
20th June 2014

Mr John Dunster
Chief Geologist

Rum Jungle Resources Ltd
20/90 Frances Bay Drive, Stuart Park NT 0820

By email

Dear John,

RE: Exploration Target for the Patanella phosphate deposit

1. Introduction and Summary

As requested by Rum Jungle Resources Ltd (RUM), MPR has estimated an Exploration Target for the Patanella phosphate deposit on the basis of drilling data supplied by RUM. This letter summarises key aspects of the MPR review.

The compiled database comprises 6 percussion holes drilled by CRA in 1994 and 81 Reverse Circulation (RC) holes drilled by Arafura Resources and NuPower Resources (subsequently Central Australian Phosphate) in 2006 and 2009 respectively for a combined 3,524 metres of drilling. The supplied sampling data includes a number of apparent inconsistencies which required modification for compilation of the working database used for the current study. These inconsistencies reduce confidence in the general reliability of the data.

Drill hole spacing varies from around 100 by 100 metres in central portions of the study area to isolated holes at around 1.0 kilometre spacing in the southern portions. Most assayed samples are around five metres in length, and combined with the generally broad drill hole spacing these long sample lengths poorly define the potential phosphate mineralisation.

The modelling approach adopted for Patanella is broadly consistent with MPR's recent Ammaroo and Ammaroo South modelling, with differences reflecting the variability in mineralisation and drill hole spacing.

The mineralised domain used for the current study captures one-metre down-hole composites grading greater than 5% P₂O₅ and is extrapolated a maximum of around 500 metres from drill holes. It trends northeast over approximately 6.2 kilometres with an average width of around 1 kilometre. Interpreted thicknesses range from approximately 3 to 42 metres and average around 8 metres. The mineralisation rarely outcrops and is overlain by an average of around 23 metres of un-mineralised material.

For the block model constructed for the current review, grades were estimated by Ordinary Kriging of one metre down-hole composites within the mineralised domain. Prior to resource estimation, the mineralised domain composites were unfolded to remove the gentle undulations from the mineralised domains. The Kriged estimates were re-folded to their correct positions in the final block model.

No density information is available for Patanella. The current estimates include a density of 1.7 t/bcm consistent with the value adopted for the Ammaroo on the basis of immersion density measurements of diamond core. Applicability of this value to Patanella is uncertain.

The broad drill spacing and uncertain representivity of the available sampling prevents estimation of Mineral Resources for Patanella.

Broadly spaced drilling at Patanella suggests the presence of mineralisation with an Exploration Target of around 50 to 100 Mt at 10% to 17% P₂O₅ at a cut off grade of 5% P₂O₅, and 20 to 50 Mt at 15% to 20% P₂O₅ at a cut off of 10% P₂O₅. These estimates are based on broad spaced drilling and are conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain that future exploration will result in determination of a Mineral Resource.

2. Sampling information

2.1. Database compilation

Sampling information used for the current review was supplied by RUM in June 2014 in a Microsoft Access database (LucyCreek_Export_20131209.mdb) containing collar, survey, assay and geological logging for drilling in the Patanella area.

The drilling includes 1994 CRA percussion drilling and RC drilling by Arafura Resources and NuPower Resources (subsequently Central Australian Phosphate) from 2006 and 2009 respectively. No details of CRA's percussion drilling were supplied for the current review and it is uncertain whether these holes were drilled by open hole or reverse circulation methods. From the available information it appears likely that they are open hole (RAB), and of uncertain reliability.

Consistent with coordinates in supplied data files, the current study is based on MGA94, Zone 53 coordinates. All collar coordinates in the supplied data are specified as being surveyed by differential GPS.

Table 1 summarises the compiled drilling database by sampling phase. Figure 1 shows drill hole collars relative to the mineralised domain used for the current study and the boundary of RUM's Exploration Licence (EL 24716).

Several Arafura RC holes which outside EL 24716 show no significant phosphate grades and the mineralisation included in the current review lies entirely within EL 24716.

Drill hole spacing varies from a semi-regular grid of around 100 by 100 metres in central portions of the interpreted mineralisation to isolated holes at around 1 kilometre spacing in the southern part of the study area.

No down-hole surveys are available for the Patanella drilling, with all holes having only assumed or planned orientations. Due to the relatively wide drill hole spacing, comparatively shallow depths and flat mineralisation the lack of down-hole surveys is of no concern for the current study.

The majority of the Patanella holes are specified as being vertical, with just four holes (LCRC067, 068,074 and 089) drilled at inclinations of 60°. Azimuths supplied for the inclined holes included only magnetic bearings. For compiling the study database, MPR applied a declination of 2.9° for conversion of magnetic azimuths to GDA grid on the basis of publicly available mapping data.

Although accuracy of this value is uncertain it does not significantly affect confidence in the current estimates.

RUM report that most of the Patanella drilling was intended primarily intended for copper and uranium exploration rather than definition of phosphate mineralisation.

The supplied assay information is dominated by five metre intervals which appear to represent field composites of one metre down-hole samples. For some of these five metre composites, the supplied data includes subsequent assays of one metre intervals. Usefulness of these one metre samples for the current is limited due to the following reasons:

- In many cases the one metre samples were assayed only for uranium and do not have assays for P₂O₅ and associated secondary attributes.
- In many cases the one metre sampling does not provide full coverage of the initial five metre interval.

The supplied assay table includes a “superseded” field apparently intended for filtering of superseded composites. This field includes many inconsistencies which prevent its use in consistently compiling a working database. The approach adopted for the current review is outline below.

- Assay results were separated into two sets containing phosphate associated assaying and uranium assaying respectively.
- For each set, composites that were re-assayed or partially over shorter intervals were reviewed on a case by case basis, and only re-assays with complete coverage of the initial interval for the relevant assays were accepted.
- Few one metre samples are available for the phosphate dataset, and in many cases the one metre uranium assays provide only partial coverage of initial five metre intervals. The resulting datasets are therefore dominated by five metre samples.
- One-metre composites were calculated from both assay datasets, and the results merged into a single composite file.

MPR’s compilation of the supplied data identified a number of inconsistencies which were modified on a case by case basis to produce a working database. These inconsistencies include five metre composites for several holes (LRC029, 032 and 039) which appear to have been entered as one metre samples spaced at five metre down-hole intervals.

Data supplied for the current review did not include any information to demonstrate the reliability of sampling and assaying.

The generally long sample intervals, and apparent database inconsistencies suggest that the currently available drilling information is unsuitable for reliable Mineral Resource estimation.

Table 1: Sampling dataset

Group	Year	Number of holes	Metres
CRA Percussion	1994	6	530
Arafura RC	2006	52	1,615
NuPower RC	2009	29	1,379
Total		87	3,524

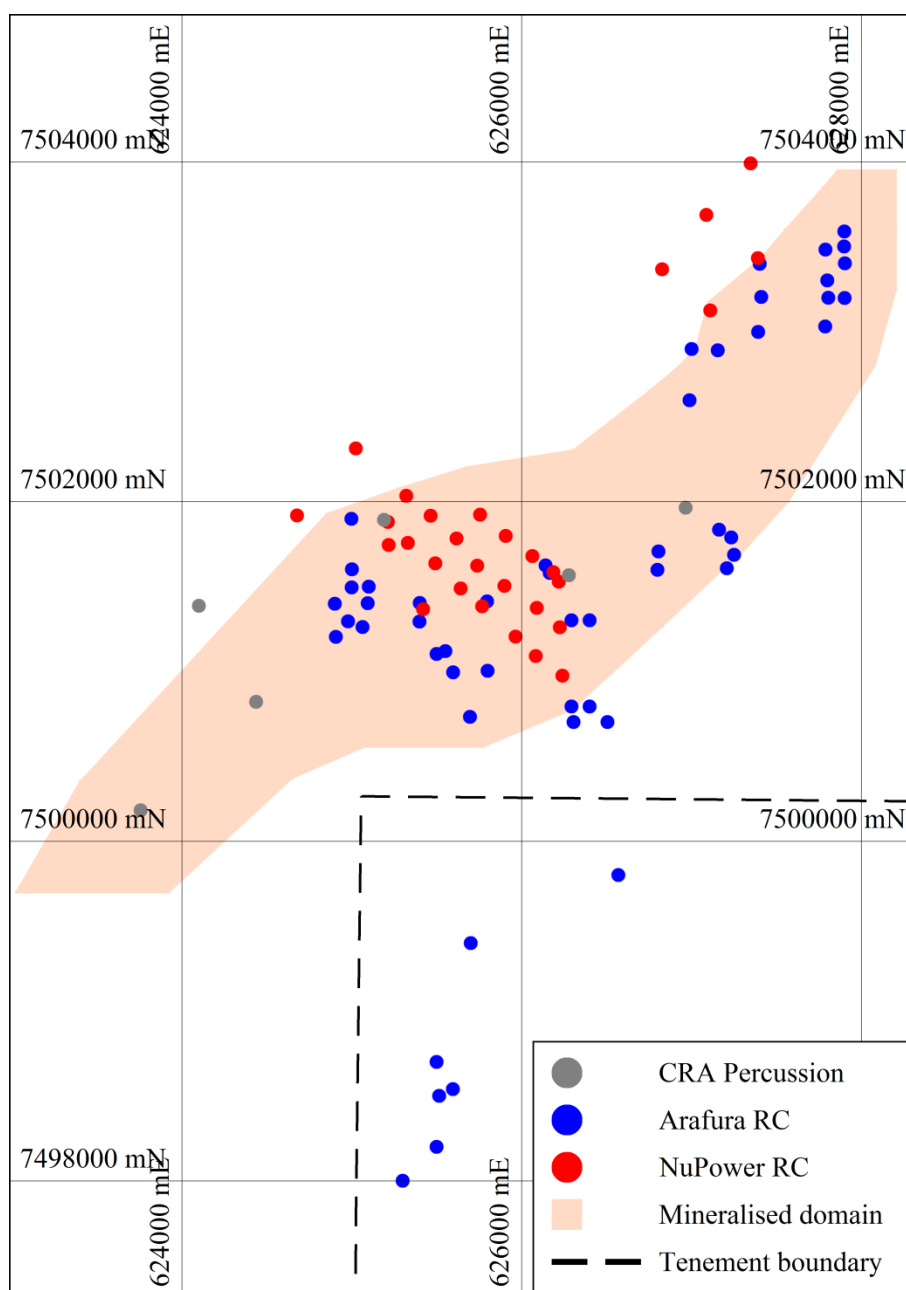


Figure 1: Mineralised domains, drill collars and tenement boundary

2.2. Sample lengths

Down-hole lengths of assayed samples range from one to six metres. Compiled sample intervals with P_2O_5 assays are dominated by five metre samples which represent around 85% of assayed drilling including 53% of samples within the mineralised domain (Figure 2).

The commonly long sample intervals create significant difficulties in reliably modelling the relatively thin phosphate mineralisation. It appears likely that some thin higher grade zones may not be reflected by the long samples.

The Ordinary Kriged estimates constructed for the current review are based on one-metre down-hole composited grades. The inconsistency between composite lengths and longer initial sample intervals has caused some inconsistencies in the Kriged estimates. However they are not material at the current level of project evaluation.

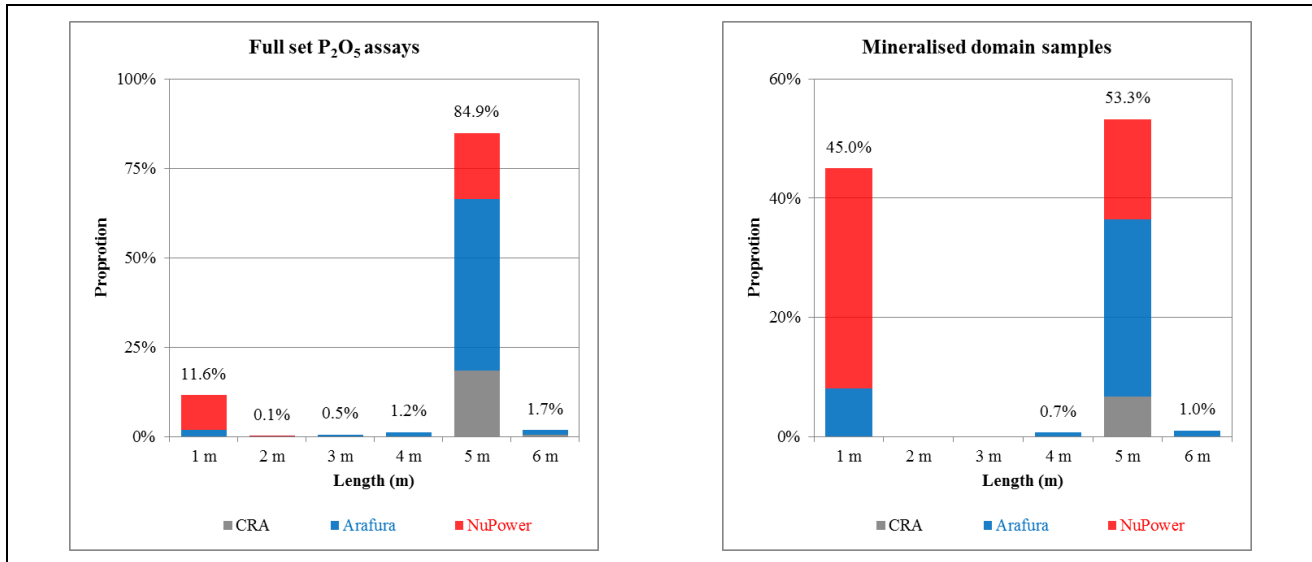


Figure 2: Histograms sample lengths for phosphate assays

3. Block modelling

3.1. Mineralised domains

The mineralised domain used for the current study was interpreted by MPR from one metre down-hole composited assay grades and captures composites grading above nominally 5% P₂O₅.

Strings representing the upper and lower contacts of interpreted mineralisation greater than 5% P₂O₅ were digitised on cross sections aligned with the variable drill hole traverses and triangulated to form open surfaces representing the top and base of mineralisation. These surfaces were linked to form a closed solid which was trimmed within plan-view polygon representing the interpreted limits of mineralisation.

The mineralised domain is extrapolated a maximum of around 500 metres from drill holes. It trends northeast over approximately 6.2 kilometres with an average width of around 1 kilometre. Interpreted thicknesses range from approximately 3 to 42 metres and average around 8 metres.

Mineralisation is only rarely interpreted to outcrop and is overlain by an average of around 23 metres of un-mineralised material with a maximum depth to mineralisation of approximately 68 metres.

Consistent with RUM's interpretation the domain is extrapolated underneath some drill holes that appear to have been drilled insufficiently deep to intersect mineralisation. Additional deeper drilling is required to confirm this interpretation.

Drilling within the mineralised domain area includes an inclined CRA percussion hole around 25 metres from a NuPower resources RC hole (PD94JR04 and LCRC074). Although both of these holes show substantial phosphate intersections, the down-hole positions of the mineralised intercepts significantly differ creating difficulties in domain interpretation. Hole PD94JR04 was excluded from the current review. This does not significantly affect the current estimates.

Figure 3 shows contour plots of the thickness of the mineralised domain and overburden based on 50 by 50 metre discretisation points. Drill holes shown as green dots within the domain boundary in these plots with no mineralised intersections around 625,000mE, 7,501,300 mN do not reach the interpreted mineralisation.

3.2. Composite dataset

The current estimates are based on one metre down-hole composited grades within the mineralised domain. Figure 2 shows a histogram of sample lengths for the resource composites and Table 2 summarises composites by sample length and drilling phase. This table and figure demonstrate that the dataset is dominated by generally five metre samples from Arafura and NuPower RC drilling.

For consistency with industry practise for reporting of resources estimates, composite elemental uranium grades were converted to U_3O_8 using a multiplication factor of 1.1792.

Table 3 shows summary statistics for the resource composites. The smaller number of composites shown for some attributes, most notably MnO and U_3O_8 reflect incomplete assaying.

The maximum P_2O_5 and CaO grades of 38.5% and 53.5% are close to the grades of fluorapatite for these attributes of 42.2 and 55.6% respectively, indicating that high grade intervals comprise greater than approximately 90% fluorapatite. CaO grades are generally strongly correlated with P_2O_5 values reflecting the approximately 0.76:1 ratio of P_2O_5 and CaO in fluorapatite (Figure 4).

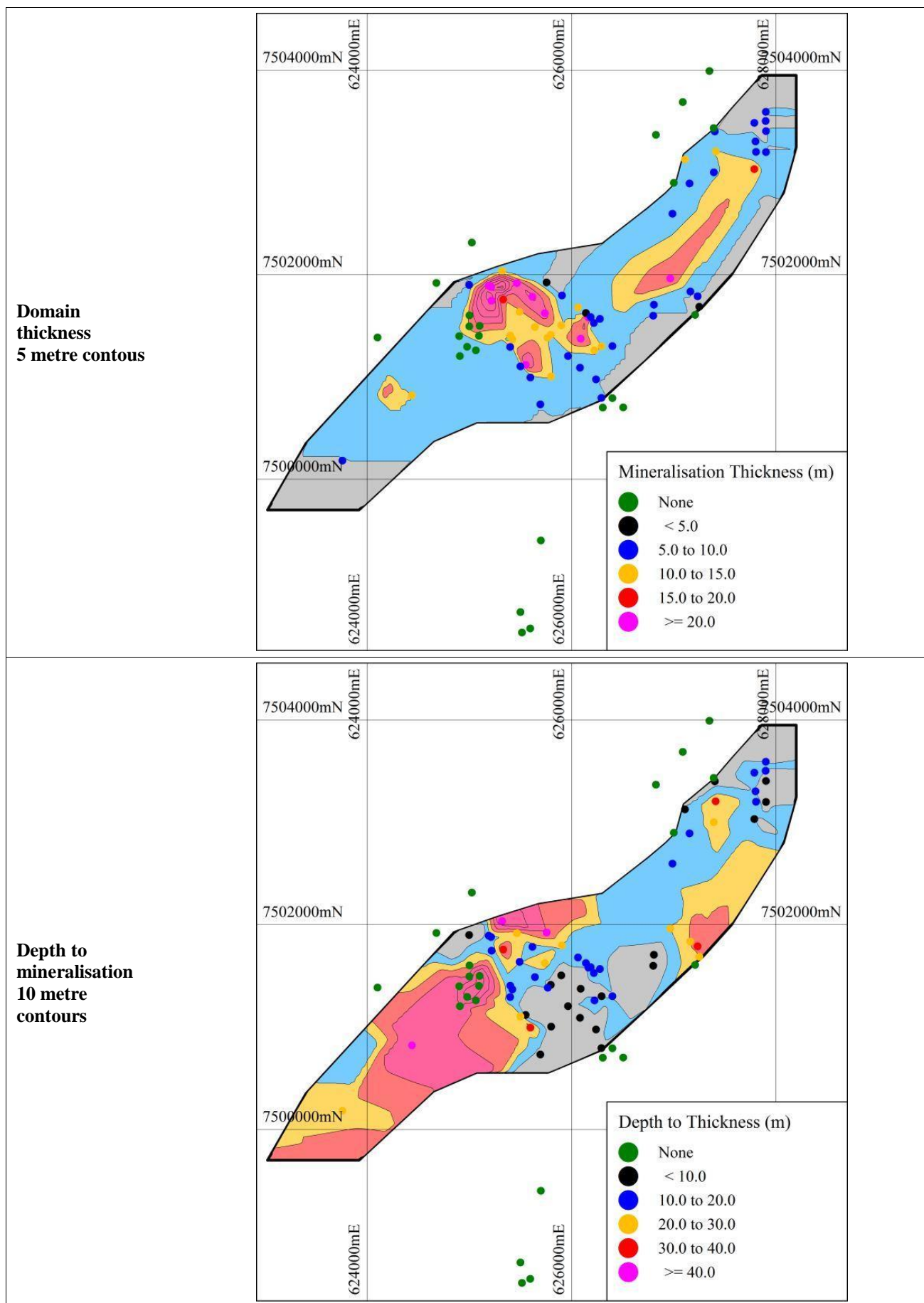


Figure 3: Mineralised domain thickness and depth

Table 2: Estimation composite dataset by phase and type

Sample length	CRA percussion	Arafura RC	NuPower RC	Total
1 m	-	48	219	267
4 m	-	4	-	4
5 m	40	176	100	316
6 m	-	6	-	6
Total	40	234	319	593
Proportion	7%	39%	54%	100%

Table 3: Resource composite statistics

	P ₂ O ₅ %	Al ₂ O ₃ %	CaO %	Fe ₂ O ₃ %	K ₂ O %	MgO %	MnO %	Na ₂ O %	SiO ₂ %	TiO ₂ %	U ₃ O ₈ ppm
Number	593	553	593	593	573	593	227	573	553	553	273
Proportion	100%	93%	100%	100%	97%	100%	38%	97%	93%	93%	46%
Average	10.9	5.63	13.1	3.84	0.57	0.22	0.06	0.11	61.0	0.26	16.0
Variance	59.4	5.84	129	29.9	0.12	0.01	0.02	0.01	324	0.01	239
Coef. var.	0.71	0.43	0.87	1.42	0.60	0.54	2.57	0.70	0.29	0.42	0.97
Minimum	1.04	0.56	0.34	0.40	0.07	0.04	0.00	0.02	2.65	0.04	2.36
1 st Quartile	5.32	3.76	5.07	1.27	0.34	0.13	0.01	0.06	52.0	0.17	8.14
Median	7.66	5.80	9.12	2.05	0.46	0.18	0.02	0.09	67.1	0.26	11.9
3 rd Quartile	14.7	7.13	19.3	4.24	0.74	0.27	0.04	0.13	74.1	0.33	19.8
Maximum	38.5	16.7	53.5	34.0	2.55	0.87	0.96	0.59	88.6	0.64	103

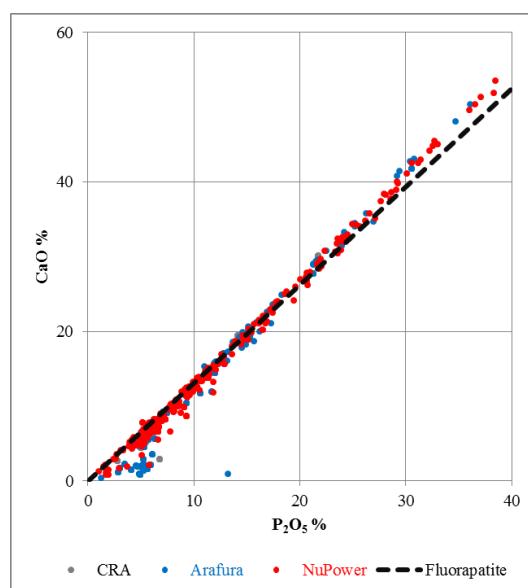


Figure 4: Mineralised domain composite CaO versus P₂O₅ grades

3.3. Estimation criteria

The current estimates use a similar un-folding approach to recent MPR Ammaroo and Ammaroo South modelling. Prior to resource estimation, the mineralised domain composites were unfolded to remove the gentle undulations from the mineralised domains using the top of the domain as a reference. The Kriged estimates were re-folded to their correct positions in the final block model.

Table 4 shows the dimensions and panel sizes of the block model created for the current study. Attribute grades were Kriged into 100 by 100 by 2 metre (east, north, elevation) blocks which were sub-blocked to minimum dimensions of 25 by 25 by 0.5 metres for adequate representation of domain volumes.

Table 4: Model dimensions and block sizes

	Easting	Northing	Elevation
Minimum (lower left)	623,000 mE	7,499,500 mN	290 m RL
Maximum (top right)	628,300 mE	7,504,100 mN	430 m RL
Extents	5,300 m	4,600 m	140 mRL
Parent block size	100 m	100 m	2 m
Minimum sub-block	25 m	25 m	0.5 m

The broad sampling available for Patanella is not sufficient to define grade continuity within the mineralised domain preventing reliable variogram modelling. For this reason the current study has adopted the variograms modelled for the Ammaroo resource estimates with rotation (Z+45) to reflect the difference in domain orientation.

Table 5 presents the five progressively more relaxed search criteria used for estimation. These criteria were selected to inform virtually all of the mineralised domains while allowing blocks to be estimated by reasonably close data where possible.

Table 6 presents the un-rounded model estimates at zero cut off by search pass. This table shows that most (97.8%) of the estimates were assigned by search passes 1 to 3 and search pass 4 and 5 represent only a small proportion of the model estimates.

Although the selected search criteria assign P₂O₅ grades to virtually all blocks within the mineralised domain, for some of the under-sampled secondary attributes grades were not estimated for around 6% of the informed blocks. These blocks were assigned the grades shown in Table 7 on the basis of the average grades of estimated blocks. Reliability of the assigned values is uncertain. However they represent only a comparatively small proportion of the model tonnages and do not significantly impact confidence in the current estimates.

Table 5: Search passes

Search Pass	Radii (x,y,z)	Minimum Data	Minimum Octants	Maximum Data
1	300,300,4	4	2	24
2	600,600,8	4	2	24
3	600,600,8	2	1	24
4	1200,1200,16	2	1	24
5	1800,1800,24	1	1	24

Table 6: Estimates at zero cut off by search pass

Search	Mt	P ₂ O ₅ %	Proportion
1	54.97	10.57	57.1%
2	35.06	10.50	36.4%
3	4.20	9.63	4.4%
4	2.11	10.36	2.2%
5	0.01	14.12	0.01%
Total	96.34	10.50	100.0%

Table 7: Values assigned to un-estimated blocks

Attribute	Assigned value
Al ₂ O ₃ %	6.08
K ₂ O %	0.613
Na ₂ O %	0.115
SiO ₂ %	60.9
TiO ₂ %	0.27

3.4. Model estimates

Table 8 summarises the current estimates for a range of P₂O₅ cut offs. The figures in this table are not rounded to reflect the precision of estimates. The estimates at zero cut-off represent the entire estimated mineralised volume.

JORC reporting rules specify that estimates of Exploration Targets be reported as ranges, and not be combined with Mineral Resources. The estimates in Table 8 are for RUM's internal use only.

Table 8: Base case estimates of exploration potential

Cut off P ₂ O ₅ %	Mt	P ₂ O ₅ %	Al ₂ O ₃ %	CaO %	Fe ₂ O ₃ %	K ₂ O %	MgO %	MnO %	Na ₂ O %	SiO ₂ %	TiO ₂ %	U ₃ O ₈ ppm
0.0	96.3	10.5	6.09	12.2	3.6	0.61	0.21	0.10	0.116	60.9	0.27	22.2
2.5	96.3	10.5	6.09	12.2	3.6	0.61	0.21	0.10	0.12	60.9	0.27	22.2
5.0	86.4	11.2	5.86	13.3	3.7	0.61	0.21	0.11	0.11	59.4	0.26	23.4
7.5	59.3	13.5	5.31	17.2	4.2	0.60	0.23	0.13	0.11	55.7	0.25	17.5
10.0	43.4	15.2	4.99	19.9	4.2	0.58	0.22	0.16	0.10	52.2	0.23	17.0
12.5	30.9	16.9	4.82	22.4	4.0	0.57	0.22	0.20	0.10	49.3	0.22	15.1
15.0	19.0	18.8	4.62	25.3	3.8	0.56	0.21	0.29	0.10	46.6	0.22	14.6
17.5	12.2	20.3	4.45	27.6	3.7	0.55	0.21	0.37	0.10	44.6	0.21	14.8
20.0	5.2	22.6	4.22	30.5	3.4	0.54	0.23	0.35	0.11	41.3	0.20	17.4

3.5. Exploration Target estimates

The 2012 JORC code specifies that for public release, estimates of the tonnage and grade of Exploration Targets cannot be aggregated with Mineral Resources and only be reported only as ranges. Reporting of the estimates of Exploration Targets should be accompanied by a statement that the estimates are conceptual in nature, and that there has been insufficient exploration to estimate a Mineral Resource and that it is uncertain that future exploration will result in determination of a Mineral Resource.

To provide a range of tonnages and grades as required by JORC guidelines the base case estimates Table 8 were multiplied by the following factors which are based on the perceived reliability of the current estimates:

- Tonnages: Lower factor 0.5, upper factor 1.25
- Grades: Lower factor 0.90, upper factor 1.5

With appropriate rounding, these factors give the following Exploration Target estimates:

- 5% P₂O₅ cut off: 50 to 100 Mt at 10% to 17% P₂O₅
- 10% P₂O₅ cut off: 20 to 50 Mt at 15% to 20% P₂O₅

The 2012 JORC code stipulates that public reporting of Exploration Targets must include a description of the exploration activities designed to test the validity of the Exploration Target and time frame within which those activities are expected to be completed.

Drilling requirements for estimation of Mineral Resources for Patanella are unclear. To provide a first pass indication of potential drilling required for estimation of Mineral Resources MPR has overlain a 400 by 400 metre pattern on the current mineralised domain. This spacing is consistent with the drilling used for estimation of Inferred Mineral Resources other RUM phosphate projects.

With projection to an average of four metres below the interpreted base of mineralisation the 400 by 400 metre pattern comprises 80 holes for approximately 2,700 metres of drilling. This pattern makes no allowance for existing drilling on the basis of the assumption that the sample intervals and apparent data reliability are inappropriate for confident resource estimation. Although not necessarily sufficient for Mineral Resource estimation, a subset of such a drilling pattern may be sufficient to test the general validity the current Exploration Target, and yield an updated Exploration Target.



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