VITRINITE
BRIGHTER COAL

SUPPORTING INFORMATION: VULCAN SOUTH

MINING LEASE APPLICATION

MAY 2022

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Table of Contents

List of Figures

List of Tables

1 INTRODUCTION

Pursuant to section 245 of the *Mineral Resources Act 1989* (Qld), Queensland Coking Coal Pty Ltd (**QCC**) and Queensland Coal Aust. No. 1 (**QCA1**) as a 50%/50% participants in the Vulcan Joint Venture, hereby make an application for a mining lease (ML) for the Vulcan Mine, near Dysart. As the owners of QCC and QCA1, Vitrinite Pty Ltd (or an associated entity) will be the operator of the Vulcan Mine.

The ML will be mined by a combination of conventional open-cut methods and contour mining using highwall mining methods and will include ancillary infrastructure such as overburden dumps as well as the various, necessary supporting surface infrastructure, including haul roads, surface water reticulation and storage, workshops, lay down areas, administration and bathhouse facilities and product storage and handling areas. The contour mining using highwall mining methods will take place in the north of the application and associated infrastructure is included in the application area.

2 HISTORY OF QCC, QCA1 & VITRINITE PTY LTD

Vitrinite Pty Ltd (**Vitrinite**), is a privately owned Australian coal exploration company. It was formed in January 2014 for the purpose of sourcing, exploring, developing and operating coal assets in Queensland for future coal export and domestic use. Vitrinite purchased a majority interest in QCC and QCA1 on the 18th September 2018, acquiring all QCC and QCA1 tenures. QCC and QCA1 are 50/50 participants in the Vulcan Joint Venture.

Vitrinite will be owner of the ML via its subsidiaries QCC and QCA1 and Vitrinite, or an associated entity appointed by the Joint Venture Participants, will be the operator.

QCC and QCA1 are majority owned and operated by Vitrinite. Vitrinite has eleven (11) granted EPC's, one (1) granted and operational mining lease (ML700060 – comprising the Jupiter deposit) and one (1) mining lease in application (ML700064) throughout Queensland's major coal bearing basins. Vitrinite's tenements are situated in close proximity to operating mines, infrastructure and coal exploration areas that have potential to yield further economically viable coal deposits.

To date, Vitrinite has focused its exploration activities over three thermal/coking coal projects, Karin Basin, Wilson Creek and the Vulcan Mine Complex. The Vulcan Mine Complex (EPCs 1233, 1234, 1238, 1732, 1729, & ML 700060) spans over a large area and incorporates 8 discrete coal deposits. The Vulcan South Mining Lease Application covers the Vulcan deposit, which is the second discrete deposit to be developed within the Complex.

3 BACKGROUND OF THE VULCAN SOUTH PROJECT

The Vulcan South ML application area is covered by, Exploration Permit for Coal (EPCs) 1234, 1233, 1732 and Prospecting Permits (PPs) 100714, 100715, 100718 and 100719.

Exploration has defined a high-quality coking coal resource within the Moranbah Coal Measures in the Bowen Basin. The depth of the DL target seam ranges from sub-crop to 55m, across the application area, dipping approximately 2° to the northeast. The deposit contains a JORC Code Resource suitable for surface mining in multiple seams from 0.3m – 3.14m thick at depths from sub-crop – 55m. Vitrinite has defined a JORC (2012) code compliant resource of 19[1]Mt (12Mt *Measured*, 4Mt *Indicated* and 3[1]Mt *Inferred*) for the Vulcan Pits.

The Vulcan deposit has undergone two waves of exploration, through QCC conducting drilling in 2015 and then Vitrinite funding further drilling in 2018-2020.

Exploration during 2015 comprised of 15 open chip boreholes and 3 partially cored boreholes (including 2 redrills) within the ML area for a total of 1311m drilled, these were geophysically logged with coal intervals recorded against the geophysics.

The most recent drilling program commenced in November 2018 and was completed in February 2020, comprising of 52 core boreholes (including 13 redrills), 62 open boreholes (including 13 pilot and 1 abandoned) and 4 fully cored Geotech holes, totalling 118 holes and 8854m drilled on EPC 1234 & 1732. The results of the drilling program have been extremely positive.

The primary target seam in the open cut mining areas is the Dysart Lower (coded DL), of which has a JORC compliant resource of 19Mt. The contour mining using highwall mining is targeting a lower seam, locally referred to as the Matilda Seam, which is located to the west of the Jupiter Pit (ML700060) and makes up part of the total JORC resource for Jupiter of 27mt

A summary of the JORC Resources obtained from the current geological model is listed below in Table 1.

[1] Rounded

Table 1: Vulcan Pit of the Vulcan Complex JORC[2012] Code Resource Estimate as at January 2021.

Modelled Sub Area	Area (Ha)	Thickness (m)	ISRD[1] (/t)	ISM (%)	In situ Basis				Horizon Depth (m)	Tonnes 10x6 (Mt)			Total (Mt)
					Ash (%)	VM (%)	TS (%)	CV (/t)		Measured	Indicated	Inferred	
Jupiter	105	0.95	1.68	4.8	42.2	16.6	1.27	4315	Oxidised	-	-	2	**27**
Jupiter	36	1.24	1.64	4.9	38.3	16.9	0.79	4645	Oxidised	-	1	-	
Jupiter	57	1.32	1.57	5.6	31.9	18.2	0.67	5121	Oxidised	1	-	-	
Jupiter	597	0.97	1.7	4.9	43.4	16.3	1.49	4197	<100	-	-	10	
Jupiter	312	1.05	1.72	5	44.8	15.7	1.49	4063	<100	-	5	-	
Jupiter	189	2.48	1.66	4.7	39.4	16.5	0.93	4565	<100	8	-	-	
Vul_Nth[2]	27	1.47	1.57	5.7	31.8	18	0.62	5141	Oxidised	-	-	1	**3***
Vul_Nth	34	2.09	1.56	6.1	31.6	17.7	0.62	5123	Oxidised	-	1	-	
Vul_Nth	11	2.33	1.56	6.1	31.6	17.7	0.62	5121	Oxidised	0.5*	-	-	
Vul_Nth	23	2.17	1.52	6	31.2	17.8	0.63	5168	<100	1	-	-	
Vulcan	70	0.9	1.59	6.7	34.2	15.6	0.48	4832	Oxidised	-	-	1	**13**
Vulcan	107	1.51	1.57	7.4	32.2	15.8	0.48	4928	Oxidised	-	3	-	
Vulcan	62	2.24	1.57	6.9	32.5	15.8	0.51	4967	Oxidised	2	-	-	
Vulcan	40	1.25	1.63	6	38.2	15.3	0.5	4599	<100	-	1	-	
Vulcan	135	2.6	1.57	6.7	32.4	15.9	0.5	4991	<100	6	-	-	
Vul_Sth	38	0.69	1.55	4.1	39.3	14.4	0.6	4690	Oxidised	-	-	0.5*	**3***
Vul_Sth	24	1.15	1.56	4.5	39.2	14.6	0.5	4589	Oxidised	-	0.5*	-	
Vul_Sth	15	0.9	1.59	3.5	51.5	12.7	0.42	3448	Oxidised	0.5*	-	-	
Vul_Sth	34	0.82	1.51	4.8	28.9	16	0.55	5667	<100	-	-	0.5*	
Vul_Sth	13	1.88	1.54	4.7	37.4	14.8	0.55	4724	<100	-	0.5*	-	
Vul_Sth	27	1.79	1.52	5	32.3	15.6	0.59	5184	<100	1	-	-	
TOTAL			1.69	4.8	42.1	18.7	0.85	4163		20*	12*	15*	**47***

4 OVERVIEW OF THE VULCAN SOUTH PROJECT

The Vulcan South Project is located approximately 36km south of Moranbah in central Queensland. Access to the site is by Saraji Road. **Figure 1** and **Figure 2** show the location of the project.

There are three open cut pits targeted within the project area as well as a highwall mining area in the North of the ML. The open pits are separated by geological conditions, water courses or physical barriers of rail and road infrastructure.

The ML is approximately 3820.89Han area and is sought for open-cut coal mining as well as surface infrastructure associated with the mining operations.

Mining of the open cut pits will be via a conventional open-cut pit, including drill and blast, excavators and trucks, shovels and dozer push methods will be utilised to extract the shallow coal of the DL and Alex seams. The low wall will be defined through line of oxidisation (LOX) drilling to determine the western extent and will follow down dip to a 35m offset from the Aurizon rail corridor. This is not the economic cut-off, rather a boundary limit due to interaction with key stakeholders. Highwall mining will also be conducted in the north of the lease. This will target the outcrop of the Matilda and DL seams.

The mine will be serviced by administration and workshop facilities and surface infrastructure will include an Explosives Magazine and surface handling facilities. Vitrinite will utilise existing access roads to the mine site.

Annual production is planned for 0.8-1.95Mt per annum over 8 years with a mine life inclusive of rehabilitation and environmental monitoring being 15 years. Details of the operations are summarised in **Table 2** below.

Table 2: Mining Operations Vulcan South

Mining Operations	
Mine Life	**15 Years**
Mineable Resources (Mt)	13.5 Mt
Coal Quality	Coking Coal with secondary Thermal
Production Rate (Mtpa)	0.8-1.95
Mining Methods	Open cut Truck/Shovel, Highwall Mining
First Coal	Subsequent to ML award and 2yr construction phase

The open cut mining area is flat to gently undulating with weathered argillaceous and micaceous fine-grained sandstone and siltstones, with localised hills of medium to coarse grained siliceous hard sandstones; all strata of the Moranbah Coal Measures. Coal of the Moranbah Coal Measures progressively outcrop at surface striking north west through the area and dip at approximately 2° to the northeast.

The geology of the area can be divided into intervals separated by geological unconformities associated with regional structural events (refer Figures 3 & 4).

The sequence at Vulcan South contains several coal seams. The cumulative coal thickness of the primary targets in the sequence is currently estimated at an average of 3.85m across 3 seam intervals (Alex, Dysart Lower(s)), the deeper Matilda seam averages 0.75m across the application area.

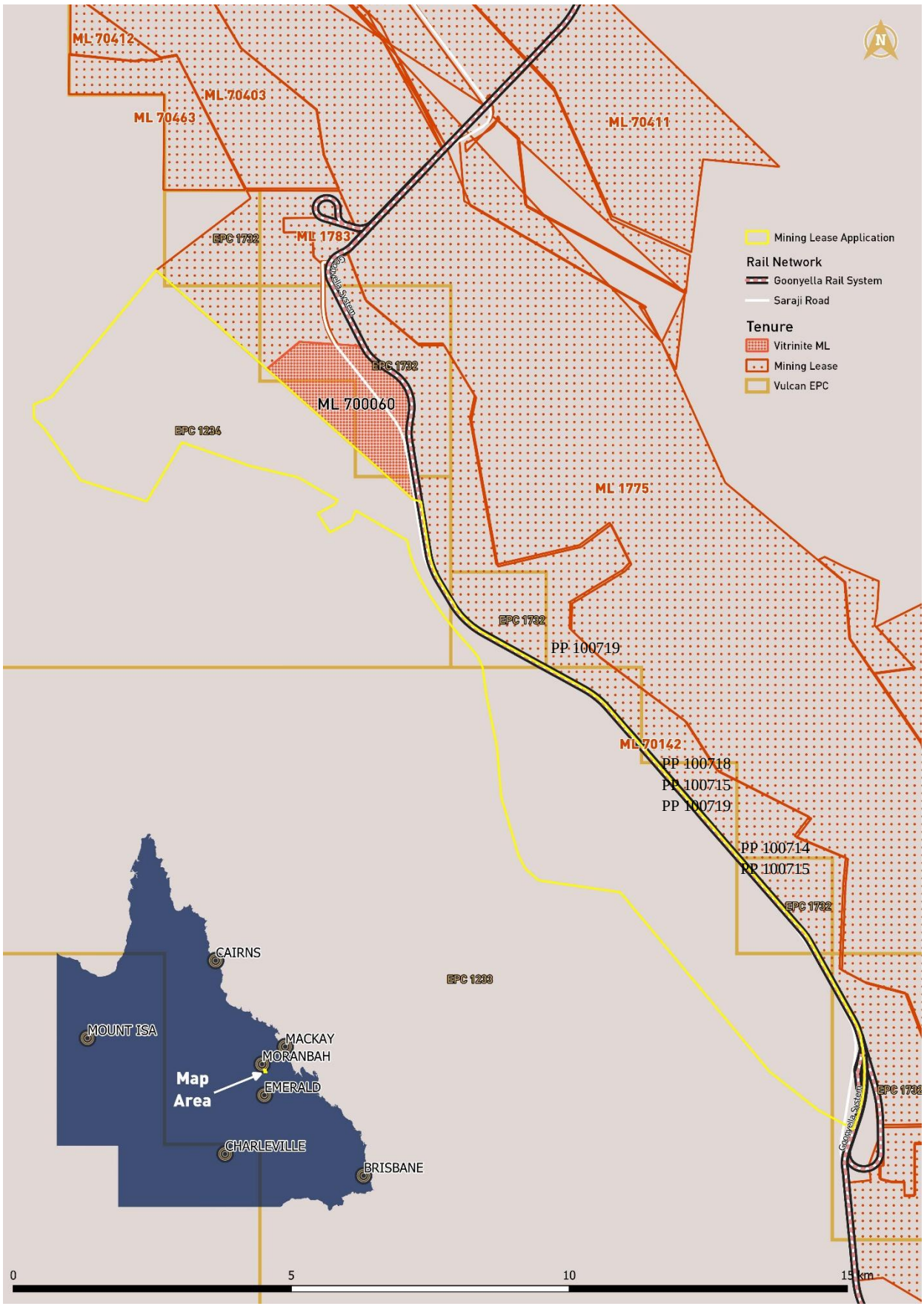


Figure 1: Vulcan South ML Application Location

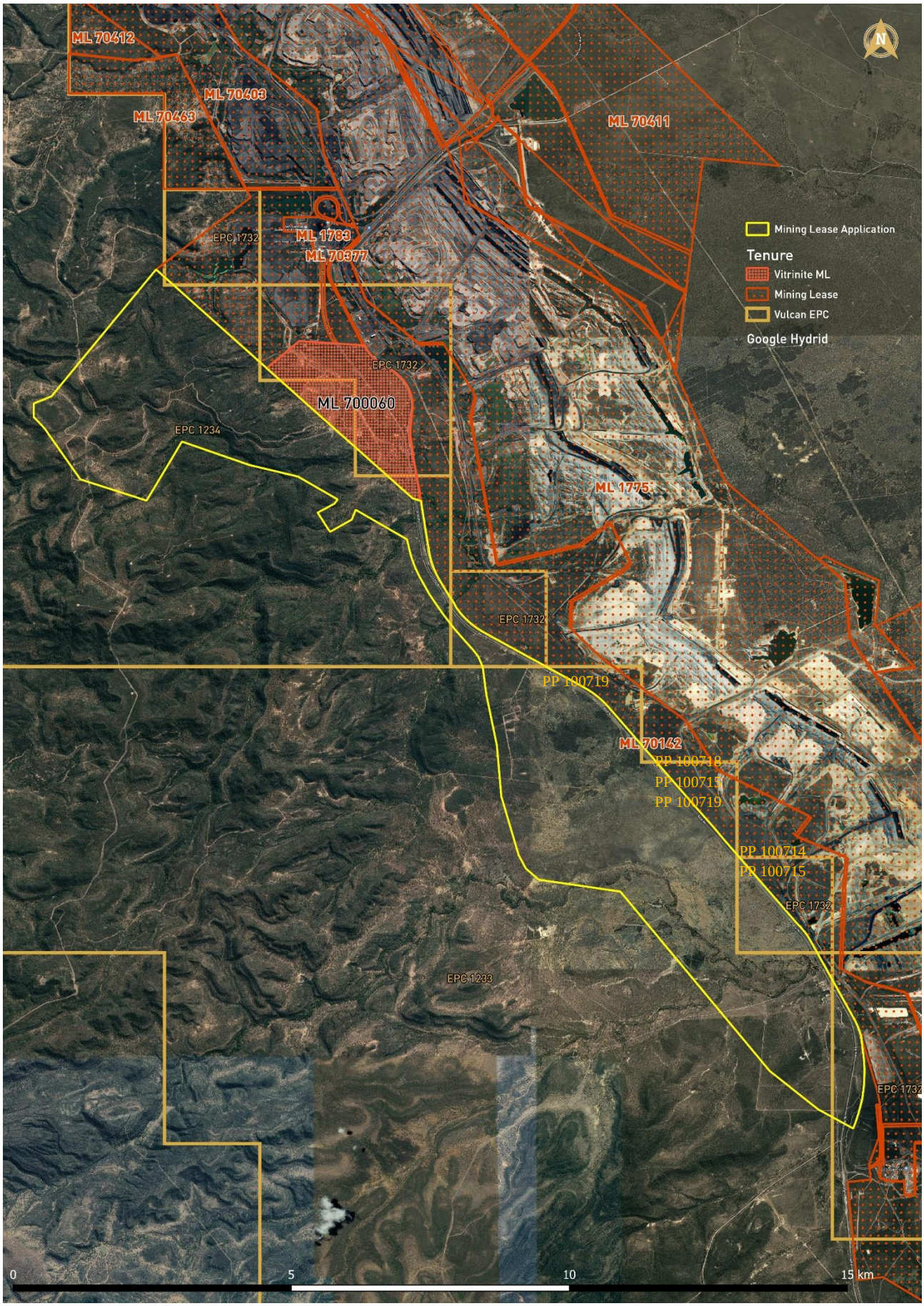


Figure 2: Vulcan Mine South ML Application Boundary

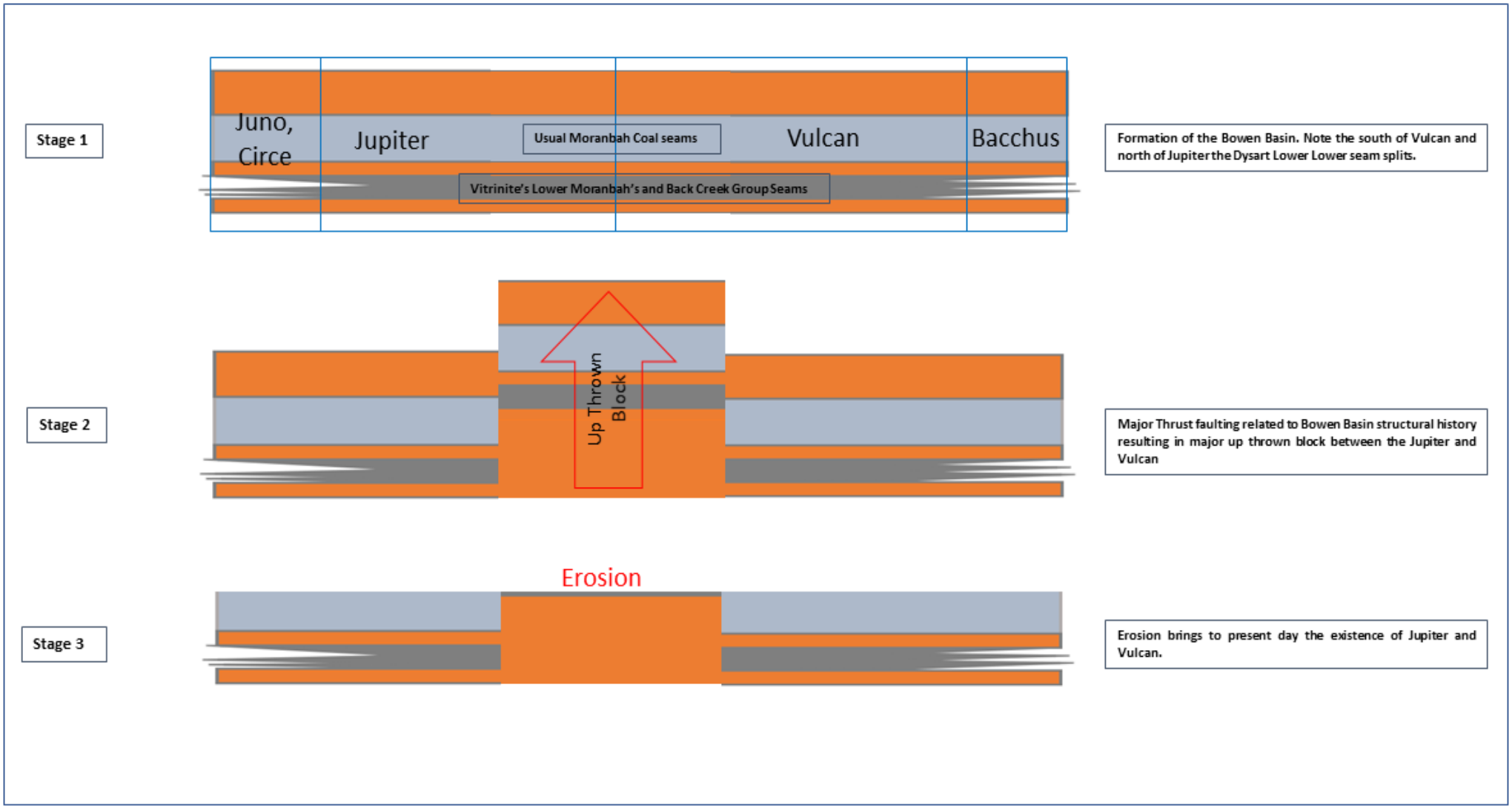


Figure 3: Eastern Vulcan Complex Structure (not to scale)

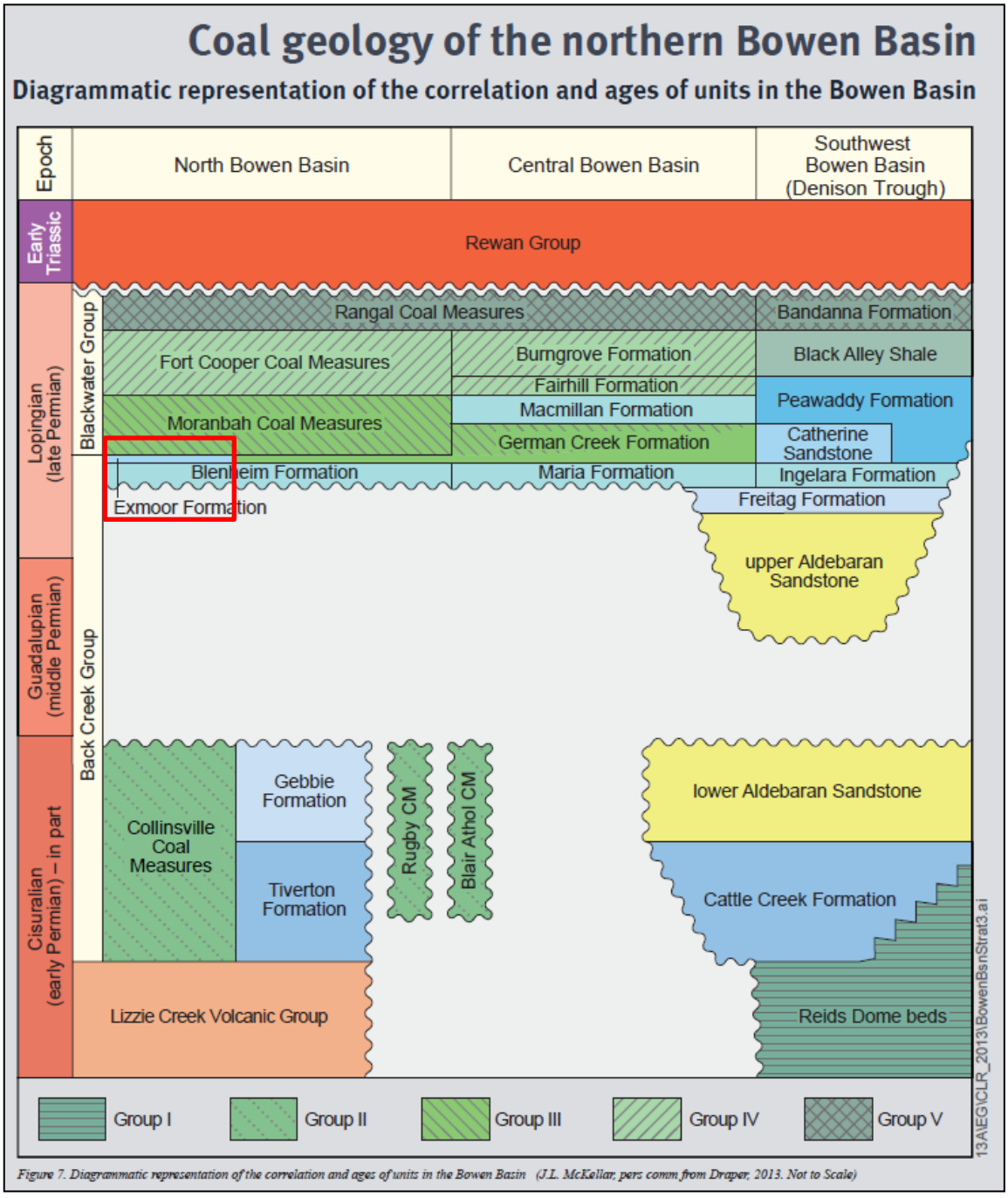


Figure 4: Regional stratigraphy of the Bowen Basin (Department of Natural Resources and Mines, 2013), Vulcan Mine area.

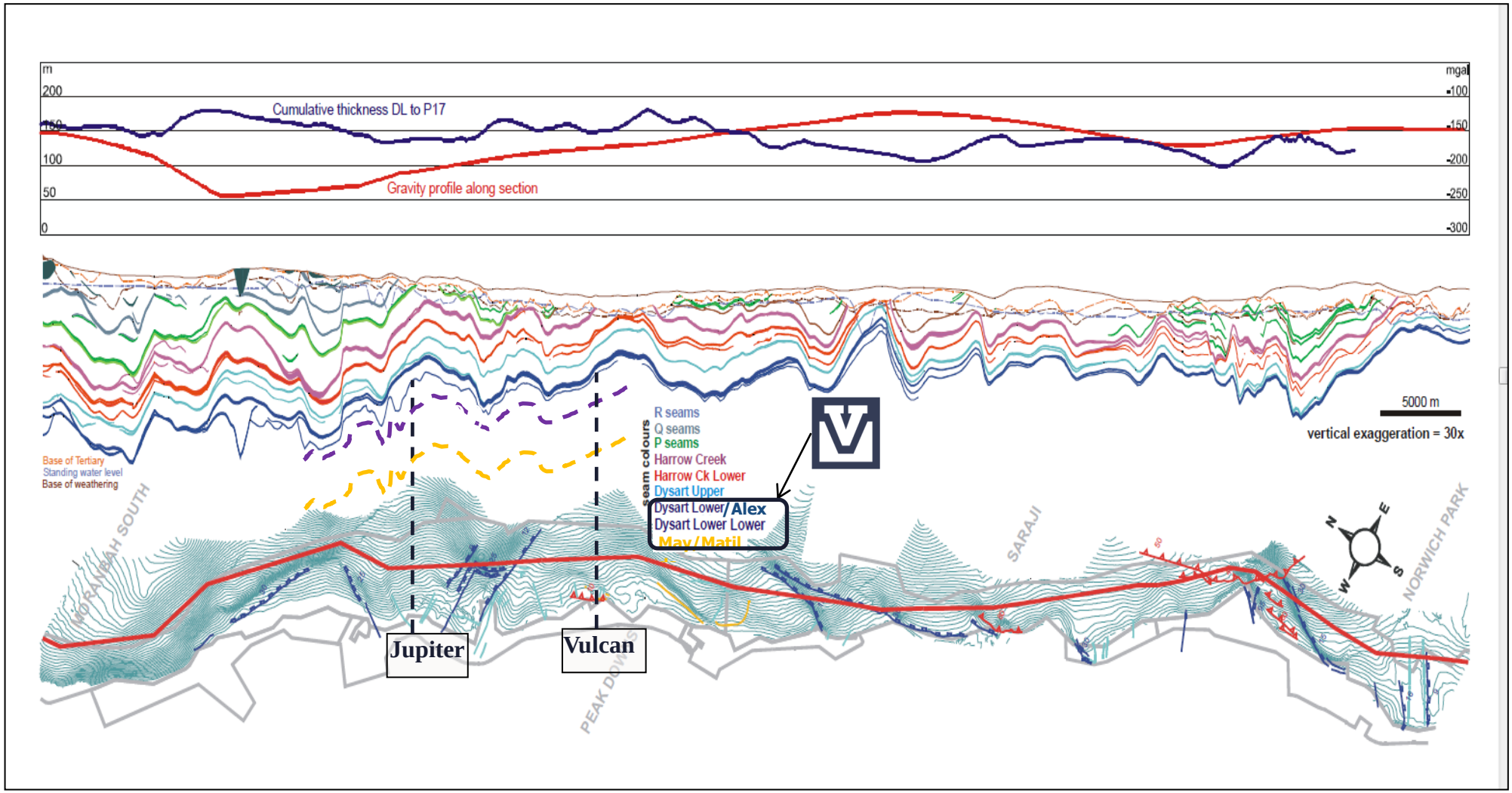


Figure 5: Bowen Basin Supermodel: Structure Contours and Interburden (Modified after Esterle & Silwa, 2002).

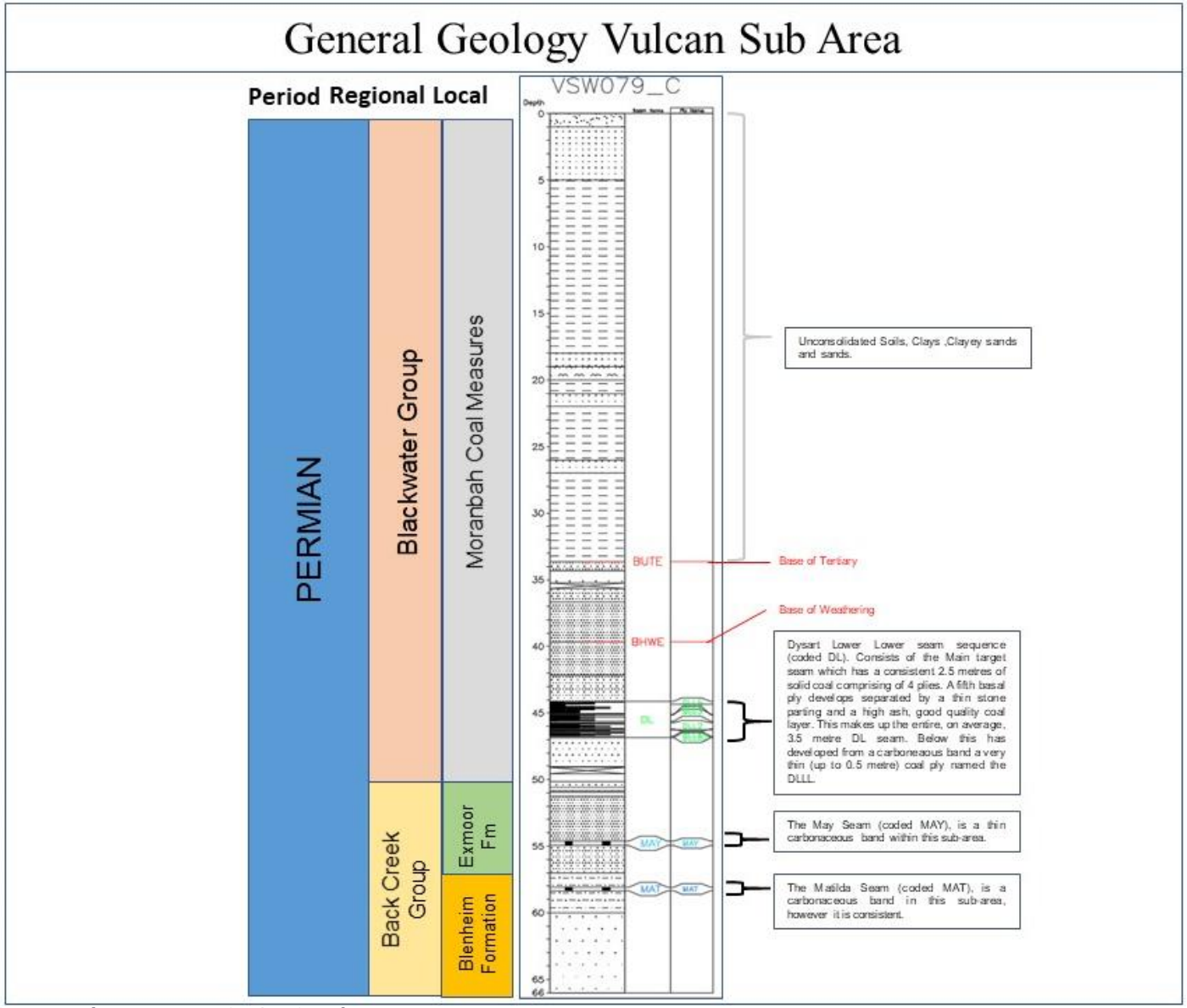


Figure 6: Vulcan Representative Stratigraphy

5 ADDITIONAL INFORMATION

5.1 Prerequisite Tenure

The pre-requisite tenements in the area subject of the MLA are included in **Figure 2**. The tenements for this application are:

- EPC 1234 (granted 22nd December 2009)
- EPC 1732 (granted 14th December 2011)
- EPC 1233 (granted 22nd December 2008)
- PP 100714 (granted 28th April 2022)
- PP 100715 (granted 28th April 2022)
- PP 100718 (granted 28th April 2022)
- PP 100719 (granted 28th April 2022)

5.2 Reasons for the Term Sought

In accordance with s.245(1)(m) of the *Mineral Resources Act 1989* (Qld), Vitrinite provides the following reasons which justify its request for a 15-year term for the ML:

The construction of mining facilities, extraction of coal resources from the Mining Lease area and transport off-site, allow for production contingencies, and rehabilitation controls and final land use. The ML contemplates approximately 13.5 million tonnes of resources at 0.8-1.95 million tonnes ROM per year equating to 8-years of reserve extraction. With the addition of time for construction, production contingency, rehabilitation and environmental monitoring, a 15-year term is required.

5.3 Reasons for the Area and Shape of the Land

In accordance with s.245(1)(k) of the *Mineral Resources Act 1989* (Qld), Vitrinite provides the following reasons which justify why the ML should be granted in respect of the area and shape of the land described in this application:

The surface area and shape is required for Vulcan South, to allow for the establishment and operation of an open-cut coal mine, highwall mining, overburden dumps as well as the various, necessary supporting surface infrastructure, including haul roads, surface water infrastructure, mining industrial area, coal handling and processing plant and train load out facility. The area was also selected for ease of access and manoeuvrability within the property and local topography to minimise required earthworks. The area and shape were also selected in recognition of the seam dips and resource limits, and the mining method employed for the site.

The geology is sufficiently mineralised with coal of suitable quality and accessibility to ensure the designated term viability of the proposed mining activities.

5.4 Specify the Minerals and/or Purpose for which the Mining Lease is Sought

The purpose is to establish and operate an open-cut mine in an area of mineable deposit for the extraction of coal (and for all purposes necessary to effectually carry on that mining). The ML is also required to accommodate infrastructure to support the mining operation contained within this ML

Vitrinite lists the following minerals/purposes for the Vulcan Mine:

- Coal;
- Road/Access/Right of Way;
- Conveyor Belt;
- Clearing vegetation;

- Transport/conveyor/vehicular;
- Environmental Dam;
- Waterway Diversion;
- Electrical Substation Facility;
- Electrical Switching Yard;
- Electrical Transmission Line;
- Stock pile ore/overburden;
- Flood mitigation works;
- Pipeline – water only;
- Processing Plant;
- Railway;
- Transport – vehicular haul road;
- Rehabilitation/Remediation;
- Industrial Facilities;
- Loading Facilities/railway
- Mine Waste/Spoil Dumps;
- Power lines/Aerials;
- Modular CHPP where required;
- Workshop/Machinery/Storage;
- Water Management;
- Water Supply;
- Explosives Magazine.

5.5 Permanent Buildings or Relevant Fixtures

There is currently a residence and associated infrastructure located to the south of the application area. This is assumed to not be a sensitive receptor.

5.6 Reserve Land

The ML contains the following reserve areas (**Figure 7**) as defined by regulation:

- Saraji Road, Isaac Regional Council Road;
- Goonyella Rail Corridor (Coppabella to Gregory Junction).

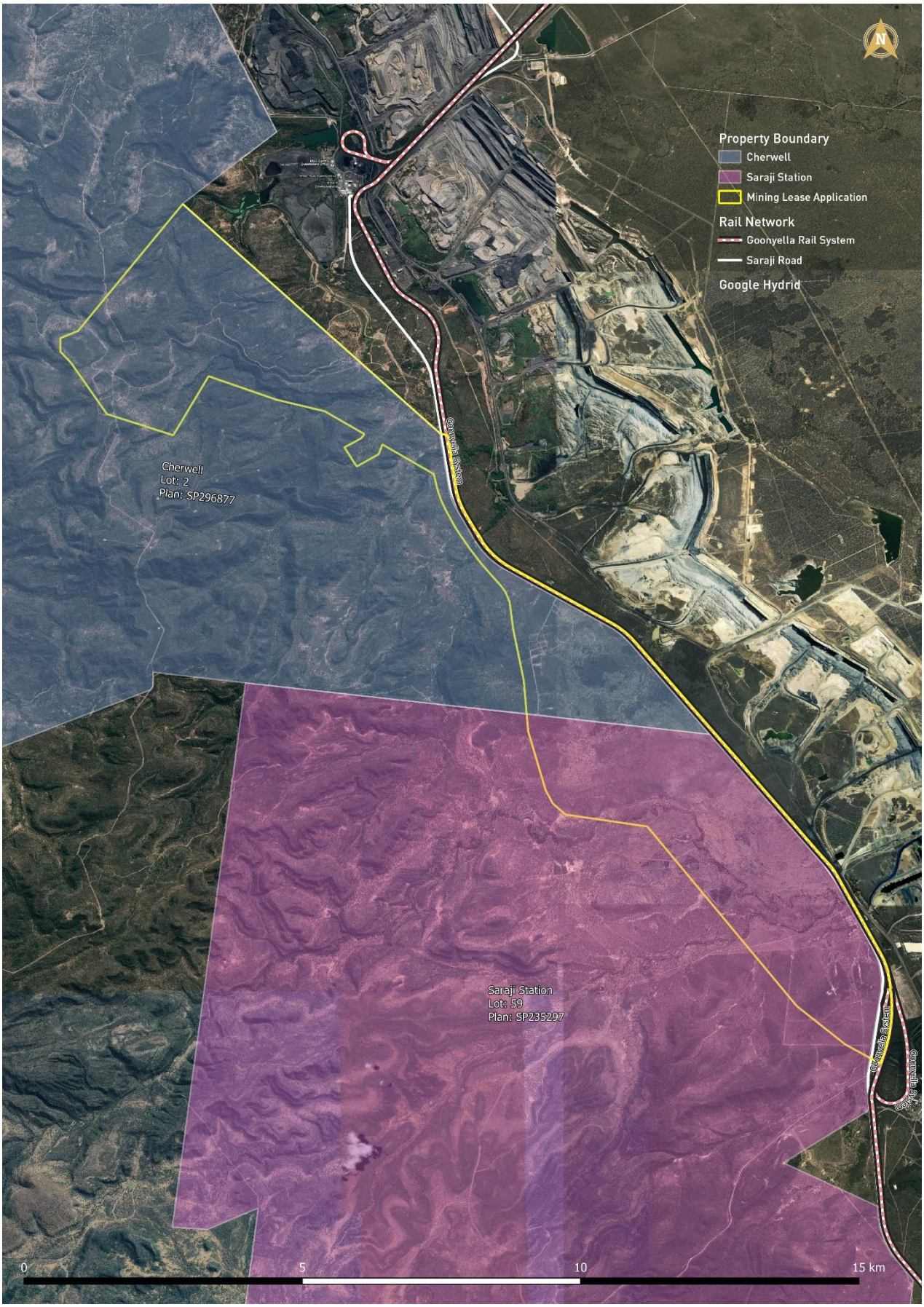


Figure 7: Vulcan South ML Boundary & Reserves

5.7 Background Land Tenure Details

The proposed ML area does not have any reserve land except for Saraji Road and the Norwich Park Branch Rail of the Goonyella Coal Rail System. The background land parcels within the ML area includes two (2) Leasehold parcels, one (1) road & one (1) railway.

Figure 7 shows the background land parcels in all areas of the proposed ML.

Table 3 provides detail of all individual properties affected by the MLA.

Table 3: Land Parcels that are subject of the MLA

Lot on Plan	Land Type	Current Land Usage	Land Tenure Name	Owner
n/a	Road Reserve	Transport	Saraji Road	Isaac Regional Council
26 CNS125 2 CNS109 3 CNS109	Lands Lease	Transport	Norwich Park Branch Railway	Mark Bailey, Minister for Department of Transport and Main Roads; Sub-lease - Aurizon Network Pty Ltd
2 SP296877	Lands Lease	Grazing	Cherwell	Raye Marilyn & Robert Alan O'Sullivan
59 SP235297			Saraji	
72 SP137467	Reserve	Transport	Norwich Park Branch Railway	Mark Bailey, Minister for Department of Transport and Main Roads; Sub-lease - QRN Property Pty Ltd

5.8 Compensation Agreement Details

No compensation agreements have been entered into with the landholders in the above table. Vitrinite has an existing relationship with the Owners of the Lands Lease parcels which constitute the surface area of the ML applied for and intends to negotiate a compensation agreement with the Owners post ML lodgement. The area of each of the reserves identified in Table 3 will be excluded from the surface area of the ML.

5.9 Location Description

The location of the ML, including the datum post and distance and bearings of each corner are described in **Table 4** and shown in **Figure 8.**

Table 4: Distance & Bearings (GDA94 Z55)

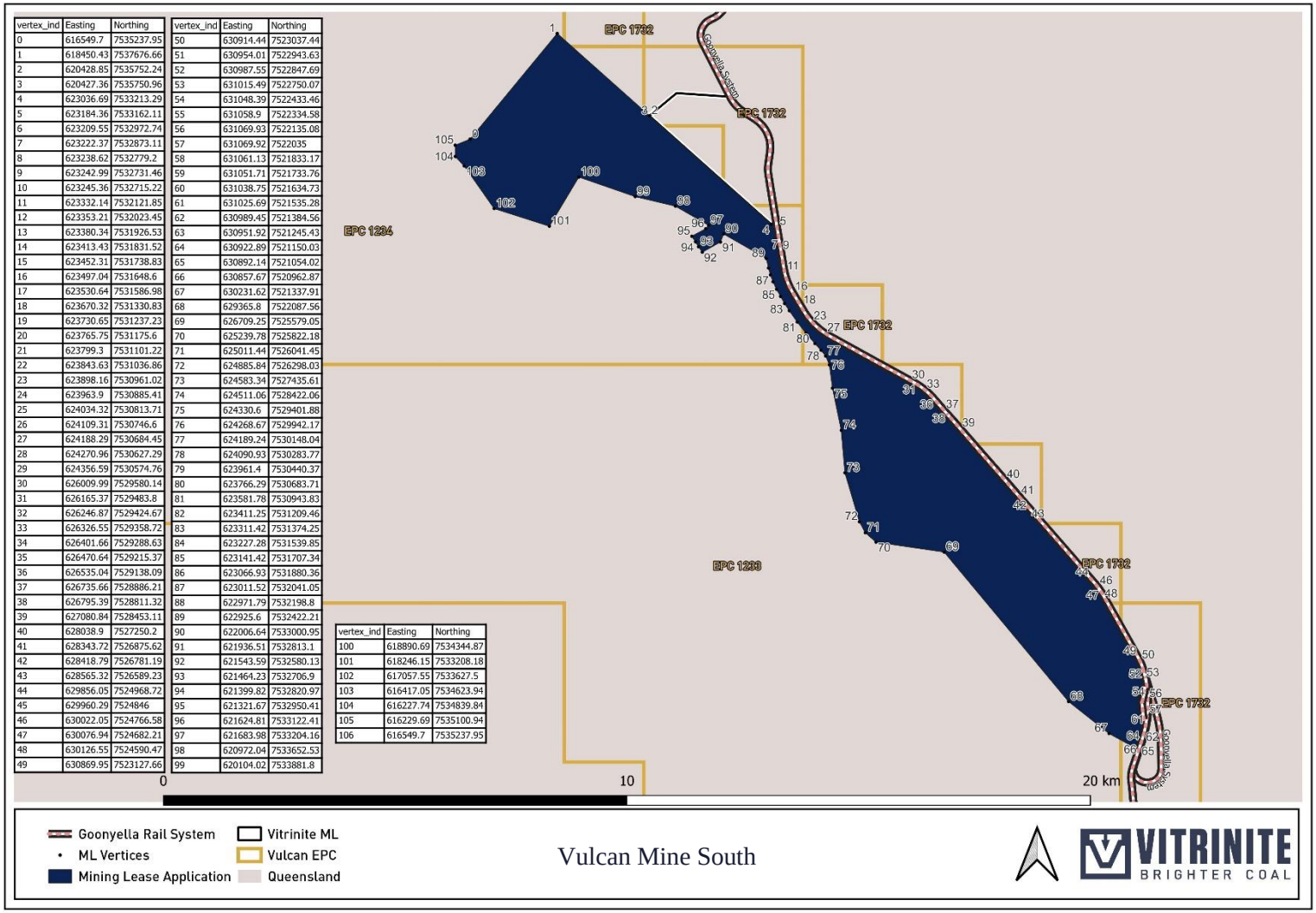
Point ID	Distance (m)	Bearing (degrees N)	Easting	Northing
0	0	52.3780762	616549.7	7535238
1	3091.93762	86.0700004	618450.4	7537676.7
2	5851.92178	181.69066	620428.9	7535752.2
3	5853.89148	181.688232	620427.4	7535751
4	9493.72213	121.658078	623036.7	7533213.3

Point ID	Distance (m)	Bearing (degrees N)	Easting	Northing
5	9650.01042	140.76745	623184.4	7533162.1
6	9841.04978	172.546264	623209.6	7532972.7
7	9941.4988	171.425284	623222.4	7532873.1
8	10036.8091	172.479793	623238.6	7532779.2
9	10084.7485	173.230085	623243	7532731.5
10	10101.1587	171.679594	623245.4	7532715.2
11	10700.845	169.796153	623332.1	7532121.9
12	10801.4747	166.137569	623353.2	7532023.5
13	10902.1137	162.579239	623380.3	7531926.5
14	11002.7235	159.02122	623413.4	7531831.5
15	11103.2424	155.437911	623452.3	7531738.8
16	11203.9421	152.512809	623497	7531648.6
17	11274.134	151.396042	623530.6	7531587
18	11565.89	149.296131	623670.3	7531330.8
19	11677.2498	148.769442	623730.7	7531237.2
20	11748.1737	153.030646	623765.8	7531175.6
21	11829.7688	150.582111	623799.3	7531101.2
22	11907.9186	144.862719	623843.6	7531036.9
23	12001.3279	141.638028	623898.2	7530961
24	12101.5176	137.254252	623963.9	7530885.4
25	12202.0165	133.670974	624034.3	7530813.7
26	12302.6567	130.012965	624109.3	7530746.6
27	12403.1555	126.429323	624188.3	7530684.5
28	12503.6554	123.095983	624271	7530627.3
29	12604.1147	121.279525	624356.6	7530574.8
30	14533.6282	121.4143	626010	7529580.1
31	14716.4494	123.880937	626165.4	7529483.8
32	14817.1385	127.787725	626246.9	7529424.7
33	14920.5731	131.317784	626326.6	7529358.7
34	15023.3042	134.871973	626401.7	7529288.6
35	15123.9335	138.458734	626470.6	7529215.4
36	15224.5225	140.829516	626535	7529138.1
37	15546.5404	141.441601	626735.7	7528886.2

Point ID	Distance (m)	Bearing (degrees N)	Easting	Northing
38	15642.3289	141.435738	626795.4	7528811.3
39	16100.3661	141.457526	627080.8	7528453.1
40	17638.1799	141.163464	628038.9	7527250.2
41	18121.1163	141.187718	628343.7	7526875.6
42	18241.7463	142.079451	628418.8	7526781.2
43	18483.2447	142.054525	628565.3	7526589.2
44	20554.9637	140.558459	629856.1	7524968.7
45	20715.9824	140.891966	629960.3	7524846
46	20816.5913	144.542187	630022.1	7524766.6
47	20917.2418	149.275435	630076.9	7524682.2
48	21021.5308	152.328222	630126.6	7524590.5
49	22662.4038	153.407436	630870	7523127.7
50	22763.0028	155.442143	630914.4	7523037.4
51	22864.8126	158.929463	630954	7522943.6
52	22966.4516	162.379222	630987.6	7522847.7
53	23067.9913	169.048339	631015.5	7522750.1
54	23386.3032	173.999348	631048.4	7522433.5
55	23485.7403	175.383876	631058.9	7522334.6
56	23685.5445	178.420797	631069.9	7522135.1
57	23785.6246	181.24941	631069.9	7522035
58	23987.6448	183.952423	631061.1	7521833.2
59	24087.4995	186.432214	631051.7	7521733.8
60	24187.3734	187.467878	631038.8	7521634.7
61	24287.674	190.502371	631025.7	7521535.3
62	24442.6942	194.308672	630989.5	7521384.6
63	24586.7973	196.00855	630951.9	7521245.4
64	24686.5156	197.340377	630922.9	7521150
65	24787.3298	199.238233	630892.1	7521054
66	24884.7832	250.82109	630857.7	7520962.9
67	25614.5709	305.905639	630231.6	7521337.9
68	26759.835	316.810356	629365.8	7522087.6
69	31147.0608	301.064325	626709.3	7525579.1
70	32636.5092	296.616503	625239.8	7525822.2

Point ID	Distance (m)	Bearing (degrees N)	Easting	Northing
71	32953.0758	323.878517	625011.4	7526041.5
72	33238.7525	339.513747	624885.8	7526298
73	34415.8657	350.458904	624583.3	7527435.6
74	35404.9628	352.687076	624511.1	7528422.1
75	36401.2613	351.512775	624330.6	7529401.9
76	36945.087	346.180664	624268.7	7529942.2
77	37165.7494	331.493027	624189.2	7530148
78	37333.3441	322.244869	624090.9	7530283.8
79	37536.5715	320.841045	623961.4	7530440.4
80	37848.4671	322.963908	623766.3	7530683.7
81	38167.3828	325.975272	623581.8	7530943.8
82	38483.0366	328.045991	623411.3	7531209.5
83	38675.7099	330.929211	623311.4	7531374.3
84	38861.46	332.962184	623227.3	7531539.9
85	39049.6779	334.782394	623141.4	7531707.3
86	39238.0535	338.841608	623066.9	7531880.4
87	39408.0253	343.419253	623011.5	7532041.1
88	39570.7049	347.090275	622971.8	7532198.8
89	39798.8328	325.260042	622925.6	7532422.2
90	40884.8503	251.336874	622006.6	7533001
91	41085.3722	219.903502	621936.5	7532813.1
92	41542.1634	283.645383	621543.6	7532580.1
93	41691.7258	329.251599	621464.2	7532706.9
94	41822.7253	329.713082	621399.8	7532821
95	41973.9303	14.6541962	621321.7	7532950.4
96	42322.4607	48.162909	621624.8	7533122.4
97	42423.3795	349.04895	621684	7533204.2
98	43264.7358	293.499045	620972	7533652.5
99	44162.5257	287.842558	620104	7533881.8
100	45461.2203	250.221972	618890.7	7534344.9
101	46767.9286	249.493492	618246.2	7533208.2
102	48028.3209	308.349789	617057.6	7533627.5
103	49212.8539	323.010761	616417.1	7534623.9

Point ID	Distance (m)	Bearing (degrees N)	Easting	Northing
104	49500.0037	339.591059	616227.7	7534839.8
105	49761.1135	33.6256613	616229.7	7535100.9
106	50109.2213	52.3780762	616549.7	7535238



vertex_ind	Easting	Northing
0	616549.7	7535237.95
1	618450.43	7537676.66
2	620428.85	7535752.24
3	620427.36	7535750.96
4	623036.69	7533213.29
5	623184.36	7533162.11
6	623209.55	7532972.74
7	623222.37	7532873.11
8	623238.62	7532779.2
9	623242.99	7532731.46
10	623245.36	7532715.22
11	623332.14	7532121.85
12	623353.21	7532023.45
13	623380.34	7531926.53
14	623413.43	7531831.52
15	623452.31	7531738.83
16	623497.04	7531648.6
17	623530.64	7531586.98
18	623670.32	7531330.83
19	623730.65	7531237.23
20	623765.75	7531175.6
21	623799.3	7531101.22
22	623843.63	7531036.86
23	623898.16	7530961.02
24	623963.9	7530885.41
25	624034.32	7530813.71
26	624109.31	7530746.6
27	624188.29	7530684.45
28	624270.96	7530627.29
29	624356.59	7530574.76
30	626009.99	7529580.14
31	626165.37	7529483.8
32	626246.87	7529424.67
33	626326.55	7529358.72
34	626401.66	7529288.63
35	626470.64	7529215.37
36	626535.04	7529138.09
37	626735.66	7528886.21
38	626795.39	7528811.32
39	627080.84	7528453.11
40	628038.9	7527250.2
41	628343.72	7526875.62
42	628418.79	7526781.19
43	628565.32	7526589.23
44	629856.05	7524968.72
45	629960.29	7524846
46	630022.05	7524766.58
47	630076.94	7524682.21
48	630126.55	7524590.47
49	630869.95	7523127.66

vertex_ind	Easting	Northing
50	630914.44	7523037.44
51	630954.01	7522943.63
52	630987.55	7522847.69
53	631015.49	7522750.07
54	631048.39	7522433.46
55	631058.9	7522334.58
56	631069.93	7522135.08
57	631069.92	7522035
58	631061.13	7521833.17
59	631051.71	7521733.76
60	631038.75	7521634.73
61	631025.69	7521535.28
62	630989.45	7521384.56
63	630951.92	7521245.43
64	630922.89	7521150.03
65	630892.14	7521054.02
66	630857.67	7520962.87
67	630231.62	7521337.91
68	629365.8	7522087.56
69	626709.25	7525579.05
70	625239.78	7525822.18
71	625011.44	7526041.45
72	624885.84	7526298.03
73	624583.34	7527435.61
74	624511.06	7528422.06
75	624330.6	7529401.88
76	624268.67	7529942.17
77	624189.24	7530148.04
78	624090.93	7530283.77
79	623961.4	7530440.37
80	623766.29	7530683.71
81	623581.78	7530943.83
82	623411.25	7531209.46
83	623311.42	7531374.25
84	623227.28	7531539.85
85	623141.42	7531707.34
86	623066.93	7531880.36
87	623011.52	7532041.05
88	622971.79	7532198.8
89	622925.6	7532422.21
90	622006.64	7533000.95
91	621936.51	7532813.1
92	621543.59	7532580.13
93	621464.23	7532706.9
94	621399.82	7532820.97
95	621321.67	7532950.41
96	621624.81	7533122.41
97	621683.98	7533204.16
98	620972.04	7533652.53
99	620104.02	7533881.8

vertex_ind	Easting	Northing
100	618890.69	7534344.87
101	618246.15	7533208.18
102	617057.55	7533627.5
103	616417.05	7534623.94
104	616227.74	7534839.84
105	616229.69	7535100.94
106	616549.7	7535237.95

Figure 8: Corner bearings of the Vulcan South ML Application

5.10 Surface Area Connection and Description

The road reserve and the railway reserve, being Lot 72 on SP137467 are excluded from the ML surface area.

The remaining surface area of the ML application allows for the establishment and operation of the open-cut, high wall mining working area, site access, explosives storage and road access, out of pit dumps, water storage dams, CHPP, rail loop, construction and operation of the various & necessary surface infrastructure detailed in this application.

5.11 Access

Access is via the Peak Downs Saraji Road (see **Figure 7**).

5.12 Strategic Cropping Land

There is no Strategic Cropping land trigger areas within the Mining Lease Application Area.

6 STATEMENTS REQUIRED BY SECTION 245(1)(N) OF THE MINERAL RESOURCES ACT 1989

6.1 Section 245(1)(n)(i)

An Initial Development Plan is attached to this application.

6.2 Section 245 (1)(n)(ii) Statement of Proposals for Infrastructure Requirements Necessary to Enable the Mining Program to Proceed, or Additional Activities to be Carried on to Work Out the Infrastructure Requirements

Infrastructure provision required to allow the mining program to proceed will include the following:

The conceptual design for the Mine Infrastructure Area (MIA) (**Figure 9**) has been developed to support the initial open pit construction and full-scale operations with an annual production output of approximately 0.8-1.95 million tonnes and a workforce of up to 190 personnel over the mine life of operation.

There are no fatal flaws associated with establishing this infrastructure at the Vulcan Mine site and the proposed MIA location realises a number of benefits with respect to existing local features, such as:

- It is away from existing drainage channels and water management strategy incorporates clean water diversions around the proposed disturbance areas to reduce interaction with water courses;
- The local topography where the mine is situated is relatively flat and the centre of the pit and in-pit dumps have been designed to match this topography for final landform;
- It is located outside the industrial buffer zone identified by the relevant planning scheme in terms of construction proximity to populated areas; and
- Connection to utilities and other offsite services is unobstructed due to proximity (power / rail / road).

The MIA concept designs incorporate the following key principals:

- Fit for purpose and cost-effective equipment and infrastructure;
- Modular design or key items with offsite construction to minimise on site labour requirements; and
- Ease of equipment disposal and site rehabilitation upon conclusion of the project life cycle.

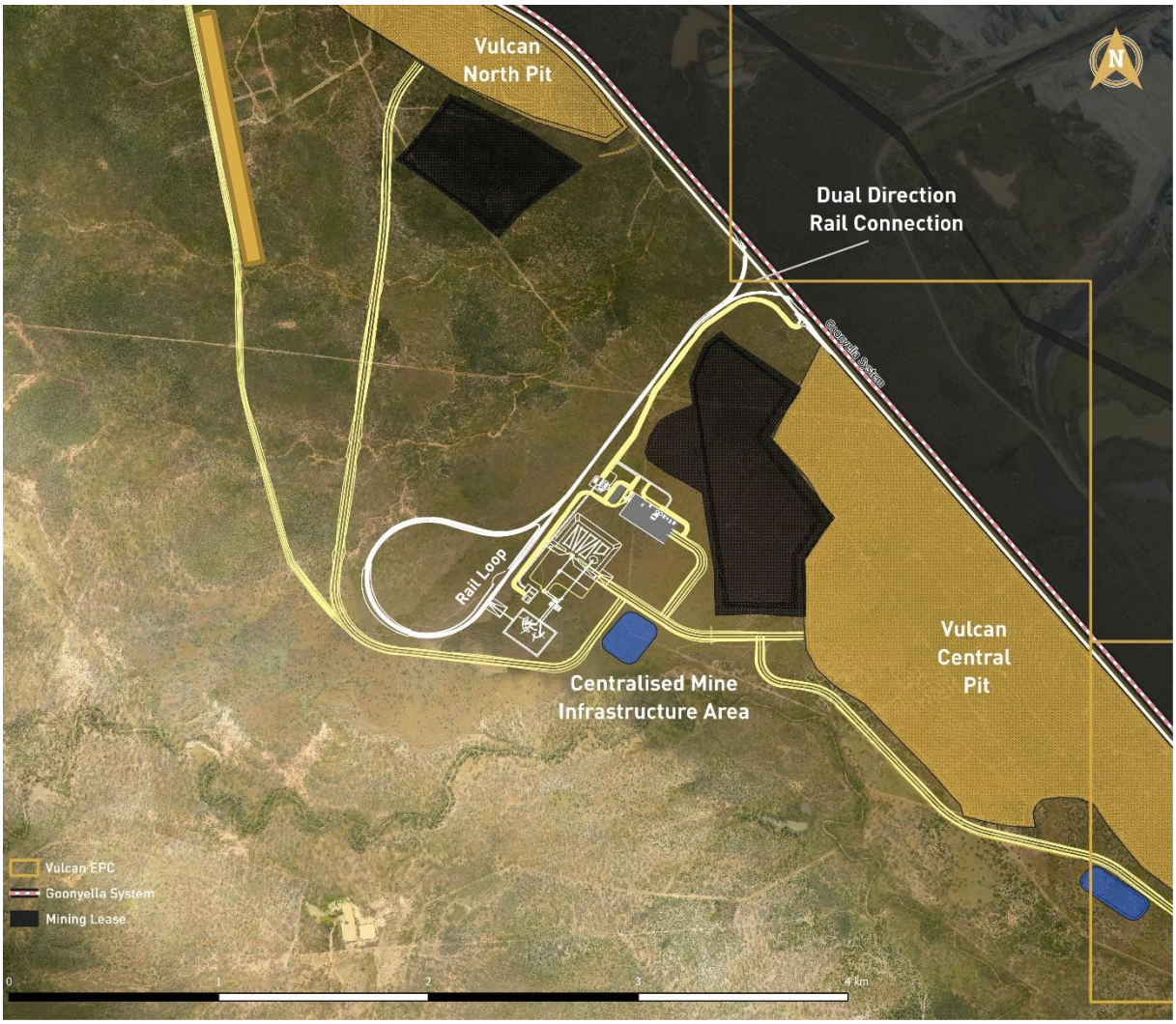


Figure 9: Mine Infrastructure Layout

6.3 Buildings and Major Structures

Rail loop, train load out (TLO) facility and coal handling preparation plant (CHPP) (detailed in the attached Initial Development Plan)

6.4 Electricity

Power requirements for site will be initially delivered through diesel generators during construction. A dedicated stub line off the Ergon main has been sourced and will be constructed as part of the initial side development. This will supply power to the MIA, CHPP and train load out facility for the duration of the project.

6.5 Water

Water assessments have been conducted based on maximum site usage scenarios. Water usage will primarily be limited process water for the wash plant and for dust suppression of haul roads. Supplementary water will be used for washdown servicing and firefighting capability. Water will be initially sourced from external mine affected water supply as well as purchased allocation from Sunwater, which will be delivered to site via private agreement with infrastructure owners (Bingegang pipeline) however other options such as sourcing allocation from existing dams have also been investigated. Once under operation the requirement for external water supply will be nullified by the capture of mine affected water and runoff. For dust suppression, modelling indicated an annual usage of 460 ML/year in the maximum (driest cast), however, average usage is expected to be ~200 ML/year.

- Mine affected water – main storage reservoir with capacity of 140ML for, surface dust suppression, surface washdown facilities and fire-fighting requirements. Includes raw water electric pumps capable of delivering the instantaneous fire water duty requirements;
- Fire Fighting System – Water cart and emergency rescue trailer will be utilised for firefighting. Water will be sourced from the raw water dam. Diesel generator pump will be utilised at the water fill point. For administration building, a generator pump will;
- Potable Water – the potable water will be supplied from external third party into storage tanks for the workforce;
- Pit Dewatering – the total open-pit dewatering capacity is rated at 160 l/s and is based on two highwall pump delivering water via a pipeline to the main mine affected dam;
- Sewage Treatment – septic tanks will be used for storage with third party extraction to local sewage treatment plant.

6.6 Diesel Fuel Storage and Dispensing

The bulk diesel storage facility has been designed to ensure compliance with the safety requirements of the fuel providers.

6.7 Section 245(1)(n)(iii) Statement of the estimated human, technical and financial resources proposed to be committed to authorised activities for the proposed mining lease during the term of the lease, if granted

A direct workforce of 190 is anticipated over the mine life of 15 years. In addition to the direct workforce, significant indirect employment of specialist service providers, contract labour, support personnel, suppliers and local business will be required.

The Moranbah and Dysart Township has a long history of supporting local mining operations and is well positioned to provide a hub for the required workforce. It is home to many experienced coal miners, currently or formally supporting the adjacent operating coal mines and coal mines under construction. The Vulcan South development will initially access the same pool of trained and experienced mineworkers. Vitrinite are committed to a residential workforce that are established in the nearby townships of Moranbah and Dysart and surrounds. Additional labour resources, both experienced and inexperienced, will be sourced and relocated to the local region and extensively trained and upskilled. The project will not only deliver significant employment opportunities for the region, it will provide a substantial boost to the local economy.

The owners of the Vulcan South have extensive experience in the development and operation of coal mining operations. This includes a large workforce of highly skilled mining professionals with a wealth of experience in the management and implementation of all technical, operational, and engineering aspect of coal mining. These resources will be utilised and expanded upon during the development and operation of the Vulcan South.

6.8 Section 245(1)(o) Statement acceptable to the chief executive and separate from the statement mentioned in paragraph (n), detailing the applicants financial and technical resources

A statement of Vitrinite's financial and technical resources is attached to this application.

7 COPYRIGHT STATEMENT

Acknowledgement and Warranty

1. Subject to 2, the tenure holder acknowledges that this Report, including the material, information and data incorporated in it, has been made under the direction or control of the State of Queensland (the State) within the meaning of section 176 of the *Copyright Act 1968 (Cwth).*

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   Reproduce;

   Publish; and

   Communicate in electronic form to the public, such material, including any data and information included in the material.

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