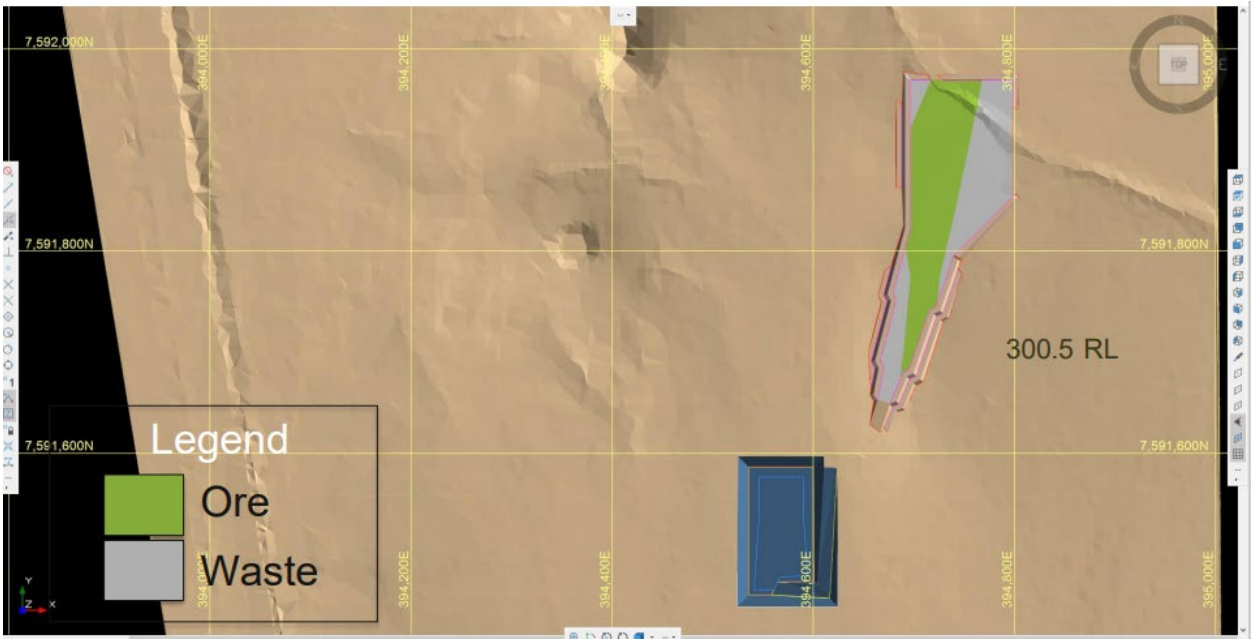
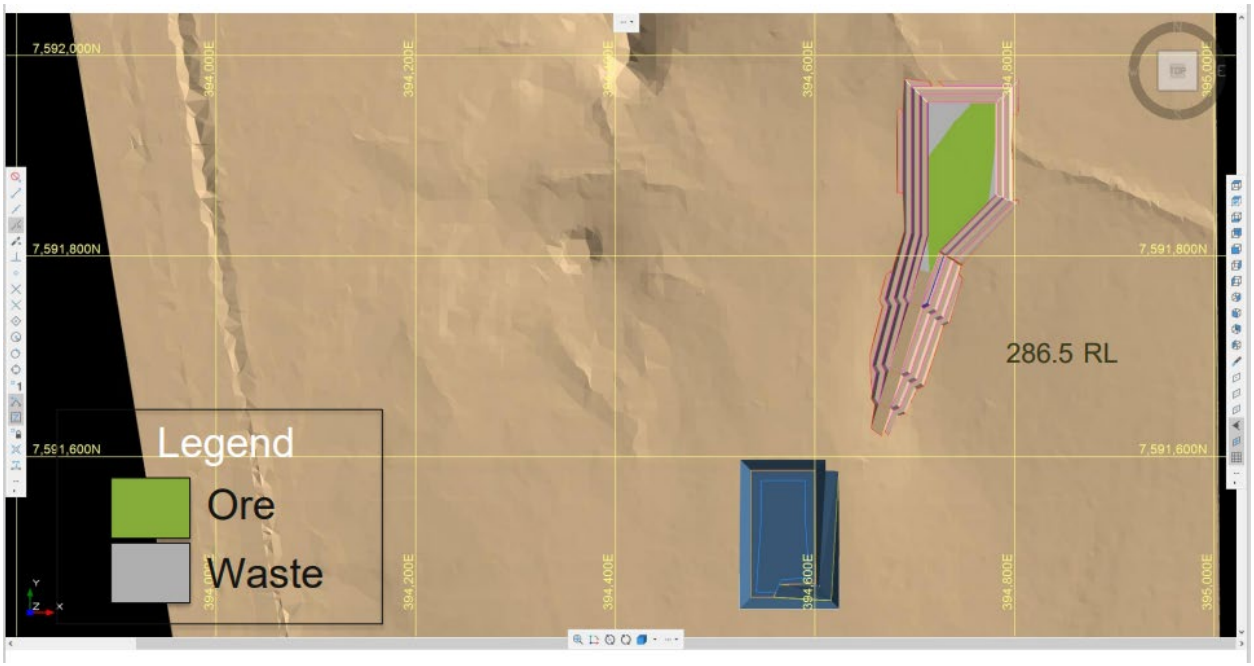


Figure 32 Years 5-7



The overburden covering MCPH and the MCPH itself is capable of being mined by free digging with one exception. The chert ban that separates the upper and lower beds will potentially require drilling and blasting in the same manner as handled at Phosphate Hill Mine.

When the approx. 2m thick chert band is encountered it will be drilled and blasted. Contract drilling and blasting contractor will be used for that specific task.

There will be no on-site storage of detonators, boosters or explosives, with the contractor bringing the required materials on as required basis.

Water for dust suppression is required within the mine access roads, over burden, ROM stockpiles but also within facility access roads, vehicle hard stand areas and the product transport road leading to the Phosphate Hill to Duchess Road. 40,000l water cart to be used.

Water will also be used in final crushing of product to 2mm x 0mm. Water to be added is 3% of final product

Crushing and transport of product will be on a more continuous basis throughout the dry season. Limited on-site operations will take place during the wet season since most domestic customers will be dormant during the period.

While intermittent road closures due to flooding on the Phosphate Hill to Duchess and the Duchess to Cloncurry roads may restrict access to the site, there will be continuous on-site presence/monitoring to ensure site safety in regard personnel and environmental structures.

6.3 Vegetation Clearing

Bulldozer and graders will be used to remove the sparse vegetation. Timber to be removed to stockpile for chipping. Chipper to be used to create wood chip mulch for use on site.

6.4 Topsoil Stripping

Elevating scrapers used to remove topsoil and deposit at stockpile site. Front end loader used to create long term stockpile. Protective wood chip mulch to be placed over stockpile to stabilize and prevent wind and water erosion.

6.5 Mining Infrastructure and Plant

Mining contractor to supply 75 to 100 ton hydraulic excavator as the prime tool for free-dig removal of overburden and phosphate. The hydraulic excavator matched with 45 to 50 tonne rear dump trucks for removal of overburden and phosphate. Associated equipment include D10 bulldozer, 14G grader, 40,000 litre water cart, service vehicle for fueling/servicing in the field, front end loader for feeding crushing and screening plant.

6.6 Processing Area

Run of Mine phosphate will be stock piled in four distinct piles on the designated ROM stockpile area.

- Stockpile A - Greater than 20 % ,
- Stockpile B- 15 to 20 % ,
- Stockpile C- 10 to 15 % and
- Stockpile D- less than 10 %.

The base of the ROM stockpile will be constructed from ROM phosphate first excavated in Year 2. The ROM stockpile base, designed for positive drainage, will be compacted using a sheep-foot roller.

The processing equipment to be utilized is as follows:

- Static grizzly to remove oversize of plus 300m
- Primary crusher to reduce phosphate from 300mm to 50mm
- Secondary crusher with screens to reduce phosphate from 50mm to 5mm with dust collection for 150micron and screening out of 2mm x 0mm
- Tertiary Crusher to reduce 5mm to top size of 2mm.
- Dust collection from the secondary crusher is by way of fans, cyclones and into 1.2cubic m bulka bags.

A separate bagging plant will bag standard product 2mm x 0mm into 1.2cubic m bulka bags.

6.7 Infrastructure Area

The mining contractors facilities :- site office, first aid room, crib room, parts storage container, compressor, welding bay, workshop bay, undercover dome structure for equipment maintenance, light vehicle repair/maintenance bay, self-bunded diesel storage, vehicle hard stand parking area.

6.8 Product Storage and handling

Crushed 2mm x 0mm product will be conveyed into an undercover structure. The structure is to protect the product from wind and rain. Access to the structure will occur to enable a front end loader to load 75t capacity side tipper and end tipping road trains.

There will be a separate undercover structure to house a small receival hopper/conveyor system bag loading plant. Bagged dust and bagged product are to be loaded onto flat top trucks for transport to the ROR Hub in Cloncurry.

Equipment for this purpose includes front end loader to load product onto road trains, small front end loader to feed bagging plant, fork lift for handling bulka bags, fork lift for loading trucks with bagged dust/product.

Where phosphate is to be exported through Port of Townsville, half height containers are currently used. The containers will be loaded with bulk 2mm x 0mm product by front end loader. The loaded containers will then be loaded onto special road trains using a large forklift.

6.9 Product Transport and Potential Export

While there are enquiries for export of Korella phosphate the Korella North project is predicated on sales into the domestic market. Transport to customers will either be in road trains capable of delivering product in bulk or on flat top trucks of all varieties capable of handling bagged phosphate.

Access to site is off the Phosphate Hill- Duchess road adjacent the existing rail crossing and then on the same route as the existing access track which is on the eastern side of the Phosphate Hill – Townsville railway line.

Sales of bulk phosphate will be on FOL ex-mine basis. Transport in bulk will be to customers via initially Phosphate Hill-Duchess - Cloncurry roads. Bagged phosphate will be transported from the mine to Cloncurry for storage and distribution at the AMPL'S Round Oak Road Distribution Hub (RORHub) which is near the intersection of the Flinders Highway and the road train bypass of the town of Cloncurry.

For bagged phosphate, sales will be on FOL ex-works RORHub. On average 300 road trains a day pass through Cloncurry. At least half have no load. Under-utilised trucking capacity is in excess of 300,000 tonnes per annum.

From Cloncurry, road trains can go west via Barkly Highway to Darwin, Alice Springs and Kununurra in WA, east via Flinders Highway to Townsville, south via Landsborough Highway to Brisbane, NSW and Victoria and north via National Route 83 to Karumba in the Gulf of Carpentaria.

For export through Townsville, there is current capacity to use the Aurizon half height container system. Half height containers can be loaded at the mine and then transported by road to existing container loading onto rail facility in Cloncurry. The half-height containers are then railed to Port of Townsville, stockpiled and when parcel size reached some 5000 to 17,000 tonnes using retainer tipped into hold of vessel.

6.10 Water Supply and Management

Water requirement

- During Mining – 10 weeks – 5 days – 12hours per day - Based on hourly watering - 24 Ml
- Remainder of dry season – 30 weeks – 5 days - 12 hours - Based on 2 hourly watering - 27Ml
- Water added during crushing – Assuming 20 per cent of product is dust collected some 190,000t of product will have 3% water added in the final crush to 2mm top size – 5.7ML
- Water requirement as calculated – 56.7Ml Contingency 70% - 39.69Ml
- Total water requirement – 96.39 Ml – Say 100 Ml per annum

Water supply alternatives

- Delivery by tanker – To contract through local landowner for deliveries from bores
- Delivery by pipeline from Mirri Bore – By agreement with MDH Pty Ltd to utilize the existing pipeline from the existing Mirri Bore and to deliver into a new water tank
- Delivery by pipeline from new borefield – To investigate a separate borefield to supply Korella North

6.11 Workforce and Accommodation

Workforce

AMPL – Off site – 5 persons

- Executive Director – one person
- Field Manager – one person
- Accounts assistance – one person
- Round Oak Round Distribution Hub – 2 persons

Mining/Processing Contractor –On site - 15 persons

- Site Senior Executive- Project Manager – one person
- Mine Superintendent– one person
- Administrative assistant – one person
- Excavator Operator– one person

- Truck drivers – 2 persons
- Water cart/Dozer/Grader – one person
- Maintenance Superintendent – one person
- Fitter/mechanics – 2 persons
- Front end loader operator – ROM pad - feeding crusher – one person
- Crusher/screen operator – one person
- Bagging plant operators – 2 persons
- Front end loader operator – product – one person

Accommodation

Accommodation for off-site staff is provided in Cloncurry. Accommodation for Mining/Crushing contractors employees to be established at Duchess in a 20 person camp. A bus will be used to transport them daily to and from Korella North. An alternative under consideration is a camp to be established on an area on the western side and some 300m from the Phosphate Hill- Duchess road

8. Public Interest Statement

AMPL believes that the Korella North Project is in the public interest due to the following key strategic benefits:

- Provides a low carbon footprint phosphate for use in agriculture
- Provides an alternative to imported phosphate
- Provides security of supply of phosphate for Australian agriculture
- An integral first step in creation of the Phosphate Value Chain
- New infrastructure and commercial benefits for the Cloncurry Shire community.
- Increased employment and business activity for the Cloncurry, Dajara and Duchess communities.
- Work force to be predominantly local, promoting expenditure and reinvestment in the Cloncurry Shire community.
- Working with Yulluna People to bring employment as well improvement to their community assets in the town of Duchess
- Already bringing new impetus through sponsorship of local social, sporting and special interest organisations eg North Queensland Sportstar Awards, Australian Junior Rodeo Association, Cloncurry Stockmans Challenge & Campdraft, Cloncurry & District Show Society, Cloncurry EAGLES Junior Rugby League, Cloncurry Police &Citizens Youth Club, Cloncurry Lions Club, Cloncurry & District Historical and Museum Society
- Mineral Royalties for Qld State Government.
- New business opportunities for local contractors and service industries.
- Aligns with the Cloncurry Shire Regional Plan as detailed in the *Cloncurry Shire Council's Economic Development Strategy 2023-2028*
- Aligns with the *Mount Isa to Townsville Economic Development Zone Strategy 2022- 2025*
- Aligns with Queensland Government's *Strategic Blueprint for Queensland's North West Minerals Province.*
- Aligns with Queensland Government's *North West Queensland Economic Diversification Strategy*
- Aligns with the Economic Recovery and Reconstruction Strategy initiative of the Regional Development Australia (RDA) to deliver crucial infrastructure projects to provide the greatest stimulus to kick start out economy, post Covid-19.

9. References

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ADJOINING LANDHOLDERS

Lot number	Plan number	Land tenure type *	Land tenure name (if applicable)	Current land usage *	Proposed usage *	Land owner's name *	Land owners address	Is compensation required? *	Land subject to erosion control works
51	SP136486	Lands lease	Phosphate Hill Branch Railway	Transport	Access	State of QLD; Dept of Transport and Main Roads (QLD Rail Head office)	50 Abbotsford Rd, Bowen Hills QLD 4006	No	No
11	CW802447	Other	No Name	Other	Access	Telstra Corporation Limited A.C.N. 051 775 556	46 Sheaffe Street, Cloncurry QLD 4824	No	No
12	WNR802449	Other	No Name	Other	Access	Telstra Corporation Limited A.C.N. 051 775 556	46 Sheaffe Street, Cloncurry QLD 4824	No	No
16	SP309110	Other	Stanbroke	Grazing	Access	M.D.H. Pty Ltd A.C.N. 010 114 468	MHD Administration PO Box 499 Cloncurry QLD 4824 AA	No	No
1	SP150176	Other	No Name	Other	Access	Southern Cross Fertilisers Pty Ltd A.C.N. 004 936 850	52 Walker St, Townsville City, Queensland 4810, AU	No	No
22	SP223509	Other	Trekelano	Grazing	Access	James Cameron Brown & Elizabeth Veronica Brown	1 "Mayfield Station" Dutchess QLD 4825, AU	No	No
2949	SP223508	Other	Pilgrim	Grazing	Access	Alistair Robert Edward McDonald		No	No
2999	PH1926	Other	Buckingham Downs	Grazing	Access	Hacon Holdings Pty Ltd A.C.N. 094 617 759	1 Alcala Road, Cloncurry QLD 4824	No	No
3562	SP261206	Other	Willsdown	Grazing	Access	Dean James Anderson & Jadie Lil-Anne Hirning-Anderson		No	No
4596	PH26	Other	Digby Peaks	Grazing	Access	Dean James Anderson & Jadie Lil-Anne Hirning-Anderson		No	No
5212	SP272847	Other	Cukadoo	Grazing	Access	Ian Charles Campbell & Marianna Campbell	2648 Duchess Rd Duchess QLD 4825	No	No
5328	SP309108	Other	Burnham	Grazing	Access	M.D.H. Pty Ltd A.C.N. 010 114 468	MHD Administration PO Box 499 Cloncurry QLD 4824 AA	No	No
5354	PH1831	Other	Kheri	Grazing	Access	William Henry Cameron		No	No

5364	SP278014	Other	Starcross	Grazing	Access	Chinova Resources Cloncurry Mines Pty Ltd A.C.N. 106 255 216	9/303 Coronation Dr, Milton QLD 4064	No	No
5	SW43	Other	Farley	Grazing	Access	Donald Francis James McDonald		No	No
69	SP315523	Other	Devoncourt	Grazing	Access	M.D.H. Pty Ltd A.C.N. 010 114 468	MHD Administration PO Box 499 Cloncurry QLD 4824 AA	No	No
22	SP136485	Other	Phosphate Hill Branch Railway	Transport	Access	State of QLD; Dept of Transport and Main Roads (QLD Rail Head office)	50 Abbotsford Rd, Bowen Hills QLD 4006	No	No

LANDHOLDERS

Lot number	Plan number	Land tenure type *	Land tenure name (if applicable)	Current land usage *	Proposed usage *	Land owner's name *	Land owners address	Is compensation required? *	Land subject to erosion control works
13	SP309109	Lands lease	Chatsworth	Grazing	Permit	MDH Pty Ltd	c/- Brightlands Station, PO Box 499 Cloncurry 4825	Yes	No
13	SP309109	Lands lease	Chatsworth	Grazing	Access	MDH Pty Ltd	c/- Brightlands Station, PO Box 499 Cloncurry 4825	Yes	No
51	SP136486	Lands lease	Phosphate Hill Branch Railway	Transport	Access	Dept Transport and Main Roads	16-22 Ramsey Street, Cloncurry Qld 4825	Yes	No

From:	Richard Smith
To:	Mineral Hub
Cc:	Anthony Chapman; Kathleen Gillis
Subject:	MLA 100379 - Korella North Project
Date:	Friday, December 22, 2023 11:04:00 AM
Attachments:	RTPL_ARD_AVM001_MAP_0013_A ML Application Mine Design.pdf ardent authorisation form 10122021.pdf image001.png

Hi

We act on behalf of Avenir Makatea, who is the applicant for ML 100379 – applied for on 28 November 2023. In the application materials (Figure 3 of the ML supporting document, and Figure 3 of the Initial Development Plan), we included a map that showed the expected site layout.

Discussions held with Avenir Makatea since this time has resulted in an amended layout being developed. We therefore enclose an updated map for your information. The change is to remove the proposed creek diversion in the north-east corner of the ML and, as a subsequent result, slightly amends the shape of the proposed mining pit. Avenir doesn't believe it affects any statement made in the application related to the mining process or resource estimation.

Should you have any questions in relation to this, please contact me.

Regards

Richard Smith
Director / General Manager (Approvals)
Ardent Group Pty Ltd

Wishing you a Merry Christmas & Happy New Year

The Ardent Group office will be closed for Christmas
from 12pm, Thursday 22 December, re-opening 8:30am Monday 9 January.

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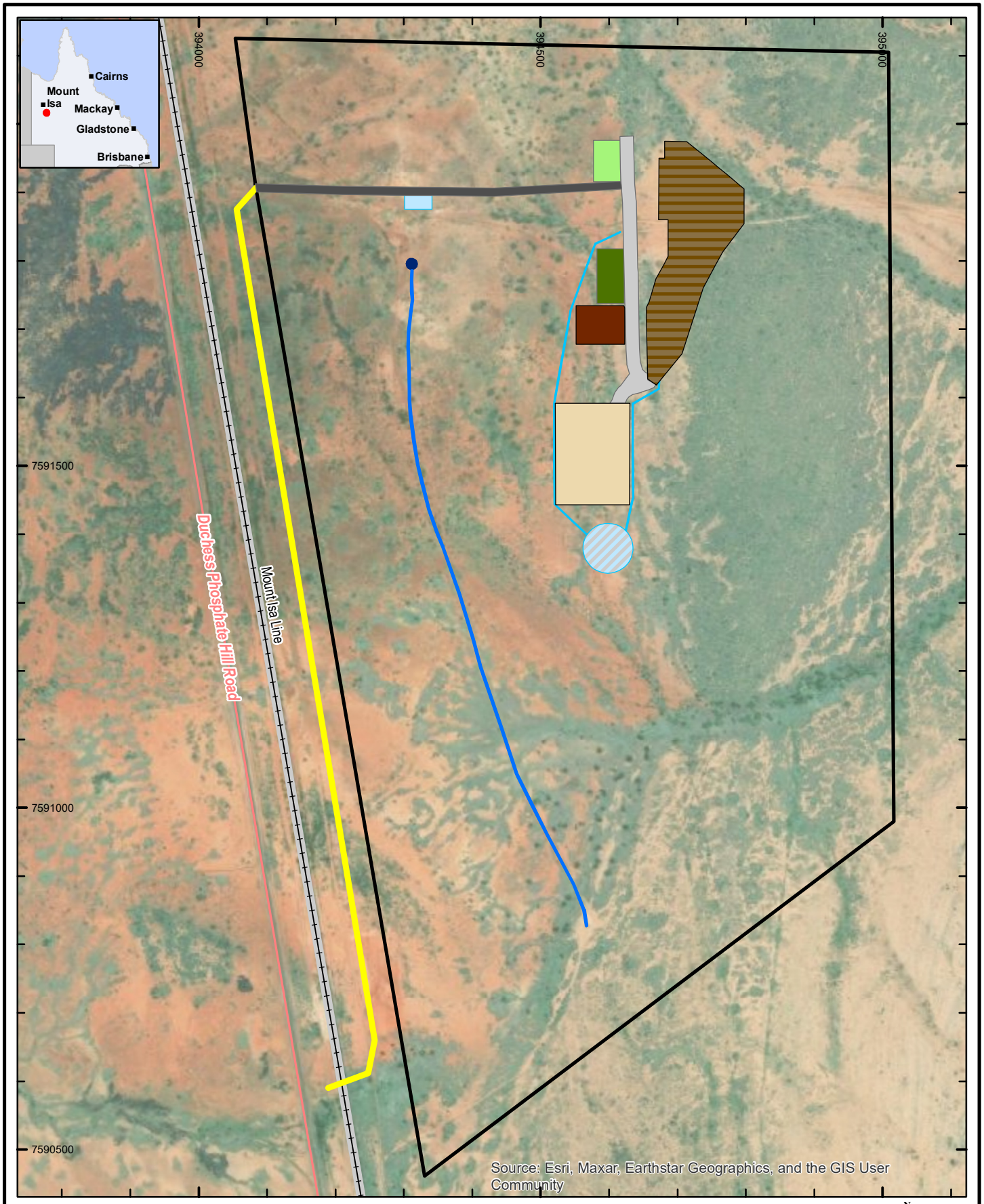

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AVENIR MAKATEA PTY LTD

Mining Lease Application

N
W E
S

GDA2020, MGA Zone 54

ARDENT GROUP PTY LTD

Mine Layout

Drawn By:	Chris Schlebusch
Requested by:	Richard Smith
Date:	15/12/2023

Sheet No.
RTPL_ARD_AVM001_MAP_0013_A

- Secondary Road
- Operational Rail Line
- Mining Lease Application Area
- Mining Lease Access
- Pit
- ROM
- Overburden
- CSB area
- MIA
- Haul road
- Onsite road
- Sediment dam
- Water managment
- Water pipeline
- Water tank
- Truck fill point

Data sources:
©State of Queensland, Department Resources,
©Geoscience Australia

Path: S:\Plans\Project_Specific\Ardent\AVM001\RTPL_ARD_AVM001_MAP_0013_A ML Application Mine Design.mxd

Avenir Makatea Pty Ltd

Korella North

Mining Lease:

100379

Initial Development Plan

For period: 1 July 2024 To 30 June 2029

Company details:

Proponent	Avenir Makatea Pty Ltd
ACN/ABN	147 660044/30 147 660 044
Street Address	59 Railway Street, Cloncurry
Postal Address	PO Box 529, Cloncurry, QLD 4824
Contact Person	Colin Randall
Position	Executive Director
Email	colin@colinrandall.com.au
Phone	0408969424

Requirements under *Section 317K* of *the MRAct (The MRAct).*

1. The period of the proposed development plan.
2. An overview of the activities proposed to be carried out under the current or proposed mining lease(s) during all the proposed term.
3. For each year of the plan period-
    a. The nature and extent of activities proposed to be carried out under the proposed mining lease during the year.
    b. And, where the activities are proposed to be carried out.
4. For each mineral-
    a. The location and an estimate of the resources of the mineral(s) in the whole project.
    b. The standards and procedures used to make the estimate.
    c. The rate and amount of the proposed mining.
    d. When the proposed mining is to start.
    e. A schedule for the proposed mining during the plan period.
5. Maps or other documents (e.g., 3d views, wireframes) that show and support the information provided at points 3 and 4 above.
6. [If part of a project] - It describes the relationships of all leases in the project to the development plan.
7. It explains how the plan is appropriate.

Requirement under sections 317N and 317T- Decision to approve

1. It describes how the mining project will be optimised in the best interests of the State, having regard to the public interest.
2. If the proposed plan is for the cessation or reduction of mining, reasons why these steps are reasonable'.

This Plan is a condition of the leases included in it.

Appendix 1: Information to support Section 5.4 "*Mineral resource estimation standards and procedures"*

1 Current Operations

1.1 Introduction

Avenir Makatea Pty Ltd (AMPL) is the wholly owned Australian subsidiary of Chatham Rock Phosphate Limited.

Chatham Rock Phosphate Limited (CRP) is a Vancouver, British Columbia, Canadian registered public company. The Company is listed on the Toronto Stock Exchange, New Zealand Stock Exchange and the Frankfurt Bourse in Germany.

AMPL has submitted a Mining Lease (ML) application for its Korella North Project, ML 100379, located in North West Queensland. The ML Application is made under section 234(1) of the *Mineral Resources Act 1989* (MR Act), for the purpose of extracting, processing and selling direct application rock phosphate into the local and export markets.

In Queensland, phosphate rock becomes a "prescribed mineral" under the MR Act when the annual production threshold of 10,000 tonnes per annum (set by the *Mineral Resources Regulation 2013*) is reached. The Project is planned to exceed that threshold in the second year of grant, therefore a development plan is required.

1.2 Project Overview

The Korella North Project as proposed is for a 3 hectare open cut mine area to produce a direct shipping ore of 20% P_2O_5 rock phosphate, approximately 395,000 tonnes in total. The mining lease is being sought for a 10 year period to develop this resource.

The project is located in North West Queensland approximately 21°47' S latitude, 139°59' E longitude, approximately 120km north of Boulia and 170km south-west of Cloncurry.

The ML is within the Cloncurry Shire Council area. The site is located within EPM 28589 that covers an area of approximately 6.6 km^2 and within Lot 13 on SP223510 that incorporates the Chatsworth Station owned by MDH Pty Ltd.

EPM 28589 lies to the south of EPM 15072 held currently by AVR and to the east of ML 5543 held by Incitec Pivot. EPM 28882 lies to the north and west of EPM 28589.

Refer to **Figure 1** for regional location details and **Figure 2** for the project area.

Figure 1: Regional Location

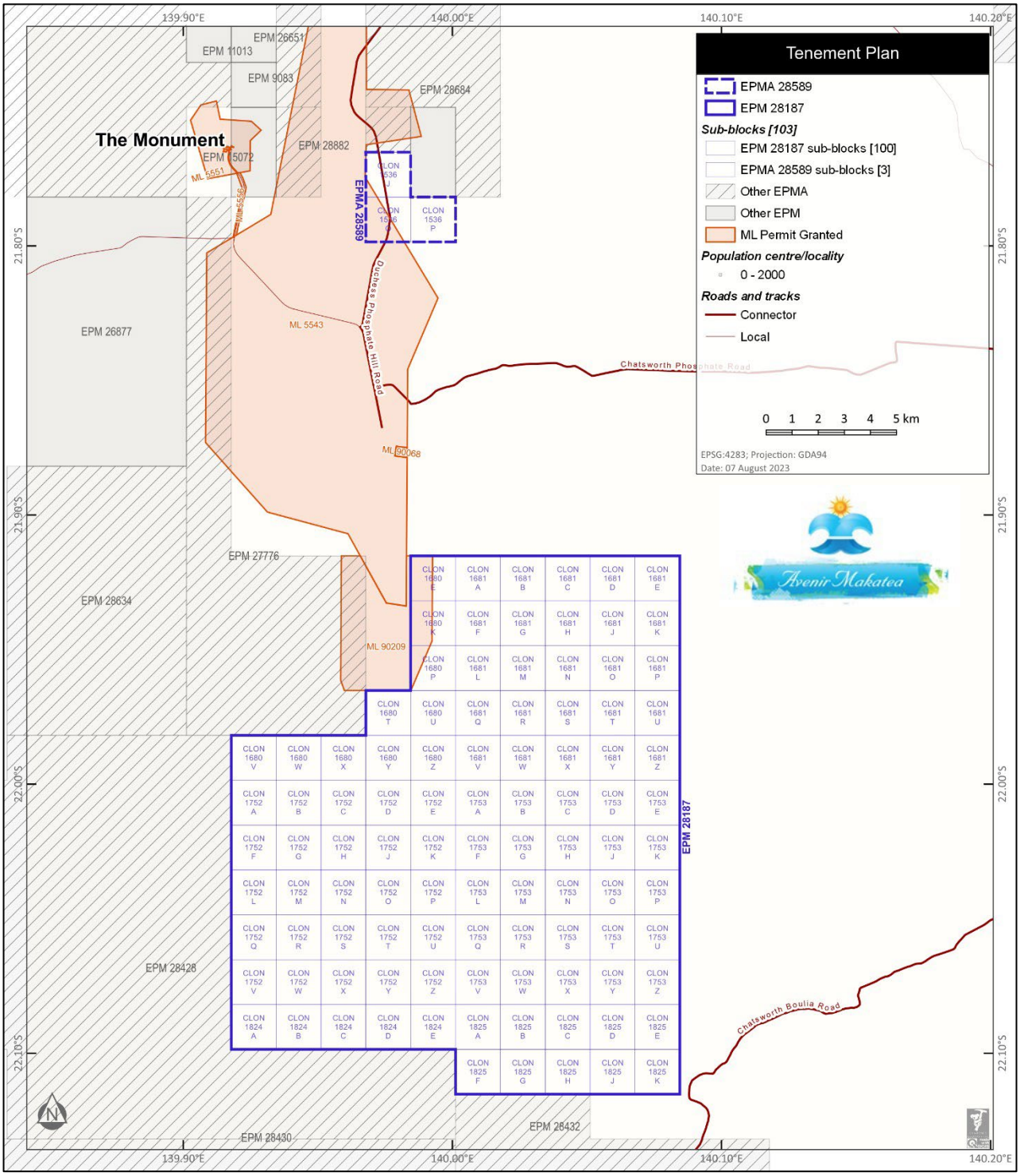
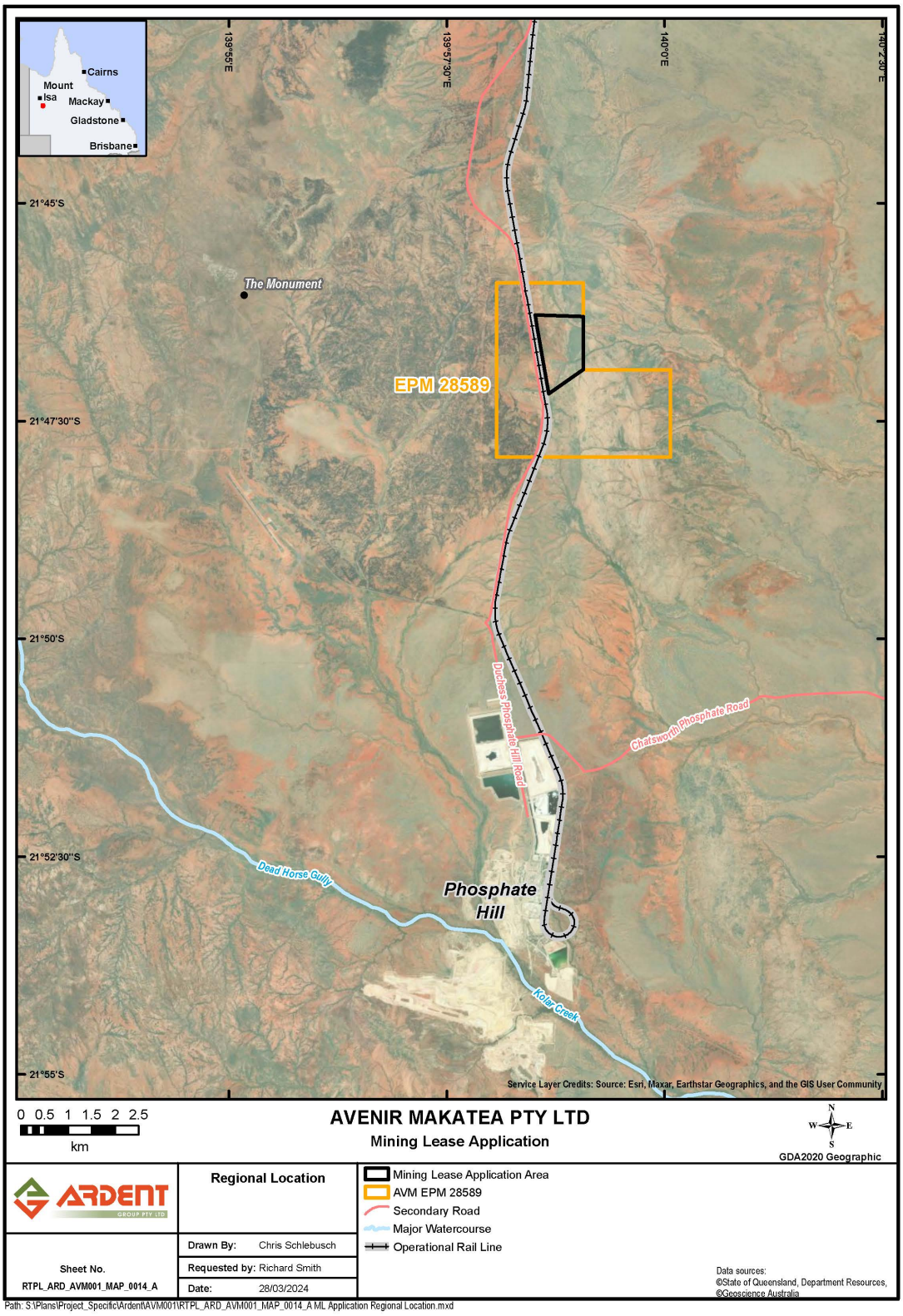


Figure 2: Project Area



2 Overview of the Plan *(Section 317K(2)(a))*

2.1 Plan period

The period for which this development plan is intended is for a period of five years from grant. The first year following grant will be site establishment and preparatory works for mining. Mineral production is scheduled to commence in the second year.

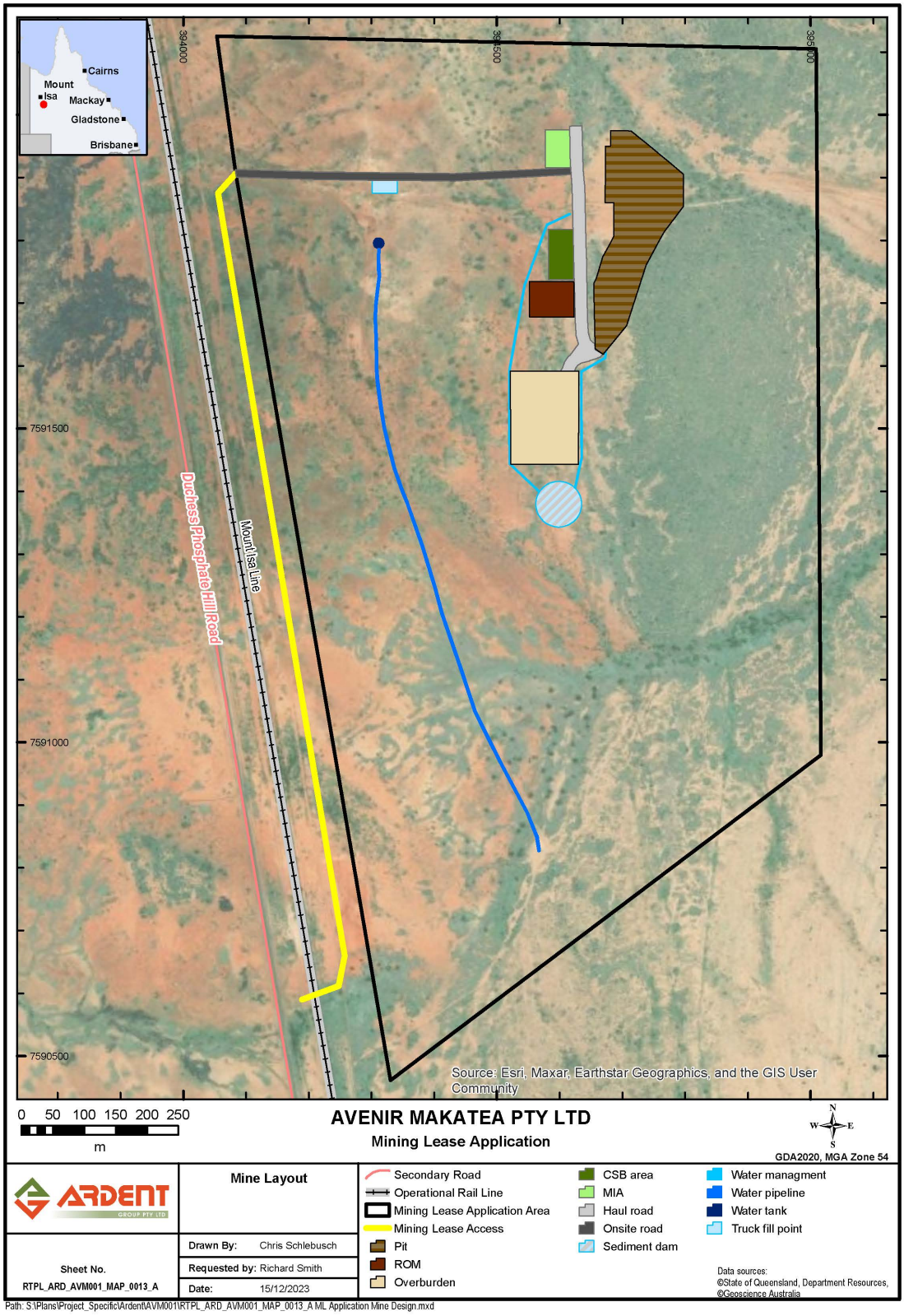
2.2 Summary of the Plan

A summary of the project subject to this development plan is shown in **Table 1**, with a site layout shown as **Figure 3**.

Table 1. Development Plan Summary

Section 317K(2)(a) - Development Plan Summary:	
Product	Phosphate
Resource Definition	Mineral resource of 2.1 million tonnes (Mt) at 13% of rock phosphate (P_2O_5) of which 0.6 Mt is the measured/indicated categories.
Production Method	Open pit
Production rate/ year	Average 50 000 tonnes per annum of phosphate rock, across life of mine.
Target Formation/Rock/Structure etc	Monastery Creek Phosphorite Member of the Beetle Creek Formation
Basin/Terrain/Orogen etc	Georgina Basin
Location	120km north of Boulia and 170km south-west of Cloncurry
Life of Mine (LoM)	10 years
Proposed/Existing Port /Destination	National distribution direct to customer (from Cloncurry distribution centre) and shipping internationally via Townsville port.
First mineral produced	Production to start in year two of grant date.
Employment – construction:	15 (at any one time)
Employment – operation:	20 (at any one time)
CAPEX/ OPEX	CAPEX $7.2 million (set up cost). OPEX (@ 50,000tpa) $3.5 million annually (10,000 tpa bagged and moved off-site, all other sales in bulk).
Power	Offices and workshops will be run by generator power supplied by a suitable contractor (not yet determined).
Transport	Road transport to Cloncurry distribution centre, then either road transport direct to customer or rail transport to Port of Townsville.
Water	Water may be supplied by tanker or pipeline (from Mirri Bore by agreement or new bore – under investigation)

Figure 3 Mine infrastructure and layout



3 Public Interest *(Section 317K(2)(f) & (g))*

AMPL believes that the Korella North Project is in the public interest due to the following key strategic benefits:

- Provides a low carbon footprint phosphate for use in agriculture
- Provides an alternative to imported phosphate
- Provides security of supply of phosphate for Australian agriculture
- An integral first step in creation of the Phosphate Value Chain
- New infrastructure and commercial benefits for the Cloncurry Shire community.
- Increased employment and business activity for the Cloncurry, Dajara and Duchess communities.
- Work force to be predominantly local, promoting expenditure and reinvestment in the Cloncurry Shire community.
- Working with Yulluna People to bring employment as well improvement to their community assets in the town of Duchess
- Already bringing new impetus through sponsorship of local social, sporting and special interest organisations eg North Queensland Sport Star Awards, Australian Junior Rodeo Association, Cloncurry Stockman's Challenge & Campdraft, Cloncurry & District Show Society, Cloncurry EAGLES Junior Rugby League, Cloncurry Police &Citizens Youth Club, Cloncurry Lions Club, Cloncurry & District Historical and Museum Society
- Mineral Royalties for Qld State Government.
- New business opportunities for local contractors and service industries.
- Aligns with the Cloncurry Shire Regional Plan as detailed in the *Cloncurry Shire Council's Economic Development Strategy 2023-2028*
- Aligns with the *Mount Isa to Townsville Economic Development Zone Strategy 2022- 2025*
- Aligns with Queensland Government's *Strategic Blueprint for Queensland's North West Minerals Province*.
- Aligns with Queensland Government's *North West Queensland Economic Diversification Strategy*
- Aligns with the Economic Recovery and Reconstruction Strategy initiative of the Regional Development Australia (RDA) to deliver crucial infrastructure projects to provide the greatest stimulus to kick start out economy, post Covid-19.

The area is considered appropriate for resource exploitation and reflects surrounding large-scale mining projects. The operation will be a dry operation and no processing of the material is required (beyond screening). No environmental residue is expected from the Mine.

The resource will be efficiently and safely exploited. Markets for the material are being finalised, as are potential plans for a future, larger-scale development in the area. As this operation is considered to be small-scale (and a standard Environmental Authority has been applied for), the maximum workforce must be 20 people at any one time. This suits the operational phase. The construction workforce is expected to be 15 people at any one time. Where possible, this workforce will be drawn from local contractors.

Capex is expected to be $7.2 million, with opex currently valued at $3.5 million annually.

4 Mine Planning *(Section 317K(2)(b))*

4.1 Nature and extent of proposed activities on an annual basis

Activities to be undertaken include the following:

YEAR 1 – CONSTRUCTION OF SITE FACILITIES/ROADS/ DRAINAGE

- 5ha of disturbance

YEARS 2 -8 - PRODUCTION

- In Year 2 – Topsoil removed from the full footprint of both the open pit (3ha) and overburden dump (1.5ha).
- ROM stockpile area base created using vehicle compacted ROM phosphate.
- Production in subsequent years proceeds by deepening the open pit with no expansion of the footprint of the open pit

YEARS 9-10 – MINE CLOSURE AND REHABILITATION

- In Year 9 – The overburden dump is placed back into the open pit.
- In Year 10 – Removal of all surface infrastructure and rehabilitation of the surface.

PRODUCT YIELD

- Based on current data the product yield for 20% P_2O_5 phosphate from ROM production is estimated at 50% in Year 1 and 60% in Years 2-8

OPEN PIT DIMENSIONS

- 3ha disturbance. Approximately 350m x 120m x 20m deep

OUT OF PIT OVERBURDEN DUMP

- 1.5ha disturbance. 100m x 150m x 20m high. 240,000 bcm.

The mining operation is expected to take place over a period of 7 years. Mining operations will be on a campaign basis during the dry season from generally March to December each year. Generally mining will take place for a period of approximately three months each year, on average 10 weeks per annum.

Mining and crushing operations will take place during daylight hours on 5 days a week basis. Transport of product off site while generally aimed to correspond with daylight only basis on 7 day week basis will need to be available on a 24 hour basis to match with delivery to domestic customers during their required hours of delivery. The potential to supply to customers in bulk as far away as Kununurra in WA and Wangaratta in Victoria requires a flexible loading program.

Annual tonnages of ore and waste are shown in **Table 2** below. The existing pit shell collects all mineable resources within the ML area (except for the area under the drainage channel in the north-east of the pit shell, which cannot be mined as a creek diversion would be required and this is unavailable to a standard Environmental Authority). The resource volume remaining in the ground from the current pit design is expected to be approximately 100,000 tonnes, due to pit outline requirements and removing the creek line from the mining footprint. Avenir proposes to undertake an extensive exploration programme throughout the overlapping EPM 28589 when that tenement is granted.

The focus of the exploration programme will be on areas within the EPM but outside of this ML, however the ML will also have some confirmation drilling conducted on it and if any further resources are defined, then these will be added to the ML reserves. A Later Development Plan will then be lodged if required.

Table 2. Annual tonnages of ore and waste for the term of this Plan.

Year	ORE (tonnes) +	WASTE (tonnes) ++
1	NIL	NIL
2	21,552	16,213.6
3	59,836	52,764.4
4	58,586	45,884.8
5	84,222	37,271
TOTAL	**224,196**	**152,133.8**

+ assumes a density of 2.0.
++ assumes shale/dolomitic shale as waste rock (density 2.6 – ref. Field Geologists Manual, Third edition, AUSIMM, 1995)

Figure 4 shows the overall design criteria for the open pit based on the area required to meet the rate of extraction of ore and waste material:

- Pit – 3ha disturbance – 350m x 120m x 20 m deep
- Out of pit overburden dump - 1.5ha disturbance – 100m x 150m x 20 m high – 240,000 bcm

Figure 5 shows the Life of Mine disturbance, whereas **Figure 6** to **Figure 9** details the annual mine plan stages.

Figure 4: Basis of Design Criteria

- 3.5m benches, 5m berms
- 77 tonne class trucks CAT777
- 100 tonne class excavator
- 13m wide 10% ramp
- Ore Density 2.0
- ~4 ha pit and dump disturbance

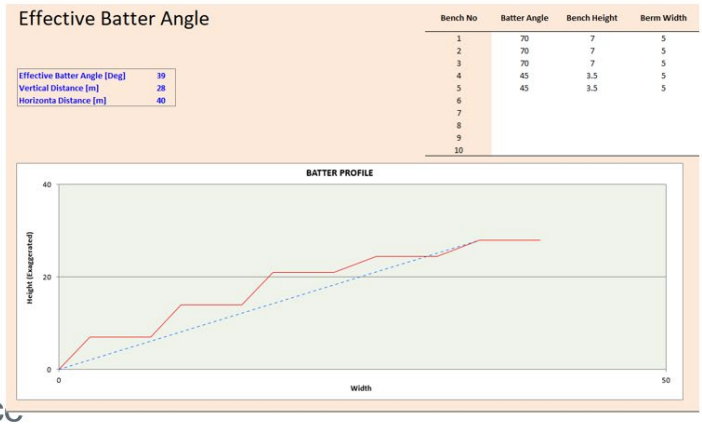


Figure 5: Pit and Dump for Life of Mine

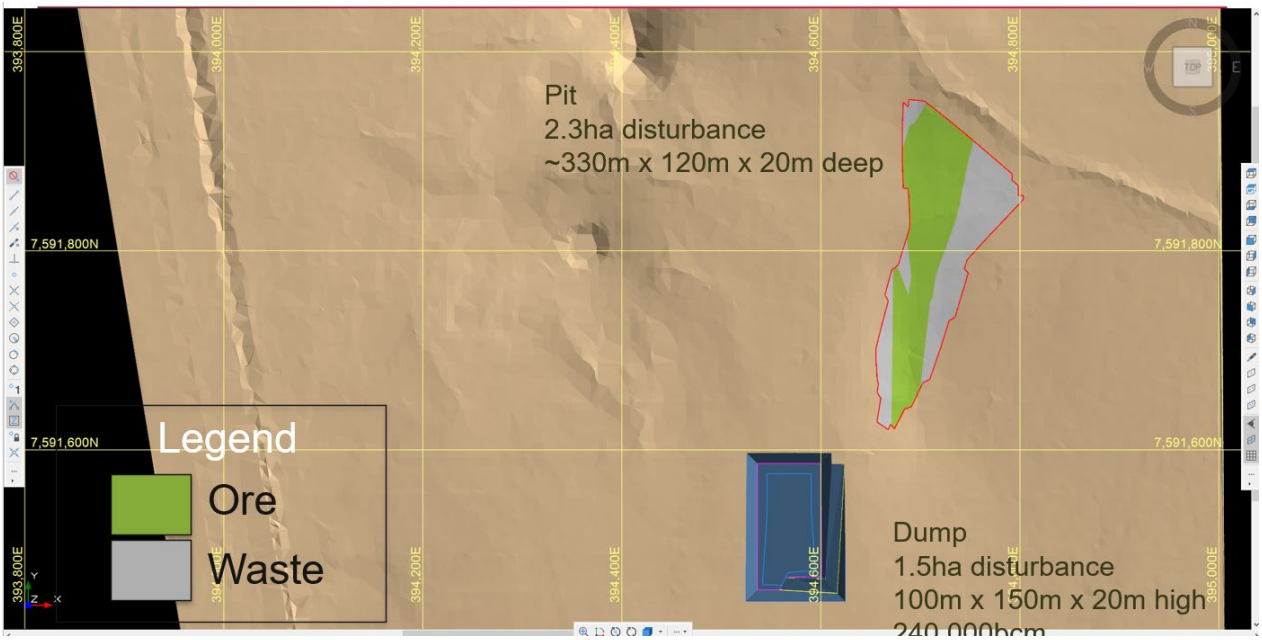


Figure 6: Pit and Dump – End of Year 2

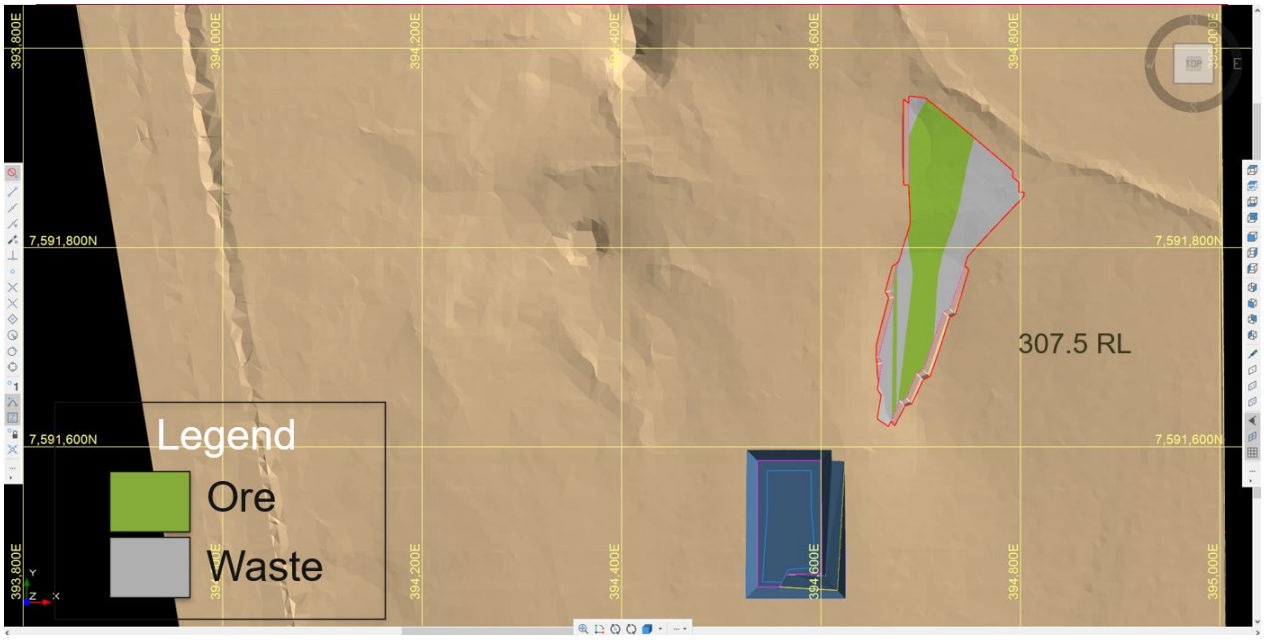


Figure 7: Pit and Dump – End of Year 3

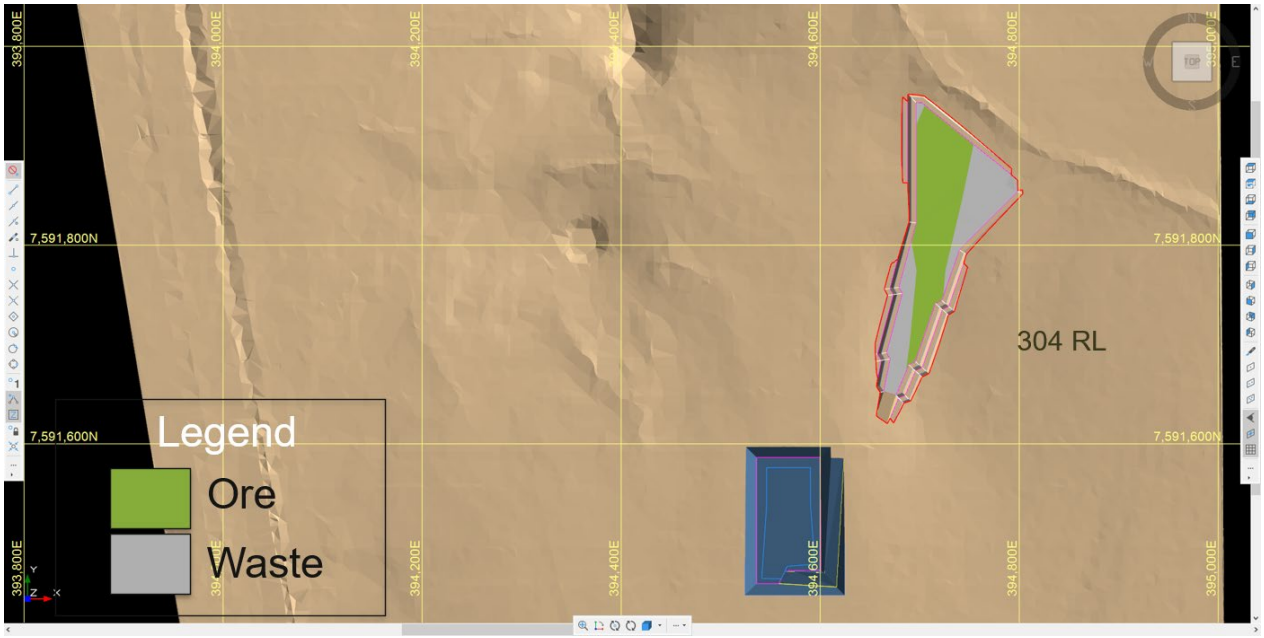


Figure 8: Pit and Dump – End of Year 4

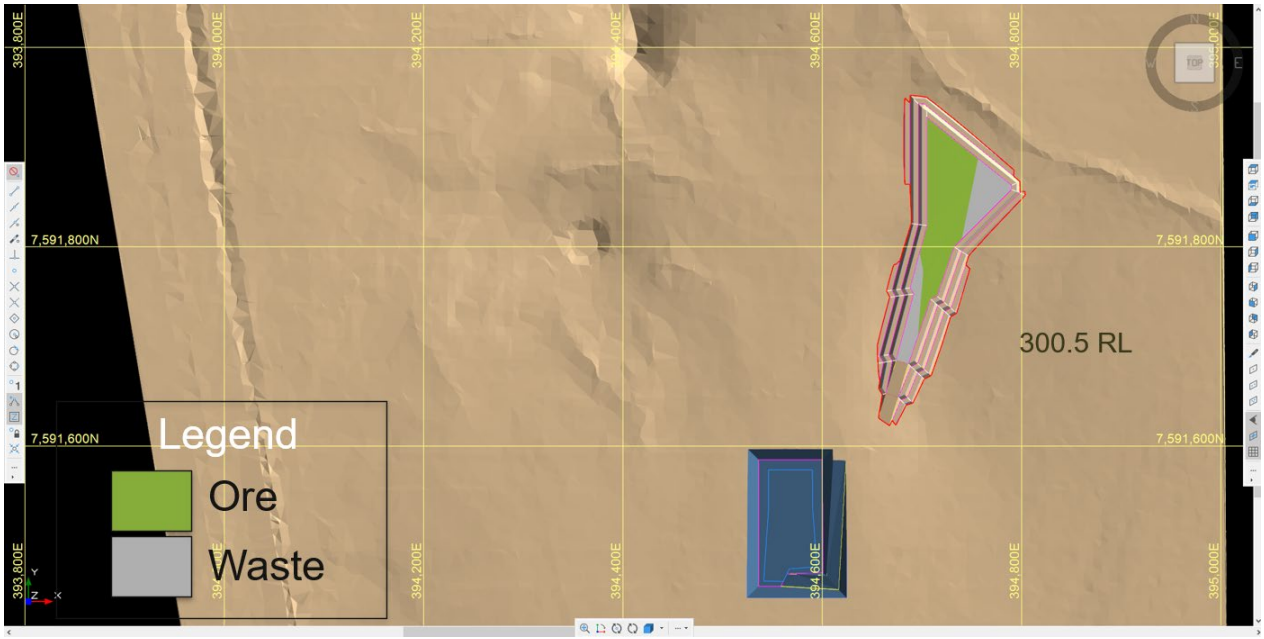
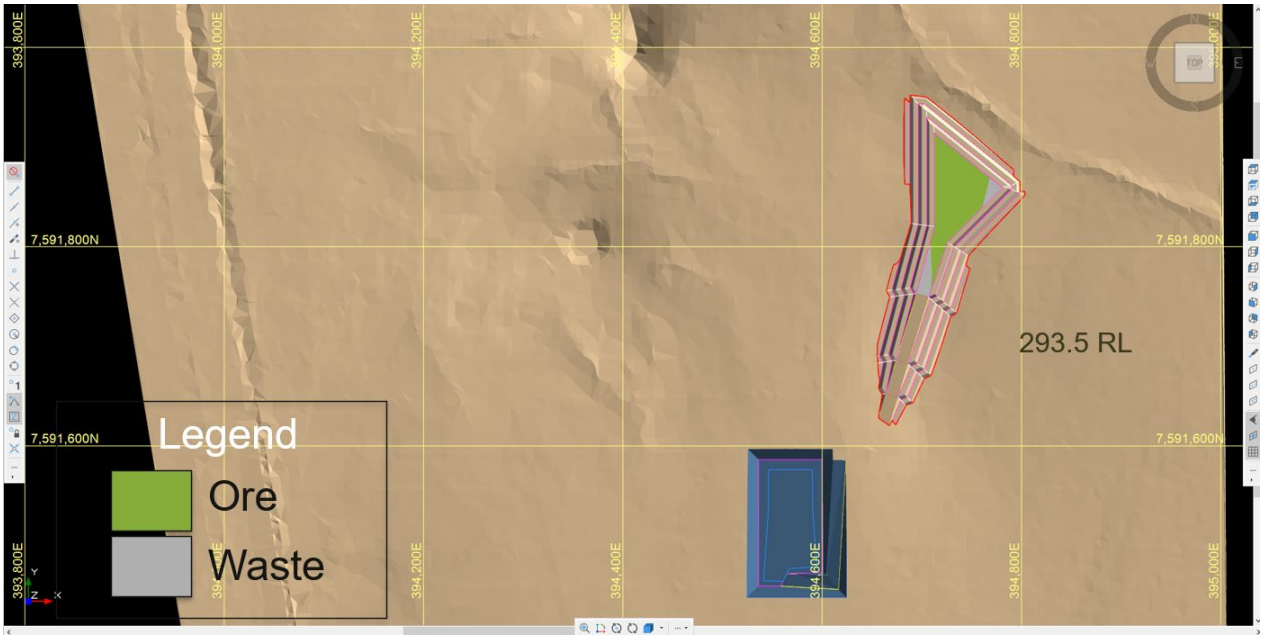


Figure 9: Pit and Dump – End of Year 5



The overburden covering the Monastery Creek Phosphorite (MCPH) and the MCPH itself is capable of being mined by free digging with one exception. The chert band that separates the upper and lower beds will potentially require drilling and blasting in the same manner as handled at Phosphate Hill Mine.

When the approx. 2m thick chert band is encountered it will be drilled and blasted. Contract drilling and blasting contractor will be used for that specific task.

Water for dust suppression is required within the mine access roads, over burden, ROM stockpiles but also within facility access roads, vehicle hard stand areas and the product transport road leading to the Phosphate Hill to Duchess Road. A 40,000l water cart to be used.

Water will also be used in final crushing of product to <2mm. Water to be added is 3% of final product

Crushing and transport of product will be on a more continuous basis throughout the dry season. Limited on-site operations will take place during the wet season since most domestic customers will be dormant during the period.

While intermittent road closures due to flooding on the Phosphate Hill to Duchess and the Duchess to Cloncurry roads may restrict access to the site, there will be continuous on-site presence/monitoring to ensure site safety in regard personnel and environmental structures.

4.1.1 Processing Area

Run of Mine phosphate will be stock piled in four distinct piles on the designated ROM stockpile area.

- Stockpile A - Greater than 20 % P_2O_5,
- Stockpile B - 15 to 20 % P_2O_5,
- Stockpile C- 10 to 15 % P_2O_5 and
- Stockpile D - less than 10 % P_2O_5.

The base of the ROM stockpile will be constructed from ROM phosphate first excavated in Year 2. The ROM stockpile base, designed for positive drainage, will be compacted using a pad-foot roller.

The processing equipment to be utilized is as follows:

- Static grizzly to remove oversize of plus 300mm
- Primary crusher to reduce phosphate from 300mm to 50mm
- Secondary crusher with screens to reduce phosphate from 50mm to 5mm with dust collection for 150micron and screening out of <2mm
- Tertiary Crusher to reduce 5mm to top size of 2mm.
- Dust collection from the secondary crusher is by way of fans, cyclones and into 1.2cubic m bulka bags.

A separate bagging plant will bag standard product <2mm into 1.2 cubic metre bulka bags.

4.1.2 Infrastructure Area

The mining contractors facilities: site office, first aid room, crib room, parts storage container, compressor, welding bay, workshop bay, undercover dome structure for equipment maintenance, light vehicle repair/maintenance bay, self-bunded diesel storage, vehicle hard stand parking area.

4.1.3 Product Storage and handling

Crushed <2mm product will be conveyed into an undercover structure. The structure is to protect the product from wind and rain. Access to the structure will occur to enable a front end loader to load 75t capacity side tipper and end tipping road trains.

There will be a separate undercover structure to house a small receival hopper/conveyor system bag loading plant. Bagged dust and bagged product are to be loaded onto flat top trucks for transport to the Round Oak Road Distribution Hub in Cloncurry. Equipment for this purpose includes front end loader to load product onto road trains, small front end loader to feed bagging plant, fork lift for handling bulka bags, fork lift for loading trucks with bagged dust/product.

Where phosphate is to be exported through Port of Townsville, half height containers are currently used. The containers will be loaded with bulk <2mm product by front end loader. The loaded containers will then be loaded onto special road trains using a large forklift.

4.1.4 Product Transport and Export

While there are enquiries for export of Korella phosphate, the Korella North project is predicated on sales into the domestic market. Transport to customers will either be in road trains capable of delivering product in bulk or on flat top trucks of all varieties capable of handling bagged phosphate.

Access to site is off the Phosphate Hill- Duchess road adjacent the existing rail crossing and then on the same route as the existing access track which is on the eastern side of the Phosphate Hill – Townsville railway line.

Sales of bulk phosphate will be on FOL ex-mine basis. Transport in bulk will be to customers via initially Phosphate Hill-Duchess - Cloncurry roads.

Bagged phosphate will be transported from the mine to Cloncurry for storage and distribution at the AMPL'S Round Oak Road Distribution Hub (RORHub) which is near the intersection of the Flinders Highway and the road train bypass of the town of Cloncurry. For bagged phosphate, sales will be on FOL ex-works RORHub. On average 300 road trains a day pass through Cloncurry. At least half have no load. Under-utilised trucking capacity is in excess of 300,000 tonnes per annum.

From Cloncurry, road trains can go west via Barkly Highway to Darwin, Alice Springs and Kununurra in WA, east via Flinders Highway to Townsville, south via Landsborough Highway to Brisbane, NSW and Victoria and north via National Route 83 to Karumba in the Gulf of Carpentaria.
For export through Townsville, there is current capacity to use the Aurizon half height container system. Half height containers can be loaded at the mine and then transported by road to existing container loading onto rail facility in Cloncurry. The half-height containers are then railed to Port of Townsville, stockpiled and when parcel size reached some 5,000 to 17,000 tonnes using retainer tipped into hold of vessel.

4.1.5 Water Supply and Management

Water requirement

- During Mining – 10 weeks – 5 days – 12hours per day - Based on hourly watering - 24 Ml
- Remainder of dry season – 30 weeks – 5 days - 12 hours - Based on 2 hourly watering - 27Ml
- Water added during crushing – Assuming 20 per cent of product is dust collected some 190,000t of product will have 3% water added in the final crush to 2mm top size – 5.7ML
- Water requirement as calculated – 56.7Ml Contingency 70% - 39.69Ml
- Total water requirement – 96.39 Ml – Say 100 Ml per annum

Water supply alternatives

- Delivery by tanker – To contract through local landowner for deliveries from bores
- Delivery by pipeline from Mirri Bore – By agreement with MDH Pty Ltd to utilize the existing pipeline from the existing Mirri Bore and to deliver into a new water tank
- Delivery by pipeline from new borefield – To investigate a separate borefield to supply Korella North

4.1.6 Workforce and Accommodation

Mining/Processing Contractor (On-site) - 15 persons

- Site Senior Executive- Project Manager – one person
- Mine Superintendent– one person
- Administrative assistant – one person
- Excavator Operator– one person
- Truck drivers – 2 persons
- Water cart/Dozer/Grader – one person
- Maintenance Superintendent – one person
- Fitter/mechanics – 2 persons
- Front end loader operator – ROM pad - feeding crusher – one person
- Crusher/screen operator – one person
- Bagging plant operators – 2 persons
- Front end loader operator – product – one person

AMPL (Off-site) – 5 persons

- Executive Director – one person
- Field Manager – one person
- Accounts assistance – one person
- Round Oak Road Distribution Hub – 2 persons

Accommodation for off-site staff is provided in Cloncurry. Accommodation for Mining/Crushing contractors employees to be established at Duchess in a 20 person camp. A bus will be used to transport them daily to and from Korella North. An alternative under consideration is a camp to be established on an area on the western side and some 300m from the Phosphate Hill- Duchess road

5 Resource Information *(Section 317K(2)(c))*

5.1 Geological Summary

The MLA is located within the lower-middle Cambrian rocks of the Duchess Embayment, which is part of the Burke River Outlier, which in turn is part of the Georgina Basin. The Georgina Basin is a large intracratonic sedimentary basin located in central and northern Australia (**Figure 10**). The basin comprises marine and non-marine sedimentary rocks deposited from the Neoproterozoic to the late-Palaeozoic (850 – 350 Ma). Locally, basin sediments can reach a thickness of 4km. The Georgina Basin is bounded on almost all sides by Precambrian rocks.

Figure 10: Georgina Basin

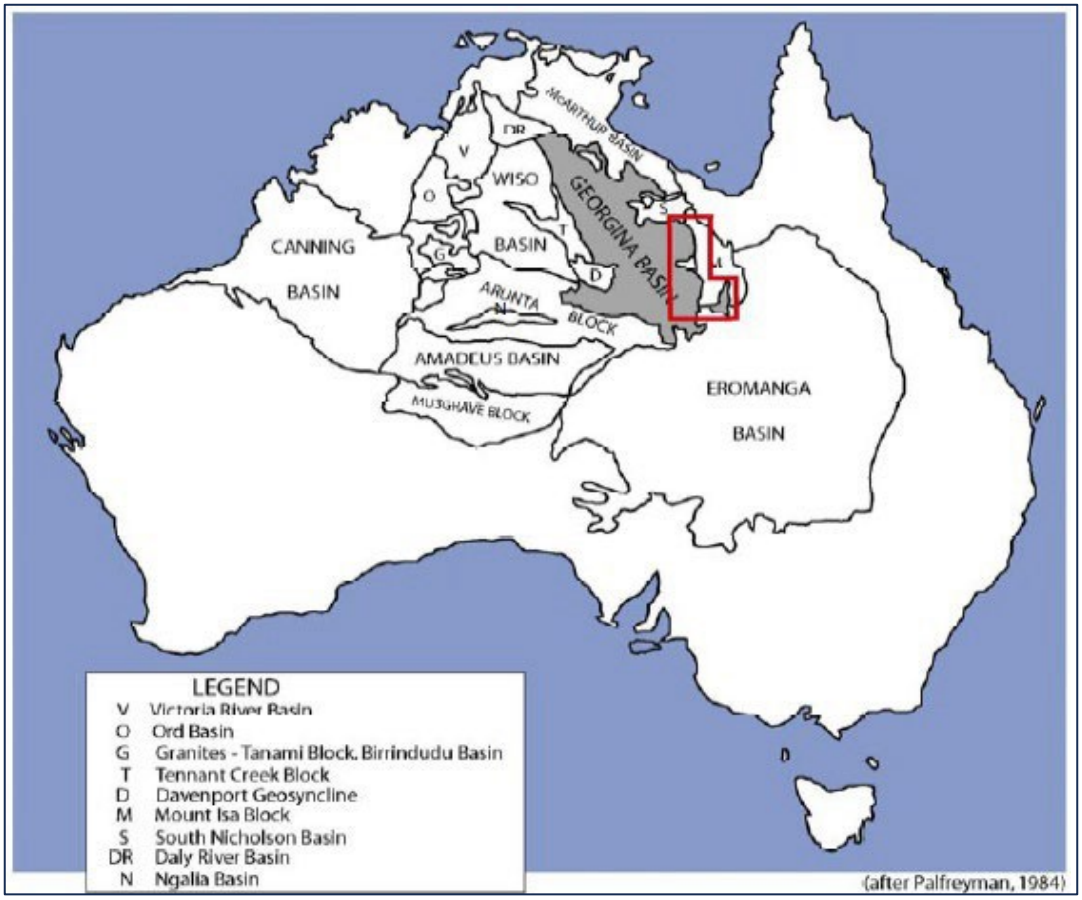
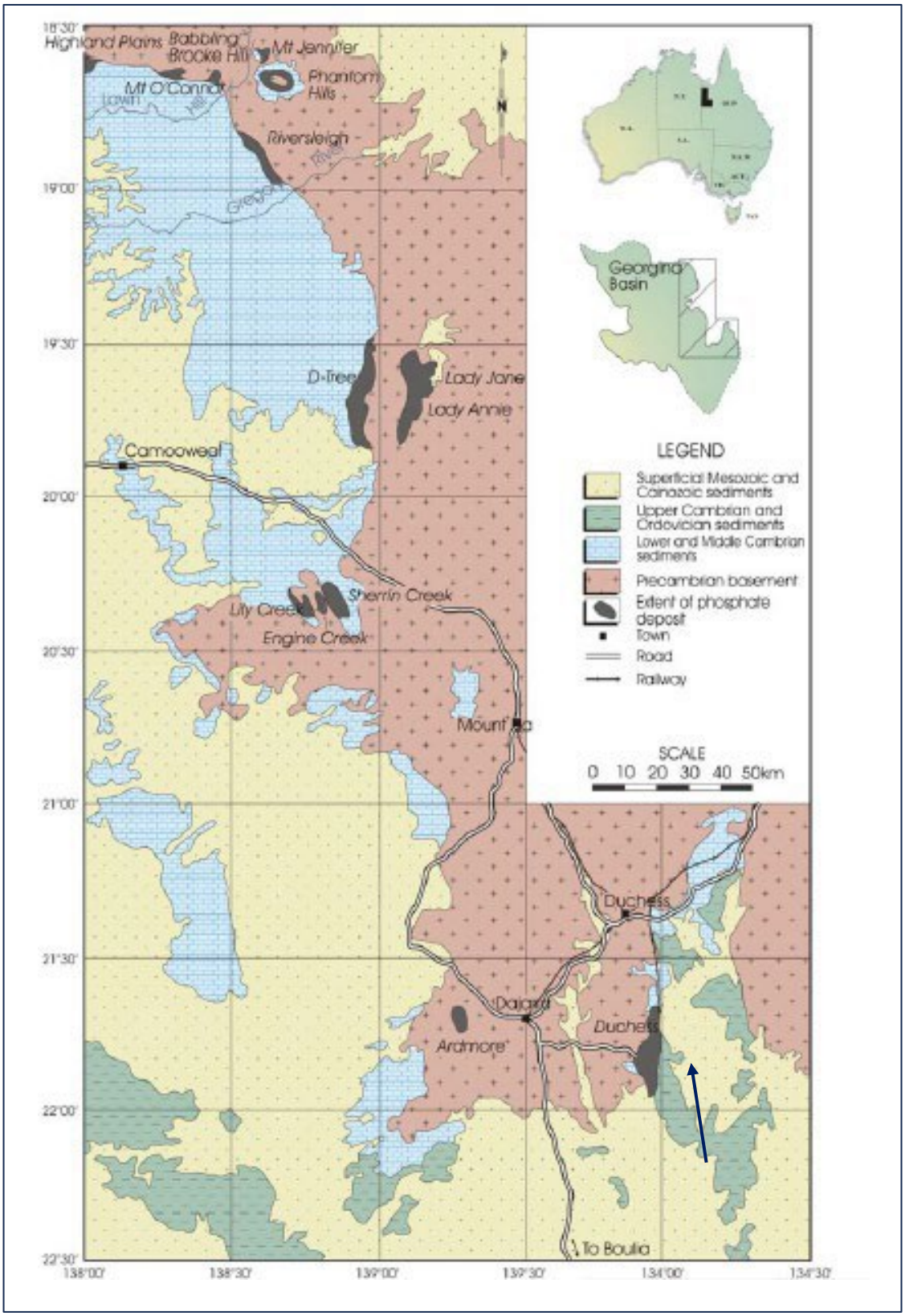


Figure 11 presents the regional geological setting of the eastern portion of the Georgina Basin. The Burke River Outlier is appended to the southeast margin of the Georgina Basin and is approximately 100km long and up to 30 km wide. It consists mostly of lower Palaeozoic sediments that reach a thickness of 1,500m. It represents a shallow depositional basin and is fault bound on all sides except the south, where it merges with the Georgina Basin sediments. The detailed physical relationships between the mostly marine sediments of the Burke River Outlier and the marine and non-marine sediments of the Georgina Basin is obscured by overlying Cretaceous aged sediments of the Great Artesian Basin. The sedimentary sequences comprising the Georgina Basin have been subjected to several deformation events generating locally intense structures, but there is no evidence of metamorphism.

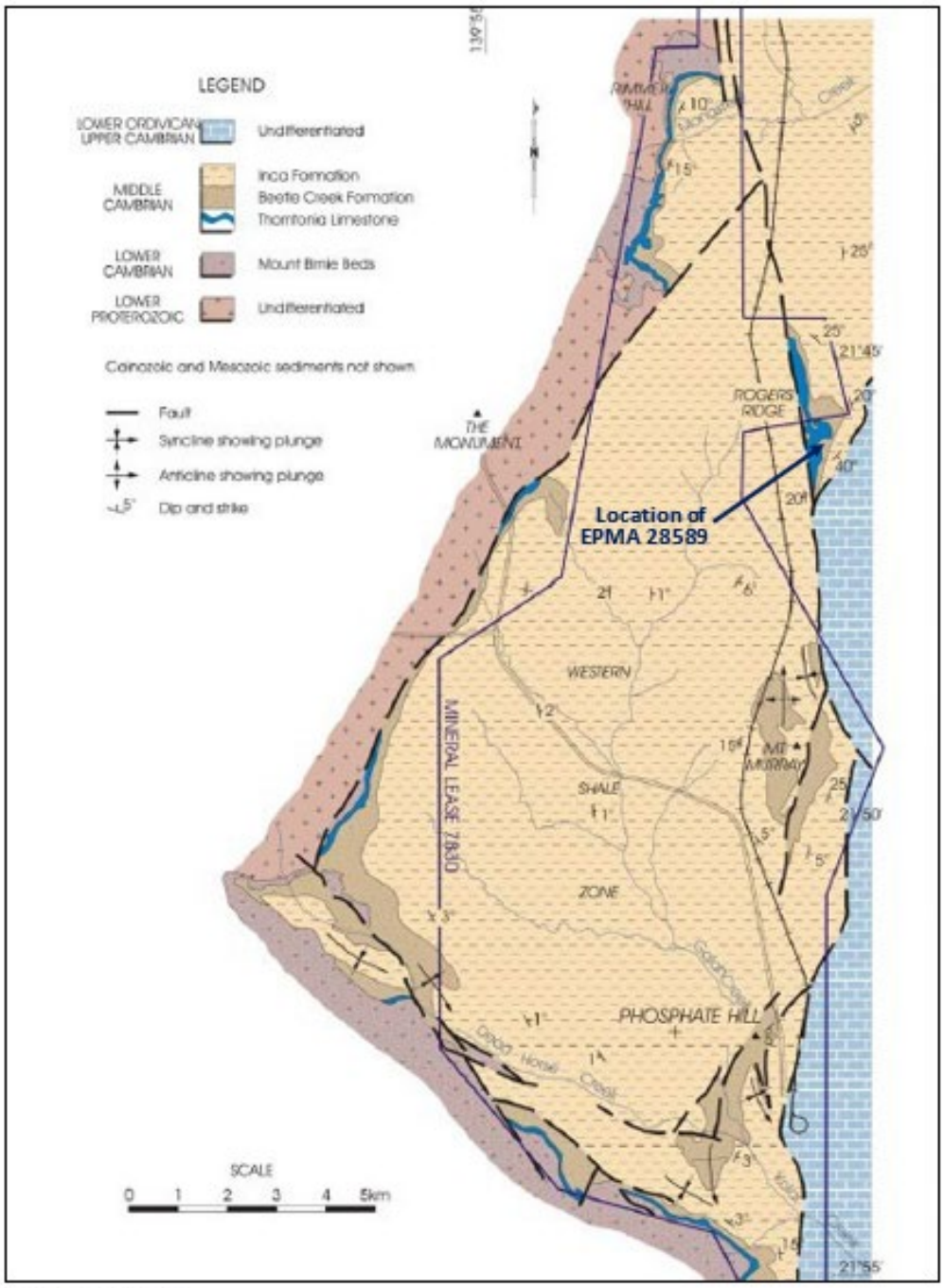
Figure 11: Regional Geology



5.1.1 Local Geology

The MLA sits along the margin of the Duchess Embayment, which is a small shallow triangular basin located on the faulted western side of the Burke River Outlier (**Figure 12**). The embayment is fault bound on all sides and has been subject to regional folding resulting in broad anticlines and synclines with a dominantly north to northwesterly trend.

Figure 12: Duchess Embayment



Source: Dippel, 2004

The main lithologies relevant to phosphate mineralisation within the embayment include the middle Cambrian Inca Formation, the lower-middle Cambrian Beetle Creek Formation, and the lower-middle Cambrian Thorntonia Limestone. **Table 3** provides a description of these formations. The best phosphate mineralisation is found within the Monastery Creek Phosphorite Member of the Beetle Creek Formation.

Table 3. Geological Units

Age	Formation	Geological Unit	Description
Middle Cambrian	Inca Formation	Inca Limestone (ILST)	Fetid, cherty dolomitic limestone, minor calcareous shale. Maximum thickness>150m
		Inca Shale	Shale, cherty shale, silkstone, minor chert. Maximum thickness approximately 107m. Gradational weathering relationship. Base parallel and angular unconformity.
Lower-Middle Cambrian	Beetle Creek Formation (BCF)	Monastery Creek Phosphorite Member (MCPM)	Phosphorite, phosphatic cherty siltstone, chert, fetid phosphatic limestone. Fresh calcareous and weathered silicic facies. Maximum thickness of 37m. Base is a gradational contact with LSM.
		Lower Siltstone Member (LSM)	Calcareous/cherty phosphatic siltstone, chert, bituminous dolomitic phosphatic limestone, and minor phosphorite. Maximum thickness >50m. Base is a parallel unconformity.
Lower-Middle Cambrian	Thorntonia Limestone (TLST)	Chert Member	Silicified carbonate and coquina. Maximum thickness of 12 m
		Carbonate Member	Dolomitic limestone, dolomite, and minor chert. Maximum thickness of 18m. Base is an angular unconformity.

5.2 Resource Estimation / Reserves

The Korella North Mineral Resource and which complies with the Canadian National Instrument 43-101, is shown in **Table 4**.

Table 4: Korella North Mineral Resource as at 11 August 2023 (10% P2O5 cutoff)

Classification	Tonnes (M)	P2O5 grade (%)	Contained P2O5 (t)
Measured	-	-	-
Indicated	0.6	13.1	80,000
Measured plus Indicated	0.6	13.1	80,000
Inferred	2.1	13.0	275,000

Notes: 1. In situ resources reported at a cut-off criterion of 10% P_2O_5.

2. Figures have been rounded to reflect the relative uncertainty in the estimate.

5.3 Location of Mineral resources

See Figure 4 above and the description of the local geology in Section 5.1.1. **Figure 13**and **Figure 14** present two cross sections through the model comparing block model grades with drillhole and trench composite grades.

Figure 13: Cross section of block model at 7591775 mN showing trench and drillhole data, and pit shell

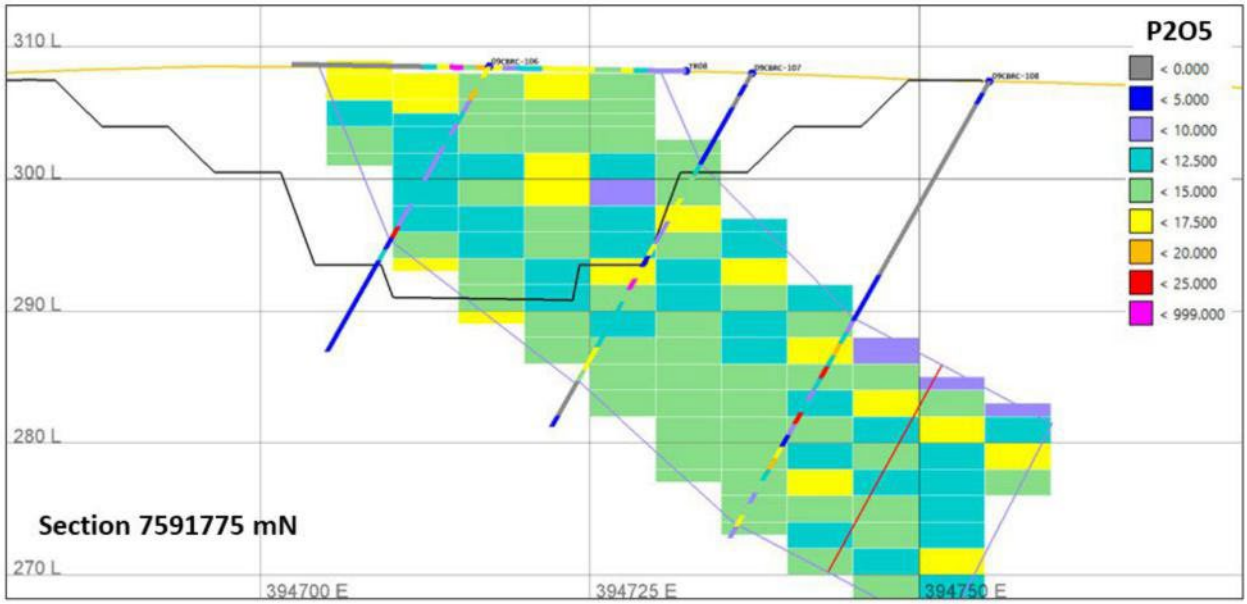
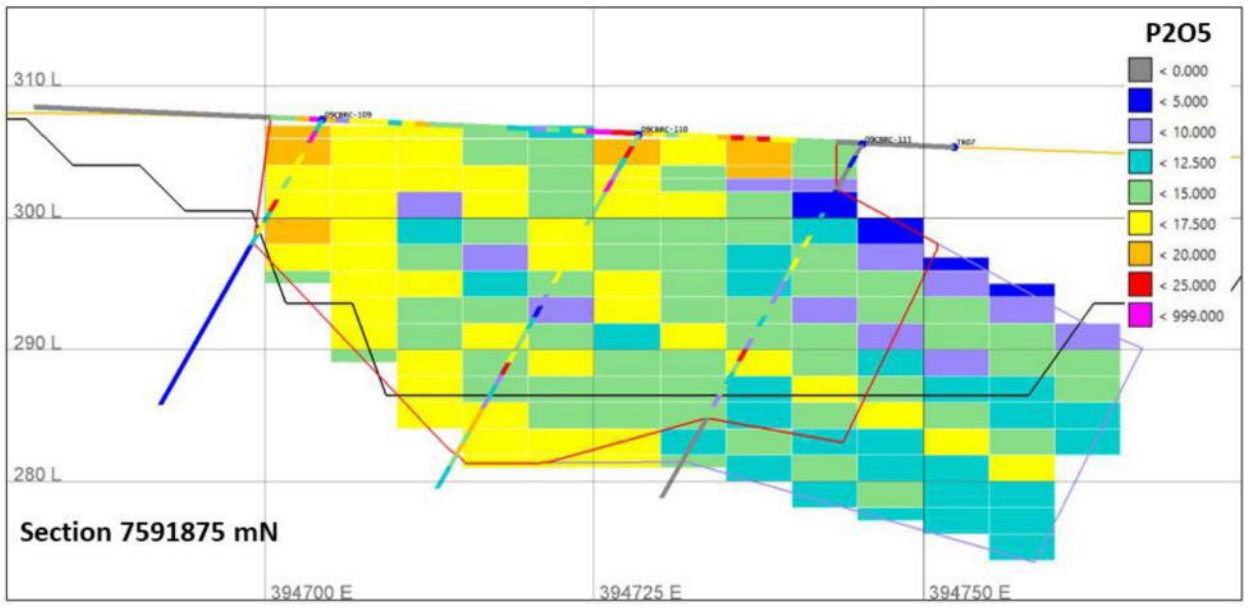


Figure 14: Cross section of block model at 7591875 mN showing trench and drillhole data, and pit shell.



5.4 Mineral resource estimation standards and procedures

A NI 43101 Report has been prepared for Korella North EPM 28589 by Derisk Geomining Consultants Pty Ltd.

The Korella North Mineral Resource has been estimated using a constrained methodology within the main rock type that hosts phosphate mineralisation. This approach means that it is possible to create grade-tonnes tables (**Table 5**) that show the sensitivity to changes in the cut-off criterion used to report the Mineral Resource estimate. As the cut-off criterion rises from 0% to 10% P_2O_5, there is little change in tonnes and grade, however once the cut-off criterion rises above 10% P_2O_5, the resource tonnage falls rapidly.

Table 5. Block model estimate using various cut off criteria

Cut-off (P_2O_5 %)	Indicated		Inferred	
	Tonnes (M)	P_2O_5 grade (%)	Tonnes (M)	P_2O_5 grade (%)
0	0.7	12.8	2.2	12.8
8	0.6	12.8	2.2	12.8
9	0.6	12.9	2.2	12.9
10	0.6	13.1	2.1	13.0
11	0.5	13.4	1.8	13.3
12	0.4	14.0	1.4	13.9
13	0.3	14.8	0.9	14.6
14	0.2	15.6	0.5	15.5
15	0.1	16.4	0.3	16.4

Source: Derisk, 2023

The process used by Derisk to prepare the Korella North Mineral Resource estimate comprised the following steps:

1. Digital and hardcopy drillhole data and surface trenching data were extracted from a master database then imported into Microsoft Access software for checking and validation.
2. Digital topographic survey data collected by LiDAR technology was reviewed and imported into the Vulcan software package.
3. Data validation checks were completed, focused on drillhole collar coordinates, trenching interval coordinates, and sampling/analysis data. Once source data was checked, modifications were applied to the master data sets accordingly.
4. Three-dimensional interpretations of lithology were created in Vulcan, based on the drillhole logs, trench mapping, and assays.
5. Statistical analysis of drillhole assay data and trenching assay data was completed and used to establish the optimum composite sample length and the creation of mineralisation domains for estimation based on lithology.
6. Drillhole and trench composites were generated for P2O5, followed by composite statistics and a variographic analysis of the data.

7. A three-dimensional block model was created in Vulcan, with some sub-celling of parent blocks used for volume accuracy, particularly near surface (See Figures 19 and 20).
8. Estimation search parameters were developed and estimates were generated using the IDS method.
9. Block model validation comprised visual checking of block grades against composite values and other statistical checks.
10. Assignment of the Mineral Resource classification was completed, considering the confidence in the geological interpretation of the mineralisation, drillhole and trench spacing, sample density, and assessments of the integrity and robustness of the sample database (Figure 21).
11. A grade-tonnes distribution was produced to illustrate the sensitivity of the estimate to different cut-off criteria.
12. Criteria to support the reasonable prospects for eventual economic extraction were assessed and an appropriate cut-off criterion was selected for reporting Mineral Resources. The relevant Qualified Person has reviewed and assessed the data inputs, estimation parameters, and reporting criterion for Korella North and reported the Mineral Resource using the 2014 CIM Definition Standards at an effective date of 11 August 2023. Drillhole and Trench Data Drilling is comprised solely of RC drilling completed by Krucible in 2009. A total of 30 drillholes (1,008 m) have been used in the current resource estimate, although seven of these fall outside of the Property. In addition, 10 surface trenches completed by Krucible in 2008 have also been included in the resource estimate.

Details of the above steps are provided in **Appendix 1.**

5.5 Prescribed mineral production during the plan period

Production schedule for ROM phosphate would be nominally based at an average 50,000 tonnes per annum over the 7 years. For the five years of this IDP, the proposed mineral production is shown in **Table 6**. The Company plans to selectively mine and separate individual units within the MCPM to generate several different grade-based stockpiles to facilitate blending and/or beneficiation using the Tomra ore sorting technology. The grade ranges planned include material >30% P_2O_5 , material grading from 20 – 30% P_2O_5, material grading from 15 – 20% P_2O_5, and material grading from 10 – 15% P_2O_5. It is expected that any waste as a result of the ROM process is minimal.

Table 6. Mineral production in the mine plan during the plan period

Year	ROM Production (t)	Grade	Product (t)	Grade
1	Construction of site facilities		0	
2	21,552	10-30%	21,552	20-30%
3	59,836	10-30%	59,836	20-30%
4	58,586	10-30%	58,586	20-30%
5	84,222	10-30%	84,222	20-30%

6 Conclusion

This Development Plan is provided in support of the application for ML 100367 "Korella North". The Korella North Project as proposed is for a 3 hectare open cut mine area to produce a direct shipping ore of 20% P_2O_5 rock phosphate, approximately 395,000 tonnes in total. The mining lease is being sought for a 10 year period to develop this resource.

This Plan covers the first 5 years of the project, following grant. The initial year of the project will be mine establishment with mining commencing in Year 2. Mining will continue for the next 7 years (under this IDP and a Later Development Plan), with the balance of the mining term to allow for contingency and rehabilitation.

ML 100367 is the only ML subject to this Development Plan.

The grant of the Mine will is important to the local community through the use of local contractors, supporting new infrastructure and commercial benefits for the Cloncurry Shire community (including increased employment and business activity for the Cloncurry, Dajara and Duchess communities). Additionally, it provides the State of Queensland royalty and investment returns, as well as providing a domestic supply of low carbon footprint phosphate for use in agriculture.

Should the Development Plan be approved, Avenir Makatea Pty Ltd understands that the Plan, and its contents, is a condition for all the leases that make up the project.

Appendix 1

Information to support Section 5.4

Mineral resource estimation standards and procedures

Standards and Procedures in Resource Estimate

Since Chatham Rock Phosphate Limited is a Canadian registered company, instead of releasing JORC Resource Statements, it is required to complete a Canadian National Instrument 43-101 Report. A NI 43101 Report has been prepared for Korella North [PM 28589 by Derisk Geomining Consultants Pty Ltd.

Resource Estimate

The process used by Derisk to prepare the Korella North Mineral Resource estimate comprised the following steps:

- Digital and hardcopy drillhole data and surface trenching data were extracted from a master database then imported into Microsoft Access software for checking and validation.
- Digital topographic survey data collected by LiDAR technology was reviewed and imported into the Vulcan software package.
- Data validation checks were completed, focused on drillhole collar coordinates, trenching interval coordinates, and sampling/analysis data. Once source data was checked, modifications were applied to the master data sets accordingly.
- Three-dimensional interpretations of lithology were created in Vulcan, based on the drillhole logs, trench mapping, and assays.
- Statistical analysis of drillhole assay data and trenching assay data was completed and used to establish the optimum composite sample length and the creation of mineralisation domains for estimation based on lithology.
- Drillhole and trench composites were generated for P2O5, followed by composite statistics and a variographic analysis of the data.
- A three-dimensional block model was created in Vulcan, with some sub-celling of parent blocks used for volume accuracy, particularly near surface.
- Estimation search parameters were developed and estimates were generated using the IDS method.
- Block model validation comprised visual checking of block grades against composite values and other statistical checks.
- Assignment of the Mineral Resource classification was completed, considering the confidence in the geological interpretation of the mineralisation, drillhole and trench spacing, sample density, and assessments of the integrity and robustness of the sample database.
- A grade-tonnes distribution was produced to illustrate the sensitivity of the estimate to different cut-off criteria.
- Criteria to support the reasonable prospects for eventual economic extraction were assessed and an appropriate cut-off criterion was selected for reporting Mineral Resources. The relevant Qualified Person has reviewed and assessed the data inputs, estimation parameters, and reporting criterion for Korella North and reported the Mineral Resource using the 2014 CIM Definition Standards at an effective date of 11 August 2023. 14.2 Resource Inputs 14.2.1 Drillhole and Trench Data Drilling is comprised solely of RC drilling completed by Krucible in 2009. A total of 30 drillholes (1,008 m) have been used in the current resource estimate, although seven of these fall outside of the Property (**Table 1**). In addition, 10 surface trenches completed by Krucible in 2008 have also been included in the resource estimate.

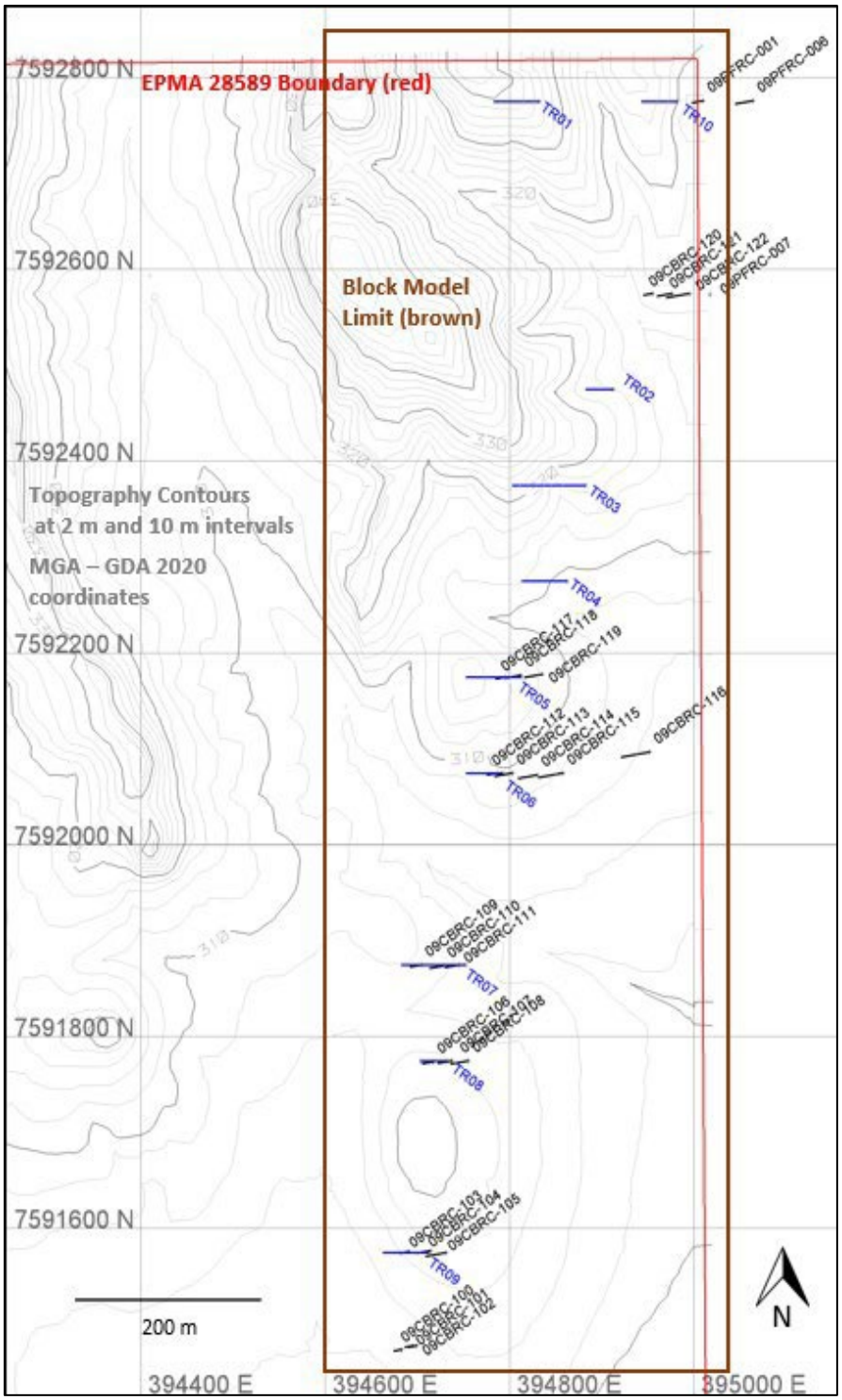
Table 1 Korella North resource input data

Data Type	Prefix	No. of holes or trenches	Total depth/length (m)	Average depth/length (m)	P_2O_5 samples	Radiometric samples
Drilling *	09PFRC	7	242	34.6	131	64
Drilling	09CBRC	23	766	33.3	462	762
Trench	TR	10	499	49.9	254	497
Drilling & Trench	09CBRC & TR	33	1,265	38.3	716	1,259

*Note: * These drillholes fall outside of EPMA 28589 but were used in the interpretation and grade estimation process.*

The drilling data consists of lines spaced from 100 – 400 m apart along strike with most lines containing a fence of three drillholes angled steeply to the west to test the shallow east-dipping MCPM (**Figure 2**). The trench data consists of ten lines spaced 100 – 300 m apart along strike with samples collected at 1.0 m intervals. Drillhole and trench information was originally recorded in the AGD66 Zone 54 grid coordinate system but has been converted to MGA 2020 Zone 54 with the GDA 2020 datum.

Figure 2 Drilling and Trenching locations



Topography and Drillhole Surveys

A subset of 2.0 m contours and key spot heights from the 2023 LiDAR survey was used to create a topographic surface for the Korella North area. Trenches were draped over the topographic surface to provide more accurate elevations. There are no downhole drillhole surveys.

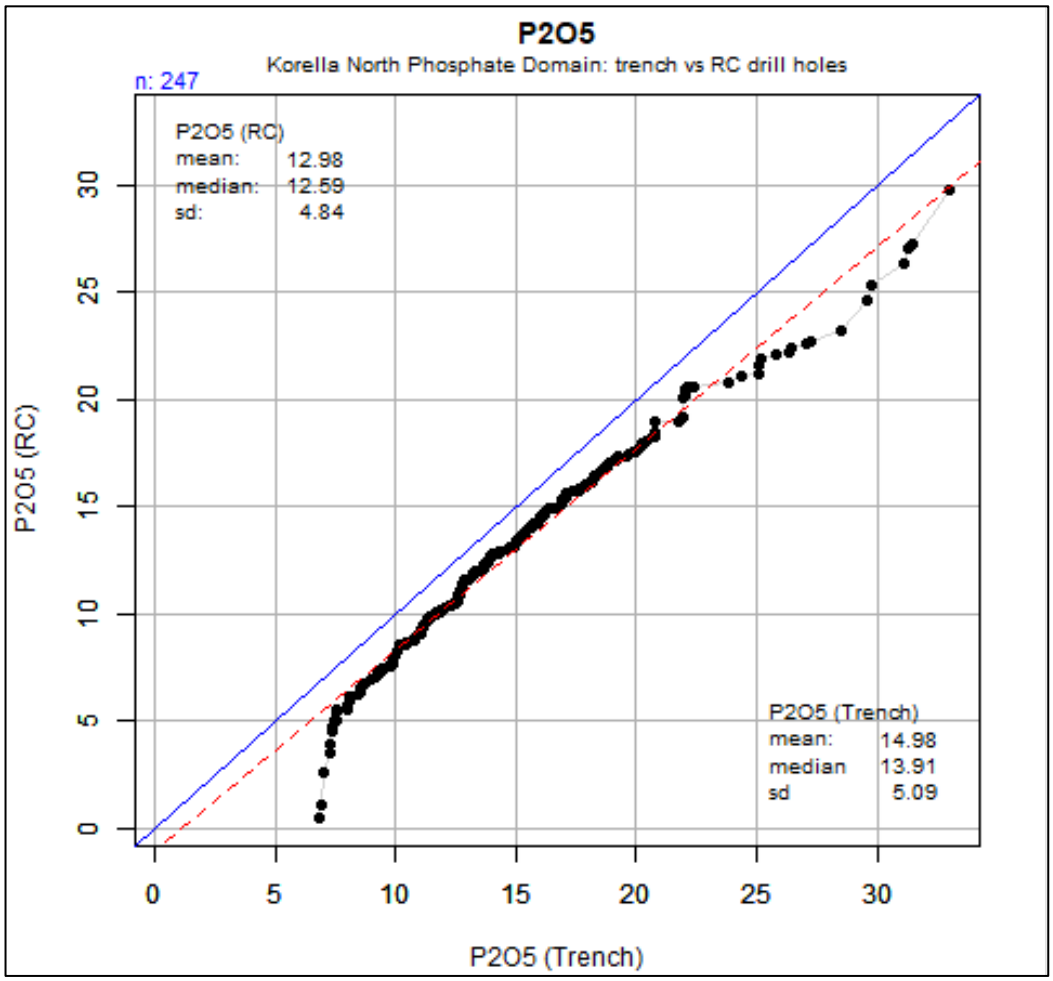
Geological and Mineralisation Interpretation

Most phosphate mineralisation is confined to the MCPM of the Beetle Creek Formation. Derisk created a MCPM lithological domain based on surface mapping, MCPM trench mapping and analyses, and drillhole logging data and analyses. Minor adjustments were made to the hanging wall and footwall contacts. In addition, a near-surface weathering-related blanket was created within the MCPM domain to represent an enriched supergene zone based on an analysis of the trench and drillhole geochemistry, as described below.

Data Analysis

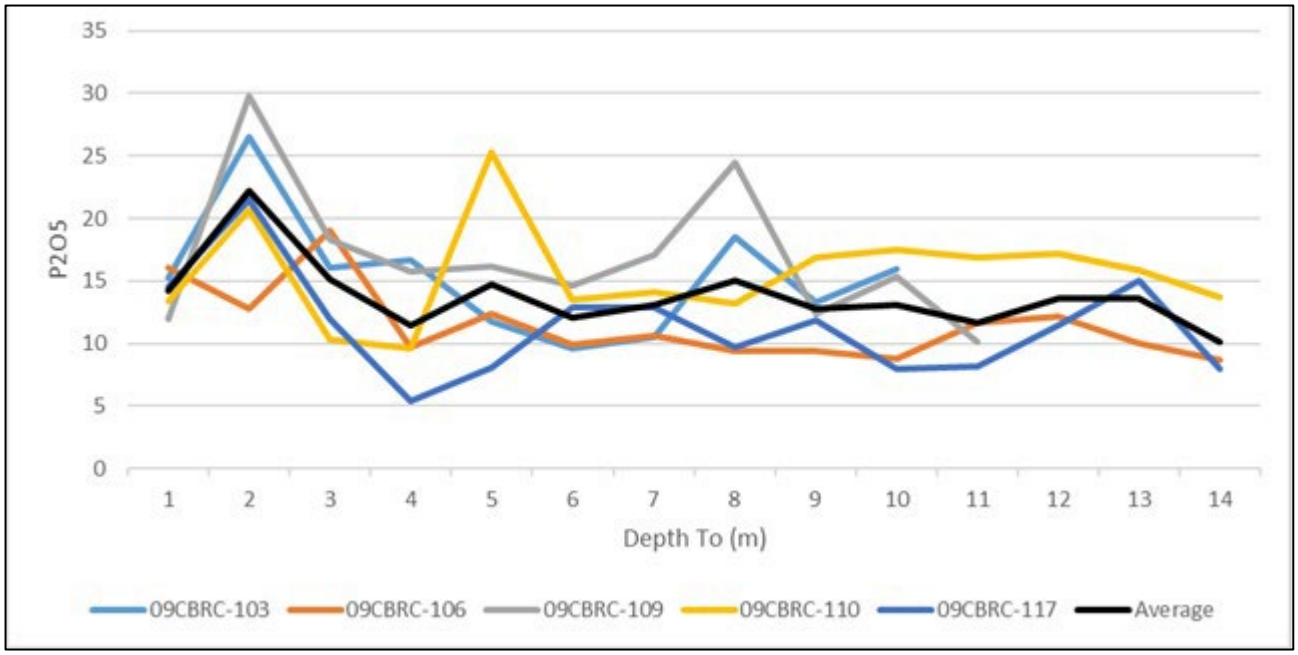
Trench and Drillhole Assay Data - All trench and RC samples are 1.0 m in length. Derisk reviewed the phosphate grade distribution within both populations to assess the potential of using the trench data to complement the drillhole data to estimate the Mineral Resource. **Figure 3** is a quantile-quantile plot (Q-Q plot) comparing the RC and trench analyses and clearly shows that the trench data (mean of 14.98% P2O5) is higher grade than the RC data (mean of 12.98% P2O5).

Figure 3 Q-Q plot of RC data vs trench data for P2O5



Five RC drillholes are collared in the MCPM and an analysis of phosphate grade with depth in these holes suggests there is a thin surface enrichment blanket (**Figure 4**). Derisk elected to create a 3 m thick surface within the MCPM in order to constrain the higher-grade trench samples and very shallow drillhole intervals.

Figure 4 Phosphate grade with drill hole depth



Sample Recovery

No statistical analysis of sample recovery was undertaken because there were no drilling records documenting recovery for the RC drilling. The relevant Qualified Person acknowledges that the lack of sample recovery statistics is a potential risk area to the Mineral Resource estimate, however phosphate is a bulk commodity and the risk is considered to be relatively low.

Compositing

All RC samples and all trench samples are 1.0 m in length and Derisk adopted a 1.0 m composite length. Derisk created a hanging wall waste domain corresponding with the Inca Formation (Domain 10) and a footwall waste domain corresponding with the Lower Siltstone Member (Domain 30). Within the MCPM, Derisk created two domains i.e., a fresh MCPM horizon (Domain 20) and a thin near surface weathered MCPM horizon (Domain 21).

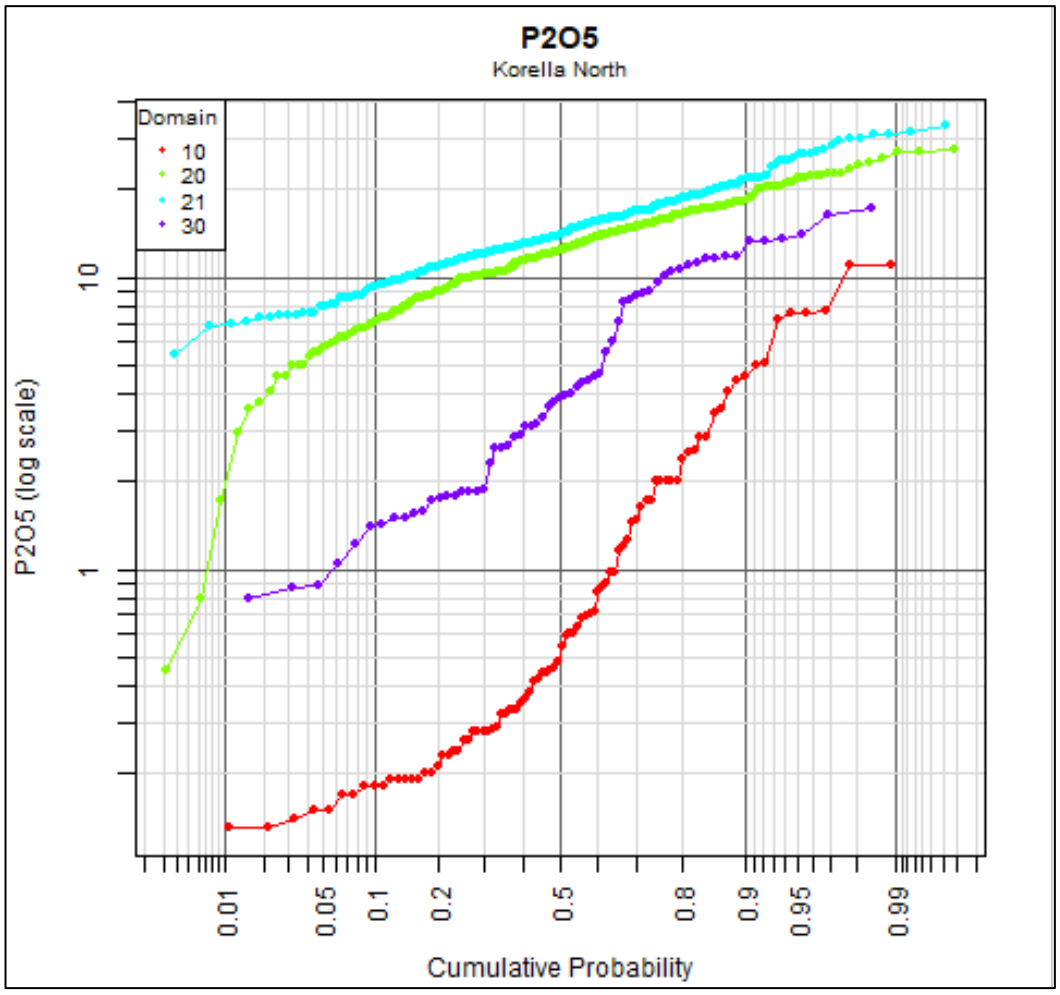
Table 2 presents P2O5 statistics for all domains and **Figure 5** presents cumulative probability plots. These clearly illustrate that the small number of RC composites lying within the weathered MCPM domain are higher grade than the RC samples within the fresh MCPM, and that the weathered surface blanket is enriched in phosphate.

Table 2 Composite Statistics for P2O5 by domain

Domain	Description	Data Type	No. Composites	Minimum (%)	Maximum (%)	Mean (%)	Coefficient of Variation
10	Hangingwall	All	90	0.1	11.0	1.5	1.5
20	MCPM Fresh	RC	316	0.5	27.3	12.8	0.4
21	MCPM Weathered *	RC	20	5.4	29.8	15.8	0.4
		Trench	247	6.8	33.0	15.0	0.3
		All	267	5.4	33.0	15.0	0.3
30	Footwall	All	63	0.8	17.4	5.7	0.8

*Note: * This domain is 3 m thick and parallel with the surface topography*

Figure 5 Cumulative Probability plot for all P2O5 data in each domain



Grade Capping

A review of the phosphate analyses was undertaken to determine if grade capping of high grades was warranted. Based on this review, and in the absence of any extreme high grades, no grade capping was applied to the composite data.

Variography

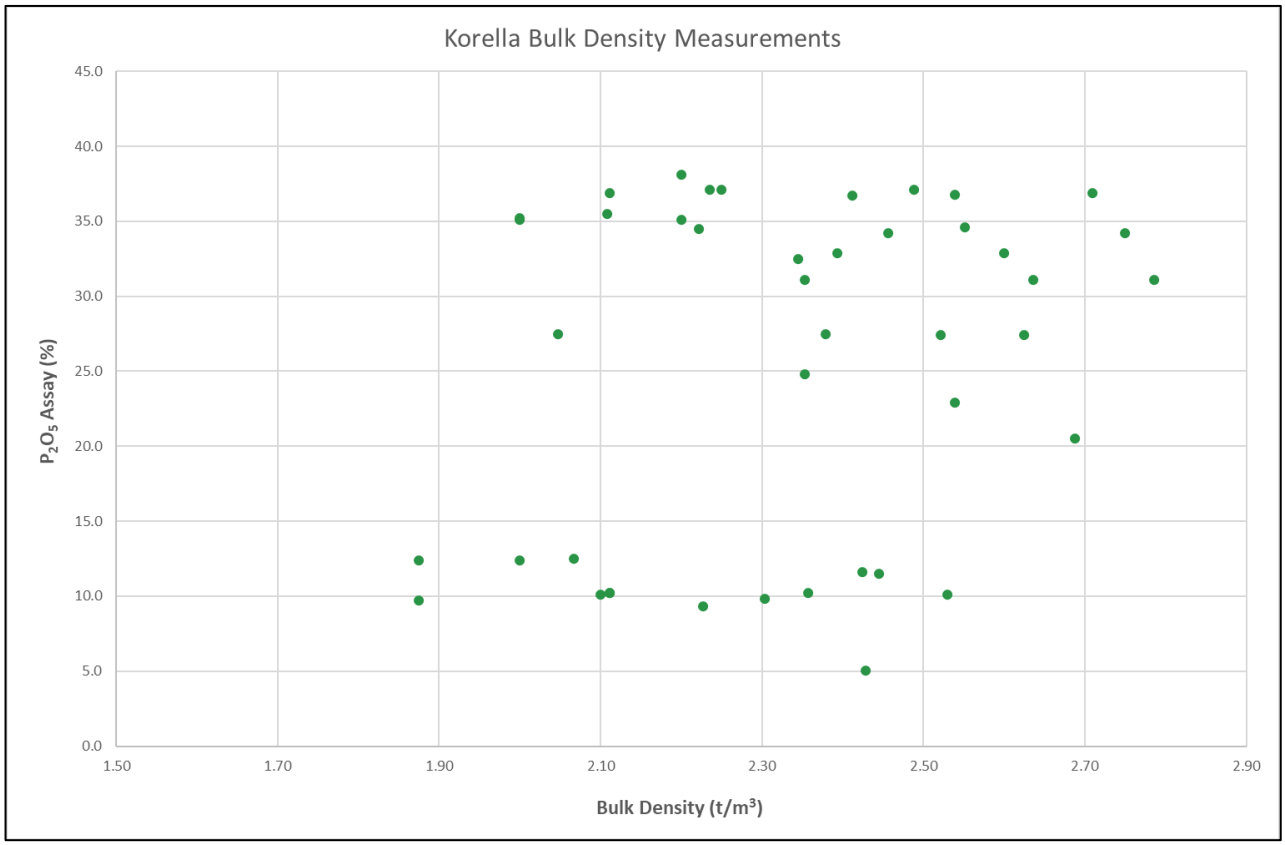
Structured variograms are present for all assay data using all domains, however when assessed for Domain 20 and 21 the variograms structure become shorter. Downhole ranges for the RC drilling are only 2 m and extend to 6 m for trenches, which are less perpendicular to the geological dip i.e., a partially down dip orientation. Downdip variograms indicate a range of 75m. This also fits the wider spaced strike (north-south) direction where the minimum drillhole spacing is 100m. The relatively short variograms structures suggest there is reduced opportunity to be selective without greater drill definition than currently provided at 100m by 30m centres. This is slightly at odds with visual assessment of the samples that indicates a central band of lower grade. Further work will be required to better understand the internal grade variations within the MCPM.

Bulk Density

No direct bulk density (BD) determinations have been measured from any samples at Korella North. However, Krucible measured BD on diamond drill core from the Korella deposit 20km to the south, which is in the same formation as Korella North. A total of 43 measurements of whole core from five diamond drill holes were documented by Krucible at Korella. Core lengths ranged from 10.0 – 19.0cm and BD was measured using a water displacement method.

Krucible wrapped the core in cling wrap prior to water immersion to prevent disintegration of the sample. **Figure 6** presents a scatter plot of measured BD versus phosphate grade. Each length of core was nominally assigned the average phosphate grade of the sample interval it came from and as such may not be accurate if the material making up the sample interval was heterogeneous.

Figure 6 Cumulative probability plot for all P2O5 data in each domain



The BD data shows the samples cover two distinct grade populations i.e., 5 – 12% P2O5 and 20 – 38% P2O5. No obvious relationship is visible between BD and phosphate grade except that the average BD of the higher- grade samples overlaps but is higher than the average BD of the lower-grade samples. **Table 3** summarises the BD statistics and indicates a mean of 2.33 t/m^3.

Table 3 Korella bulk density measurement statistics

Number	Minimum (t/m^3)	Maximum (t/m^3)	Mean (t/m^3)	Mode (t/m^3)	Median (t/m^3)	Standard Deviation
43	1.87	2.79	2.33	2.11	2.35	0.24

Source: Krucible digital data records

The relevant Qualified Person makes the following observations:

- BD measurements made on competent pieces of core can potentially result in a bias if there is also substantial material that is friable and cannot be measured the same way. Typically, this can lead to a BD that is too high.
- The use of cling wrap to protect the core from disintegration during water immersion can sometimes result in air bubbles being retained inside the cling wrap, leading to an inaccurate BD measurement.
- BD estimates used for other Georgina Basin phosphate deposits hosted in the MCPM or local equivalents typically report a lower mean BD than 2.33 t/m3 (Qualified Person personal knowledge). The relevant Qualified Person notes that BD estimates for the phosphate mineralisation of four other deposits in the Georgina Basin range from 1.70 – 2.25 t/m^3. The relevant Qualified Person considers that it is appropriate to apply a mean BD of 2.0 t/m^3 to lack of direct BD measurements at Korella North represents a technical risk if the actual BD is less than 2.0 t/m^3 , and an opportunity if the actual BD is greater than 2.0 t/m^3.

Resource Estimation

Block Model Set-up

The Mineral Resource estimate for Korella North was prepared on the assumption that the mineralisation will be amenable to open pit mining methods. The block model is in the MGA 2020 Zone 54 with the GDA 2020 datum grid with dimensions listed in **Table 4**. The parent block size is smaller than is supported by the drillhole spacing. It does not reflect any assumptions of selectivity and was selected principally to allow some cross strike resolution given the shallow easterly dip and slight changes in strike direction. Subblocks of 1 m vertically were adopted to provide reasonable topography and Domain 21 volume resolution and accuracy.

Table 4 Block Model Extents

	East	North	RL
Minimum MGA Coordinate	394600	7591450	260
Maximum MGA Coordinate	395040	7592850	360
Model Extent (m)	440	1,400	100
Block Size (m)	5	10	2
Subblock Size (m)	5	10	1

Source: Derisk, 2023

The block model dimensions were restricted by the topographic surface based on block centroids below this surface. Blocks beyond the EPMA boundary were discarded. Geological domains 10, 20, and 30 were assigned based on the modelled surfaces for the top and bottom of Domain 20. Domain 21 was assigned for all Domain 20 blocks within 3 m of the LiDAR topography survey model. Estimation Parameters Domain wireframe models reflect surface mapping as well as drilling and trench intercepts.

Also, there are slight changes in strike direction and modelled dip. Simple unfolding was used to improve the sample selection for all estimation. This was applied using locally assigned search orientations based on the top and bottom surfaces for Domain 20. For the near surface enrichment (Domain 21), a horizontal orientation was assumed due to the thinness of the domain. Block phosphate grades were estimated using IDS and Vulcan software. Phosphate was estimated into Domains 20 and 21 in a single search pass with parameters listed in **Table 5** and orientations as described above. IDS used a 1 to 10 flattening anisotropy for Domain 20 and an isotropic anisotropy for Domain 21.

Table 5 Phosphate grade estimation search parameters

Domain	X Search (m)	Y Search (m)	Z Search (m)	Minimum No. of Composites	Maximum No. of Composites	Maximum Composites Per Hole	Maximum Composites Per Octant	Maximum Drill holes
20	300	90	25	3	16	4	4	4
21	300	90	90	3	16	4	4	4

Source: Derisk, 2023

Model Validation

Validation of the estimation was undertaken by visual checks of the model versus drillhole composite grades, and analysis of model versus composite statistics (**Table 6**). These checks indicate that the block model fairly represents the grades observed in the drillhole composites

Table 6 Phosphate grade estimation validation - composites vs block model statistics

Domain and Description	Composites – P_2O_5			Model – P_2O_5			Difference (%)
	Minimum (%)	Maximum (%)	Mean (%)	Minimum (%)	Maximum (%)	Mean (%)	
20 MCPM Fresh	0.5	27.3	12.8	2.9	24.0	12.6	-1.3%
21 MCPM Weathered	5.4	33.0	15.0	7.8	28.6	14.7	-2.1%

Source: Derisk, 2023

Classification

Classification of the estimate considered a range of factors including geological and mineralisation controls and interpretation, trench and drilling density, and data input quality. Some of the deficiencies associated with some of the data inputs include:

- Uncertainties associated with data collection protocols for the RC drilling campaign.
- Uncertainties associated with QA/QC protocols and systems used for the RC drilling and trenching campaigns.

Lack of direct BD measurements. The CIM definition Standards define Indicated and Inferred Resources as follows:

“An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation”.

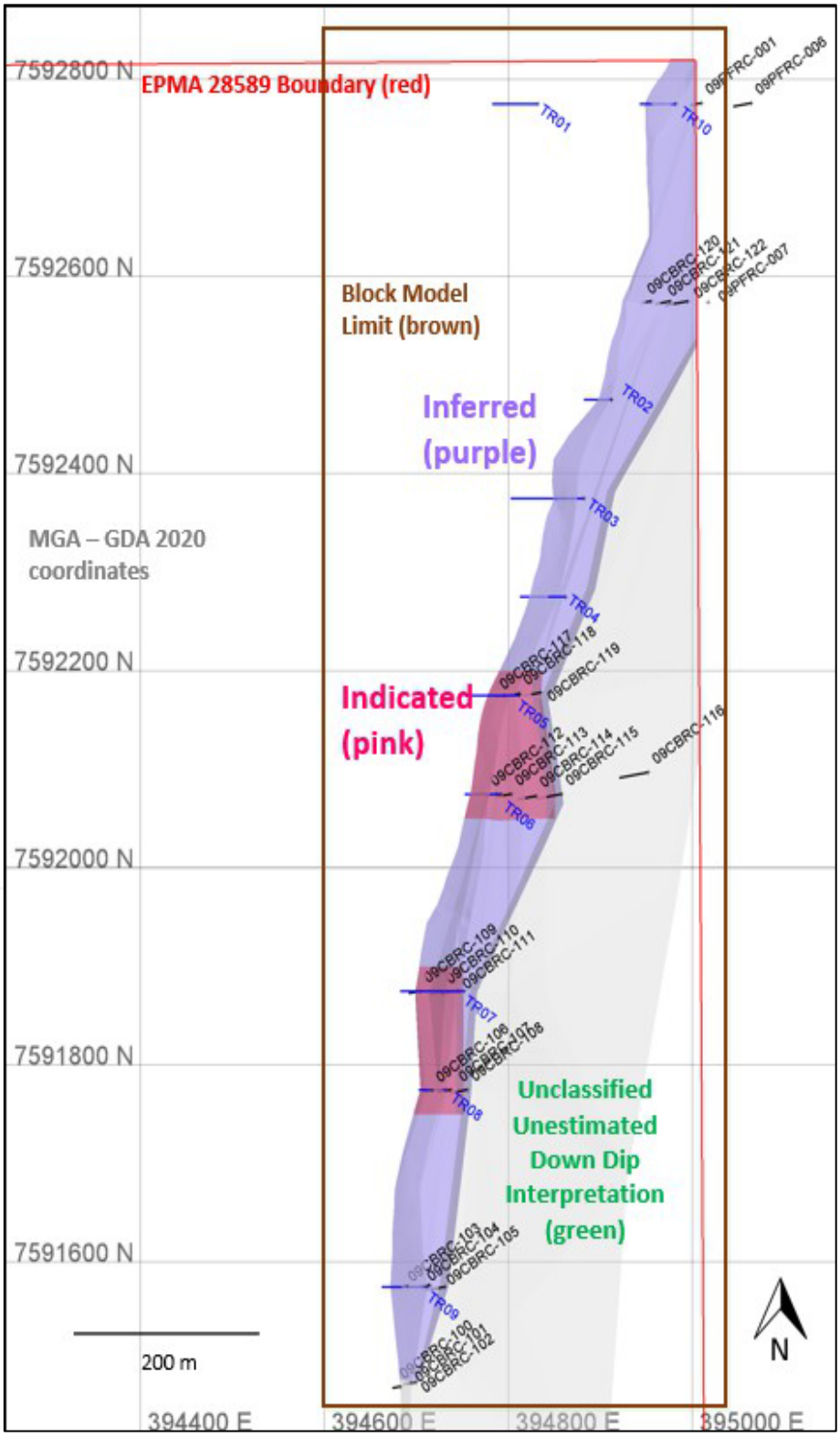
“An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve”.

The relevant Qualified Person considers that there is adequate confidence to classify two areas as Indicated Resources where the drilling and trench data are at a spacing of approximately 100 m by 30 m, with extrapolation of 10 m down dip and 25 m along strike.

Inferred Resources have been classified for the drill defined areas with up to 400 m spacing, with mapping and trenching support, and extrapolation of 25 m down dip and 50 m along strike. This assessment is based on the relevant Qualified Persons experience with similar sediment-hosted phosphate deposits in the Georgina Basin.

Figure 7 illustrates a plan view of the model extents and resource classification and highlights that the resource is constrained by the EPMA boundary at the northern end.

Figure7 Plan view of interpretation and classification wireframes



Mineral Resource Estimate

Grade – Tonnes Relationship

The Korella North Mineral Resource has been estimated using a constrained methodology within the main rock type that hosts phosphate mineralisation. This approach means that it is possible to create grade-tonnes tables (**Table 7**) that show the sensitivity to changes in the cut-off criterion used to report the Mineral Resource estimate. As the cut-off criterion rises from 0% to 10% P2O5, there is little change in tonnes and grade, however once the cut-off criterion rises above 10% P2O5, the resource tonnage falls rapidly.

Table 7 Block model estimate using various cut off criteria

Cut-off (P_2O_5 %)	Indicated		Inferred	
	Tonnes (M)	P_2O_5 grade (%)	Tonnes (M)	P_2O_5 grade (%)
0	0.7	12.8	2.2	12.8
8	0.6	12.8	2.2	12.8
9	0.6	12.9	2.2	12.9
10	0.6	13.1	2.1	13.0
11	0.5	13.4	1.8	13.3
12	0.4	14.0	1.4	13.9
13	0.3	14.8	0.9	14.6
14	0.2	15.6	0.5	15.5
15	0.1	16.4	0.3	16.4

Source: Derisk, 2023

Cut-off Criterion for Reporting

The relevant Qualified Person has reviewed the Korella North Mineral Resource estimate in the context that there must be reasonable prospects for eventual economic extraction. The Mineral Resource model is restricted to 260 mRL, about 50m below surface as well as 25m down dip extrapolation. These constrain the estimates to areas potentially suitable for open pit mining.

AMPL has advised Derisk that it is assessing the opportunity to establish a selective open pit mining and beneficiation operation with the objective of producing a direct shipping product grading 20% P2O5 for an international client.

The Company plans to selectively mine and separate individual units within the MCPM to generate several different grade-based stockpiles to facilitate blending and/or beneficiation using the Tomra ore sorting technology. The grade ranges planned include material >30% P2O5 , material grading from 20 – 30% P2O5, material grading from 15 – 20% P2O5, and material grading from 10 – 15% P2O5.

AMPL engaged a mining contractor to complete a conceptual mining design based on assumptions of 3.5m benches, 77t trucks, 100t excavator, and a maximum disturbance area of 5 hectares to demonstrate there are reasonable prospects for economic extraction of phosphate from Korella North.

This conceptual work identified that there is potential for a direct shipping operation at Korella North. Based on the results of the conceptual mining study and supported by the preliminary beneficiation testwork completed by the Company at its Korella deposit, the relevant Qualified Person considers it is appropriate to apply a cut-off criterion of 10% P2O5 for reporting at Korella North. **Table 8** presents the Korella North Mineral Resource estimate reported at a cut-off criterion of 10% P2O5. The relevant Qualified Person concludes that the factors assessed and documented in the preceding sections demonstrate that there are reasonable prospects for eventual economic extraction. Furthermore, the relevant Qualified Person is not aware of any non-technical issues such as environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that are likely to prevent the reporting of a Mineral Resource for Korella North.

Table 8 Korella North Mineral Resource as at 11 August 2023 reported using a cut off criterion of 10% P2O5

Classification	Tonnes (M)	P_2O_5 grade (%)	Contained P_2O_5 (t)
Measured	-	-	-
Indicated	0.6	13.1	80,000
Measured plus Indicated	0.6	13.1	80,000
Inferred	2.1	13.0	275,000

Notes: 1. In situ resources reported at a cut-off criterion of 10% P_2O_5.

2. Figures have been rounded to reflect the relative uncertainty in the estimate.