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ASX Announcement
23 September 2013

REASSESSMENT OF INFERRED RESOUCE ON 13879X (TEEG)

Exploration licence 13879X (Teeg) is located in the Ovorhangay region in Mongolia (see below).

Exploration Licences in the Ovorhangay Region

A previous resource estimate for coal within this licence was completed in July 2012 and stated Inferred Resources of 75 Mt (see release to the ASX dated 30 July 2012).

The Company recently appointed McElroy Bryan Geological Services Pty Ltd ("MBGS") to reassess the Inferred Resource on Teeg. MBGS determined Inferred Resources of approximately 10 Mt. The details are summarised in the following table:

Total Coal Resources 30 September 2013											
Mining Method	**Depth Interval (m)**	**Measured (A)**			**Indicated (B)**			**(A+B)**	**Inferred**		
		Tonnes (Mt)	Quality		Tonnes (Mt)	Quality		Tonnes (Mt)	Tonnes (Mt)	Quality	
			CV (kcal/kg)	Ash (%)		CV (kcal/kg)	Ash (%)			CV (kcal/kg)	Ash (%)
OC	0 - 50	-	-	-	-	-	-	-	**2.4**	-	-
OC	50 - 100	-	-	-	-	-	-	-	**3.6**		
OC	100 - 150	-	-	-	-	-	-	-	**3.0**	-	-
Total		-	-	-	-	-	-	-	**9.0**		
Total Resources (Rounded)		-	-	-	-	-	-	-	**10**	-	-

Notes:

1. *For further information, refer to Appendix I, JORC Code 2012 Edition Table 1*
2. *Resources and coal quality reported at in situ moisture basis*

The significant difference from the July 2012 estimate is mainly due to the exclusion of coal below 150 m depth which totalled 62 Mt. The Inferred Resource estimated to a depth of 150 m in the July 2012 estimate was 12 Mt.

The main reasons for the change in the estimate of Inferred Resources are:

- Resource estimate depth limit changed - Resources from 150m to 300m deep have been assessed as not having reasonable prospects for eventual economic extraction and therefore have not been included in the Coal Resource; and

- Area of influence from drilling data points reduced - Due to the complexity of the coal deposit the extrapolated distances from the drill hole data points have been reduced.

A full copy of MBGS' Competent Person Report, which provides details of the reassessment of the Inferred Resource, is attached to this announcement.

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Further Information

Please contact Peter Doherty or Jarrod Smith on +612-9230-0760, or enquiries@draigresources.com, for further information.

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Competent Person Statement

The information in this announcement that relates to Coal Resources, is based on information compiled under the supervision of, and reviewed by, the Competent Person, Charles Parbury, who is a full time employee of McElroy Bryan Geological Services Pty Ltd, is a Member of the Australasian Institute of Mining and Metallurgy and who has no conflict of interest with Draig Resources.

The Coal Resource estimate for 13879X presented in this announcement has been carried out in accordance with the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition" prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

Charles Parbury has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Charles Parbury consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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COMPETENT PERSON REPORT

COAL RESOURCES

TEEG PROJECT 13879X

OVORKHANGAI AIMAG, MONGOLIA,

AS AT SEPTEMBER 2013

Prepared for

Draig Resources Limited

Report No. 339/01/01 C F R Parbury September 2013

McElroy Bryan Geological Services Pty Ltd
Consulting Geologists since 1970

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1. COAL RESOURCE DECLARATION

McElroy Bryan Geological Services Pty Ltd (MBGS) have prepared a report for the Directors of Draig Resources Limited on coal resources in Ovorkhangai Aimag, Mongolia. The resources are estimated to the end of September 2013.

The purpose of this report is to provide at 13879X an objective assessment of coal resources that are compliant with the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code). A copy of the 2012 JORC Code is included as Appendix B.

1: PROJECT / MINE NAME	Teeg, Ovorkhangai Aimag, Mongolia
Company Interest (%)	The lease is held by BDBL LLC, an indirect wholly owned subsidiary of Draig Resources Limited
2: MINING / EXPLORATION TITLE (s)	13879X

3: PROJECT / MINE STATUS & DESCRIPTION OF MINING METHOD & COAL TYPE

The project area is located approximately 115km southwest of Arvaikheer, the aimag capital of Ovorkhangai. Access to the area is via commercial airline from Ulaanbaatar to Bayankhongor 90kms west of the lease, or by road 520km directly to the lease (Figure 2.1). It is 340km north of the border with China. Most of the license area (approximately 1750masl) is covered by flat grassy steppe. The area is sparsely inhabited and is occasionally used for grazing livestock (sheep, goats) by nomadic Mongolian family groups. The western half of lease is dominated by a prominent hill comprising Tertiary (Neogene) age flood basalt with over 150m vertical relief. The basalt has probably come via feeder pipes that intrude sediments ranging in age from Upper Permian to Lower Cretaceous. Coal seams are known to occur throughout the sequence and have reported thickness from 5-50m. The steeply dipping sedimentary strata (up to near vertical degrees to the southwest) in the license area belong to the Bakhar Formation which is Jurassic age contained within the Ongyn Gol Basin. Coal resources in 13879X would present a limited open cut potential with the mine product being sold locally for domestic power.

The Bayanteeg open cut coal pit is located adjacent, and parallel to, the northern boundary of 13879X. The pit which extracts coal at the near surface has reportedly been in operation for over 50 years. It currently sells coal to several local villages (Nariinteel and Hayrhandulaan) for domestic heating and cooking. Coal in the Bayanteeg mine is interpreted to be Jurassic age and low rank. It has variable dips (20 to 70 degrees to the south-southwest – as mapped by Nordic Geo Solutions (NGS) in 2010).

It is not known how the coal seams in the Bayanteeg pit relate geologically to the seams intersected in the 13879X drill holes. Detailed additional mapping may be able to determine this.

4: COAL RESOURCE ESTIMATION DETAILS (geological model details, limits applied to resources, density & moisture details)

Coal seam pick files derived from down hole geophysical logs from drill holes in 13879X were uploaded into MINEX geological modeling software. Structure roof, structure floor and structure thickness grids for all 43 plies from 2 coal seams; plus grids for topography and base of weathering were generated. DUMMY holes were used to control seam shape, thickness, and dip so that the modelled coal seams honoured the existing drill hole pick files. Geological model (Teeg_0913), has been generated from data from approximately 45 holes completed since the 2011 Due Diligence program. Steeply south-dipping coal plies of Lower to Middle Jurassic Bakhar Formation are intersected within drill holes provided to MBGS. These drill hole intersections contain 43 coal plies within two coal seams called A (lower) and B (upper) Figure 2.2. These plies comprise the entirety of MBGS' resource assessment. Resources are estimated at 50m depth intervals within two resource polygons. Resource polygons, because of coal seam steep dip, are mostly confined to strip along the coal seams subcrop trending northwest-southeast. Resource polygons are constrained by drilling locations and density.

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5: COMPETENT PERSON			
Name:	*Charles Parbury*	Membership of AusIMM/AIG:	MAusIMM (101430), MAIG (2219)
Employer/ Title:	*McElroy Bryan Geological Services*	Telephone:	*+61 2 9958 1455*
Qualifications:	BA(Hons) Macquarie University, 1976	Email:	*Charles.parbury@mbgs.com.au*
Brief Description of Relevant Experience:	More than 30 years working in the coal industry of which more than 15 years has involved resource estimation, due diligence and technical reviews of coal deposits within Australia (Qld, NSW, Tasmania, WA)) as well as in South Africa, Indonesia, Thailand, China, Russia and Mongolia.	Signed:	

The information in this report that relates to Coal Resources, is based on information compiled under the supervision of, and reviewed by, the Competent Person, Mr. Parbury , who is a full time employee of McElroy Bryan Geological Services, is a Member of the Australasian Institute of Mining and Metallurgy and who has no conflict of interest with Draig Resources.
The Coal Resource estimate for 13879X presented in this report has been carried out in accordance with the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves', The JORC Code 2012 Edition prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).
Mr Parbury has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Parbury consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

6: Total Coal Resources 30 September 2013

Mining Method	Depth Interval (m)	Measured (A)			Indicated (B)			(A+B)	Inferred		
		Tonnes (Mt)	Quality		Tonnes (Mt)	Quality		Tonnes (Mt)	Tonnes (Mt)	Quality	
			CV (kcal/kg)	Ash (%)		CV (kcal/kg)	Ash (%)			CV (kcal/kg)	Ash (%)
OC	0 - 50	-	-	-	-	-	-	-	**2.4**	-	-
OC	50 - 100	-	-	-	-	-	-	-	**3.6**		
OC	100 - 150	-	-	-	-	-	-	-	**3.0**	-	-
Total		-	-	-	-	-	-	-	**9.0**		
Total Resources (Rounded)		-	-	-	-	-	-	-	**10**	-	-

Notes:

1. *For further information, refer to Appendix I, JORC Code 2012 Edition Table 1*
2. *Resources and coal quality reported at in situ moisture basis*

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2. RESOURCE DESCRIPTION / GEOLOGY

The landscape in the licence area is dominated by Bayanteeg Uul, a prominent hill in the western part of the lease comprising Neogene basalt. The rest of the lease to the north and eastern part of the Teeg tenement, is characterised by generally flat to rolling steppe landform comprising the Lower - Middle Jurassic Bakhar Formation within the Ongyn Gol Coal Basin of central Mongolia, (Figure 2.1).

This statement includes all identified coal resources within Draig's 13879X – Teeg based on current drilling results. The Teeg coal resources are interpreted to occur in a south-westerly steeply dipping stratigraphic sequence; within an upper (B) and lower (A) coal interval. The coal seams striking northwest-southeast direction with the upper B interval highly banded and variable in nature and the lower A seeming to be more consistent and less banded. True thickness of the two intervals is approximately 25m thick with an interburden between the two seams assumed to be up to 40m thick. Because no drill hole clearly intersected the two seams in the same hole, this estimate is based on geometric projections of the individual holes that did intersect them.

The steep dip (up to possibly vertical - Figure 2.3), rapid lateral variations in coal thickness and as yet undetermined complex structure based on the limited drilling make individual coal seam correlations difficult and there is therefore a low level of confidence in the correlations. The two seams appear to be correlateable between holes inside the two designated resource polygons.
The subcrop of the two nominated seams in 13879X is sub-parallel to the strike of the coal mined in the Bayanteeg pit adjacent and north of 13879X, (see Figure 2.1).

Previous mapping recorded consistent medium to sub-vertical bedding dips south (up to 75 degrees in places) within accessible parts of the Bayanteeg pit. Structural deformation was documented along the Bayanteeg highwall (e.g. folding, normal faults with vertical displacement of up to 5m, and one minor reverse fault).

The actual relationship of the seams intersected in 13879X and the mined coal in the pit (north of 13879X) is not known and assumed to be complex.

Previously in 2009 Peabody Polo (former lease holder) inspected the Bayanteeg pit and conducted very limited field mapping within the Teeg license area. The field team discovered a wide zone of sooty coal in the southern area of 13879X that was exposed in Peabody Trench B and later confirmed by drill hole BTE01.

The Tertiary basalt formation in the western part of 13879X is in all likelihood a flow and overlies and masks the underlying older Jurassic sedimentary stratigraphy and has had an unknown effect on the older sediments. The structure and steep dip of the Jurassic sediments probably took place in the compressional

and extensional evolution of this part of the Ongyn Gol Basin before the emplacement of the basalt.

It is unclear if the coal sequence observed in Teeg is stratigraphically continuous with the seams that are exposed in the Bayanteeg pit. Drill hole BTE 04 (Figure 2.1) along strike from the southern limb of the Bayanteeg pit intersected strata dipping at 70 degrees indicating steep dip and complex structure (dips in BTE 05 were however generally flat). The structural complexity is in line with NGS's observations within the Bayanteeg Coal Mine in December 2011.

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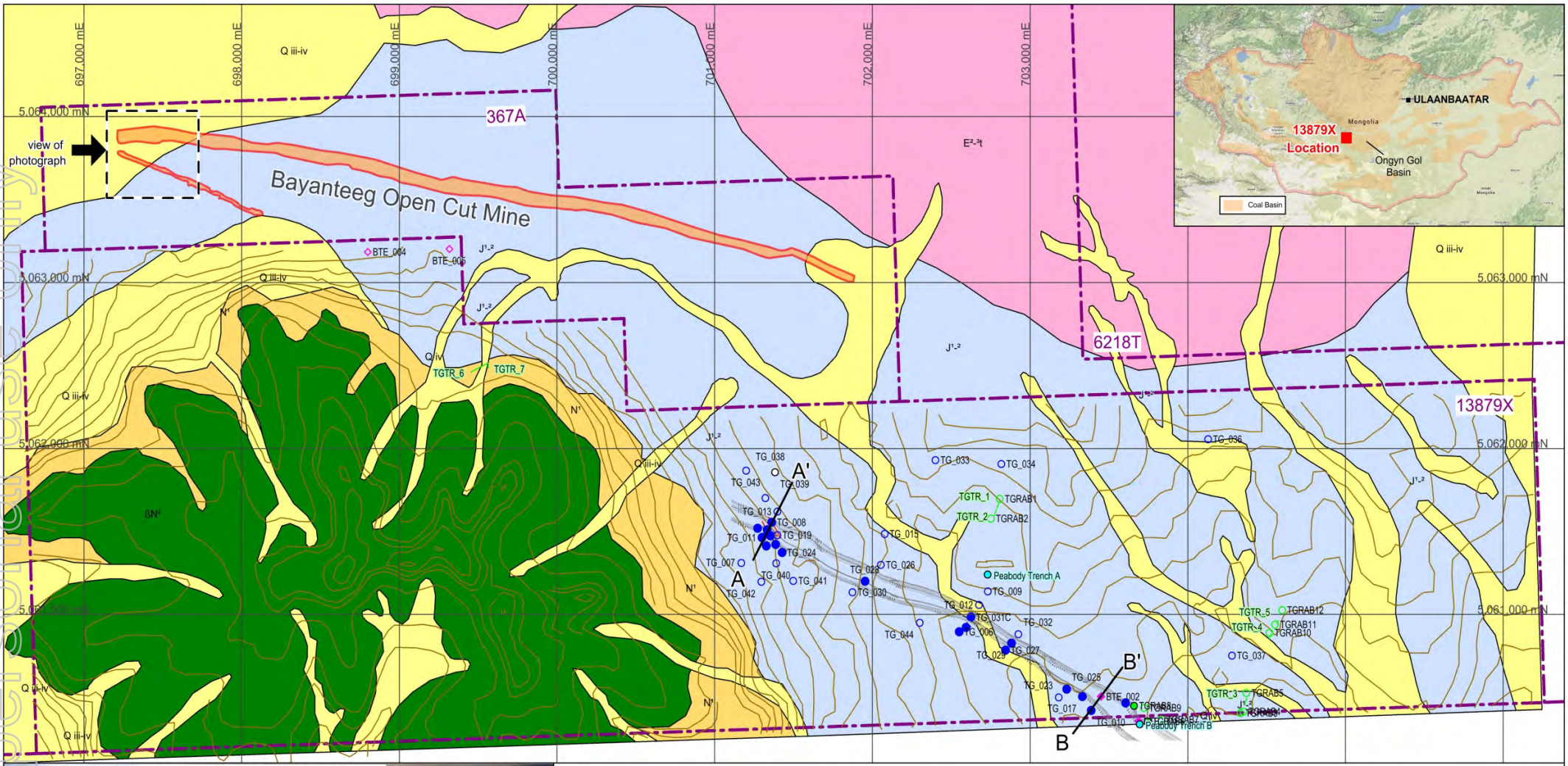


Bayanteeg open cut mine view towards east

LEGEND

- 2012 core hole, coal intercepted
- 2012 non-core hole, no coal intercepted
- 2012 non-core hole, coal intercepted
- 2011 core hole, no coal intercepted
- 2011 core hole, coal intercepted
- drill hole, details uncertain
- RAB non-core hole, coal intercepted
- RAB non-core hole, no coal intercepted
- Peabody trenches A and B
- TGTR_1 2013 Trench
- Topography contour (5m interval)
- Seam subcrop
- Lease boundary
- A —— A' Cross Section

LITHOLOGY

Q iii-iv	Quaternary. Sandy loam, gravel loam, clay.
N¹	Tertiary Pliocene. Red clay, sand, gravel.
βN²	Tertiary Miocene. Black open grain basalt.
J¹⁻²	Lower-Mid Jurassic (Bakhar Formation). Sandstone, siltstone, claystone and coal.
E²⁻³t	Proterozoic (Togtokhinshil Formation). Diorite with quartz.

NORTH

0 0.5 1 kilometres

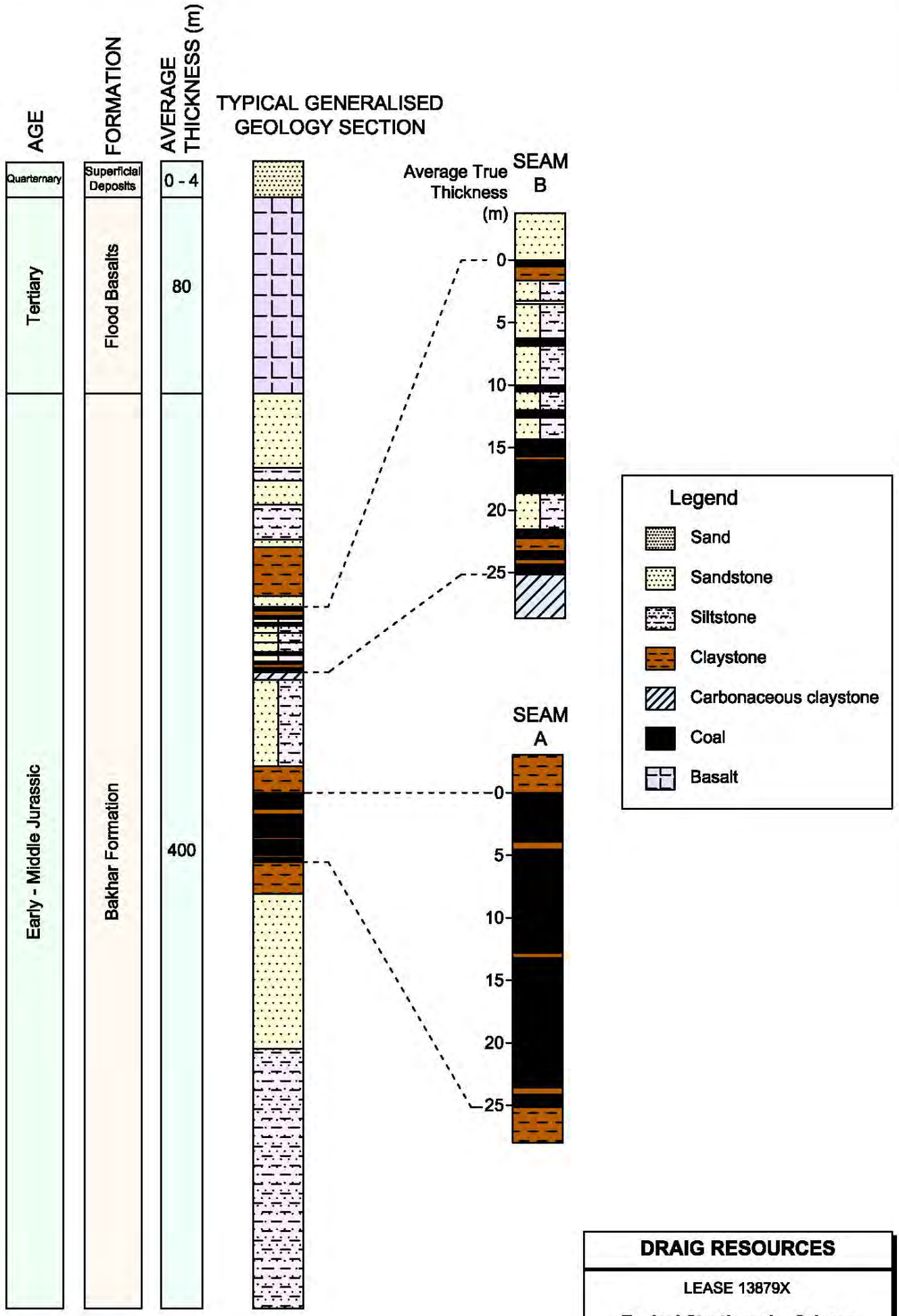
DRAIG RESOURCES

Lease 13879x

Local Geology Plan

Prepared by McElroy Bryan Geological Services

Figure 2.1
September 2013



DRAIG RESOURCES

LEASE 13879X

Typical Stratigraphy Column

Prepared by McElroy Bryan Geological Services

Figure 2.2

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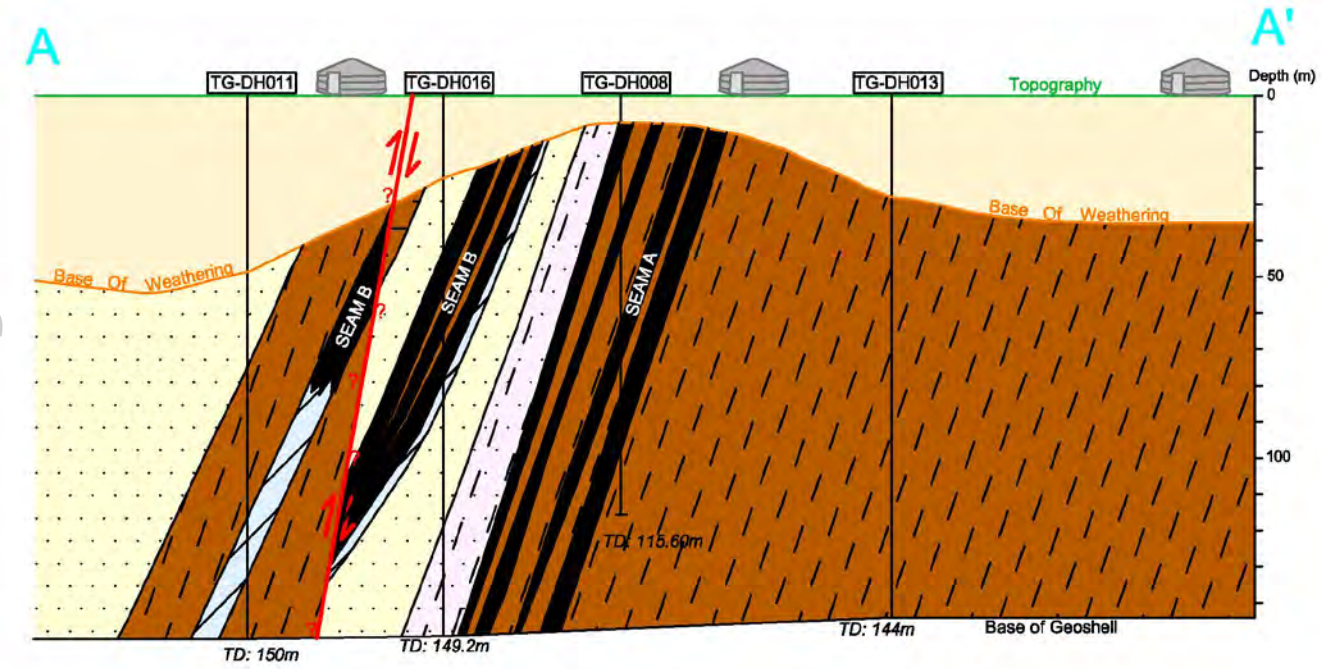

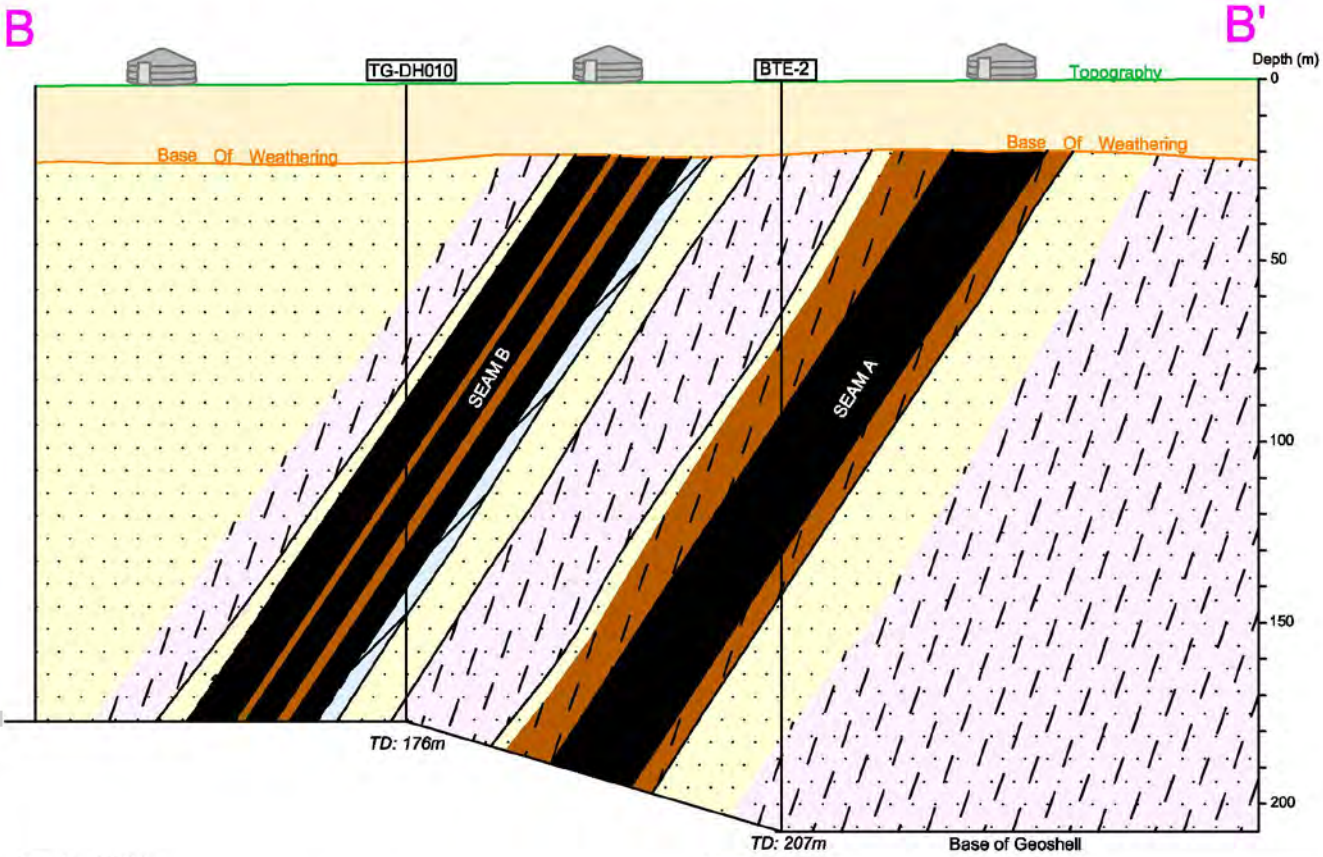

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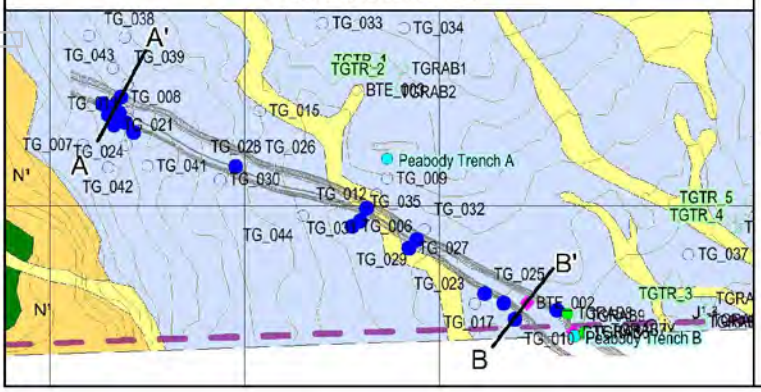
LOCATION PLAN



Legend

- Sandstone
- Siltstone
- Claystone
- Carbonaceous claystone
- Coal
- Fault

DRAIG RESOURCES

LEASE 13879X

Geological Cross Sections

Prepared by McElroy Bryan Geological Services

Figure 2.3

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3. COAL QUALITY

Coal quality at Teeg 13879X is based on samples from five core holes, 2 completed in the 2011 and 3 in the 2012 drilling programme. Based on the down hole geophysics, samples were taken from Seam A with 4 intersections and Seam B with one intersection. One core hole (35C) was drilled at 45^0 (off vertical) to core the coal seam orthogonal to dip. This was done to better represent the quality of the full true seam thickness and determine where any quality variations might be in relation to that true thickness. Given the steep to near-vertical dip of the seams and the vertical holes for the other four holes, the samples will only be indicative of the coal quality for those seams (hole 31C did not fully intersect Seam A). It is not known which part of the seam was sampled in the vertical holes which make the results unrepresentative of the whole seam.

Even though there are over 200 coal samples recorded as being taken in the core holes, the results from those samples are only considered indicative. The raw coal seam quality parameters such as moisture, ash, volatile matter, total sulphur and specific energy have not been modelled. The existing quality results is summarised in Table 3.1

Table 3.1 Summary Raw Coal Quality Seam A and B

	Air Dried Basis (adb)														
	Moisture %			Ash %			Volatile Matter %			Specific Energy kcal/kg			Total Sulphur %		
Seam	From	To	Average	From	To	Average	From	To	Average	From	To	Average	From	To	Average
B	1.7	3.1	2.4	6	42	21	30	47	38	3,400	7,100	5,800	1.0	3.1	1.6
A	0.2	6.8	3.3	4	45	14	28	47	39	3,800	7,200	6,200	0.3	6.2	1.1

Quality values used to generate this summary table do not include any values corresponding to a raw coal ash greater than 45%, as these are assumed to be non-coal partings and therefore would bias the values derived from the coal plies.

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4. COAL RESOURCES

The following is a summary of the assumptions and limiting factors used in the estimation of coal resources at Teeg 13879X.

- No minimum coal ply cut-off was applied so any individual coal ply that belongs either to Seam A or B is included in the resources. At this stage non-coal partings were not included in any resource as the seam correlation detail would not allow this. Hence there are no coal resources that would ordinarily include some dirt partings at this stage.
- Non-coal parting material was not estimated. Only coal plies based on coal picks from each drill hole were modelled and estimated for resources.
- A default density value of 1.45 g/cc was used for all coals.
- Areal extent of resources was limited using vertical sided 'cookie cutter' polygons as indicated in Figure 4.1.
- The upper limit of coal resources was set at the base of weathering and the lower limit was set at the 'geoshell' base.
- A "geoshell", is defined as the volume of ground formed by valid geological data points, drill holes (and any other points of observation) limits, both on the basis of areal, as well as depth extent, in which coal resources are located. The 'geoshell' was not based on every drill hole. Where a short hole existed between two deeper holes the 'geoshell' surface trended below the shallow hole. The 'geoshell' included both barren holes and holes with coal intersections (Figure 2.3).

  The limits also used to define the 'geoshell' were:

  - seams intersected in drill holes
  - extent and depth of drill hole data
  - subcrop of each coal zone
- Resources were reported in 50m increments from the surface but taking into consideration that there are no resources above the base of weathering.(Table 4.1)
- Inferred coal resources were classified on the basis of confidence level in geological data and drill hole density then estimated for each resource polygon, (see Figure 4.1 and Figure 2.3)
- Coal quality was not used to limit resources.
- Strip ratios were not used to limit resources.

Seam continuity has not been established to an acceptable level of confidence between all the holes that intersected coal along the length of the deposit and is therefore classified as an Inferred Resource in the two existing discrete polygons, Figure 4.1.

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Table 4.1 Coal Resources, Teeg 13879X

INFERRED RESOURCES as at 30 September 2013					
DEPTH INCREMENT	SEAM NAME	AVERAGE SEAM APPARENT THICKNESS (m)	IN SITU DENSITY (g/cc)	TOTAL TONNES (Mt)	SUBTOTAL FOR EACH DEPTH INCREMENT (Mt)
0 - 50 m	A Seam	53.9	1.45	**2.1**	
	B Seam	13.99	1.45	**0.3**	
					2.4
50 - 100 m	A Seam	56.02	1.45	**3**	
	B Seam	13.73	1.45	**0.6**	
					3.6
100 -150 m	A Seam	56.45	1.45	**2.5**	
	B Seam	13.21	1.45	**0.5**	
					3
			TOTAL	**9.0**	
			Rounded	**10**	

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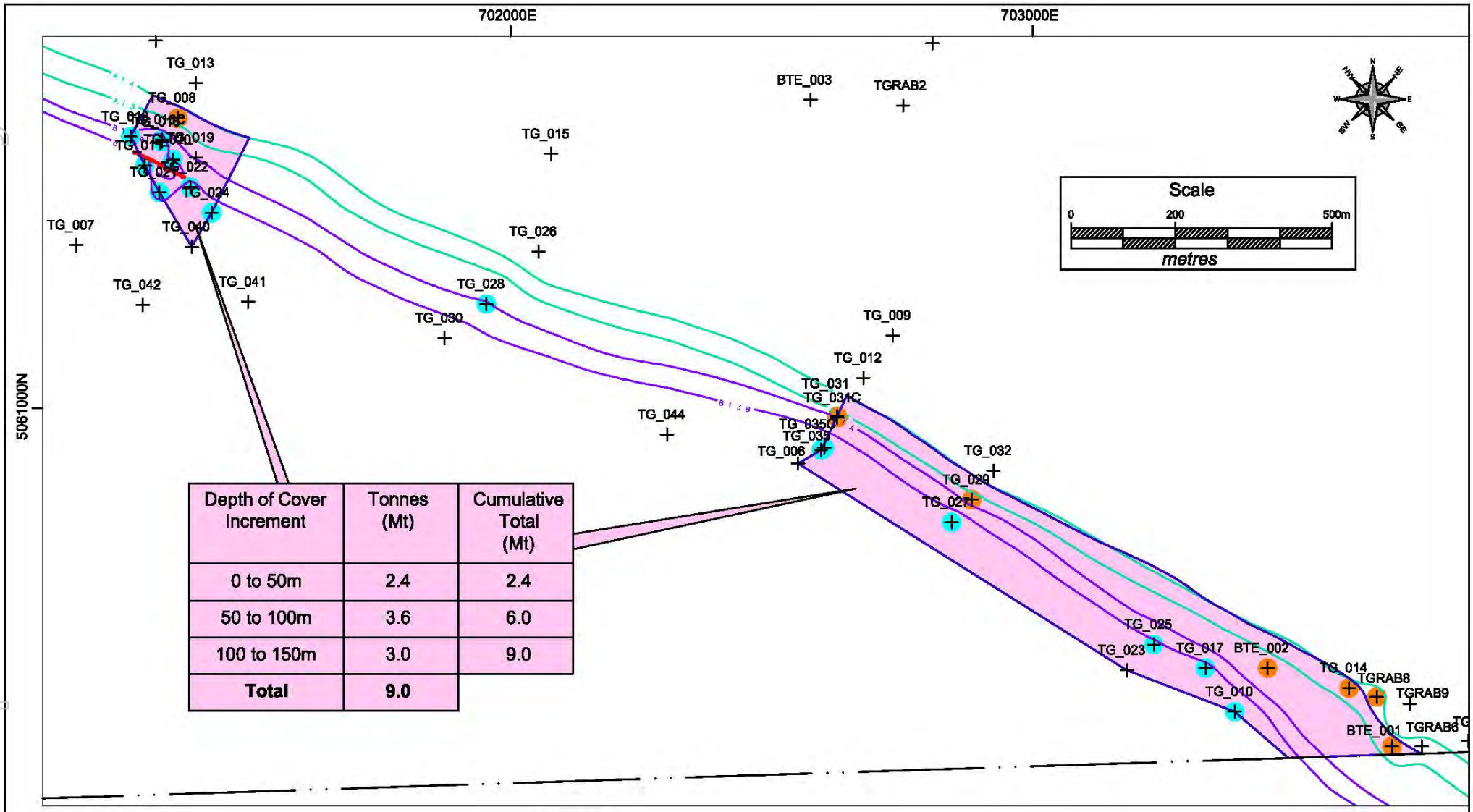
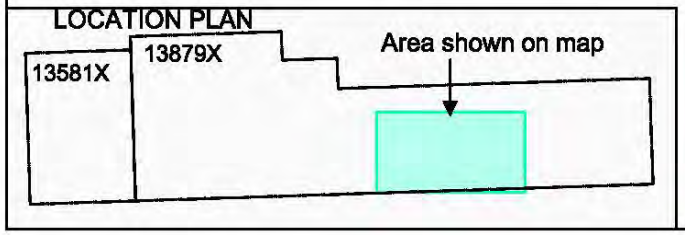


Depth of Cover Increment	Tonnes (Mt)	Cumulative Total (Mt)
0 to 50m	2.4	2.4
50 to 100m	3.6	6.0
100 to 150m	3.0	9.0
Total	**9.0**	

LOCATION PLAN



Legend

- Drill hole
- Drill hole intersecting A seam
- Drill hole intersecting B seam
- A seam subcrop
- B seam subcrop
- Inferred Resource

DRAIG RESOURCES

TEEG 13879X

Location of Estimated Resources

Prepared by McElroy Bryan Geological Services

Figure 4.1

September 2013

5. COAL RESOURCE RECONCILIATION

B1: PROJECT/ MINE NAME	Teeg, Ovorkhangai Aimag, Mongolia
B2: MINING/EXPLORATION TITLE (s)	13879X

B3: PREVIOUS COAL RESOURCE ASSESSMENT July 2012

Mining Method	Depth Interval (m)	Measured		Indicated		Inferred	
		Tonnes (Mt)	Quality	Tonnes (Mt)	Quality	Tonnes (Mt)	Quality
	0 - 50	-		-		**2.8**	
	50-100	-		-		**4.7**	
	100-150	-		-		**4.8**	
	150-200	-		-		**9.3**	
	200-250	-		-		**27.3**	
	250-300	-		-		**25.8**	
Total Resources		0.0	CV: kcal/kg-	0.0	CV: kcal/kg-	**74.7**	CV: kcal/kg-
			Ash: % -		Ash: % -		Ash: % -
Total Resources (Rounded)		0	CV: kcal/kg	0	CV: kcal/kg	**75**	CV: kcal/kg
			Ash: %		Ash: %		Ash: %
		0				0	

B4: INTERIM PERIOD

Non-Production Changes	Measured and Indicated (Mt)	Inferred (Mt)
Geology model change[(1)]	-	-66
Net Change in Coal Resources	-	-66

B5: NEW COAL RESOURCE ASSESSMENT September 2013

Mining Method	Depth Interval (m)	Measured		Indicated		Inferred	
		Tonnes (Mt)	Quality	Tonnes (Mt)	Quality	Tonnes (Mt)	Quality
OC	0 - 50					**2.4**	-
OC	50 - 100					**3.6**	-
OC	100 - 150					**3.0**	-
Total Resources		0.0	CV: kcal/kg-	0.0	CV: kcal/kg-	**9**	CV: kcal/kg-
			Ash: % -		Ash: % -		Ash: % -
Total Resources (Rounded)		0	CV: kcal/kg	0	CV: kcal/kg	**10**	CV: kcal/kg
			Ash: %		Ash: %		Ash: %
		0				0	

Resources and coal quality reported at in situ moisture basis

B6: NOTES- Explain geology model changes to tonnes & quality

1.	New geological model by MBGS in MINEX. Changes to the area of influence from drilling data points. No longer have 1000m extrapolated distances beyond last drill hole with coal intersection. The resource polygons of this estimate are not extended beyond the last drill hole along strike of coal seams. Changes to resource estimate depth limit of 150m as compared to previously estimated down to 300m. The July 2012 resource estimate to a depth of 150m totalled is 12Mt as compared to this September 2013 estimate that totals 10Mt. There are no geological data that confirms or substantiates resources below 150m deep. Changes to using the estimated base of weathering layer as determined from all the drill holes. This estimate uses the modelled grid layer of base of weathering as a cut-off for resource estimation. Changes to the assumption that there is any lateral continuity along strike or down dip beyond any drill holes. It is assumed that the two coal seams do continue along strike where supported by drill data. Seams are extrapolated down dip from last drill hole intersection to a maximum depth of 150m.

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Appendix A JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Drilling in 2011 and 2012 provided core and non-core samples of strata in 13879X. Core holes designed to intersect coal that was sampled and tested for analysis at Ulaanbaatar laboratories. Some samples were analysed in Australia to determine coal rank. • Industry standard sampling ie 100% of coal core was sampled for testing. • Core recoveries of coal sections uncertain and not validated. • Because coal seams are very close to vertical, the vertical core drill holes will provide coal samples that do not necessarily represent the coal quality of the full true coal seam thickness.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• There are 47 drill holes within the reported area which covers an area of approximately 2,200ha. • These include 5 fully cored HQ diameter drill holes drilled in 2011 and supervised by Trinity Development LLC as part of the due diligence program conducted by the Draig Resources Pty Ltd (formerly known as C@ Limited) . Two of these drill holes intersected significant coal intersections (BTE1 and 2). The other 3 Holes numbered from BTE 3 to BTE 5 did not intersect any coal. • During 2012, an additional 39 open holes and 3 partly cored PQ diameter holes were drilled within Teeg for a total of 6,700m of drilling. Drill hole numbers from TG 001 to TG 44. Three cored holes drilled at same site as non-core holes and given same number as non-core hole with suffix 'C' at end of number, eg TG 016 and TG 016C. TG035 and TG035C was drilled at 45^0 angle hole towards the northeast. • In addition to this, several hundred meters of shallow trenching

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Criteria	JORC Code explanation	Commentary
		across areas with exposed smut at the surface were also completed. • 12 Rotary Air Blast holes were completed in May 2013. Possible total depths of RAB holes were only 31m.These holes were not logged using down hole logs but were still used as points of observation for geological modeling purposes. Two holes that were located in subcrop zone of coal group did intersect coal. The two holes that hit coal did not fully intersect the coal seam.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Chip samples collected and laid out on ground for every metre drilled. These chips then logged by geologist and sub-sample collected and stored in chip sample containers. • Core samples taken and sent to laboratory for analysis. Drilling recoveries of the coal seams not fully understood. Down hole logs less than 'industry standard' meant when comparing core log to geophysical log there is a low confidence level in determining core losses and where to allocate those losses. • Vertically drilled core holes (four of five) in vertical or near vertical dipping coal seams will in all likelihood produce quality results that are not representative of true thickness of coal seam.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All holes have been lithologically logged by either Mongolian or expat geologists. • Geological logging described non-core (chip) colour, rock type, grain size, weathering, and coal was brightness logged. • Core samples; described rock type, colour, grain size, bedding dips, coal was brightness logged. • Based on core photography, rock discontinuities that were logged fractures were sometimes bedding that was very steeply dipping. • Photographic records of the chip and core resulting from the all drilling since Due Diligence in 2011 exist. • Standard of some of core and chip photography not according to 'industry standards'. • Core holes not geotechnically logged. • Comments throughout drill hole logging sheets that geologist was 'fatigued' assuming a 24 hour drill shift with not enough geological personnel leading to those onsite becoming fatigued enough for comment to be made in logging sheets. This practice less than 'industry standard'.
Sub-sampling techniques and sample	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• One hundred percent of core sample taken for analysis at laboratory as is coal industry practice. • Two core holes that intersected coal drilled in 2011 and three core holes that intersected coal drilled in 2012. Out of total 5 core holes

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Criteria	JORC Code explanation	Commentary
preparation	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	approximately 1km apart. • 4 sampled Lower Seam (A) and one sampled a different seam thought to be Upper Seam (B) at the northwestern extent of drilling. • One drill hole (TG035C) tried to intersect coal more normal to dip - drilled at 45 degrees off vertical. Mention of core losses throughout logging sheet. Core loss allocation based on down hole log unknown. • Sample results of coal from vertical holes in vertical or steeply dipping coal will not be representative of coal seam.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Coal samples sent to Ulaanbaatar testing facilities. • 2 core hole sample set in 2011 from BTE1 and 2. Due Diligence testing completed by SGS Mongolia Minerals for Relative Density (250um pulp sample by volumetric method) Total Moisture Proximate, Specific Energy, Total Sulphur, FSI using ASTM and ISO standard practice procedures. A sample from BTE01 reportedly sent to Australia for Giesler Fluidity test, (reported as showing no fluidity). • A 3 core hole sample set drilled in 2012 (TG16C, TG31C and TG35C) testing completed for Relative Density, Proximate, Total Sulphur, specific energy, FSI, Phosphorous, Trace elements, Geisler fluidity, Hardgrove Grindability, Limited Maximum Reflectance Mean Maximum Reflectance % • Rank determinations hole 31C completed at ALS Stewart Group Mongolia reported a result 0.60% • This provides a total five sample sets of data that covers what is believed to be two coal seam groups. The four holes in the southeast appear to intersect coal from Seam A and the hole in the northwest (TG016) appears to intersect Seam B . • Limited data set of coal quality results not appropriate to draw any detailed conclusions of variations in trends of coal quality. Only more generalised comments possible. • Default values for ash, moisture and in situ density used for each of the two seams when estimating resources from the geological model. • Down hole geophysical logs were run on 2011 and 2012 drilling. • Down hole log tools comprise gamma, density ,and caliper only. Calibration of ALT tools in not known. Tools were run outside drill rods and inside drill rods. Quality of output from tools less than best practice for the coal industry. Rotary Air Blast drilling completed in 2013 was not down hole geophysically logged. • There are no sample duplicates, blanks or external laboratory checks
Verification	• *The verification of significant intersections by either independent or*	• Core holes 2012 drilled beside non-core holes in an effort to be able

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Criteria	JORC Code explanation	Commentary
of sampling and assaying	*alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	to predict what coal intervals were going to be intersected and sampled.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Topographic data (5m contours) for the site was hand digitized from scanned images collated during the original mapping of the tenement by Peabody, the previous exploration license holder. This information, although only approximate, conforms with the broad topography observed during recent field works. • Drill hole collar data was collected using a handheld Garmin GPS. Two GPS units were available and both produced comparable eastings and northings. As expected with this technology the collar levels produced were only approximate with variances of up to 10m between units and a similar range of discrepancies when compared with the digitized topography. To accommodate these inconsistencies all drill hole collar elevations were adjusted to match the digitized topographic model. • Location of 12 RAB holes drilled 2013 by handheld GPS Garmin. • Location of 7 trenches by handheld GPS Garmin units • Grid system is UTM Zone47N(WGS84)
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The steep dip and variable thickness of the coal sequence limits the Teeg coal resource to a narrow zone of economic coal which is less than 100m wide in places. The exploration approach adopted for the tenement was to drill traverses of relatively closely spaced holes targeting the narrow steeply dipping coal sequence. This approach has resulted in nineteen of the forty seven boreholes drilled at Teeg intersecting significant coal intersections. The low coal intersection rate reflects the steep dip and complex geology that confines the resource to a narrow zone along coal seam strike . • Seam continuity has been only just established to an acceptable level for Inferred Resources in two discrete areas, one in the central portion of the tenement and the other to the south east. The central area has a greater density of boreholes when compared to the south, however, resource status in this area is still at an inferred level due to the more complex geology and limited coal quality data (one hole) that characterises this part of the deposit. Inferred Resources were supported along strike by drill holes that could be just correlated with some analytical data and down dip to a depth of 150m. • Inferred Resources were also limited so as not to be extrapolated

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Criteria	JORC Code explanation	Commentary
		below the 'geoshell' that is defined by the total depth limits of the holes. In effect this means the coal seams are extrapolated not more than 50m down dip from the last point of observation (to a maximum depth of 150m). • Because the seam dips in the deposit are so steep, not one hole intersected both of the postulated two intervals of coal. That is when a hole intersected coal it only intersected one of the assumed coal seams so the actual thickness of the interburden between the two seams is estimated only. For the purpose of modeling the two intervals are called A and B. • There is only one core intersection of Seam B so this coal seam quality confidence level is limited.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Most of drilling completed using vertical holes. All thicknesses will be apparent and have to be corrected for true thickness. The geological modeling process is able to account for this. • Because the holes that are vertical and are drilling in seams that are near vertical, coal quality results will be biased towards that part of the seam intersected by the hole. Which part of the seam was intersected is unknown. In future all coal quality core holes will have to be planned to be orthogonal to the coal as best as practical.
Sample security	• *The measures taken to ensure sample security.*	• Unlike samples for base metal deposits coal sample security is not regarded as required for the coal industry. • Coal core that is designated as sufficient for testing in a laboratory is bagged, labeled and transported to the laboratory in Ulaanbaatar. Additional tests for a limited number of samples taken in the 2011 due diligence programme were sent to Australia.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• These are not known at time of estimation of coal resources.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental*	• Lease 13879X is held by BDBL LLC. The nature and length of tenure is not verified here and would need additional independent confirmation. • Any additional title of a material nature such as declared water

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Criteria	JORC Code explanation	Commentary
	settings. • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.*	protection areas is not taken into consideration in this resource estimation and would have to be independently investigated.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• During 2009, geological mapping of the license area was conducted by Peabody Polo LLC. This work was followed by trenching program in 2010 by Peabody Winsway LLC. Trench B located near BTE 001 appears to have intersected the same coal as in drill hole BTE001. • Nordic Geological Solutions compiled a Due Diligence report for C@ Limited in October 2011 for relisting on the ASX as Draig
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Proposed two seam steeply dipping Jurassic coal intervals. Western part of lease overlain by Tertiary basalts. The source and geometry of the basalt is not known but if a large feeder pipe is present, it could affect the coal measure stratigraphy by impacting on seam continuity and possibly coal quality. There is not enough drilling or exploration evidence to determine what effects these are. The extent of coal measure stratigraphy under the flat lying flood basalt is unknown. • Based on down hole logs upper seam (A) is highly banded poorer quality than the Lower seam interval (B). Seam B appears to be better quality. Interburden between two seams estimated to be approximately up to 40m. • Base of Weathering (BOW) is generated using drill hole picks based on visual inspection of core and chips and validated against core/chip photographs. There is considerable variation in BOW data, which ranges from 6 m to 117 m. Where BOW effects modelled coal seam subcrops BOW values appear reliable and is generally 20m deep.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• Individual drill hole results are not presented here. They are tabulated and included in Appendices C and D. • All drill hole data that pertains to coal seams has been loaded and modelled in the geological computer model software MINEX program used to estimate coal resources. The coal resource table presented in this report does present summary information (av. thickness, av. density) relating to each seam interval.
Data	• *In reporting Exploration Results, weighting averaging techniques,*	• With only five core holes in the resource and the likely

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Criteria	JORC Code explanation	Commentary
aggregation methods	*maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	unrepresentative nature of the results, coal quality determination is regarded as indicative only. Numerous samples ('plies') within each seam group were taken but have not been related to down hole geophysics or any validated correlated ply system. The basic qualities of Seam A and B are therefore just a combination of results for each seam group, reported as minimum and maximum with an indicative average. See Table 3.1
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• All 2011 and 2012 holes drilled vertically in very steeply dipping geology, except drill hole TG035C that was drilled 45^0 towards the northeast. This hole would have been drilled in an effort to intersect the very steeply dipping coal at an angle that would be closer to true thickness.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• This report contains a selection of text figures presenting; • Typical Stratigraphy • Cross sections of resource, • Drill hole plan with geology • Resource areas
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Tabulation of all drill holes and the coal seam pick file used in the geological model is presented in Appendices C and D.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Geophysical survey by Dashmeg Engineering Induced Polarisation Dipole-Dipole (IPDD) survey 12 lines completed in 13879X and reviewed by Logantek. • Around 90% of all holes have been logged using ALT tools; (caliper, density, gamma, some sonic; some verticality and digital data stored in LAS files) unless ground conditions prevented insertion of sondes. Seam picks have been corrected to geophysics. • Holes not down hole logged - TG039 (Total depth 24m). • ALT down hole logging tools less than industry standard. • All 2012 boreholes which intersected coal include verticality data which is included in the geological model. Drill holes in 2011 do not include verticality data and are assumed to be vertical.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions,*	• The results of this report will be discussed further by Draig and decisions regarding future exploration will be made over the next several months.

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Criteria	JORC Code explanation	Commentary
	including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• All coal seam picks regenerated by MBGS and uploaded into geological model.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• A site visit has not been completed. Data for resource estimation has been supplied by Draig Resources Limited - Mongolia country manager.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Based on down hole geophysical logs two seams have been correlated for this deposit from 19 coal intersections in drill hole sites; however, no single hole has intersected both seams. The lack of data, steep dips and possible faulting have made interpreting the geology difficult. The model is considered reasonable given what little data is available; however, many DUMMY pick and DUMMY drill holes have been used to control the model in order to honour the existing drill hole seam pick data. • Coal plies belonging to either Seam A or B have been arbitrarily picked in individual drill holes using the same relevant alpha numeric ply code for each hole. Correlations of individual plies between holes was not attempted, so if the intersected seam in another hole did not have the same number of sequential plies, the missing plies were set to zero. Coal ply picks are based on an arbitrary down hole geophysical log density cut-off of 1.8 g/cc. Because it is not known how the geophysical tools were standardised or calibrated, the confidence level of this procedure is low. • Coal ply picks exclude non-coal parting material. • No coal working sections have been created. • Some structure is interpreted to be present at the north western end of the deposit (Polygon NW), which could be a set of tight isoclinal rolls; however, it has been interpreted by MBGS as a large thrust fault and modelled as such.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below*	• Strike length of two coal seams is assumed to be approximately 3kms trending northwest-southeast. However only 1.4km strike length of

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Criteria	JORC Code explanation	Commentary
	surface to the upper and lower limits of the Mineral Resource.	the seams (comprising two polygons) has been used in estimating resources because the level of confidence between holes does not allow a single resource polygon to join the two existing ones. • A 'geoshell' designed to limit resources at depth is based on the drill hole total depths. Resources are therefore not extrapolated below the maximum depths of drilling data. Resources are reported in 50m depth increments from the surface to a maximum depth of 150m.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• Minex Geological Model called Teeg_0913 • Structure roof, structure floor and structure thickness grids for all 43 coal plies for 2 coal seams (A and B); plus grids for topography and base of weathering grids were generated. • Structural model of seam grids at 10m mesh • Validation process of model was to ensure that seam grids at least honoured the coal ply picks as defined by drilling. Any interpolated or extrapolated coal seams were constrained by using DUMMY holes to control their thickness and structure. • A little amount of coal quality data is available for this project, discrepancies between plies and samples are present where data does exist. For this reason it was decided to use default values for ash, moisture and in situ density. • Dummy or default coal quality grids were created for each ply.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages estimated on moisture in situ Relative Density basis assumed for all grids to be RD1.45
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• There is not enough data to make any decisions regarding any appropriate cut-off grades to ash, total Sulphur. Coal resource estimate is based on arbitrary maximum down hole geophysical density 1.8 gms/cc, that defined a coal pick interval.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider*	• Like the Bayanteeg mine adjacent and north of 13879X lease boundary, the resource in 13879X is assumed to be open cut potential. • Resources are estimated in 50m increments down to a maximum

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Criteria	JORC Code explanation	Commentary
	potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	depth of 150m. • There has been no discussions with any mine planning engineers to determine the likely potential of possible mining depths for a resource such as this in this area. • The mine at Bayanteeg appears to be a single cut along strike of the coal seam subcrop. Based on satellite images it does not appear to be any deeper than 50m. • Power, water and local unformed roads provide infrastructure to the Bayanteeg pit and these are therefore close to the 13879X if a mine were to start at Teeg.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Coal quality data is currently insufficient to be used to generate quality grids for each of Seam A and B. • Therefore there are no quality cut-offs applied to the resource at this time.
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• No environmental factors or assumptions have been made at this stage. •
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• A default coal density of 1.45 was used in the coal resource estimate
Classificatio	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• Coal Resources have been classified as Inferred within 13879X. • Text figure 4.1 indicates the extent of the resource polygons inside

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Criteria	JORC Code explanation	Commentary
n	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	which resources were estimated. Resource areas are limited to the thin subcrop zone of each seam with limited down dip extensions based on limited drill holes for each section line. • Using Minex software, seam thickness grids (limited to below the base of weathering) and Apparent Relative Density grids were used to estimate in situ coal tonnages (i.e. coal resources). • Resources were estimated within vertical sided resource/polygon areas. Inferred Resources were also constrained by a surface formed by an envelope (areal and depth) of drill holes ('geoshell' surface of geological data limits, generally located at the base of drill holes). • An Inferred Resource definition is supplied in Appendix B
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• A previous resource estimate for 13879X was completed in July 2012 by PT Danmar Explorindo in a report titled **"JORC Compliant Statement of Inferred Resources of Coal Insitu (sic) and Target Coal for Further Exploration'.** The comments on this report are as follows and the bold italic text is quoted from the 2012 report; • Previously ***the 1000m sphere of influence is assumed because there is good evidence for the lateral continuity of the coal in outcrop (4km) and the seam is particularly thick (24m) therefore likely to persist down dip for at least 1000m*** is deemed not reasonable or supported by any drilling data and the extrapolation distances between drill holes has been reduced significantly. Given the known geology of the area this assumption is not valid. The maximum distance along strike used in this 2013 estimate is 250m. • Previously ***no weathering halo was applied to the coal resources*** is deemed unreasonable. All coal deposits have a weathering profile (or 'halo') and the current resource estimate uses a grid that is the base of weathering. • Previously ***a bottom limit of 300m depth was applied to the model, which assumes maximum depth limit of coal*** is deemed inappropriate and unreasonable as this depth does not have 'reasonable prospects for eventual economic extraction' (2004 JORC Code). The current resource estimate is taken to a maximum depth of 150m. The deepest drilled coal intersection in 13879X is currently 175m. • Previously ***The Inferred Resource estimate is based on extrapolation of the coal seam down-dip at a dip angle between 15-30° to the northeast.*** This interpretation is not supported by a single drill hole data point and the 2012 estimate of 62Mt below 150m

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Criteria	JORC Code explanation	Commentary
		to 300m is mostly hypothetical and a result of extrapolated coal northeast of the drilled subcrop. The existing drilling indicates a complex, steeply dipping group of coal seams (assumed to be only two for this estimation) dipping to the southwest – with up to near vertical dips.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• Based on the density and location of existing drill holes, and minor trenching (that confirms a coal seam subcrop near BTE 02), the resultant exploration data provides a level of confidence that warrants only an Inferred Resource classification. • There would be every expectation that the 2013 coal resource estimate of 10Mt Inferred Resources could be upgraded to Indicated Resources with continued exploration. • There is currently no mine or excavation in these resources so the estimated resources cannot be confirmed by mining. • Even though there is the Bayanteeg pit to the north it is not known how the geology of those mined coal seams relate to the resources located in 13879X.

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Appendix B Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 'The JORC Code 2012 Edition'

Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves

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Joint Ore Reserves Committee

The JORC Code
2012 Edition

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THE MINERALS INSTITUTE

Minerals Council of Australia

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Prepared by the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC)

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Foreword

1. The *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the 'JORC Code' or 'the Code') sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves. The Joint Ore Reserves Committee ('JORC') was established in 1971 and published several reports containing recommendations on the classification and Public Reporting of Ore Reserves prior to the release of the first edition of the JORC Code in 1989.

   Revised and updated editions of the Code were issued in 1992, 1996, 1999, and 2004. This 2012 edition supersedes all previous editions.

   Since 1994, the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) has worked to create a set of standard international definitions for reporting Mineral Resources and Mineral (Ore) Reserves, based on the evolving JORC Code's definitions. CRIRSCO was initially a committee of the Council of Mining and Metallurgical Institutions (CMMI).

   Representatives of bodies from Australia, Canada, South Africa, USA and the UK reached provisional agreement on standard definitions for reporting resources and reserves in 1997. This was followed in 1998 by an agreement to incorporate the CMMI definitions into the International Framework Classification for Reserves and Resources – Solid Fuels and Mineral Commodities, developed by the United Nations Economic Commission for Europe (UN-ECE).

   CMMI was disbanded in 2002 but CRIRSCO remained as a separate entity and now has a relationship with the International Council on Mining and Metals (ICMM). An initiative was commenced by CRIRSCO to develop a Template, largely based on the JORC Code, that was designed to assist countries to develop their own code in line with world best practice. The Template has been recognised as a commodity-specific code in UNFC 2009.

   CRIRSCO's members are National Reporting Organisations (NROs) who are responsible for developing mineral reporting codes or standards and guidelines. The NROs are: Australasia (JORC), Canada (CIM Standing Committee on Reserve Definitions), Chile (National Committee), Europe (PERC), Russia (NAEN), South Africa (SAMCODES) and USA (SME). As a result of the CRIRSCO/CMMI initiative, considerable progress has been made towards widespread adoption of consistent reporting standards throughout the world. In this edition of the JORC Code defined terms are aligned to the CRIRSCO Standard Definitions as revised in October 2012.

Introduction

2. In this edition of the JORC Code, important terms and their definitions are highlighted in bold text. The guidelines are placed after the respective Code Clauses using indented italics. Guidelines are not part of the Code but are intended to provide assistance and guidance to readers and should be considered persuasive when interpreting the Code.

3. The Code has been adopted by The Australasian Institute of Mining and Metallurgy (The AusIMM) and the Australian Institute of Geoscientists (AIG) and is binding on members of those organisations. The Code is endorsed by the Minerals Council of Australia and the Financial Services Institute of Australasia as a contribution to good practice. The Code has also been adopted by and included in the listing rules of the Australian Securities Exchange (ASX) and the New Zealand Stock Exchange (NZX).

   The ASX and NZX have, since 1989 and 1992 respectively, incorporated the Code into their listing rules. Under these listing rules, a Public Report must be prepared in accordance with the Code if it includes a statement on Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves. The incorporation of the Code imposes certain specific requirements on mining or exploration companies reporting to the ASX and NZX. There remain a number of other issues outside of the JORC Code associated with Public Reports that are addressed specifically within the listing rules.

As such, it is strongly recommended that users of the Code familiarise themselves with the listing rules of the relevant exchange that relates to Public Reporting of Exploration Results, Mineral Resources and Ore Reserves.

For Public Reports of initial or materially changed Exploration Results, Mineral Resources or Ore Reserves the JORC Code requires the Competent Person, on whose documentation the Public Report is based, to be named in the Public Report. The Public Report or attached statement must say that the Competent Person consents to the inclusion in the Public Report of the matters based on their information in the form and context in which it appears, and must include the name of the Competent Person's firm or employer.

Users of the Code should refer to Clause 9.

Scope

4. The principles governing the operation and application of the JORC Code are Transparency, Materiality and Competence.

- **Transparency requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not be misled by this information or by omission of material information that is known to the Competent Person.**
- **Materiality requires that a Public Report contains all the relevant information that investors and their professional advisers would reasonably require, and reasonably expect to find in the report, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources or Ore Reserves being reported. Where relevant information is not supplied an explanation must be provided to justify its exclusion.**
- **Competence requires that the Public Report be based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional code of ethics (the Competent Person).**

Transparency and Materiality are guiding principles of the Code, and the Competent Person must provide explanatory commentary on the material assumptions underlying the declaration of Exploration Results, Mineral Resources or Ore Reserves.

In particular, the Competent Person must consider that the benchmark of Materiality is that which includes all aspects relating to the Exploration Results, Mineral Resources or Ore Reserves that an investor or their advisers would reasonably expect to see explicit comment on from the Competent Person. The Competent Person must not remain silent on any material aspect for which the presence or absence of comment could affect the public perception or value of the mineral occurrence.

5. Table 1 provides a checklist or reference of criteria to be considered by the Competent Person in developing their documentation and in preparing the Public Report.

In the context of complying with the principles of the Code, comments relating to the items in the relevant sections of Table 1 should be provided on an 'if not, why not' basis within the Competent Person's documentation. Additionally comments related to the relevant sections of Table 1 must be complied with on an 'if not, why not' basis within Public Reporting for significant projects (see Appendix 1 Generic Terms and Equivalents) when reporting Exploration Results, Mineral Resources or Ore Reserves for the first time. Table 1 also applies in instances where these items have materially changed from when they were last Publicly Reported. Reporting on an 'if not, why not' basis is to ensure that it is clear to an investor whether items have been considered and deemed of low consequence or are not yet addressed or resolved.

For the purposes of the JORC Code the phrase 'if not, why not' means that each item listed in the relevant section of Table 1 must be discussed and if it is not discussed then the Competent Person must explain why it has been omitted from the documentation.

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The Code requires in Clauses 19, 27 and 35 that reporting of first time or materially changed Exploration Results, Mineral Resources or Ore Reserves estimates be accompanied by a technical summary of all relevant sections of Table 1 on an 'if not, why not' basis as an appendix to the Public Report.

A material change could be a change in the estimated tonnage or grade or in the classification of the Mineral Resources or Ore Reserves. Whether there has been a material change in relation to a significant project must be considered by taking into account all of the relevant circumstances, including the style of mineralisation. This includes considering whether the change in estimates is likely to have a material effect on the price or value of the company's securities.

6. **Public Reports are reports prepared for the purpose of informing investors or potential investors and their advisers on Exploration Results, Mineral Resources or Ore Reserves. They include, but are not limited to, annual and quarterly company reports, press releases, information memoranda, technical papers, website postings and public presentations.**

   These Public Reports may be to the Australian Securities Exchange and the New Zealand Stock Exchange, or other regulatory authorities or as required by law.

   The Code is a required minimum standard for Public Reporting. JORC also recommends its adoption as a minimum standard for other reporting. Companies are encouraged to provide information in their Public Reports that is as comprehensive as possible.

   The Code applies to other publicly released company information in the form of postings on company websites and presentation material used in briefings for shareholders, stockbrokers and investment analysts. The Code also applies to the following reports if they have been prepared for the purposes described in Clause 6 including but not limited to: environmental statements, information memoranda, expert reports, and technical papers referring to Exploration Results, Mineral Resources or Ore Reserves.

   For companies issuing concise annual reports, inclusion of all material information relating to Exploration Results, Mineral Resources and Ore Reserves is recommended. In cases where summary information is presented it should be clearly stated that it is a summary, and a reference attached giving the location of the Code-compliant Public Reports or Public Reporting on which the summary is based.

   It is recognised that companies can be required to issue reports into more than one regulatory jurisdiction, with compliance standards that may differ from this Code. It is recommended that such reports include a statement alerting the reader to this situation. Where members of The AusIMM and the AIG are required to report in other jurisdictions, they are obliged to comply with the requirements of those jurisdictions.

   Reference in the Code to 'documentation' is to internal company documents prepared as a basis for, or to support, a Public Report.

   It is recognised that situations may arise where documentation prepared by a Competent Person for internal company or similar non-public purposes does not comply with the JORC Code. In such situations, it is recommended that the documentation includes a prominent statement to this effect. This will make it less likely that non-complying documentation will be used to compile Public Reports, since Clause 9 requires Public Reports to fairly reflect Exploration Results, Mineral Resource and/or Ore Reserve estimates, and supporting documentation, prepared by a Competent Person.

   While every effort has been made within the Code and Guidelines (including Table 1) to cover most situations likely to be encountered in Public Reporting, there may be occasions when doubt exists as to the appropriate form of disclosure. On such occasions, users of the Code and those compiling reports to comply with the Code should be guided by its intent, which is to provide a minimum standard for Public Reporting, and to ensure that such reporting contains all information that investors and their professional advisers would reasonably require, and reasonably expect to find in the report, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources or Ore Reserves being reported.

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The JORC Code is a Code for Public Reporting not a Code that regulates the manner in which a Competent Person estimates Mineral Resources or Ore Reserves. The term 'JORC compliant' therefore refers to the manner of reporting not to the estimates. Use of the words 'JORC compliant' to describe resources or estimates is potentially misleading. The words 'JORC compliant' should be interpreted to mean: 'Reported in accordance with the JORC Code and estimated (or based on documentation prepared) by a Competent Person as defined by the JORC Code'.

7. The Code is applicable to all solid minerals, including diamonds, other gemstones, industrial minerals and coal, for which Public Reporting of Exploration Results, Mineral Resources and Ore Reserves is required by the Australian Securities Exchange and the New Zealand Stock Exchange.

The JORC Code is cited by the 'Code and Guidelines for Technical Assessment and/or Valuation of Mineral and Petroleum Assets and Mineral and Petroleum Securities for Independent Expert Reports' (the 'VALMIN Code') as the applicable standard for the Public Reporting of Exploration Results, Mineral Resources and Ore Reserves. References to 'technical and economic studies' and 'feasibility studies' in the JORC Code are not intended as references to Technical Assessments or Valuations as defined in the VALMIN Code.

8. JORC recognises that further review of the Code and Guidelines will be required from time to time.

Competence and Responsibility

9. A Public Report concerning a company's Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is the responsibility of the company acting through its Board of Directors. Any such report must be based on, and fairly reflect, the information and supporting documentation prepared by a Competent Person. A company issuing a Public Report shall disclose the name(s) of the Competent Person, state whether the Competent Person is a full-time employee of the company, and, if not, name the Competent Person's employer.

Any potential for a conflict of interest by the Competent Person or a related party must be disclosed in accordance with the Transparency principle. Any other relationship of the Competent Person with the Company making the report must also be disclosed in the Public Report. The report must be issued with the prior written consent of the Competent Person as to the form and context in which it appears.

Where a company is re-issuing information previously issued with the written consent of the Competent Person, it must state the original report name, the name(s) of the Competent Person responsible for the original report, and state the date and reference the location of the original source public report for public access. In these circumstances the Company is not required to obtain the Competent Person's prior written consent as to the form and context in which the information appears, provided:

- The company confirms in the subsequent public presentation that it is not aware of any new information or data that materially affects the information included in the relevant market announcement. In the case of estimates of Mineral Resources or Ore Reserves, the company confirms that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.
- The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified. Note that for the subsequent public presentation it is the responsibility of the company acting through its Board of Directors to ensure the form and context has not been materially altered.

This relaxation of the requirement to obtain the Competent Person's prior written consent does not apply to the requirements for annual reporting of Mineral Resources and Ore Reserves contained in Clause 15.

All such public disclosure should be specifically reviewed by the company to ensure that the form and context in which the Competent Person's findings are presented have not been materially modified, and to

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ensure that the previously issued Exploration Results, Mineral Resources or Ore Reserve remain valid in the light of any more recently-acquired data.

Examples of appropriate forms of compliance statements are provided in Appendix 3.

In order to assist Competent Persons and companies to comply with these requirements a Competent Person's Consent Form has been devised that incorporates the requirements of the Code. The Competent Person's Consent Form is provided in Appendix 2.

The completion of a consent form, whether in the format provided or in an equivalent form, is recommended as good practice and provides readily available evidence that the required prior consent has been obtained.

The Competent Person's Consent Form(s), or other evidence of the Competent Person's written consent, should be retained by the company and the Competent Person to ensure that the written consent can be promptly provided if required.

10. Documentation detailing Exploration Results, Mineral Resource and Ore Reserve estimates, on which a Public Report on Exploration Results, Mineral Resources and Ore Reserves is based, must be prepared by, or under the direction of, and signed by, a Competent Person. If an Exploration Target is included in a Public Report, documentation must also be prepared by, or under the direction of, and signed by, a Competent Person. The documentation must provide a fair representation of the matters being reported.

11. **A 'Competent Person' is a minerals industry professional who is a Member or Fellow of The Australasian Institute of Mining and Metallurgy, or of the Australian Institute of Geoscientists, or of a 'Recognised Professional Organisation' (RPO), as included in a list available on the JORC and ASX websites. These organisations have enforceable disciplinary processes including the powers to suspend or expel a member.**

    A Competent Person must have a minimum of five years relevant experience in the style of mineralisation or type of deposit under consideration and in the activity which that person is undertaking.

    If the Competent Person is preparing documentation on Exploration Results, the relevant experience must be in exploration. If the Competent Person is estimating, or supervising the estimation of Mineral Resources, the relevant experience must be in the estimation, assessment and evaluation of Mineral Resources. If the Competent Person is estimating, or supervising the estimation of Ore Reserves, the relevant experience must be in the estimation, assessment, evaluation and economic extraction of Ore Reserves.

    The key qualifier in the definition of a Competent Person is the word 'relevant'. Determination of what constitutes relevant experience can be a difficult area and common sense has to be exercised. For example, in estimating Mineral Resources for vein gold mineralisation, experience in a high-nugget, vein-type mineralisation (such as tin, uranium, etc) may be relevant, whereas experience in (say) massive base metal deposits may not be. As a second example, to qualify as a Competent Person in the estimation of Ore Reserves for alluvial gold deposits, considerable (at least five years) experience in the evaluation and economic extraction of this type of mineralisation may be needed. This is due to the properties of gold in alluvial systems, the particle sizing of the host sediment, and the low grades involved. Experience with placer deposits containing minerals other than gold may not necessarily provide appropriate relevant experience.

    The key word 'relevant' also means that it is not always necessary for a person to have five years experience in each and every type of deposit to act as a Competent Person if that person has relevant experience in other deposit types. For example, a person with (say) 20 years experience in estimating Mineral Resources for a variety of metalliferous hard-rock deposit types may not require five years specific experience in (say) porphyry copper deposits to act as a Competent Person. Relevant experience in the other deposit types could count towards the required experience in relation to porphyry copper deposits.

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In addition to experience in the style of mineralisation, a Competent Person taking responsibility for the compilation of Exploration Results or Mineral Resource estimates should have sufficient experience in the sampling and analytical techniques relevant to the deposit under consideration to be aware of problems that could affect the reliability of data. Some appreciation of extraction and processing techniques applicable to that deposit type may also be important.

As a general guide, a person being called upon to act as Competent Person should be clearly satisfied in their own mind that they could face their peers and demonstrate competence in the commodity, type of deposit and situation under consideration. If doubt exists, the person should either seek opinions from appropriately experienced peers or should decline to act as a Competent Person.

Estimation of Mineral Resources may be a team effort (for example, involving one person or team collecting the data and another person or team preparing the estimate). Estimation of Ore Reserves is very commonly a team effort involving several technical disciplines. It is recommended that, where there is clear division of responsibility within a team, each Competent Person and his or her contribution should be identified, and responsibility accepted for that particular contribution. If only one Competent Person signs the Mineral Resource or Ore Reserve documentation, that person is responsible and accountable for the whole of the documentation under the Code. It is important in this situation that the Competent Person accepting overall responsibility for a Mineral Resource or Ore Reserve estimate and supporting documentation prepared in whole or in part by others, is satisfied that the work of the other contributors is acceptable.

Complaints made with respect to the professional work of a Competent Person will be dealt with under the disciplinary procedures of the professional organisation to which the Competent Person belongs.

When an Australian Securities Exchange or New Zealand Stock Exchange listed company with overseas interests wishes to report overseas Exploration Results, Mineral Resource or Ore Reserve estimates prepared by a person who is not a member of The AusIMM, the AIG or a RPO, it is necessary for the company to nominate a Competent Person or Persons to take responsibility for the Exploration Results, Mineral Resource or Ore Reserve estimate. The Competent Person undertaking this activity should appreciate that they are accepting full responsibility for the estimate and supporting documentation under Australian Securities Exchange and/or the New Zealand Stock Exchange listing rules and should not treat the procedure merely as a 'rubber-stamping' exercise.

Reporting Terminology

12. Public Reports dealing with Exploration Results, Mineral Resources or Ore Reserves must only use the terms set out in Figure 1.

Figure 1 sets out the framework for classifying tonnage and grade estimates to reflect different levels of geological confidence and different degrees of technical and economic evaluation. Mineral Resources can be estimated on the basis of geoscientific information with some input from other disciplines. Ore Reserves, which are a modified sub-set of the Indicated and Measured Mineral Resources (shown within the dashed outline in Figure 1), require consideration of the Modifying Factors affecting extraction, and should in most instances be estimated with input from a range of disciplines.

'Modifying Factors' are considerations used to convert Mineral Resources to Ore Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

Measured Mineral Resources may be converted to either Proved Ore Reserves or Probable Ore Reserves. The Competent Person may convert Measured Mineral Resources to Probable Ore Reserves because of uncertainties associated with some or all of the Modifying Factors which are taken into account in the conversion from Mineral Resources to Ore Reserves. This relationship is shown by the broken arrow in Figure 1. Although the trend of the broken arrow includes a vertical component, it does not, in this instance, imply a reduction in the level of geological knowledge or confidence. In such a situation these Modifying Factors should be fully explained.

Refer also to the guidelines to Clause 32.

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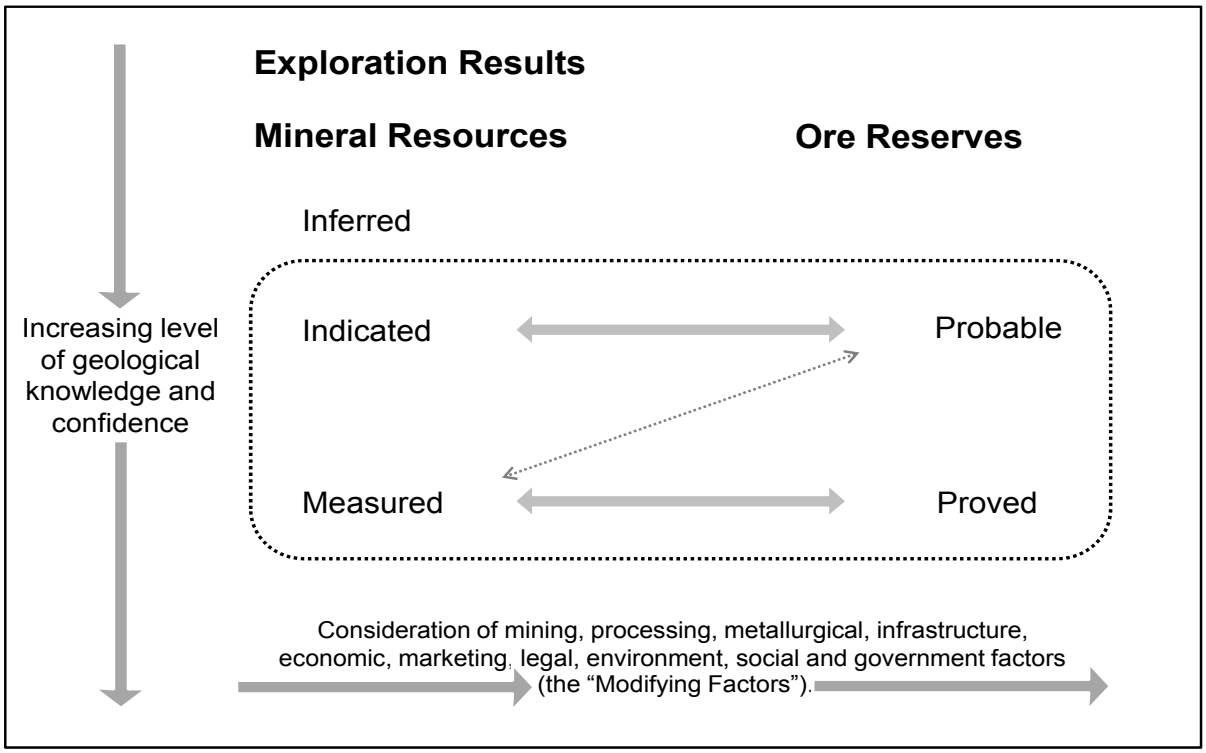

Figure 1 General relationship between Exploration Results, Mineral Resources and Ore Reserves.

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Reporting General

13. Public Reports concerning a company's Exploration Results, Mineral Resources or Ore Reserves must include a description of the style and nature of the mineralisation.

14. A company must disclose all relevant information concerning Exploration Results, Mineral Resources or Ore Reserves that could materially influence the economic value of those Exploration Results, Mineral Resources or Ore Reserves to the company. A company must promptly report any material changes in its Mineral Resources or Ore Reserves.

15. Companies must review and publically report their Mineral Resources and Ore Reserves annually. The annual review date must be nominated by the Company in its Public Reports of Mineral Resources and Ore Reserves and the effective date of each Mineral Resource and Ore Reserve statement must be shown. The Company must discuss any material changes to previously reported Mineral Resources and Ore Reserves at the time of publishing updated Mineral Resources and Ore Reserves.

16. Throughout the Code, if appropriate, 'quality' may be substituted for 'grade' and 'volume' may be substituted for 'tonnage'. (Refer to Appendix 1 Generic Terms and Equivalents.)

17. It is recognised that it is common practice for a company to comment on and discuss its exploration in terms of target size and type. However, any such comment in a Public Report must comply with the following requirements.

    An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade (or quality), relates to mineralisation for which there has been insufficient exploration to estimate a Mineral Resource.

    Any such information relating to an Exploration Target must be expressed so that it cannot be misrepresented or misconstrued as an estimate of a Mineral Resource or Ore Reserve. The terms Resource or Reserve must not be used in this context. In any statement referring to potential quantity and grade of the target, these must both be expressed as ranges and must include:

- a detailed explanation of the basis for the statement, including specific description of the level of exploration activity already completed, and
- a clarification statement within the same paragraph as the first reference of the Exploration Target in the Public Report, stating that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to estimate a Mineral Resource and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Given the level of uncertainty surrounding the supporting data, an Exploration Target tonnage or grade must not be reported as a 'headline statement' in a Public Report.

If a Public Report includes an Exploration Target the proposed exploration activities designed to test the validity of the exploration target must be detailed and the timeframe within which those activities are expected to be completed must be specified.

If an Exploration Target is shown pictorially (for instance as cross sections or maps) or with a graph, it must be accompanied by text that meets the requirements above.

A Public Report that includes an Exploration Target must be accompanied by a Competent Person statement taking responsibility for the form and context in which the Exploration Target appears.

All disclosures of an Exploration Target must clarify whether the target is based on actual Exploration Results or on proposed exploration programmes. Where the Exploration Target statement includes information relating to ranges of tonnages and grades these must be represented as approximations. The explanatory text must include a description of the process used to determine the grade and tonnage ranges used to describe the Exploration Target.

For an Exploration Target based on Exploration Results, a summary of the relevant exploration data available and the nature of the results should also be stated, including a disclosure of the current drill hole or sampling spacing and relevant plans or sections. In any subsequent upgraded or modified statements on the Exploration Target, the Competent Person should discuss any material changes to potential scale or quality arising from completed exploration activities.

Reporting of Exploration Results

18. **Exploration Results include data and information generated by mineral exploration programmes that might be of use to investors but which do not form part of a declaration of Mineral Resources or Ore Reserves.**

The reporting of such information is common in the early stages of exploration when the quantity of data available is generally not sufficient to allow any reasonable estimates of Mineral Resources.

If a company reports Exploration Results in relation to mineralisation not classified as a Mineral Resource or an Ore Reserve, then estimates of tonnages and average grade must not be assigned to the mineralisation unless the situation is covered by Clause 17, and then only in strict accordance with the requirements of that Clause.

Examples of Exploration Results include results of outcrop sampling, assays of drill hole intersections, geochemical results and geophysical survey results.

19. Public Reports of Exploration Results must contain sufficient information to allow a considered and balanced judgement of their significance. Reports must include relevant information such as exploration context, type and method of sampling, relevant sample intervals and locations, distribution, dimensions and relative location of all relevant assay data, methods of analysis, data aggregation methods, land tenure status plus information on any of the other criteria listed in Table 1 that are material to an assessment.

Public Reports of Exploration Results must not be presented so as to unreasonably imply that potentially economic mineralisation has been discovered. If true widths of mineralisation are not reported, an appropriate qualification must be included in the Public Report.

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Where assay and analytical results are reported, they must be reported using one of the following methods, selected as the most appropriate by the Competent Person:

- either by listing all results, along with sample intervals (or size, in the case of bulk samples), or
- by reporting weighted average grades of mineralised zones, indicating clearly how the grades were calculated.

Clear diagrams and maps designed to represent the geological context must be included in the report. These must include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.

Reporting of selected information such as isolated assays, isolated drill holes, assays of panned concentrates or supergene enriched soils or surface samples, without placing them in perspective is unacceptable.

While it is not necessary to report all assays or drill holes, it is a requirement that sufficient information about the omitted data is provided so that a considered and balanced judgement can be made by the reader of the report. Where reports of Exploration Results do not include all drill holes or all intersections of drill holes the Competent Person must provide an explanation of why this information is not considered relevant or why it has not been provided.

As required under Clauses 4 and 5, the Competent Person must not 'remain silent on any issue for which the presence or absence of comment could impact the public perception or value of the mineral occurrence'. For significant projects the reporting of all criteria in sections 1 and 2 of Table 1 on an 'if not, why not basis' is required, preferably as an appendix to the Public Report. Additional disclosure is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results; for example, poor sample recovery, poor repeatability of assay or laboratory results, etc.

Reporting of Mineral Resources

20. **A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.**

All reports of Mineral Resources must satisfy the requirement that there are reasonable prospects for eventual economic extraction (ie more likely than not), regardless of the classification of the resource.

Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource. The basis for the reasonable prospects assumption is always a material matter, and must be explicitly disclosed and discussed by the Competent Person within the Public Report using the criteria listed in Table 1 for guidance. The reasonable prospects disclosure must also include a discussion of the technical and economic support for the cut-off assumptions applied.

Where untested practices are applied in the determination of reasonable prospects, the use of the proposed practices for reporting of the Mineral Resource must be justified by the Competent Person in the Public Report.

Geological evidence and knowledge required for the estimation of Mineral Resources must include sampling data of a type, and at spacings, appropriate to the geological, chemical, physical, and mineralogical complexity of the mineral occurrence, for all classifications of Inferred, Indicated and Measured Mineral Resources. A Mineral Resource cannot be estimated in the absence of sampling information.

The term 'Mineral Resource' covers mineralisation, including dumps and tailings, which has been identified and estimated through exploration and sampling and within which Ore Reserves may be defined by the consideration and application of the Modifying Factors.

The term 'reasonable prospects for eventual economic extraction' implies an assessment (albeit preliminary) by the Competent Person in respect of all matters likely to influence the prospect of economic extraction including the approximate mining parameters. In other words, a Mineral Resource is not an inventory of all mineralisation drilled or sampled, regardless of cut-off grade, likely mining dimensions location or continuity. It is a realistic inventory of mineralisation which, under assumed and justifiable technical, economic and development conditions, might, in whole or in part, become economically extractable.

Where considered appropriate by the Competent Person, Mineral Resource estimates may include material below the selected cut-off grade to ensure that the Mineral Resources comprise bodies of mineralisation of adequate size and continuity to properly consider the most appropriate approach to mining. Documentation of Mineral Resource estimates should clearly identify any diluting material included and Public Reports should include commentary on the matter if considered material.

Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron ore, bauxite and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However for the majority of smaller deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time. In all cases, the considered time frame should be disclosed and discussed by the Competent Person.

Any adjustment made to the data for the purpose of making the Mineral Resource estimate, for example by cutting or factoring grades, should be clearly stated and described in the Public Report.

Certain reports (eg inventory coal reports, exploration reports to government and other similar reports not intended primarily for providing information for investment purposes) may require full disclosure of all mineralisation, including some material that does not have reasonable prospects for eventual economic extraction. Such estimates of mineralisation would not qualify as Mineral Resources or Ore Reserves in terms of the JORC Code (refer also to the guidelines to Clauses 6 and 42).

21. **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. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.**

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to an Ore Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Where the Mineral Resource being reported is predominantly an Inferred Mineral Resource, sufficient supporting information must be provided to enable the reader to evaluate and assess the risk associated with the reported Mineral Resource.

In circumstances where the estimation of the Inferred Mineral Resource is presented on the basis of extrapolation beyond the nominal sampling spacing and taking into account the style of mineralisation, the report must contain sufficient information to inform the reader of:

- the maximum distance that the resource is extrapolated beyond the sample points
- the proportion of the resource that is based on extrapolated data
- the basis on which the resource is extrapolated to these limits
- a diagrammatic representation of the Inferred Mineral Resource showing clearly the extrapolated part of the estimated resource.

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The Inferred category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data are insufficient to allow the geological and grade continuity to be confidently interpreted. While it would be reasonable to expect that the majority of Inferred Mineral Resources would upgrade to Indicated Mineral Resources with continued exploration, due to the uncertainty of Inferred Mineral Resources, it should not be assumed that such upgrading will always occur.

Confidence in the estimate of Inferred Mineral Resources is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in Pre-Feasibility (Clause 39) or Feasibility (Clause 40) Studies. For this reason, there is no direct link from an Inferred Mineral Resource to any category of Ore Reserves (see Figure 1).

Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as Scoping Studies (refer to Clause 38).

22. **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 gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered.

    An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Ore Reserve.

    Mineralisation may be classified as an Indicated Mineral Resource when the nature, quality, amount and distribution of data are such as to allow confident interpretation of the geological framework and to assume continuity of mineralisation.

    Confidence in the estimate is sufficient to allow application of Modifying Factors within a technical and economic study as defined in Clauses 37 to 40.

23. **A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.**

    Geological evidence is derived from detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to confirm geological and grade (or quality) continuity between points of observation where data and samples are gathered.

    A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Ore Reserve or under certain circumstances to a Probable Ore Reserve.

    Mineralisation may be classified as a Measured Mineral Resource when the nature, quality, amount and distribution of data are such as to leave no reasonable doubt, in the opinion of the Competent Person determining the Mineral Resource, that the tonnage and grade of the mineralisation can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability.

    This category requires a high level of confidence in, and understanding of, the geological properties and controls of the mineral deposit.

    Confidence in the estimate is sufficient to allow application of Modifying Factors within a technical and economic study as defined in Clauses 37 to 40.

Depending upon the level of confidence in the various Modifying Factors it may be converted to a Proved Ore Reserve (high confidence in Modifying Factors), Probable Ore Reserve (some uncertainty in Modifying Factors) or may not be converted at all (low or no confidence in some of the Modifying Factors; or no plan to mine, eg pillars in an underground mine or outside economic pit limits).

24. The choice of the appropriate category of Mineral Resource depends upon the quantity, distribution and quality of data available and the level of confidence that attaches to those data. The appropriate Mineral Resource category must be determined by a Competent Person.

    Mineral Resource classification is a matter for skilled judgement and a Competent Person should take into account those items in Table 1 that relate to confidence in Mineral Resource estimation.

    In deciding between Measured Mineral Resources and Indicated Mineral Resources, Competent Persons may find it useful to consider, in addition to the phrases in the two definitions relating to geological and grade continuity in Clauses 22 and 23, the phrase in the guideline to the definition for Measured Mineral Resources: '... any variation from the estimate would be unlikely to significantly affect potential economic viability'.

    *In deciding between Indicated Mineral Resources and Inferred Mineral Resources, Competent Persons may wish to take into account, in addition to the phrases in the two definitions in Clauses 21 and 22 relating to geological and grade continuity, that part of the definition for Indicated Mineral Resources: '***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***', which contrasts with the guideline to the definition for Inferred Mineral Resources: 'Confidence in the estimate of Inferred Mineral Resources is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in Pre-Feasibility (Clause 39) or Feasibility (Clause 40) Studies' and 'Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as Scoping Studies (refer to Clause 38)'.*

    The Competent Person should take into consideration issues of the style of mineralisation and cut-off grade when assessing geological and grade continuity for the purposes of classifying the resource.

    Cut-off grades chosen for the estimation should be realistic in relation to the style of mineralisation and the anticipated mining and processing development options.

25. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. Reporting of tonnage and grade figures should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures and, in the case of Inferred Mineral Resources, by qualification with terms such as 'approximately' and to emphasise the imprecise nature of a Mineral Resource, the final result should always be referred to as an estimate not a calculation.

    In most situations, rounding to the second significant figure should be sufficient. For example 10,863,000 tonnes at 8.23 per cent should be stated as 11 million tonnes at 8.2 per cent. There will be occasions, however, where rounding to the first significant figure may be necessary in order to convey properly the uncertainties in estimation. This would usually be the case with Inferred Mineral Resources.

    Competent Persons are encouraged, where appropriate, to discuss the relative accuracy and confidence level of the Mineral Resource estimates with consideration of at least sampling, analytical and estimation errors. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnage. Where a statement of the relative accuracy and confidence level is not possible, a qualitative discussion of the uncertainties should be provided in its place (refer to Table 1).

26. Public Reports of Mineral Resources must specify one or more of the categories of 'Inferred', 'Indicated' and 'Measured'. Categories must not be reported in a combined form unless details for the individual categories are also provided. Mineral Resources must not be reported in terms of contained metal or mineral content unless corresponding tonnages and grades are also presented.

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Mineral Resources must not be aggregated with Ore Reserves.

Public Reporting of tonnages and grades outside the categories covered by the Code is not permitted unless the situation is covered by Clause 17, and then only in strict accordance with the requirements of that Clause.

Estimates of tonnage and grade outside of the categories covered by the Code may be useful for a company in its internal calculations and evaluation processes, but their inclusion in Public Reports is not permitted.

27. In a Public Report of a Mineral Resource for a significant project for the first time, or when those estimates have materially changed from when they were last reported, a brief summary of the information in relevant sections of Table 1 must be provided or, if a particular criterion is not relevant or material, a disclosure that it is not relevant or material and a brief explanation of why this is the case must be provided.

For a significant project, when Mineral Resource estimates are first Publicly Reported or when a material change occurs (including classification changes), there is an increased need for transparent discussion of the basis for the new Mineral Resource estimate in order that investors are appropriately informed of the basis for the changes. As noted in Clauses 4 and 5 the benchmark of Materiality is that which an investor or their advisers would reasonably expect to see explicit comment on from the Competent Person, thus the reporting of all relevant criteria in Table 1 on an 'if not, why not' basis is required.

The Code specifies reporting against relevant sections of Table 1 in this Clause. This may be satisfied by reporting against section 3 on the presumption that matters related to sections 1 and 2 will already have been included in a still current Public Report and this Report can be referenced. If this is not the case then these sections are also relevant and should be included in the Public Report.

The technical summary based against Table 1 criteria should be presented as an appendix to the Public Report.

Where there are as yet unresolved issues potentially impacting the reliability of, or confidence in, a statement of Mineral Resources (for example, poor sample recovery, poor repeatability of assay or laboratory results, limited information on bulk densities, etc) those unresolved issues should also be reported.

If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

Uncertainties in any of the criteria listed in Table 1 that could lead to under- or over-statement of Mineral Resources should be disclosed.

Mineral Resource estimates are sometimes reported after adjustment from reconciliation with production data. Such adjustments should be clearly stated in a Public Report of Mineral Resources and the nature of the adjustment or modification described.

28. The words 'ore' and 'reserves' must not be used in describing Mineral Resource estimates as the terms imply technical feasibility and economic viability and are only appropriate when all relevant Modifying Factors have been considered. Reports and statements should continue to refer to the appropriate category or categories of Mineral Resources until technical feasibility and economic viability have been established. If re-evaluation indicates that the Ore Reserves are no longer viable, the Ore Reserves must be reclassified as Mineral Resources or removed from Mineral Resource/Ore Reserve statements.

It is not intended that re-classification from Ore Reserves to Mineral Resources or vice versa should be applied as a result of changes expected to be of a short term or temporary nature, or where company management has made a deliberate decision to operate on a non-economic basis. Examples of such situations might be commodity price fluctuations expected to be of short duration, mine emergency of a non-permanent nature, transport strike, etc.

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Reporting of Ore Reserves

29. **An 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.**

The reference point at which Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

The key underlying assumptions and outcomes of the Pre-Feasibility Study or Feasibility Study must be disclosed at the time of reporting of a new or materially changed Ore Reserve.

Pre-Feasibility and Feasibility Studies are defined in Clauses 39 and 40 below.

Ore Reserves are sub-divided in order of increasing confidence into Probable Ore Reserves and Proved Ore Reserves.

In reporting Ore Reserves, information on estimated mineral processing recovery factors is very important, and should always be included in Public Reports.

Ore Reserves are those portions of Mineral Resources that, after the application of all Modifying Factors, result in an estimated tonnage and grade which, in the opinion of the Competent Person making the estimates, can be the basis of a technically and economically viable project, after taking account of material relevant Modifying Factors. Deriving an Ore Reserve without a mine design or mine plan through a process of factoring of the Mineral Resource is unacceptable.

Ore Reserves are reported as inclusive of marginally economic material and diluting material delivered for treatment or dispatched from the mine without treatment.

The term 'economically mineable' implies that extraction of the Ore Reserves has been demonstrated to be viable under reasonable financial assumptions. This will vary with the type of deposit, the level of study that has been carried out and the financial criteria of the individual company. For this reason, there can be no fixed definition for the term 'economically mineable'.

In order to achieve the required level of confidence in the Modifying Factors, appropriate Feasibility or Pre-Feasibility level studies will have been carried out prior to determination of the Ore Reserves. The studies will have determined a mine plan and production schedule that is technically achievable and economically viable and from which the Ore Reserves can be derived.

The term 'Ore Reserves' need not necessarily signify that extraction facilities are in place or operative, or that all necessary approvals or sales contracts have been received. It does signify that there are reasonable grounds to expect that such approvals or contracts will eventuate within the anticipated time frame required by the mine plans. There must be reasonable grounds to expect that all necessary Government approvals will be received. The Competent Person should highlight and discuss any material unresolved matter that is dependent on a third party on which extraction is contingent.

If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

Any adjustment made to the data for the purpose of making the Ore Reserve estimate, for example by cutting or factoring grades, should be clearly stated and described in the Public Report.

Where companies prefer to use the term 'Mineral Reserves' in their Public Reports, eg for reporting industrial minerals or for reporting outside Australasia, they should state clearly that this is being used with the same meaning as 'Ore Reserves', defined in this Code. If preferred by the reporting company,

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'Ore Reserve' and 'Mineral Resource' estimates for coal may be reported as 'Coal Reserve' and 'Coal Resource' estimates.

JORC prefers the term 'Ore Reserve' because it assists in maintaining a clear distinction between a 'Mineral Resource' and an 'Ore Reserve', whereas other codes feel it is better to reference Mineral Exploration Results, Mineral Resources and Mineral Reserves.

30. **A 'Probable Ore Reserve' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve.**

    Consideration of the confidence level of the Modifying Factors is important in conversion of Mineral Resources to Ore Reserves.

    A Probable Ore Reserve has a lower level of confidence than a Proved Ore Reserve but is of sufficient quality to serve as the basis for a decision on the development of the deposit.

31. **A 'Proved Ore Reserve' is the economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors.**

    A Proved Ore Reserve represents the highest confidence category of reserve estimate and implies a high degree of confidence in geological and grade continuity, and the consideration of the Modifying Factors. The style of mineralisation or other factors could mean that Proved Ore Reserves are not achievable in some deposits.

32. The choice of the appropriate category of Ore Reserve is determined primarily by the relevant level of confidence in the Mineral Resource and after considering any uncertainties in the consideration of the Modifying Factors. Allocation of the appropriate category must be made by a Competent Person.

    The Code provides for a direct two-way relationship between Indicated Mineral Resources and Probable Ore Reserves and between Measured Mineral Resources and Proved Ore Reserves. In other words, the level of geological confidence for Probable Ore Reserves is similar to that required for the determination of Indicated Mineral Resources, and the level of geological confidence for Proved Ore Reserves is similar to that required for the determination of Measured Mineral Resources.

    The Code also provides for a two-way relationship between Measured Mineral Resources and Probable Ore Reserves. This is to cover a situation where uncertainties associated with any of the Modifying Factors considered when converting Mineral Resources to Ore Reserves may result in there being a lower degree of confidence in the Ore Reserves than in the corresponding Mineral Resources. Such a conversion would not imply a reduction in the level of geological knowledge or confidence.

    A Probable Ore Reserve derived from a Measured Mineral Resource may be converted to a Proved Ore Reserve if the uncertainties in the Modifying Factors are removed. No amount of confidence in the Modifying Factors for conversion of a Mineral Resource to an Ore Reserve can override the upper level of confidence that exists in the Mineral Resource. Under no circumstances can an Indicated Mineral Resource be converted directly to a Proved Ore Reserve (see Figure 1).

    Application of the category of Proved Ore Reserve implies the highest degree of geological, technical and economic confidence in the estimate at the level of production increments used to support mine planning and production scheduling, with consequent expectations in the minds of the readers of the report. These expectations should be considered when categorising a Mineral Resource as Measured.

    Refer also to the guidelines in Clause 24 regarding classification of Mineral Resources.

33. Ore Reserve estimates are not precise calculations. Reporting of tonnage and grade estimates should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures. Refer also to Clause 25.

    To emphasise the imprecise nature of an Ore Reserve, the final result should always be referred to as an estimate and not a calculation.

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Competent Persons are encouraged, where appropriate, to discuss the relative accuracy and confidence level of the Ore Reserve estimates with consideration of both underlying estimation and Modifying Factor uncertainties. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnage. Where a statement of the relative accuracy and confidence level is not possible, a qualitative discussion of the uncertainties should be provided in its place (refer to Table 1).

34. Public Reports of Ore Reserves must specify one or other or both of the categories of 'Proved' and 'Probable'. Reports must not contain combined Proved and Probable Ore Reserve figures unless the relevant figures for each of the categories are also provided. Reports must not present metal or mineral content figures unless corresponding tonnage and grade figures are also given.

    Public Reporting of tonnage and grade outside the categories covered by the Code is not permitted unless the situation is covered by Clause 17, and then only in strict accordance with the requirements of that Clause.

    Estimates of tonnage and grade outside of the categories covered by the Code may be useful for a company in its internal calculations and evaluation processes, but their inclusion in Public Reports could cause confusion, and is not permitted.

    Ore Reserves may incorporate material (dilution) that is not part of the original Mineral Resource. It is essential that this fundamental difference between Mineral Resources and Ore Reserves is considered and caution exercised if attempting to draw conclusions from a comparison of the two.

    When revised Ore Reserve and Mineral Resource statements are publicly reported, the Company must discuss any material changes from the previous estimate, and supply sufficient comment to enable the basis for significant changes to be understood by the reader.

35. In a Public Report of an Ore Reserve estimate for a significant project for the first time, or when those estimates have materially changed from when they were last reported, a brief summary of the information in relevant sections of Table 1 must be provided or, if a particular criterion is not relevant or material, a disclosure that it is not relevant or material and a brief explanation of why this is the case must be provided.

    For a significant project, when Ore Reserve estimates are first Publicly Reported or when a material change occurs (including classification changes), there is an increased need for transparent discussion of the basis for the new Ore Reserve estimate in order that investors are appropriately informed of the basis for the changes. As noted in Clauses 4 and 5 the benchmark of Materiality is that which an investor or their advisers would reasonably expect to see explicit comment on from the Competent Person, thus the reporting of all criteria in Table 1 on an 'if not, why not' basis is required.

    The Code specifies reporting against relevant sections of Table 1 in this Clause. This may be satisfied by reporting against section 4 on the presumption that matters related to sections 1, 2 and 3 will already have been included in a still current Public Report and this Report can be referenced. If this is not the case then these sections are also relevant and should be included in the Public Report.

    The Technical summary based against Table 1 criteria should be presented as an appendix to the Public Report.

    Where there are as yet unresolved issues potentially impacting the reliability of, or confidence in, a statement of Ore Reserves (for example, limited geotechnical information, complex orebody metallurgy, uncertainty in the permitting process, etc) those unresolved issues should also be reported.

    If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

    Uncertainties in any of the criteria listed in Table 1 that could lead to under- or over- statement of Ore Reserves should be disclosed.

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Ore Reserve estimates are sometimes reported after adjustment from reconciliation with production data. Such adjustments should be clearly stated in a Public Report of Ore Reserves and the nature of the adjustment or modification described.

36. In situations where figures for both Mineral Resources and Ore Reserves are reported, a statement must be included in the report which clearly indicates whether the Mineral Resources are inclusive of, or additional to the Ore Reserves.

    Ore Reserve estimates must not be aggregated with Mineral Resource estimates to report a single combined figure.

    In some situations there are reasons for reporting Mineral Resources inclusive of Ore Reserves and in other situations for reporting Mineral Resources additional to Ore Reserves. It must be made clear which form of reporting has been adopted. Appropriate forms of clarifying statements may be:

    - *'The Measured and Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Ore Reserves.' or*
    - *'The Measured and Indicated Mineral Resources are additional to the Ore Reserves.'*

    In the former case, if any Measured and Indicated Mineral Resources have not been modified to produce Ore Reserves for economic or other reasons, the relevant details of these unmodified Mineral Resources should be included in the report. This is to assist the reader of the report in making a judgement of the likelihood of the unmodified Measured and Indicated Mineral Resources eventually being converted to Ore Reserves.

    Inferred Mineral Resources are by definition generally additional to Ore Reserves except where included as dilution in the Ore Reserves.

    For reasons stated in the guidelines to Clause 34 and in this paragraph, the reported Ore Reserve estimates must not be aggregated with the reported Mineral Resource estimates (eg in graphs, figures or tables). The resulting total is misleading and is capable of being misunderstood or of being misused to give a false impression of a company's prospects.

Technical Studies

37. These definitions are included in the Code to provide clarity on what is expected when reporting using these terms. The definition of a Scoping Study has been included because of the common usage of the term in Public Reports. However attention is drawn to the requirement for a Pre-Feasibility Study or a Feasibility study to have been completed for the Public Reporting of an Ore Reserve in Clause 29. An Ore Reserve must not be reported based on the completion of a Scoping Study.

38. **A Scoping Study is an order of magnitude technical and economic study of the potential viability of Mineral Resources. It includes appropriate assessments of realistically assumed Modifying Factors together with any other relevant operational factors that are necessary to demonstrate at the time of reporting that progress to a Pre-Feasibility Study can be reasonably justified.**

    A Scoping Study must not be used as the basis for estimation of Ore Reserves.

    If the outcome of a Scoping Study is partially supported by Inferred Mineral Resources and/or an Exploration Target, the Public Report must state both the proportion and relative sequencing of the Inferred Mineral Resources and/or an Exploration Target within the Scoping Study.

    For all Scoping Studies, the entity must include a cautionary statement in the same paragraph as, or immediately following, the disclosure of the Scoping Study.

    An example cautionary statement follows:

    'The Scoping Study referred to in this report is based on low-level technical and economic assessments, and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised.'

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In discussing 'reasonable prospects for eventual economic extraction' in Clause 20, the Code requires an assessment (albeit preliminary) in respect of all matters likely to influence the prospect of economic extraction including the approximate mining parameters by the Competent Person. While a Scoping Study may provide the basis for that assessment, the Code does not require a Scoping Study to have been completed to report a Mineral Resource.

Scoping Studies are commonly the first economic evaluation of a project undertaken and may be based on a combination of directly gathered project data together with assumptions borrowed from similar deposits or operations to the case envisaged. They are also commonly used internally by companies for comparative and planning purposes. Reporting the general results of a Scoping Study needs to be undertaken with care to ensure there is no implication that Ore Reserves have been established or that economic development is assured. In this regard it may be appropriate to indicate the Mineral Resource inputs to the Scoping Study and the processes applied, but it is not appropriate to report the diluted tonnes and grade as if they were Ore Reserves.

While initial mining and processing cases may have been developed during a Scoping Study, it must not be used to allow an Ore Reserve to be developed.

39. **A Preliminary Feasibility Study (Pre-Feasibility Study) is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Competent Person, acting reasonably, to determine if all or part of the Mineral Resources may be converted to an Ore Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study.**

As noted in Clause 29, formal assessment of all Modifying Factors is required in order to determine how much available Measured and Indicated Mineral Resources can be converted to Ore Reserves.

A Pre-Feasibility Study will consider the application and description of all Modifying factors (as outlined in Table 1, section 4) to demonstrate economic viability and to support an Ore Reserve Public Report. The Pre-Feasibility Study will identify the preferred mining, processing, and infrastructure requirements and capacities, but will not yet have finalised these matters. Detailed assessments of environmental and socio-economic impacts and requirements will also be well advanced. The Pre-Feasibility Study will highlight areas that require further refinement within the final study stage.

40. **A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable Modifying Factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a Pre-Feasibility Study.**

The Code does not require that a full Feasibility Study has been undertaken to convert Mineral Resources to Ore Reserves, but it does require that at least a Pre-Feasibility Study will have been carried out that will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.

Terms such as "Bankable Feasibility Study" and "Definitive Feasibility Study" are noted as being equivalent to a Feasibility Study as defined in this Clause.

A Feasibility Study is of a higher level of confidence than a Pre-Feasibility Study and would normally contain mining, infrastructure and process designs completed with sufficient rigour to serve as the basis for an investment decision or to support project financing. Social, environmental and governmental

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approvals, permits and agreements will be in place, or will be approaching finalisation within the expected development timeframe. The Feasibility Study will contain the application and description of all Modifying factors (as outlined in Table 1, section 4) in a more detailed form than in the Pre-Feasibility Study, and may address implementation issues such as detailed mining schedules, construction ramp up, and project execution plans.

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Reporting of Mineralised Fill, Remnants, Pillars, Low Grade Mineralisation, Stockpiles, Dumps and Tailings

41. The Code applies to the reporting of all potentially economic mineralised material. This can include mineralised fill, remnants, pillars, low grade mineralisation, stockpiles, dumps and tailings (remnant materials) where there are reasonable prospects for eventual economic extraction in the case of Mineral Resources, and where extraction is reasonably justifiable in the case of Ore Reserves. Unless otherwise stated, all other Clauses of the Code (including Figure 1) apply.

Any mineralised material as described in this Clause can be considered to be similar to in situ mineralisation for the purposes of reporting Mineral Resources and Ore Reserves. Judgements about the mineability of such mineralised material should be made by professionals with relevant experience.

If there are no reasonable prospects for the eventual economic extraction of all or part of the mineralised material as described in this Clause, then this material cannot be classified as either Mineral Resources or Ore Reserves. If some portion of the mineralised material is currently sub-economic, but there is a reasonable expectation that it will become economic, then this material may be classified as a Mineral Resource. If technical and economic studies have demonstrated that economic extraction could reasonably be justified under realistically assumed conditions, then the material may be classified as an Ore Reserve.

The above guidelines apply equally to low-grade in situ mineralisation, sometimes referred to as 'mineralised waste' or 'marginal grade material', and often intended for stockpiling and treatment towards the end of mine life. For clarity of understanding, it is recommended that tonnage and grade estimates of such material be itemised separately in Public Reports, although they may be aggregated with total Mineral Resource and Ore Reserve figures.

Stockpiles are defined to include both surface and underground stockpiles, including broken ore in stopes, and can include ore currently in the ore storage system. Mineralised material in the course of being processed (including leaching), if reported, should be reported separately.

Reporting of Coal Resources and Reserves

42. Clauses 42 to 44 of the Code address matters that relate specifically to the Public Reporting of Coal Resources and Coal Reserves. Unless otherwise stated, Clauses 1 to 41 and Clause 51 of this Code (including Figure 1) apply. Table 1 should be considered when reporting on Coal Resources and Reserves.

For purposes of Public Reporting, the requirements for coal are those for other commodities with the replacement of terms such as 'mineral' by 'coal' and 'grade' by 'quality'.

For guidance on the estimation of Coal Resources and Reserves and on statutory reporting not primarily intended for providing information to the investing public, readers are referred to the 'Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves' or its successor document as published from time to time by the Coalfields Geology Council of New South Wales and the Queensland Resources Council. These guidelines do not override the provisions and intentions of the JORC Code for Public Reporting. Competent Persons should as always exercise their judgement in the application of these guidelines to ensure they are appropriate to the circumstances being reported. They may not be appropriate for use in all situations in Australia or overseas.

Because of its impact on planning and land use, governments may require estimates of inventory coal that are not constrained by short- to medium-term economic considerations. The JORC Code does not cover such estimates. Refer also to the guidelines to Clauses 6 and 20.

43. The terms 'Mineral Resource(s)' and 'Ore Reserve(s)', and the subdivisions of these as defined above, apply also to coal reporting, but if preferred by the reporting company, the terms 'Coal Resource(s)' and 'Coal Reserve(s)' and the appropriate subdivisions may be substituted.

44. 'Marketable Coal Reserves', representing beneficiated or otherwise enhanced coal product where modifications due to mining, dilution and processing have been considered, must be publicly reported in conjunction with, but not instead of, reports of Coal Reserves. The basis of the predicted yield to achieve Marketable Coal Reserves must be stated.

Since investors need to be informed on the products intended to be sold, reporting of Marketable Coal Reserves is required.

Reference to the terms 'coking coal' or 'metallurgical coal', or any reference to coking properties, should not be made until specific coking properties are demonstrated by analytical results for samples from a deposit.

Reporting of Diamond Exploration Results, Mineral Resources and Ore Reserves

45. Clauses 45 to 48 of the Code address matters that relate specifically to the Public Reporting of Exploration Results, Mineral Resources and Ore Reserves for diamonds and other gemstones. Unless otherwise stated, Clauses 1 to 41 and Clause 51 of this Code (including Figure 1) apply. Table 1 should be considered when reporting Exploration Results, Mineral Resources and Ore Reserves for diamonds and other gemstones.

For the purposes of Public Reporting, the requirements for diamonds and other gemstones are generally similar to those for other commodities with the replacement of terms such as 'mineral' by 'diamond' and 'grade' by 'grade and average diamond value'. The term 'quality' should not be substituted for 'grade,' since in diamond deposits these have distinctly separate meanings. Other industry guidelines on the estimation and reporting of diamond resources and reserves may be useful but will not under any circumstances override the provisions and intentions of the JORC Code.

A number of characteristics of diamond deposits are different from those of, for example, typical metalliferous and coal deposits and therefore require special consideration. These include the generally low mineral content and variability of primary and placer deposits, the particulate nature of diamonds, the specialised requirement for diamond valuation and the inherent difficulties and uncertainties in the estimation of diamond resources and reserves.

46. Reports of diamonds recovered from sampling programmes must provide material information relating to the basis on which the sample is taken, the method of recovery and the recovery of the diamonds. The weight of diamonds recovered may only be omitted from the report when the diamonds are considered to be too small to be of commercial significance. This lower cut-off size should be stated.

The stone size distribution and price of diamonds and other gemstones are critical components of the resource and reserve estimates. At an early exploration stage, sampling and delineation drilling will not usually provide this information, which relies on large diameter drilling and, in particular, bulk sampling.

In order to demonstrate that a resource has reasonable prospects for economic extraction, some description of the likely stone size distribution and price is necessary, however preliminary the analysis of these may be. To determine an Inferred Mineral Resource in simple, single-facies or single-phase deposits, such information may be obtainable by representative large diameter drilling. More often, some form of bulk sampling, such as pitting and trenching, would be employed to provide larger sample parcels.

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In order to progress to an Indicated Mineral Resource, and from there to a Probable Ore Reserve, it is likely that much more extensive bulk sampling would be needed to fully determine the stone size distribution and value. Commonly such bulk samples would be obtained by underground development designed to obtain sufficient diamonds to enable a confident estimate of price.

In complex deposits, it may be very difficult to ensure that the bulk samples taken are truly representative of the whole deposit. The lack of direct bulk sampling, and the uncertainty in demonstrating spatial continuity of size and price relationships should be persuasive in determining the appropriate resource category.

47. Where diamond Mineral Resource or Ore Reserve grades (carats per tonne) are based on correlations between the frequency of occurrence of micro-diamonds and of commercial size stones, this must be stated, the reliability of the procedure must be explained and the cut-off sieve size for micro-diamonds reported.

48. For Public Reports dealing with diamond or other gemstone mineralisation, it is a requirement that any reported valuation of a parcel of diamonds or gemstones be accompanied by a statement verifying the independence of the valuation. The valuation must be based on a report from a demonstrably reputable and qualified expert.

    If a valuation of a parcel of diamonds is reported, the weight in carats and the lower cut-off size of the contained diamonds must be stated and the value of the diamonds must be given in US dollars per carat. Where the valuation is used in the estimation of diamond Mineral Resources or Ore Reserves, the valuation must be based on a parcel representative of the size, shape and colour distributions of the diamond population in the deposit.

    Diamond valuations should not be reported for samples of diamonds processed using total liberation methods.

Reporting of Industrial Minerals Exploration Results, Mineral Resources and Ore Reserves

49. Industrial minerals are covered by the JORC Code if they meet the criteria set out in Clauses 6 and 7 of the Code. For the purpose of the JORC Code, industrial minerals can be considered to cover commodities such as kaolin, phosphate, limestone, talc, etc.

    For minerals that are defined by a specification, the Mineral Resource or Ore Reserve estimation must be reported in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals.

    When reporting information and estimates for industrial minerals, the key principles and purpose of the JORC Code apply and should be borne in mind. Assays may not always be relevant, and other quality criteria may be more applicable. If criteria such as deleterious minerals or physical properties are of more relevance than the composition of the bulk mineral itself, then they should be reported accordingly.

    The factors underpinning the estimation of Mineral Resources and Ore Reserves for industrial minerals are the same as those for other deposit types covered by the JORC Code. It may be necessary, prior to the reporting of a Mineral Resource or Ore Reserve, to take particular account of certain key characteristics or qualities such as likely product specifications, proximity to markets and general product marketability.

    For some industrial minerals, it is common practice to report the saleable product rather than the 'as-mined' product, which is traditionally regarded as the Ore Reserve. JORC's preference is that, if the saleable product is reported, it should be in conjunction with, not instead of, reporting of the Ore Reserve. However, it is recognised that commercial sensitivities may not always permit this preferred style of reporting. It is important that, in all situations where the saleable product is reported, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

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Some industrial mineral deposits may be capable of yielding products suitable for more than one application and/or specification. If considered material by the reporting company, such multiple products should be quantified either separately or as a percentage of the bulk deposit.

Reporting of Metal Equivalents

50. The reporting of Exploration Results, Mineral Resources or Ore Reserves for polymetallic deposits in terms of metal equivalents (a single equivalent grade of one major metal) must show details of all material factors contributing to the net value derived from each constituent.

The following minimum information must accompany any Public Report that includes reference to metal equivalents, in order to conform to the principles of Transparency, Materiality and Competence, as set out in Clause 4:

- individual grades for all metals included in the metal equivalent calculation,
- assumed commodity prices for all metals (Companies should disclose the actual assumed prices. It is not sufficient to refer to a spot price without disclosing the price used in calculating the metal equivalent. However where the actual prices used are commercially sensitive, the company must disclose sufficient information, perhaps in narrative rather than numerical form, for investors to understand the methodology it has used to determine these prices),
- assumed metallurgical recoveries for all metals and discussion of the basis on which the assumed recoveries are derived (metallurgical test work, detailed mineralogy, similar deposits, etc),
- a clear statement that it is the company's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold, and
- the calculation formula used.

In most circumstances, the metal chosen for reporting on an equivalent basis should be the one that contributes most to the metal equivalent calculation. If this is not the case, a clear explanation of the logic of choosing another metal must be included in the report.

Estimates of metallurgical recoveries for each metal must be used to calculate meaningful metal equivalents.

Reporting on the basis of metal equivalents is not appropriate if metallurgical recovery information is not available or able to be estimated with reasonable confidence.

For many projects at the Exploration Results stage, metallurgical recovery information may not be available or able to be estimated with reasonable confidence. In such cases reporting of metal equivalents may be misleading.

Reporting of *In Situ* or In Ground Valuations

51. The publication of *in situ* or 'in ground' financial valuations breaches the principles of the Code (as set out in Clause 4) as the use of these terms is not transparent and lacks material information. It is also contrary to the intent of Clause 28 of the Code. Such *in situ* or in ground financial valuations must not be reported by companies in relation to Exploration Results, Mineral Resources or deposit size.

The use of such financial valuations (usually quoted in dollars) has little or no relationship to economic viability, value or potential returns to investors.

These financial valuations can imply economic viability without the apparent consideration of the application of the Modifying Factors, (Clause 12 and Clauses 29 to 36), in particular, the mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors.

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In determining project viability it is necessary to include all reasonable Modifying Factors (Clauses 29 to 36) to determine the economic value that can be extracted from the mineralisation.

Many deposits with large in ground values are never developed because they have a negative Net Present Value when all reasonable Modifying Factors are considered.

By reporting such financial valuations as a component of Exploration Results or when evaluating deposits that commonly include large portions of Inferred Mineral Resources, companies are not necessarily representing the economic viability of the project, or the net economic value that can be extracted from the mineralisation.

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Table 1 Checklist of Assessment and Reporting Criteria

Table 1 is a checklist or reference for use by those preparing Public Reports on Exploration Results, Mineral Resources and Ore Reserves.

In the context of complying with the Principles of the Code, comment on the relevant sections of Table 1 should be provided on an 'if not, why not' basis within the Competent Person's documentation and must be provided where required according to the specific requirements of Clauses 19, 27 and 35 for significant projects in the Public Report. This is to ensure that it is clear to the investor whether items have been considered and deemed of low consequence or have yet to be addressed or resolved.

As always, relevance and Materiality are overriding principles that determine what information should be publicly reported and the Competent Person must provide sufficient comment on all matters that might materially affect a reader's understanding or interpretation of the results or estimates being reported. This is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results or an estimate of Mineral Resources or Ore Reserves.

The order and grouping of criteria in Table 1 reflects the normal systematic approach to exploration and evaluation. Criteria in section 1 'Sampling Techniques and Data' apply to all succeeding sections. In the remainder of the table, criteria listed in preceding sections would often also apply and should be considered when estimating and reporting.

It is the responsibility of the Competent Person to consider all the criteria listed below and any additional criteria that should apply to the study of a particular project or operation. The relative importance of the criteria will vary with the particular project and the legal and economic conditions pertaining at the time of determination.

In some cases it will be appropriate for a Public Report to exclude some commercially sensitive information. A decision to exclude commercially sensitive information would be a decision for the company issuing the Public Report, and such a decision should be made in accordance with any relevant corporations regulations in that jurisdiction. For example, in Australia decisions to exclude commercially sensitive information need to be made in accordance with the Corporations Act 2001 and the ASX listing rules and guidance notes.

In cases where commercially sensitive information is excluded from a Public Report, the report should provide summary information (for example the methodology used to determine economic assumptions where the numerical value of those assumptions are commercially sensitive) and context for the purpose of informing investors or potential investors and their advisers.

JORC TABLE 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Explanation
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*

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Criteria	Explanation
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*

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Criteria	Explanation
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*
Sample security	• *The measures taken to ensure sample security.*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Explanation
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*
Geology	• *Deposit type, geological setting and style of mineralisation.*

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  • *easting and northing of the drill hole collar*
	  • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  • *dip and azimuth of the hole*
	  • *down hole length and interception depth*
	  • *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*

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Criteria	Explanation
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	Explanation
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.*

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Criteria	Explanation
Estimation and modelling techniques (continued)	• *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*
Audits or reviews.	• *The results of any audits or reviews of Mineral Resource estimates.*

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Criteria	Explanation
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	Explanation
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*

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Criteria	Explanation
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*

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Criteria	Explanation
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*

Section 5 Estimation and Reporting of Diamonds and Other Gemstones

(Criteria listed in other relevant sections also apply to this section. Additional guidelines are available in the 'Guidelines for the Reporting of Diamond Exploration Results' issued by the Diamond Exploration Best Practices Committee established by the Canadian Institute of Mining, Metallurgy and Petroleum.)

Criteria	Explanation
Indicator minerals	• *Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory.*
Source of diamonds	• *Details of the form, shape, size and colour of the diamonds and the nature of the source of diamonds (primary or secondary) including the rock type and geological environment.*
Sample collection	• *Type of sample, whether outcrop, boulders, drill core, reverse circulation drill cuttings, gravel, stream sediment or soil, and purpose (eg large diameter drilling to establish stones per unit of volume or bulk samples to establish stone size distribution).* • *Sample size, distribution and representivity.*

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Criteria	Explanation
Sample treatment	• *Type of facility, treatment rate, and accreditation.* • *Sample size reduction. Bottom screen size, top screen size and re-crush.* • *Processes (dense media separation, grease, X-ray, hand-sorting, etc).* • *Process efficiency, tailings auditing and granulometry.* • *Laboratory used, type of process for micro diamonds and accreditation.*
Carat	• *One fifth (0.2) of a gram (often defined as a metric carat or MC).*
Sample grade	• *Sample grade in this section of Table 1 is used in the context of carats per units of mass, area or volume.* • *The sample grade above the specified lower cut-off sieve size should be reported as carats per dry metric tonne and/or carats per 100 dry metric tonnes. For alluvial deposits, sample grades quoted in carats per square metre or carats per cubic metre are acceptable if accompanied by a volume to weight basis for calculation.* • *In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive sample grade (carats per tonne).*
Reporting of Exploration Results	• *Complete set of sieve data using a standard progression of sieve sizes per facies. Bulk sampling results, global sample grade per facies. Spatial structure analysis and grade distribution. Stone size and number distribution. Sample head feed and tailings particle granulometry.* • *Sample density determination.* • *Per cent concentrate and undersize per sample.* • *Sample grade with change in bottom cut-off screen size.* • *Adjustments made to size distribution for sample plant performance and performance on a commercial scale.* • *If appropriate or employed, geostatistical techniques applied to model stone size, distribution or frequency from size distribution of exploration diamond samples.* • *The weight of diamonds may only be omitted from the report when the diamonds are considered too small to be of commercial significance. This lower cut-off size should be stated.*
Grade estimation for reporting Mineral Resources and Ore Reserves	• *Description of the sample type and the spatial arrangement of drilling or sampling designed for grade estimation.* • *The sample crush size and its relationship to that achievable in a commercial treatment plant.* • *Total number of diamonds greater than the specified and reported lower cut-off sieve size.* • *Total weight of diamonds greater than the specified and reported lower cut-off sieve size.* • *The sample grade above the specified lower cut-off sieve size.*

Value estimation	• *Valuations should not be reported for samples of diamonds processed using total liberation method, which is commonly used for processing exploration samples.*
	• *To the extent that such information is not deemed commercially sensitive, Public Reports should include:*
	  • *diamonds quantities by appropriate screen size per facies or depth.*
	  • *details of parcel valued.*
	  • *number of stones, carats, lower size cut-off per facies or depth.*
	• *The average $/carat and $/tonne value at the selected bottom cut-off should be reported in US Dollars. The value per carat is of critical importance in demonstrating project value.*
	• *The basis for the price (eg dealer buying price, dealer selling price, etc).*
	• *An assessment of diamond breakage.*

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Criteria	Explanation
Security and integrity	• *Accredited process audit.* • *Whether samples were sealed after excavation.* • *Valuer location, escort, delivery, cleaning losses, reconciliation with recorded sample carats and number of stones.* • *Core samples washed prior to treatment for micro diamonds.* • *Audit samples treated at alternative facility.* • *Results of tailings checks.* • *Recovery of tracer monitors used in sampling and treatment.* • *Geophysical (logged) density and particle density.* • *Cross validation of sample weights, wet and dry, with hole volume and density, moisture factor.*
Classification	• *In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive grade (carats per tonne). The elements of uncertainty in these estimates should be considered, and classification developed accordingly.*

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Appendix 1 Generic Terms and Equivalents

Throughout the Code, certain words are used in a general sense when a more specific meaning might be attached to them by particular commodity groups within the industry. In order to avoid unnecessary duplication, a non-exclusive list of generic terms is tabulated below together with other terms that may be regarded as synonymous for the purposes of this document.

Generic Term	Synonyms and similar terms	Intended generalised meaning
assumption	*value judgements*	*The Competent Person in general makes value judgements when making assumptions regarding information not fully supported by test work.*
Competent Person	*Qualified Person (Canada), Qualified Competent Person (Chile)*	*Refer to the Clause 11 of the Code for the definition of a Competent Person. Any reference in the Code to the singular (a Competent Person) includes a reference to the plural (Competent Persons). It is noted that reporting in accordance with the Code is commonly a team effort.*
cut-off grade	*product specifications*	*The lowest grade, or quality, of mineralised material that qualifies as economically mineable and available in a given deposit. May be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product specification.*
grade	*quality, assay, analysis (that is value returned by the analysis)*	*Any physical or chemical measurement of the characteristics of the material of interest in samples or product. Note that the term quality has special meaning for diamonds and other gemstones. The units of measurement should be stated when figures are reported.*
metallurgy	*processing, beneficiation, preparation, concentration*	*Physical and/or chemical separation of constituents of interest from a larger mass of material. Methods employed to prepare a final marketable product from material as mined. Examples include screening, flotation, magnetic separation, leaching, washing, roasting, etc.* *Processing is generally regarded as broader than metallurgy and may apply to non-metallic materials where the term metallurgy would be inappropriate.*
mineralisation	*type of deposit, orebody, style of mineralisation.*	*Any single mineral or combination of minerals occurring in a mass, or deposit, of economic interest. The term is intended to cover all forms in which mineralisation might occur, whether by class of deposit, mode of occurrence, genesis or composition.*
mining	*quarrying*	*All activities related to extraction of metals, minerals and gemstones from the earth whether surface or underground, and by any method (eg quarries, open cast, open cut, solution mining, dredging, etc)*
Ore Reserves	*Mineral Reserves*	*'Ore Reserves' is preferred under the JORC Code but 'Mineral Reserves' is in common use in other countries and is generally accepted. Other descriptors can be used to clarify the meaning (eg Coal Reserves, Diamond Reserves, etc).*
recovery	*yield*	*The percentage of material of interest that is extracted during mining and/or processing. A measure of mining or processing efficiency.*
significant project	*material project*	*An exploration or mineral development project that has or could have a significant influence on the market value or operations of the listed company, and/or has specific prominence in Public Reports and announcements.*
tonnage	*quantity, volume*	*An expression of the amount of material of interest irrespective of the units of measurement (which should be stated when figures are reported).*

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Appendix 2 Competent Person's Consent Form

Companies reporting Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves are reminded that while a public report is the responsibility of the company acting through its Board of Directors, Clause 9 requires that any such report 'must be based on, and fairly reflect the information and supporting documentation prepared by a Competent Person or Persons'. Clause 9 also requires that the 'report shall be issued with the prior written consent of the Competent Person or Persons as to the form and context in which it appears'.

In order to assist Competent Persons and companies to comply with these requirements, and to emphasise the need for companies to obtain the prior written consent of each Competent Person for their material to be included in the form and context in which it appears in the public report, ASX, together with JORC, have developed a Competent Person's Consent Form that incorporates the requirements of the JORC Code.

The completion of a consent form, whether in the format provided or in an equivalent form, is recommended as good practice and provides readily available evidence that the required prior written consent has been obtained.

Having the consent form witnessed by a peer professional society member is considered leading practice and is strongly encouraged.

The Competent Person's Consent Form(s), or other evidence of the Competent Person's written consent, should be retained by the company and the Competent Person to ensure that the written consent can be promptly provided if required.

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[Letterhead of Competent Person or Competent Person's employer]

Competent Person's Consent Form

Pursuant to the requirements of ASX Listing Rules 5.6, 5.22 and 5.24 and Clause 9 of the JORC Code 2012 Edition (Written Consent Statement)

Report name

_____

(Insert name or heading of Report to be publicly released) ('Report')

_____

(Insert name of company releasing the Report)

_____

(Insert name of the deposit to which the Report refers)

If there is insufficient space, complete the following sheet and sign it in the same manner as this original sheet.

_____

(Date of Report)

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Statement

I/We,

_____

(Insert full name(s))

confirm that I am the Competent Person for the Report and:

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code 2012 Edition, having five years experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member or Fellow of The Australasian Institute of Mining and Metallurgy or the Australian Institute of Geoscientists or a 'Recognised Professional Organisation' (RPO) included in a list promulgated by ASX from time to time.
- I have reviewed the Report to which this Consent Statement applies.

I/We am a full time employee of

_____

(Insert company name)

Or

I am a consultant working for

_____

(Insert company name)

and have been engaged by

_____

(Insert company name)

to prepare the documentation for

_____

(Insert deposit name)

on which the Report is based, for the period ended

_____

(Insert date of Resource/Reserve statement)

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Exploration Targets, Exploration Results, Mineral Resources and/or Ore Reserves (*select as appropriate*).

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Consent

I consent to the release of the Report and this Consent Statement by the directors of:

_____

(Insert reporting company name)

Signature of Competent Person	Date:
Professional Membership: (insert organisation name)	Membership Number:
Signature of Witness:	Print Witness Name and Residence: (eg town/suburb)

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Additional deposits covered by the Report for which the Competent Person signing this form is accepting responsibility:

_____

_____

_____

_____

_____

Additional Reports related to the deposit for which the Competent Person signing this form is accepting responsibility:

_____

_____

_____

_____

_____

Signature of Competent Person	Date:
Professional Membership: (insert organisation name)	Membership Number:
Signature of Witness:	Print Witness Name and Residence: (eg town/suburb)

Appendix 3 Compliance Statements

Appropriate forms of compliance statements should be as follows (delete bullet points which do not apply).

For Public Reports of Exploration Targets, initial or materially changed reports of Exploration Results, Mineral Resources or Ore Reserves or company annual reports:

- *If the required information is in the report:*

  'The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by (insert name of Competent Person), a Competent Person who is a Member or Fellow of The Australasian Institute of Mining and Metallurgy or the Australian Institute of Geoscientists or a 'Recognised Professional Organisation' (RPO) included in a list that is posted on the ASX website from time to time (select as appropriate and insert the name of the professional organisation of which the Competent Person is a member and the Competent Person's grade of membership).'

- *If the required information is included in an attached statement:*

  'The information in the report to which this statement is attached that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by (insert name of Competent Person), a Competent Person who is a Member or Fellow of The Australasian Institute of Mining and Metallurgy or the Australian Institute of Geoscientists or a 'Recognised Professional Organisation' (RPO) included in a list posted on the ASX website from time to time (select as appropriate and insert the name of the professional organisation of which the Competent Person is a member and the Competent Person's grade of membership).'

- *If the Competent Person is a full-time employee of the company:*

  '(Insert name of Competent Person) is a full-time employee of the company.'

- *If the Competent Person is not a full-time employee of the company:*

  '(Insert name of Competent Person) is employed by (insert name of Competent Person's employer).'

- *The full nature of the relationship between the Competent Person and the reporting Company must be declared together with the Competent Person's details. This declaration must outline and clarify any issue that could be perceived by investors as a conflict of interest.*

- For all reports:

  '(Insert name of Competent Person) has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. (Insert name of Competent Person) consents to the inclusion in the report of the matters based on his (or her) information in the form and context in which it appears.'

For any subsequent Public Report based on a previously issued Public Report that refers to those Exploration Results or estimates of Mineral Resources or Ore Reserves:

Where a Competent Person has previously issued the written consent to the inclusion of their findings in a report, a company re-issuing that information to the Public whether in the form of a presentation or a subsequent announcement must, state the report name, date and reference the location of the original source Public Report for public access.

- *'The information is extracted from the report entitled (name report) created on (date) and is available to view on (website name). The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of*

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estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.'

Companies should be aware this exemption does not apply to subsequent reporting of information in the company annual report.

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Appendix 4 List of Acronyms

AIG	Australian Institute of Geoscientists
ASX	Australian Securities Exchange
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CMMI	Council of Mining and Metallurgical Institutions
CRIRSCO	Committee for Mineral Reserves International Reporting Standards
ICMM	International Council on Mining and Metals
JORC	Joint Ore Reserves Committee
JORC Code	Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves
NAEN	The Russian Society of Subsoil Use Experts
NPV	Net Present Value
NROs	National Reporting Organisations
NZX	New Zealand Stock Exchange
UN-ECE	United Nations Economic Commission for Europe
UNFC	United Nations Framework Classification
PERC	Pan-European Reserves & Resources Reporting Committee
RPO	Recognised Professional Organisation
SAMCODES	South African Mineral Codes
SME	Society for Mining, Metallurgy & Exploration (USA)
The AusIMM	The Australasian Institute of Mining and Metallurgy
VALMIN Code	Code and Guidelines for Technical Assessment and/or Valuation of Mineral and Petroleum Assets and Mineral and Petroleum Securities for Independent Expert Reports

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Appendix C Table of Drill Hole Details

Appendix C - Table of Drill Hole Details

(Location Map Grid UTM Zone 47N [WGS84])

Drill Hole	Easting	Northing	Total Depth (m)	Elevation (m)
BTE_001	703688	5060356	99.61	1748
BTE_002	703450	5060505	207.00	1747
BTE_003	702575	5061588	174.00	1762
BTE_004	698800	5063184	81.00	1804
BTE_005	699318	5063202	156.00	1808
TG_006	702551	5060895	216.00	1755
TG_007	701169	5061311	174.00	1793
TG_008	701363	5061554	115.60	1784
TG_009	702732	5061139	126.00	1759
TG_010	703387	5060422	176.00	1746
TG_011	701300	5061463	150.00	1788
TG_012	702676	5061058	156.00	1756
TG_013	701398	5061620	144.00	1781
TG_014	703606	5060467	200.00	1747
TG_015	702078	5061485	156.00	1765
TG_016	701333	5061508	149.20	1786
TG_016C	701333	5061512	96.48	1786
TG_017	703331	5060505	114.00	1749
TG_018	701273	5061518	120.00	1787
TG_019	701398	5061478	96.00	1785
TG_020	701354	5061474	159.00	1786
TG_021	701328	5061412	120.00	1787
TG_022	701387	5061422	182.00	1785
TG_023	703181	5060501	146.00	1748
TG_024	701428	5061373	129.00	1784
TG_025	703232	5060550	117.00	1750
TG_026	702054	5061299	190.00	1765
TG_027	702845	5060783	195.00	1751
TG_028	701954	5061199	150.00	1768
TG_029	702883	5060826	168.00	1752
TG_030	701874	5061134	105.00	1771
TG_031	702626	5060985	168.00	1755
TG_031C	702626	5060982	80.70	1755
TG_032	702925	5060881	108.00	1753
TG_033	702400	5061930	180.00	1772
TG_034	702818	5061906	165.00	1771
TG_035	702595	5060921	140.00	1755
TG_035C	702601	5060925	120.21	1755
TG_036	704128	5062056	128.00	1768
TG_037	704280	5060752	171.00	1745
TG_038	701321	5061701	129.00	1781
TG_039	701383	5061857	24.00	1776
TG_040	701390	5061308	150.00	1785
TG_041	701498	5061203	150.00	1782
TG_042	701296	5061197	150.00	1790

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Drill Hole	Easting	Northing	Total Depth (m)	Elevation (m)
TG_043	701200	5061866	150.00	1782
TG_044	702300	5060950	200.00	1759
TGRAB1	702808	5061696	31.00	1761
TGRAB2	702752	5061577	31.00	1752
TGRAB3	704334	5060407	31.00	1735
TGRAB4	704353	5060415	31.00	1735
TGRAB5	704371	5060527	31.00	1732
TGRAB6	703745	5060356	31.00	1736
TGRAB7	703834	5060366	31.00	1734
TGRAB8	703659	5060450	31.00	1737
TGRAB9	703722	5060437	31.00	1737
TGRAB10	704518	5060889	31.00	1753
TGRAB11	704553	5060939	31.00	1748
TGRAB12	704598	5061026	31.00	1751

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Appendix D Coal Seam Pick File

Appendix D - Coal Seam Pick File

Drill Hole	From (m)	To (m)	Coal Ply	Drilled (Apparent) Thickness (m)	Comments
BTE_001	0.73	5.00	A8	4.27	
BTE_001	5.00	8.40	A7	3.40	
BTE_001	8.40	9.00	A6	0.60	
BTE_001	9.00	9.00	BOW	0.00	
BTE_001	9.00	15.10	A6	6.10	
BTE_001	15.10	17.82	A5	2.72	
BTE_001	19.67	24.67	A4	5.00	
BTE_001	24.77	31.58	A3B	6.81	
BTE_001	31.88	33.90	A3A	2.02	
BTE_001	35.91	39.00	A2	3.09	
BTE_001	39.50	43.39	A1B	3.89	
BTE_001	43.90	45.90	A1A	2.00	
BTE_001	57.18	59.82	BAND	2.64	
BTE_002	21.50	21.50	BOW	0.00	
BTE_002	89.10	93.97	A9	4.87	
BTE_002	93.97	96.10	A8	2.13	
BTE_002	96.10	99.40	A7	3.30	
BTE_002	99.40	103.20	A6	3.80	
BTE_002	103.20	104.48	A5	1.28	
BTE_002	105.08	109.40	A4	4.32	
BTE_002	109.40	117.39	A3B	7.99	
BTE_002	117.79	118.28	A3A	0.49	
BTE_002	118.72	126.84	A2	8.12	
BTE_002	127.62	129.02	A1	1.40	
BTE_003				0.00	NO COAL/NOT LOGGED
BTE_004				0.00	NO COAL/NOT LOGGED
BTE_005	8.00	8.00	BOW	0.00	NO COAL
TG_006	35.00	35.00	BOW	0.00	
TG_006	142.20	143.80	BAND	1.60	
TG_007	112.00	112.00	BOW	0.00	NO COAL
TG_008	3.10	8.00	A10	4.90	
TG_008	8.00	8.00	BOW	0.00	
TG_008	8.00	8.91	A10	0.91	
TG_008	10.24	10.96	A9	0.72	
TG_008	10.96	15.00	A8	4.04	
TG_008	15.26	20.43	A7	5.17	
TG_008	35.32	38.52	A6	3.20	
TG_008	38.99	41.49	A5	2.50	
TG_008	63.52	66.39	A4	2.87	
TG_008	66.64	69.54	A3B	2.90	
TG_008	70.08	73.52	A3A	3.44	
TG_008	83.92	85.32	A2B	1.40	
TG_008	86.20	87.59	A2A	1.39	
TG_008	92.30	92.30	A1	0.00	
TG_009	32.00	32.00	BOW	0.00	NO COAL
TG_010	22.00	22.00	BOW	0.00	
TG_010	87.40	87.66	B13B	0.26	
TG_010	88.40	89.08	B13A	0.68	
TG_010	91.00	91.00	B12	0.00	
TG_010	93.40	93.40	B11	0.00	
TG_010	97.30	97.30	B10	0.00	
TG_010	106.40	106.90	B9	0.50	
TG_010	114.50	114.80	B8	0.30	
TG_010	119.28	119.40	B7	0.12	
TG_010	121.56	122.42	B6	0.86	
TG_010	122.69	124.21	B5B	1.52	

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Drill Hole	From (m)	To (m)	Coal Ply	Drilled (Apparent) Thickness (m)	Comments
TG_010	124.44	124.76	B5A	0.32	
TG_010	129.30	130.21	B4	0.91	
TG_010	131.71	132.36	B3C	0.65	
TG_010	132.82	133.12	B3B	0.30	
TG_010	133.12	133.57	B3A	0.45	
TG_010	134.40	134.40	B2	0.00	
TG_010	139.20	139.20	B1	0.00	
TG_011	49.00	49.00	BOW	0.00	
TG_011	116.5	116.5	B13	0.00	
TG_011	120	120	B12	0.00	
TG_011	123	123	B11	0.00	
TG_011	125	125	B10	0.00	
TG_011	130.5	130.5	B9	0.00	
TG_011	133	133	B8	0.00	
TG_012	37.00	37.00	BOW	0.00	NO COAL
TG_013	28.00	28.00	BOW	0.00	NO COAL
TG_014	2.00	3.12	A7	1.12	
TG_014	3.12	6.74	A6	3.62	
TG_014	6.74	8.00	A5	1.26	
TG_014	8.00	8.00	BOW	0.00	
TG_014	8.00	8.18	A5	0.18	
TG_014	8.60	12.00	A4	3.40	
TG_014	12.00	20.80	A3	8.80	
TG_014	21.48	27.76	A2	6.28	
TG_014	31.05	33.10	A1	2.05	
TG_015	80.00	80.00	BOW	0.00	NO COAL
TG_016	23.00	23.00	BOW	0.00	
TG_016	43.58	43.96	B13	0.38	
TG_016	44.09	45.90	B12	1.81	
TG_016	46.18	46.58	B11	0.40	
TG_016	51.27	53.65	B10	2.38	
TG_016	53.65	58.67	B9	5.02	
TG_016	59.04	62.46	B8	3.42	
TG_016	62.46	66.46	B7	4.00	
TG_016	67.27	67.95	B6	0.68	
TG_016	69.00	70.00	B5B	1.00	
TG_016	70.00	70.89	B5A	0.89	
TG_016	73.96	75.00	B4	1.04	
TG_016	75.00	76.70	B3B	1.70	
TG_016	77.00	77.47	B3A	0.47	
TG_016	84.34	85.13	B2	0.79	
TG_016	85.74	85.91	B1	0.17	
TG_016C	27.00	27.00	BOW	0.00	
TG_016C	48.84	49.25	B13	0.41	
TG_016C	49.25	49.81	B12	0.56	
TG_016C	54.42	55.56	B11	1.14	
TG_016C	56.88	59.36	B10	2.48	
TG_016C	61.00	61.00	B9	0.00	
TG_016C	62.60	63.30	B8	0.70	
TG_016C	65.00	65.00	B7	0.00	
TG_016C	70.00	70.00	B6	0.00	
TG_016C	73.00	73.00	B5B	0.00	
TG_016C	74.50	74.50	B5A	0.00	
TG_016C	76.27	76.46	B4B	0.19	
TG_016C	77.12	78.52	B4A	1.40	
TG_016C	79.53	80.52	B3	0.99	
TG_016C	82.40	82.40	B2	0.00	
TG_016C	84.07	84.33	B1	0.26	

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Drill Hole	From (m)	To (m)	Coal Ply	Drilled (Apparent) Thickness (m)	Comments
TG_017	11.00	11.00	BOW	0.00	
TG_017	29.90	30.20	B13	0.30	
TG_017	33.50	33.50	B12	0.00	
TG_017	38.60	38.90	B11	0.30	
TG_017	42.70	45.94	B10	3.24	
TG_017	46.65	49.57	B9C	2.92	
TG_017	49.57	51.73	B9B	2.16	
TG_017	51.73	52.73	B9A	1.00	
TG_017	53.55	56.43	B8	2.88	
TG_017	57.88	59.36	B7	1.48	
TG_017	60.98	62.21	B6	1.23	
TG_017	68.60	69.19	B5B	0.59	
TG_017	70.52	70.96	B5A	0.44	
TG_017	74.86	76.30	B4	1.44	
TG_017	80.15	81.15	B3C	1.00	
TG_017	81.34	81.52	B3B	0.18	
TG_017	81.96	82.24	B3A	0.28	
TG_017	82.81	83.62	B2C	0.81	
TG_017	83.62	84.15	B2B	0.53	
TG_017	84.15	84.4	B2A	0.25	
TG_017	86.07	88.27	B1	2.20	
TG_018	7.00	7.00	BOW	0.00	
TG_018	12.93	13.67	B4B	0.74	
TG_018	14.02	14.66	B4A	0.64	
TG_018	15.69	16.97	B3	1.28	
TG_018	17.24	17.60	B2	0.36	
TG_018	27.00	27.00	B1	0.00	
TG_019	22.00	22.00	BOW	0.00	NO COAL
TG_020	19.50	20.00	B13	0.50	
TG_020	20.00	20.00	BOW	0.00	
TG_020	20.00	20.88	B12	0.88	
TG_020	26.59	28.13	B11	1.54	
TG_020	28.36	31.37	B10	3.01	
TG_020	31.55	33.63	B9	2.08	
TG_020	34.96	37.12	B8	2.16	
TG_020	37.43	38.15	B7	0.72	
TG_020	47.50	47.50	B6	0.00	
TG_020	56.00	56.00	B5	0.00	
TG_020	113.32	114.12	B4B	0.80	
TG_020	114.65	115.36	B4A	0.71	
TG_020	116.66	116.84	B3	0.18	
TG_020	118.65	118.79	B2	0.14	
TG_020	121.80	121.80	B1	0.00	
TG_021	31.00	31.00	BOW	0.00	
TG_021	88.45	89.14	B4B	0.69	
TG_021	89.41	90.19	B4A	0.78	
TG_021	90.83	91.56	B3B	0.73	
TG_021	91.89	94.35	B3A	2.46	
TG_021	94.88	96.27	B2	1.39	
TG_021	96.84	98.13	B1	1.29	
TG_022	16.00	16.00	BOW	0.00	
TG_022	40.60	41.35	B13	0.75	
TG_022	44.03	46.09	B12	2.06	
TG_022	47.68	51.64	B11	3.96	
TG_022	55.41	57.77	B10	2.36	
TG_022	57.77	58.43	B9	0.66	
TG_022	66.27	67.18	B8B	0.91	
TG_022	67.37	68.32	B8A	0.95	

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Drill Hole	From (m)	To (m)	Coal Ply	Drilled (Apparent) Thickness (m)	Comments
TG_022	69.79	70.25	B7	0.46	
TG_023	25.00	25.00	BOW	0.00	NO COAL
TG_024	25.00	25.00	BOW	0.00	
TG_024	91.48	92.84	B13	1.36	
TG_024	93.11	94.67	B12	1.56	
TG_024	98.19	98.95	B11	0.76	
TG_024	108.9	109.56	B10	0.66	
TG_024	111.28	111.66	B9	0.38	
TG_024	112.52	114.08	B8	1.56	
TG_024	118.75	119.22	B7	0.47	
TG_025	15.00	15.00	BOW	0.00	
TG_025	30.00	30.75	B13	0.75	
TG_025	31.45	33.25	B12	1.80	
TG_025	36.45	37.12	B11B	0.67	
TG_025	37.65	37.94	B11A	0.29	
TG_025	43.23	45.65	B10	2.42	
TG_025	46.00	48.00	B9C	2.00	
TG_025	48.24	49.23	B9B	0.99	
TG_025	49.31	50.93	B9A	1.62	
TG_025	51.86	53.94	B8	2.08	
TG_025	56.14	56.65	B7	0.51	
TG_025	61.44	62.76	B6	1.32	
TG_025	79.00	79.35	B5B	0.35	
TG_025	79.70	80.17	B5A	0.47	
TG_025	80.50	81.60	B4B	1.10	
TG_025	82.44	83.52	B4A	1.08	
TG_025	85.00	85.68	B3C	0.68	
TG_025	85.88	86.31	B3B	0.43	
TG_025	86.65	86.98	B3A	0.33	
TG_025	88.40	89.34	B2C	0.94	
TG_025	89.65	89.93	B2B	0.28	
TG_025	90.28	90.52	B2A	0.24	
TG_025	91.65	91.88	B1	0.23	
TG_026	19.00	19.00	BOW	0.00	NO COAL
TG_027	54.00	54.00	BOW	0.00	
TG_027	100.79	101.20	B13	0.41	
TG_027	104.33	104.47	B12	0.14	
TG_027	111.58	111.70	B11	0.12	
TG_027	115.56	116.62	B10	1.06	
TG_027	126.04	127.17	B9C	1.13	
TG_027	128.74	129.10	B9B	0.36	
TG_027	130.27	130.88	B9A	0.61	
TG_027	148.16	149.91	B8	1.75	
TG_027	150.50	150.50	B7	0.00	
TG_027	156.00	156.00	B6	0.00	
TG_027	156.50	156.50	B5	0.00	
TG_027	158.31	159.09	B4	0.78	
TG_027	159.6	159.6	B3C	0.00	
TG_027	159.96	160.29	B3B	0.33	
TG_027	160.29	160.59	B3A	0.30	
TG_027	161.5	162.44	B2C	0.94	
TG_027	163	163	B2B	0.00	
TG_027	163.5	163.5	B2A	0.00	
TG_027	174.60	175.28	B1	0.68	
TG_028	23.09	23.68	B4B	0.59	
TG_028	23.95	24.00	B4A	0.05	
TG_028	24.00	24.00	BOW	0.00	
TG_028	24.00	24.40	B4A	0.40	

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Drill Hole	From (m)	To (m)	Coal Ply	Drilled (Apparent) Thickness (m)	Comments
TG_028	25.38	25.84	B3B	0.46	
TG_028	26.35	27.84	B3A	1.49	
TG_028	29.74	30.84	B2B	1.10	
TG_028	31.20	34.00	B2A	2.80	
TG_028	37.40	37.65	B1B	0.25	
TG_028	40.08	40.56	B1A	0.48	
TG_029	16.00	16.00	BOW	0.00	
TG_029	38.71	42.80	A13	4.09	
TG_029	43.20	44.51	A12	1.31	
TG_029	44.73	45.62	A11	0.89	
TG_029	45.62	56.20	A10	10.58	
TG_029	56.47	60.37	A9	3.90	
TG_029	60.52	78.91	A8	18.39	
TG_029	78.91	84.80	A7	5.89	
TG_029	84.80	90.01	A6	5.21	
TG_029	90.01	94.19	A5	4.18	
TG_029	94.37	98.82	A4	4.45	
TG_029	98.82	102.69	A3	3.87	
TG_029	102.69	105.73	A2	3.04	
TG_029	105.73	109.13	A1	3.40	
TG_030	18.00	18.00	BOW	0.00	NO COAL
TG_031	17.00	17.00	BOW	0.00	
TG_031	27.85	32.27	A13	4.42	
TG_031	32.63	40.77	A12	8.14	
TG_031	58.30	63.80	A11	5.50	
TG_031	64.13	78.40	A10	14.27	
TG_031	80.16	81.60	A9	1.44	
TG_031	81.82	85.72	A8	3.90	
TG_031	85.91	87.05	A7B	1.14	
TG_031	87.36	95.36	A7A	8.00	
TG_031	99.70	107.47	A6	7.77	
TG_031	107.62	111.93	A5	4.31	
TG_031	117.10	123.30	A4	6.20	
TG_031	123.48	134.50	A3	11.02	
TG_031	134.68	138.91	A2	4.23	
TG_031	141.05	146.72	A1	5.67	
TG_031C	11.00	11.00	BOW	0.00	
TG_031C	38.96	45.85	A13	6.89	
TG_031C	46.51	53.60	A12	7.09	
TG_031C	65.39	74.09	A11	8.70	
TG_031C	75.11	80.70	A10	5.59	HOLE STOPPED IN COAL
TG_032	6.00	6.00	BOW	0.00	NO COAL
TG_033	14.00	14.00	BOW	0.00	NO COAL
TG_034	18.00	18.00	BOW	0.00	NO COAL
TG_035	27.00	27.00	BOW	0.00	
TG_035	49.65	49.91	B7	0.26	
TG_035	51.2	51.81	B6	0.61	
TG_035	52.35	53.27	B5B	0.92	
TG_035	54.43	55	B5A	0.57	
TG_035	56.51	58.22	B4	1.71	
TG_035	58.22	58.62	B3	0.40	
TG_035	60.45	60.69	B2B	0.24	
TG_035	61.27	61.51	B2A	0.24	
TG_035	66.09	66.54	B1B	0.45	
TG_035	66.86	67.51	B1A	0.65	
TG_035	94.57	94.93	A7B	0.36	
TG_035	95.2	95.75	A7A	0.55	
TG_035	96.63	97.91	A6	1.28	

Drill Hole	From (m)	To (m)	Coal Ply	Drilled (Apparent) Thickness (m)	Comments
TG_035	98.12	102.24	A5	4.12	
TG_035	103.53	108.41	A4	4.88	
TG_035	108.41	113.08	A3	4.67	
TG_035	113.32	122.12	A2	8.80	
TG_035	122.34	122.9	A1B	0.56	
TG_035	123.23	124.08	A1A	0.85	
TG_035C	18	18	BOW	0.00	
TG_035C	36	36.5	B7	0.50	
TG_035C	37.4	38.2	B6	0.80	
TG_035C	38.45	38.97	B5B	0.52	
TG_035C	39.88	40.52	B5A	0.64	
TG_035C	43.85	46.58	B4	2.73	
TG_035C	46.97	48.78	B3	1.81	
TG_035C	51.09	52.99	B2	1.90	
TG_035C	54.12	54.8	B1	0.68	
TG_035C	75.34	77.5	A9	2.16	
TG_035C	77.5	79.06	A8	1.56	
TG_035C	79.06	80.27	A7	1.21	
TG_035C	83.39	87.56	A6	4.17	
TG_035C	87.92	89.3	A5	1.38	
TG_035C	91.23	95.17	A4	3.94	
TG_035C	95.17	104	A3	8.83	
TG_035C	104	109.11	A2	5.11	
TG_035C	110.23	111.57	A1B	1.34	
TG_035C	111.89	113.3	A1A	1.41	
TG_036	117.00	117.00	BOW	0.00	NO COAL
TG_037	53.00	53.00	BOW	0.00	NO COAL
TG_038	22.00	22.00	BOW	0.00	NO COAL
TG_039				0.00	NO COAL /NOT LOGGED
TG_040	34.00	34.00	BOW	0.00	NO COAL
TG_041	66.00	66.00	BOW	0.00	NO COAL
TG_042	85.00	85.00	BOW	0.00	NO COAL
TG_043	64.00	64.00	BOW	0.00	NO COAL
TG_044	51.00	51.00	BOW	0.00	NO COAL
TGRAB1	6.00	6.00	BOW	0.00	NO COAL
TGRAB2	6.00	6.00	BOW	0.00	NO COAL
TGRAB3				0.00	NO COAL/BOW NOT REACHED
TGRAB4				0.00	NO COAL/BOW NOT REACHED
TGRAB5				0.00	NO COAL/BOW NOT REACHED
TGRAB6	1	7	A	6.00	
TGRAB6	7	7	BOW	0.00	
TGRAB6	7	31	A	24.00	HOLE STOPPED IN COAL
TGRAB7	15	15	BOW	0.00	NO COAL
TGRAB8	0.5	7	A	6.50	
TGRAB8	7	7	BOW	0.00	
TGRAB8	7	27	A	20.00	
TGRAB9	16	16	BOW	0.00	NO COAL
TGRAB10	16	16	BOW	0.00	NO COAL
TGRAB11	17	17	BOW	0.00	NO COAL
TGRAB12	26	26	BOW	0.00	NO COAL

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Appendix E Trench Location Details

Appendix E - Trench Location Details

Trench Name	Year	Start Easting	Start Northing	Finish Easting	Finish Northing	Length (m)	Orientation	Coal Encountered
TGTR_1	2013	702789	5061639	702801	5061681	47	NE - SW	YES
TGTR_2	2013	702776	5061596	702786	5061629	38	NE - SW	YES
TGTR_3	2013	704358	5060453	704375	5060498	50	NE - SW	NO
TGTR_4	2013	704517	5060852	704526	5060881	35	NE - SW	NO
TGTR_5	2013	704566	5060943	704574	5060964	23	NE - SW	NO
TGTR_6	2013	699454	5062460	699563	5062515	14	NE - SW	NO
TGTR_7	2013	699554	5062464	699559	5062480	12	NE - SW	NO
Trench A	2010	702731	5061240	Not recorded	Not recorded	28	NE - SW	YES
Trench B	2010	703694	5060338	Not recorded	Not recorded	61	NE - SW	YES

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