

## **BLACKGOLD NATURAL RESOURCES LIMITED**

### **PT SAMANTAKA BATUBARA**

#### **JORC CODE (2012) COMPLIANT STATEMENT OF OPEN CUT COAL RESOURCES AND COAL RESERVES as at 31 December 2017**

**Dated** : 3 April 2018

**Reference** : *GMT\_Samantaka\_IQPR17\_FINAL.docx*

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**IMPORTANT INFORMATION ABOUT THIS DOCUMENT****1. Our Client**

This report is produced by PT GMT Indonesia (“GMT”) solely for BlackGold Natural Resources Limited (“BNR” or the “Client”) to prepare a Statement (the “Statement”) of the Coal Resources and Reserves of the PT Samantaka Batubara coal mining concession (“Project”) as at 31 December 2017.

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**6. Statement of Independence**

Neither GMT nor any of the authors of this report have any material present or contingent interest in the outcome of this report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of GMT. GMT has no prior association with SB, APA and AAM, or its officers, in regard to the mineral assets that are the subject of this report other than acting as a geological services provider. GMT has no beneficial interest in the outcome of the technical assessment. GMT’s fee for completing this report is based on its normal professional rates plus reimbursement of incidental expenses. The payment of that professional fee is not contingent upon the outcome of the report.

## EXECUTIVE SUMMARY

### Introduction

PT GMT Indonesia (“**GMT**”) was commissioned by BlackGold Natural Resources Limited (“**BNR**” or the “**Client**”) to prepare a JORC Code (2012) compliant statement (the “**Statement**”) of the Coal Resources and Reserves of the PT Samantaka Batubara coal mining concession (“**PTSB**” or the “**Project**”) as at 31 December 2017. The Statement has been undertaken in compliance with the requirements of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (the “**JORC Code 2012**”) and the Australian Guidelines for the estimation and classification of Coal Resources 2014 Edition, prepared by the Coalfields Geology Council of New South Wales and the Queensland Resources Council (the “**Guidelines**”) specifically to meet the requirements of the Singapore Stock Exchange (“**SGX**”) which requires an annual update of the Statement.

The previous Statement was issued by GMT in June 2017 (PT GMT Indonesia, BlackGold Natural Resources Limited, PT Samantaka Batubara, JORC Code (2012) Compliant Statement of Open Cut Coal Resources and Reserves for the Project located in the Kabupaten of Indragiri Hulu, Province of Riau, Republic of Indonesia. This current Statement was prepared by William James Park and Chris Spiliopoulos (“**Qualified Persons**” or the “**Consultants**”) under the supervision of Mr. Krisjna Alimoeddin of GMT. Mr. Alimoeddin is a qualified Competent Person for the reporting of JORC Code 2012 Coal Resources and is a Director and Shareholder of GMT. Mr. Park and Mr. Spiliopoulos are both employed by PT New Resource Mine Consulting (“**NRM**”), an independent Indonesian based coal consultancy sub-contracted by GMT. (Note: All abbreviations are included in **Appendix A**).

The JORC Code 2012 requires that for the Reporting of Ore (Coal) Reserves, “*An ‘Ore (Coal) Reserve’ is the economically mineable part of a Measured and/or Indicated Mineral (Coal) 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*” (JORC Code 2012, Section 29, paragraph 1). Given that the Project is at a “brownfield” stage of development, the Consultant is of the opinion that supporting studies including the Life of Mine plan (“**LOM**”), geotechnical studies, the environmental impact studies, coal transport and marketing agreements, to pre-feasibility (“**PFS**”) level of detail are adequate to support the outcomes of this Statement. It is recognised by the Consultant that further hydrological and planning studies are required in relation to diversion of the minor Cimpur River which traverses the Project. Further planning of the diversion of a logging road is also required. **It is further recognised that the Coal Reserves Statement is largely dependent on the outcome of the ongoing Riau-1 Mine-Mouth Power Plant (“MMPP”) bid by BNR.**

The three “*guiding principles*” of the JORC Code 2012 are as follows:

- “*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 omission of material information that is known to the Competent Person (and in the instance of the additional requirement regarding supervision of the Statement);

- “*Materiality*” requires that a Public Report contains all relevant information that investors and their professional advisers would reasonably require, and would reasonably accept to find in the report, for the reason of making a reasoned and balanced judgement regarding the Exploration Results, Mineral (Coal) Resources or Ore (Coal) 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); and
- In the case of SGX compliant JORC Code 2012 Statements, the SGX specifies the further requirement that the Competent Person must be supervised by a Director or Shareholder of the company issuing the Statement.

**This Statement is fully compliant with the JORC Code 2012 and also the further condition which is exclusive to the SGX as the nominated supervisor, Mr Krisjna Alimoeddin, is also a Competent Person as defined by the JORC Code 2012.**

The Project is located in the Peranap Sub-District, Indragiri Hulu Regency of Riau Province, Indonesia, approximately 150 kilometres (“km”) south east of Pekanbaru, the Capital of the Riau Province (see **Figure ES 1**). The PTSB mining concession covers an area of 15,000 hectares (“Ha”) (see **Figure ES 2**). The status of the concession is shown in **Table ES 1** below, while a copy of the Mining License (“IUP”) document can be found in **Appendix B**. The Client has advised that the status has been confirmed as “clean and clear” (“CnC”) by the Indonesian Directorate General of Mineral and Coal with certificate number 148/Bb/03/2014 granted on 14 February 2014 under regulations of the Ministry of Energy and Mineral Resources of Republic Indonesia ([www.esdm.go.id](http://www.esdm.go.id)). A copy of the certificate is attached in **Appendix C**.

**Table ES 1 PTSB Mining Concession**

Concession	Area (Ha)	IUP No.	Date Issued	Term (years)	Status
PT Samantaka Batubara	15,000	Permit No. 001/IUP/545-02/II/2013	26 February 2013	10 years until 26 February 2023, extendable upon compliance with the prevailing laws and regulations.	Production

The Project area is primarily forested hilly terrain and open rolling hills with topography ranging from 44 to 159 metres (“m”) above mean sea level (“MSL”). Detailed topographic survey has been conducted over the entire concession. Ground topographic survey by Total Station covers an area of 1,004 Ha, while aerial topography survey using Interferometric Synthetic Aperture Radar (“ifSAR”) techniques covers the remaining area of 13,996 Ha. Project topography is shown in **Figure ES 3**.

Land use is designated as a “Production Forest” (Hutan Produksi Tetap or “HP”). The southern part of the concession is overlain by softwood plantation owned by PT Citra Sumber Sejahtera (“CSS”). It is understood that PTSB already has a “Forest Use Permit” (Izin Pinjam Pakai Kawasan Hutan or

“**IPPKH**”) for coal production covering an area of 1,004 Ha in the northern part of the mining concession from the Indonesian Forestry and Environment Ministry, No. SK 797/Menhut-II/2014 dated 24 September 2014. The IPPKH document can be found in **Appendix D**. An application has been submitted to extend the IPPKH to cover the southern part of the concession however, based on information from the Client, the application is ongoing.

The Client has also an approved Analisis Dampak Lingkungan Hidup (“**ANDAL**”) covering the entire concession issued in December 2012 which is a pre-requisite to formal environmental approval, Analisis Mengenai Dampak Lingkungan Hidup (“**AMDAL**”) which is yet to be completed. The ANDAL document is included in **Appendix E**.

### **Geology and Geological Database**

The Project is located in the South Sumatra Basin and is predominantly underlain by the coal-bearing Late Miocene to Pliocene age Muara Enim Formation (“**Tmpm**”) which covers 65% of the concession. Regional geology is shown in **Figure ES 4**.

A total of 10 coal seams and 20 sub-seams have been identified through successive exploration drilling programs. The major seams, Seam M5 and Seam M7 have average thicknesses of 3.6 m and 1.8 m, respectively. The geological structure is a gentle anticlinal structure with the axis trending N135°E. Coal dips on both the northern and southern limbs of the anticline are <10 degrees. Up to 30 April 2017, a total of 1,167 holes have been drilled over an area of approximately 10,000 Ha. Separate drilling programmes were conducted over the northern and southern limbs of the anticline and for the purposes of this Statement are herein referred as the North Block and South Block, respectively.

The borehole locations and the seam stratigraphic sequences are shown in **Figure ES 5** and **Figure ES 6** respectively, while the typical cross sections are shown in **Figure ES 7**.

The *in situ* coal quality was tested to ASTM standards with a standard suite of tests, including Total Moisture (“**TM**”), Proximate Analysis, Calorific Value (“**CV**”), Total Sulphur (“**TS**”) and Relative Density (“**RD**”). All analyses were undertaken by the internationally accredited PT Geoservices (“**Geoservices**”) laboratory at Padang, West Sumatra, Indonesia and PT Sucofindo (“**Sucofindo**”) laboratory at Pekanbaru, Riau, Indonesia.

### **North Block Exploration**

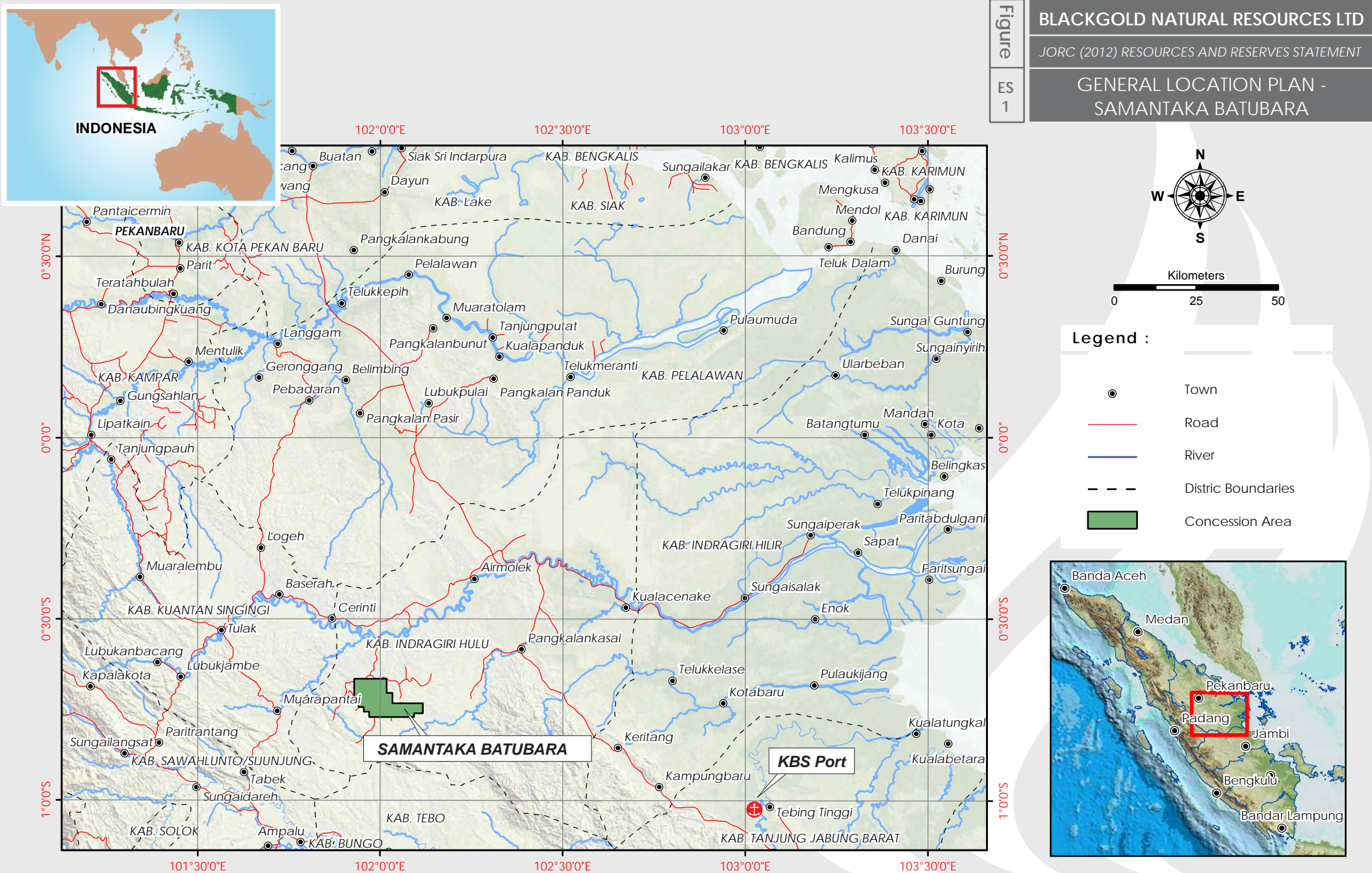
Exploration drilling within the North Block was conducted in three stages. The first stage followed geological mapping in 2011. A total of 51 holes were drilled including 4 quality holes. Most holes were geophysically logged and drill collars were surveyed by Total Station. The second stage drilling was conducted from October to December 2012 with a total of 103 holes including 12 quality holes. All holes were geophysically logged and most drillhole collars were surveyed by Total Station. A total of 656 holes including 118 quality holes and 7 fully cored geotechnical holes were drilled during the third stage in 2015. The third stage drilling was also supported by geophysical logging and drill collars were surveyed using Total Station.

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JORC (2012) RESOURCES AND RESERVES STATEMENT

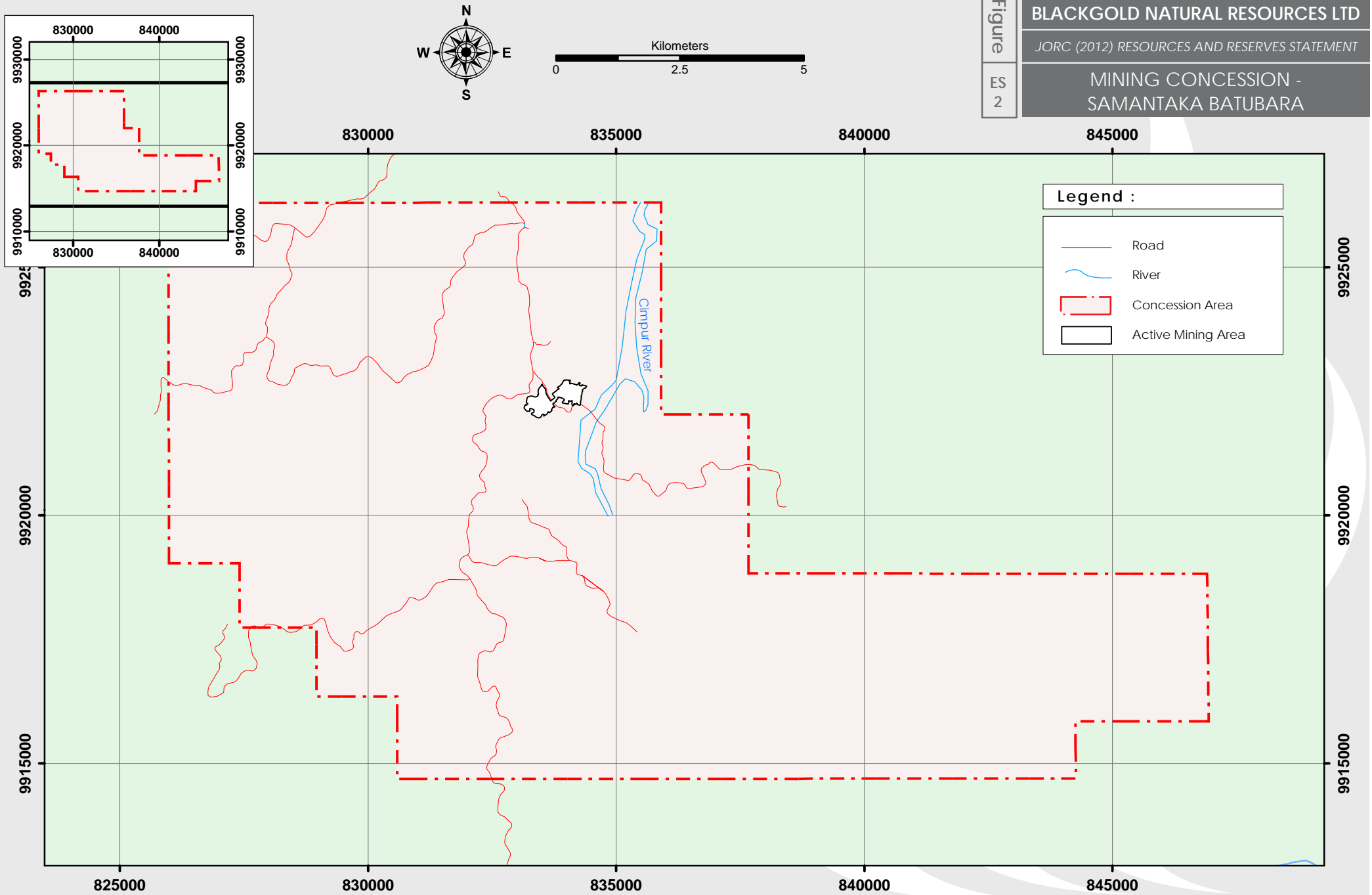
**GENERAL LOCATION PLAN -  
SAMANTAKA BATUBARA**

Figure  
ES  
1



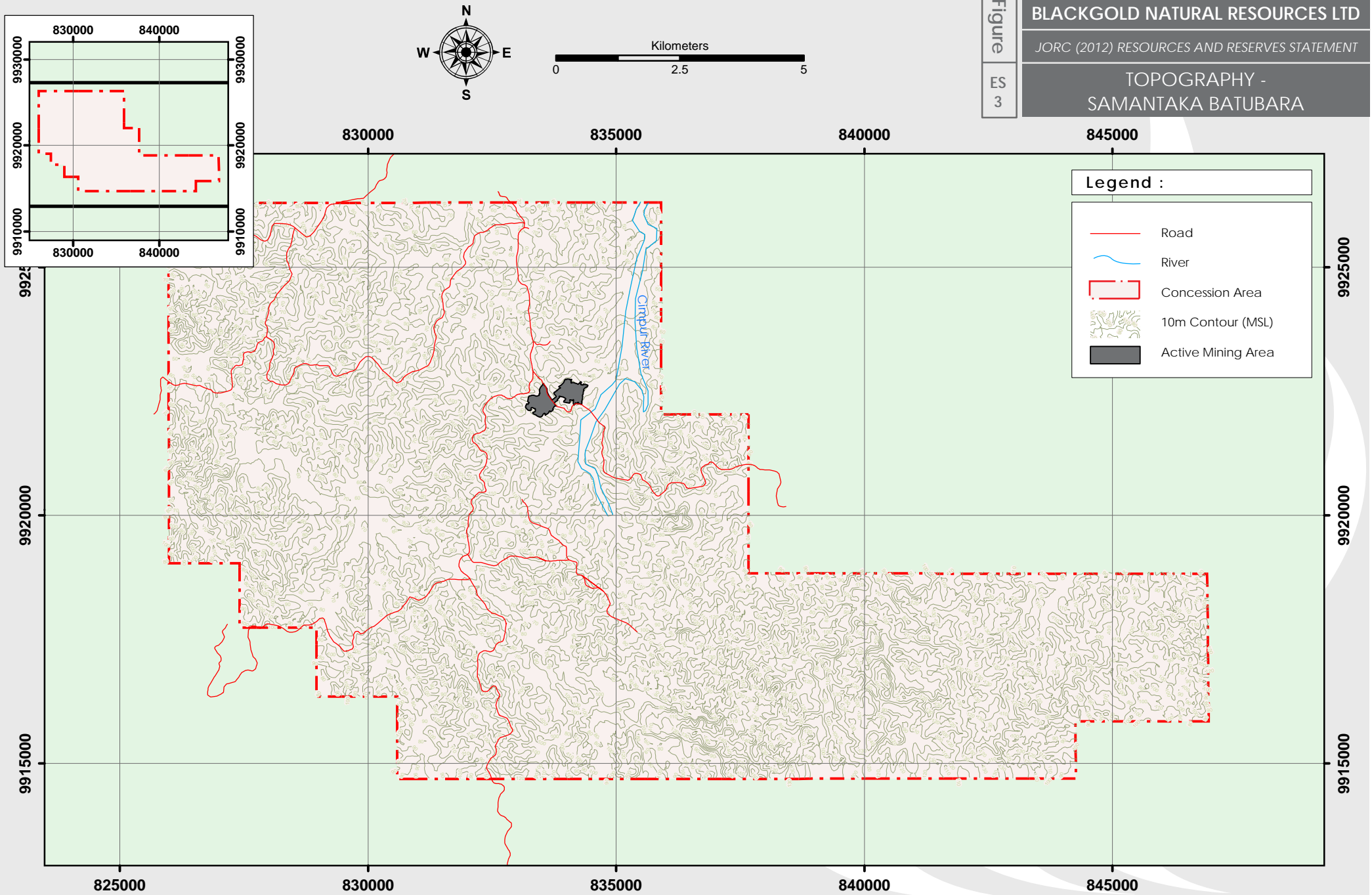
Figure

ES  
2

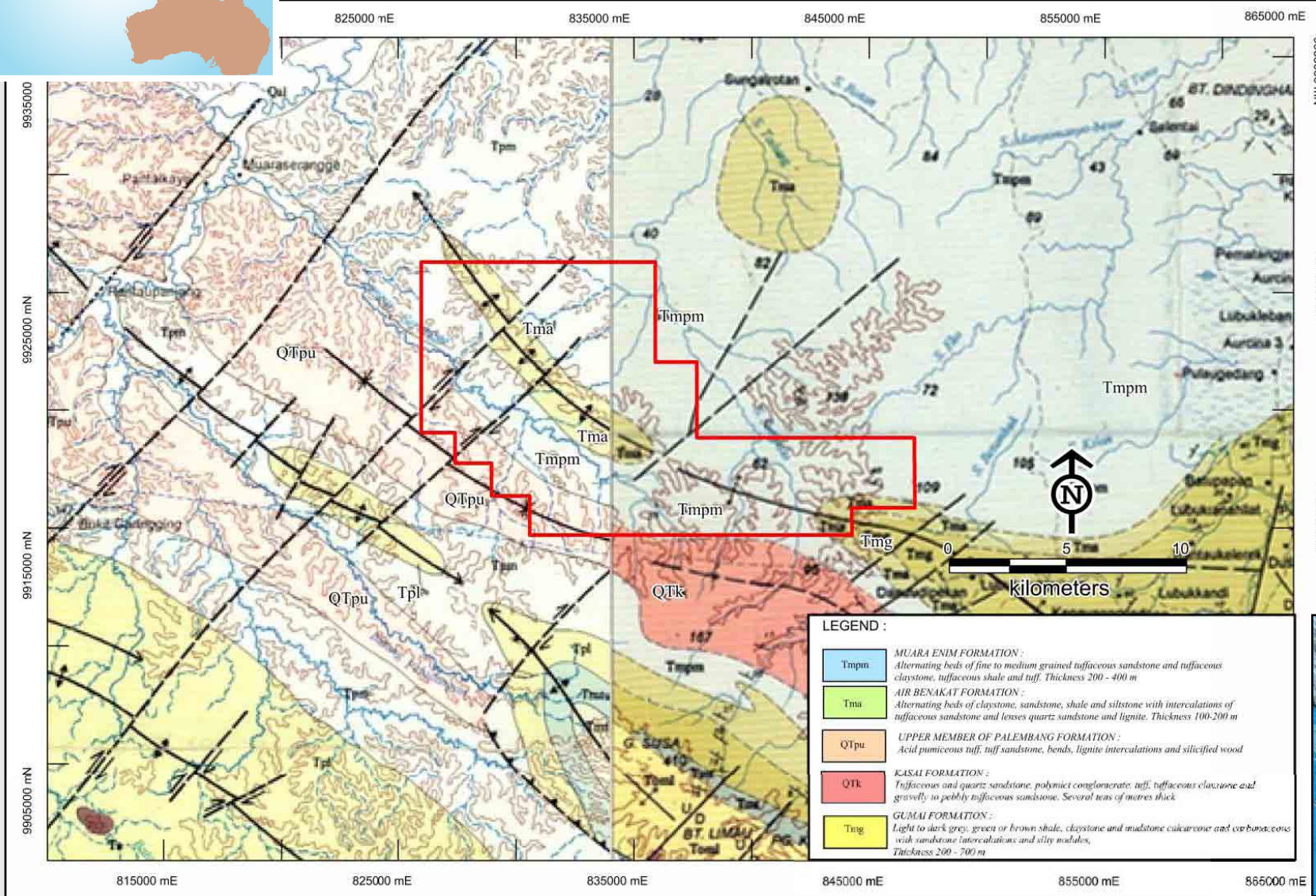


TOPOGRAPHY -  
SAMANTAKA BATUBARA

Figure  
ES  
3





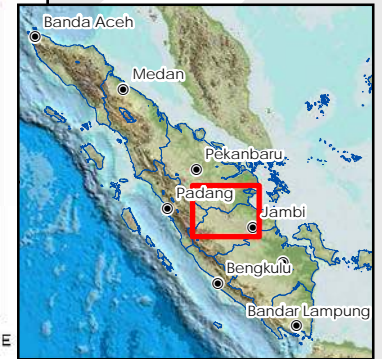


**Legend :**

- Fault
- River
- Concession Area

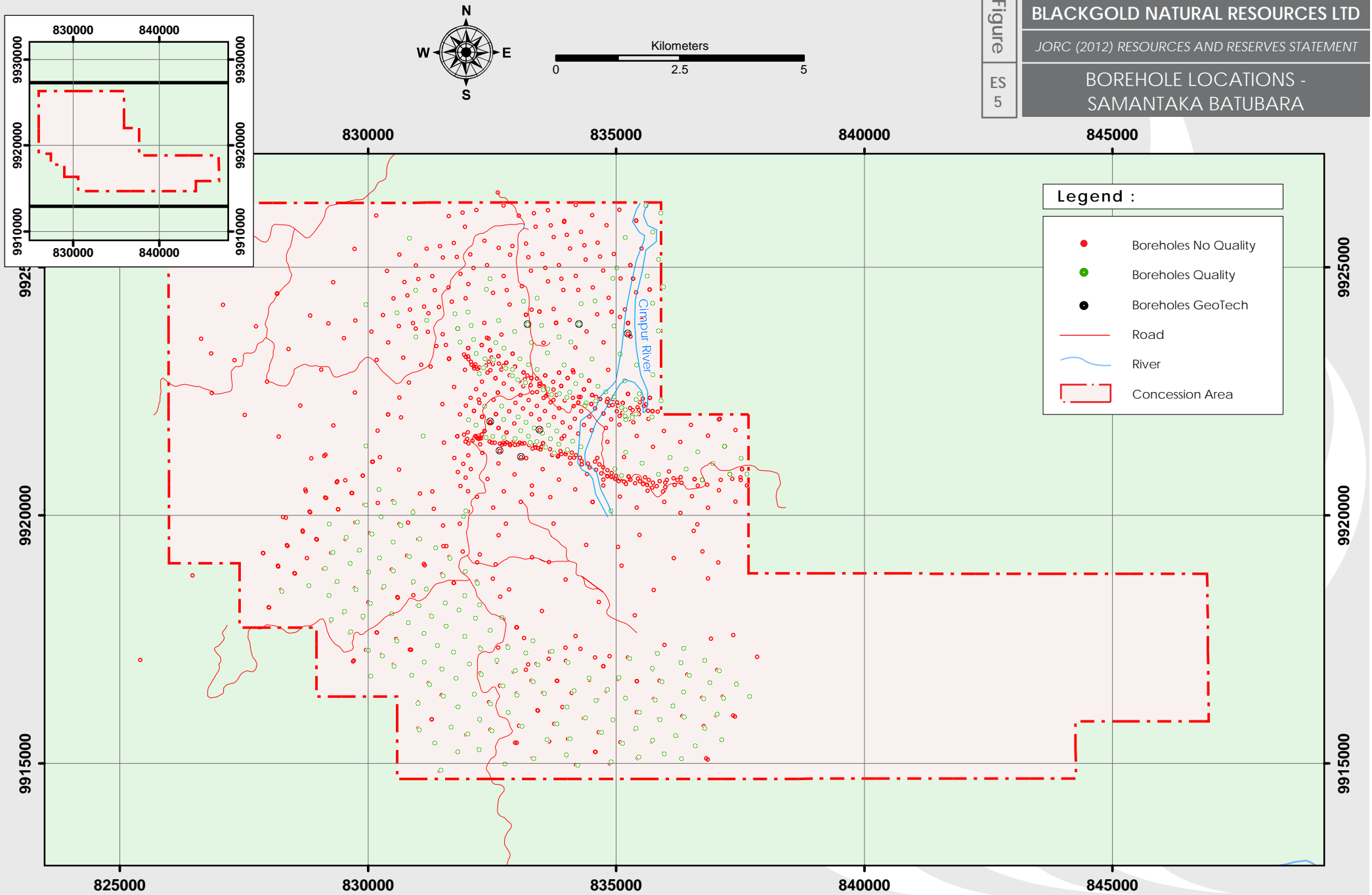
**LEGEND :**

- Tmpm** **MUARA ENIM FORMATION :**  
Alternating beds of fine to medium grained tuffaceous sandstone and tuffaceous claystone, tuffaceous shale and tuff. Thickness 200 - 400 m
- Tma** **AIR BENAKAT FORMATION :**  
Alternating beds of claystone, sandstone, shale and siltstone with intercalations of tuffaceous sandstone and lenses quartz sandstone and lignite. Thickness 100-200 m
- QTpu** **UPPER MEMBER OF PALEMBANG FORMATION :**  
Acid pumiceous tuff, tuff sandstone, beds, lignite intercalations and silicified wood
- QTK** **KASAI FORMATION :**  
Tuffaceous and quartz sandstone, polymict conglomerate, tuff, tuffaceous claystone and gravelly to pebbly tuffaceous sandstone. Several tens of metres thick
- Tmg** **GUMAI FORMATION :**  
Light to dark grey, green or brown shale, claystone and mudstone calcareous and carbonaceous with sandstone intercalations and silt modules, Thickness 200 - 700 m



BOREHOLE LOCATIONS - SAMANTAKA BATUBARA

Figure ES 5



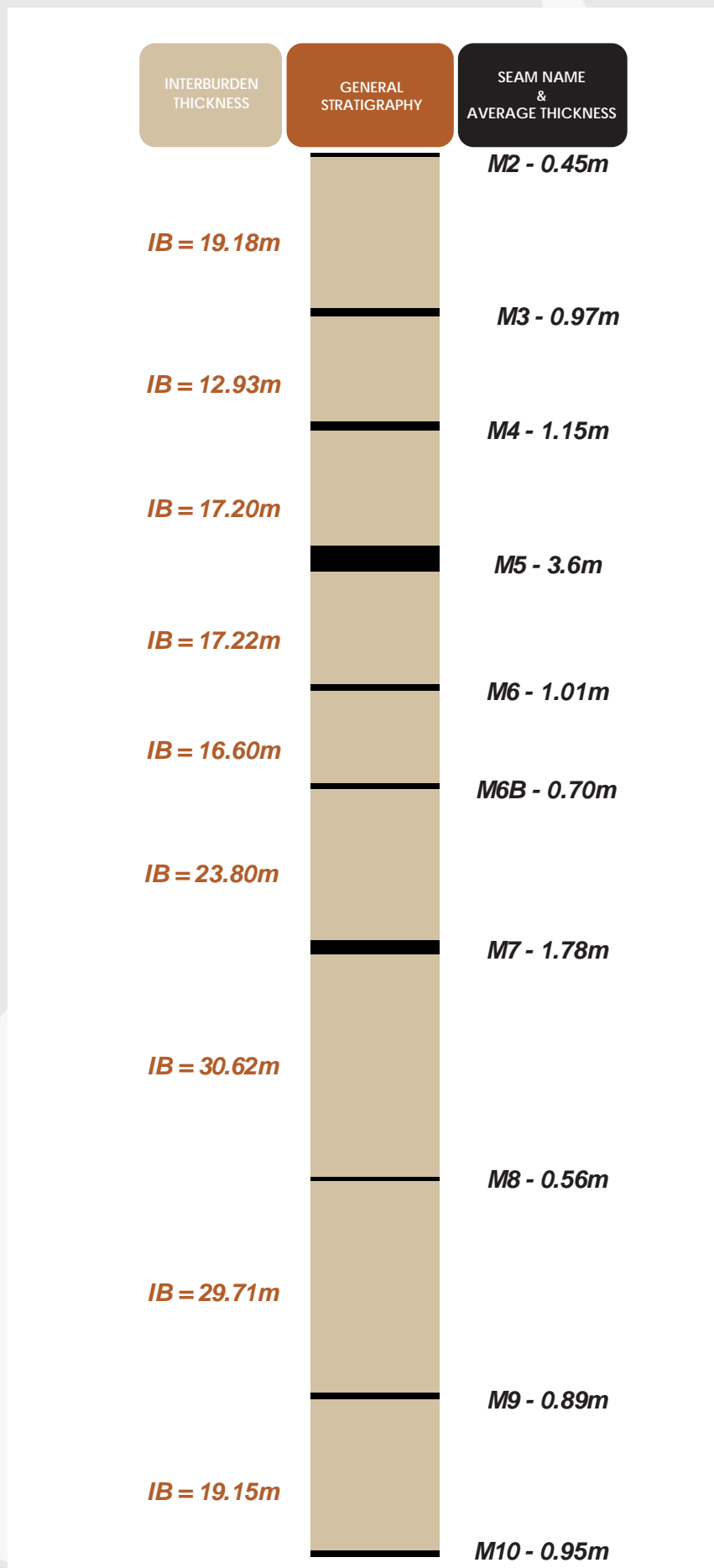
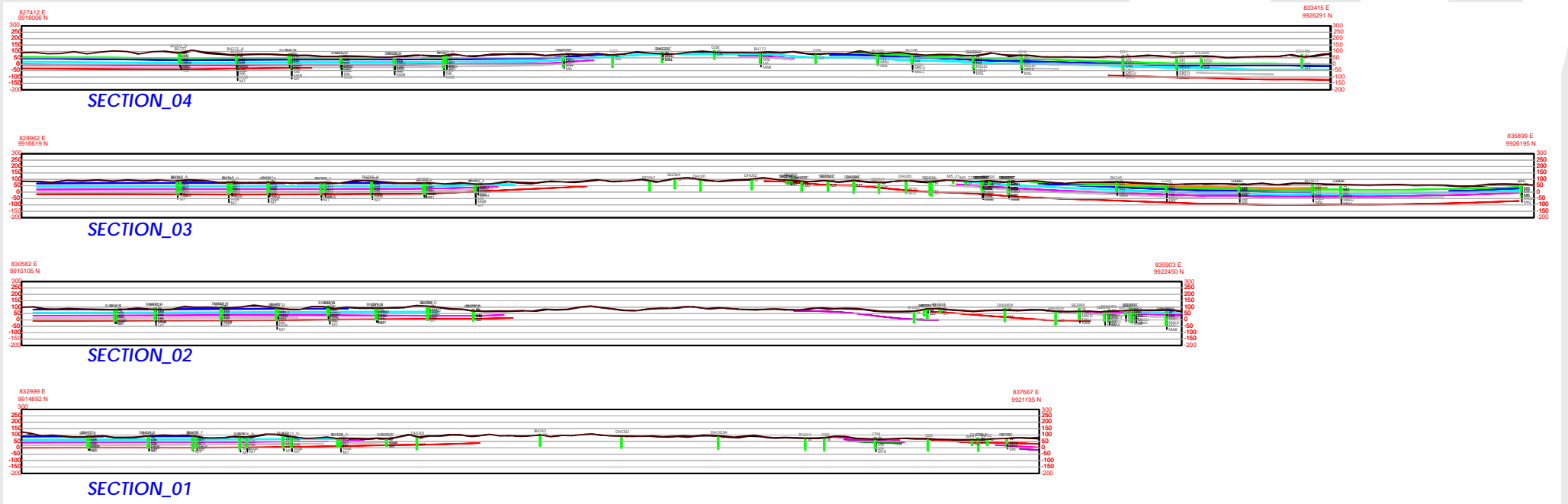
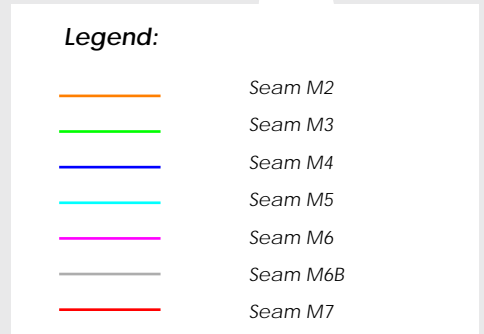
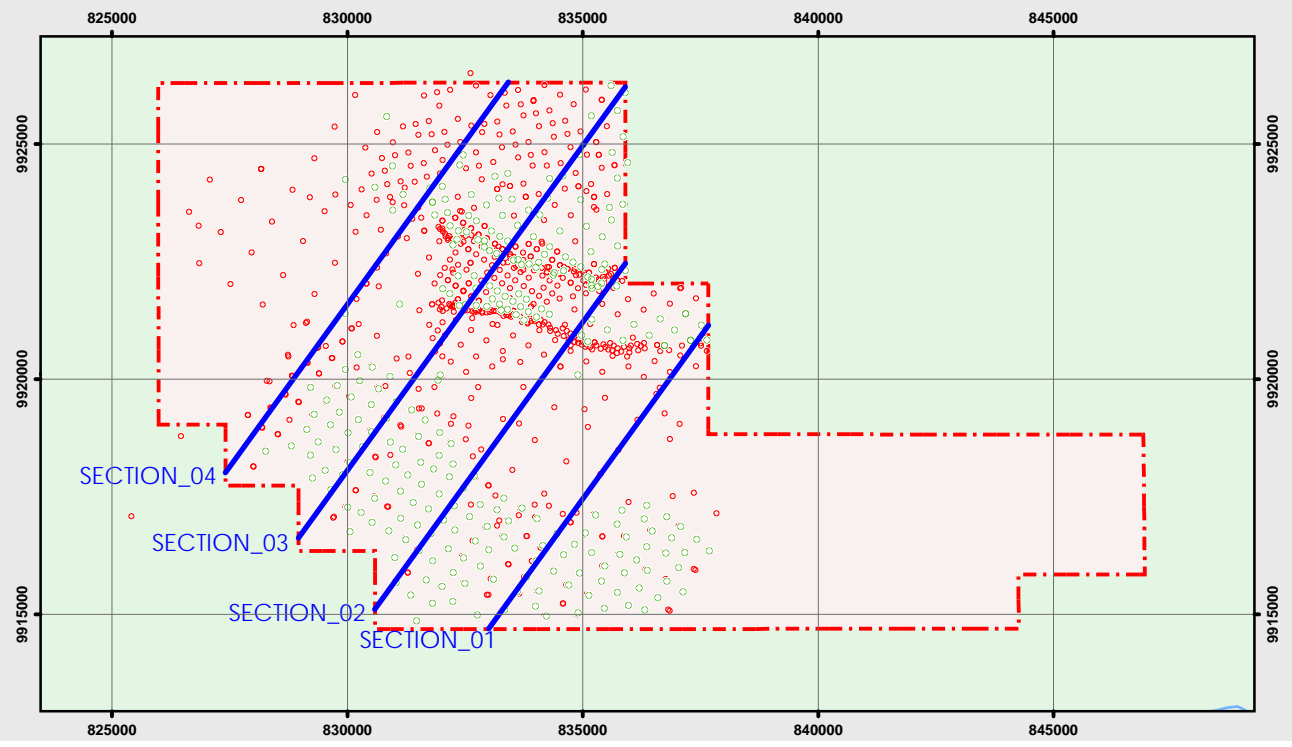


Figure  
ES  
7

**BLACKGOLD NATURAL RESOURCES LTD**  
 JORC (2012) RESOURCES AND RESERVES STATEMENT  
 TYPICAL CROSS SECTIONS -  
 SAMANTAKA BATUBARA



All drillholes were drilled on lines perpendicular direction to the strike with line spacing of 200 m to 800 m. Drillholes are typically shallow with an average depth of 65 m and a maximum depth of 150 m. Total depth of drilling in the North Block is 53,256 m. All quality holes recorded >90% coal recovery.

### South Block Exploration

Exploration drilling within the South Block was conducted in 2011 on lines perpendicular to the strike with drill line spacing of 400 m. A total of 357 holes were drilled, including 177 “twinned” quality holes adjacent to previous “pilot” holes. Total depth drilled was 29,820 m with an average depth of 84 m and a maximum depth of 129 m. All quality holes recorded >90% coal recovery. The exploration data was acquired by BNR in early 2017. No geotechnical drilling has been undertaken in the South Block.

### Computer Modelling

Based on the exploration drillholes (seam thickness, depth, elevation and coal quality), a single 3D surface model was built by the NRM geologists, using Ventyx Minescape “Stratmodel” software. The surface model includes the topographic surface, weathering surface, seam roofs and floors.

Minescape software is an internationally used mining software package that is capable of modelling seam splits as well as faults. Quality data was undertaken with seam roof and floor strata and in-seam partings sampled separately, however it is noted that coal intervals were not sampled on a “ply-by-ply” basis. Proximate Analysis, TM, TS and full analysis parameters were modeled. Only drillholes with geophysical logging, collar survey by Total Station and in the case of cored holes, only those with >90% core recovery were used in the geological model.

**The geological database and model are considered by GMT to be of a suitable standard for estimation and reporting of Coal Resources in accordance with the JORC Code 2012.**

### Coal Resources

Coal Resources were estimated from the geological model based on data as of 31 December 2017. A total of 520 million tonnes (“Mt”) of Coal Resources was estimated for the Project, of which 140 Mt is categorised as Measured, 250 Mt as Indicated with the balance of 130 Mt as Inferred. The Coal Resources have been estimated to the reduced level (“RL”) minus 100 m.

The comparison between this Statement and the previous Statement (PT GMT Indonesia, Resources and Reserves Updated Estimated for The Blackgold Natural Resources Project, Kabupaten of Indragiri Hulu, Province of Riau, Republic of Indonesia, 9 June 2017) is shown in **Table ES 2** below. No additional exploration drilling was undertaken in 2017. Actual coal mined in 2017 totalled 197 thousand tonnes (“kt”). Coal Resources totals have been rounded to the second significant figure to reflect the order of accuracy of the estimates and in conformance with the JORC Code 2012 guidelines (Section 25), therefore there is no reported change in the Coal Resources from the previous IQPR16.

**Table ES 2 Summary Coal Resources Comparison**

		Coal Resources (Mt)			
		Measured	Indicated	Inferred	Total
Dec-17	GMT	140	250	130	520
June-17	GMT	140	250	130	520
<b>Variance</b>		<b>0</b>	<b>00</b>	<b>0</b>	<b>0</b>
		<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

The Coal Resources estimation excludes any coal seams less than 0.5 m in thickness. The *in situ* RD was estimated from the air dried RD and using the Preston-Sanders (1993) formula was converted to a moisture in situ (“Mis”) basis using TM.

The coal is of a lignitic rank with an average quality as follows: TM 43.5% (as received, “ar”), Inherent Moisture (“IM”) 19.6% (air dried basis, “ad”), Ash Content is typically moderately high 9.6% (ad), with low TS 0.23% (ad) and CV 3,510 kcal/kg (gross as received, “gar”). The Coal Resources are summarised in **Table ES 3** below, while detailed Coal Resources by category is shown in **Table ES 4**. Further Coal Resources sub-divided on the basis of coal quality and coal thickness are shown in **Table ES 5** and **Table ES 6**. (Note: Coal Resources totals may not be identical to the sum of individual sub-totals due to the effect of rounding).

**Table ES 3 Coal Resources Summary (as at 31 Dec 2017)**

Coal Resources (Mt)				TM %	IM %	Ash %	TS %	CV kcal/kg		RD g/cc
Measured	Indicated	Inferred	Total	(ar)	(ad)	(ad)	(ad)	(ad)	(gar)	<i>in situ</i>
<b>140</b>	<b>250</b>	<b>130</b>	<b>520</b>	<b>43.5</b>	<b>19.6</b>	<b>9.6</b>	<b>0.23</b>	<b>3,510</b>	<b>4,990</b>	<b>1.21</b>

(Note: All Coal Resources are reported to a basal RL of -100 m)

**Table ES 4 Coal Resources by Category (as at 31 December 2017)**

Category	Coal Resources (Mt)	TM %	IM %	Ash %	TS %	CV kcal/kg		RD g/cc
		(ar)	(ad)	(ad)	(ad)	(gar)	(ad)	<i>in situ</i>
Measured	140	43.6	19.9	9.6	0.23	3,515	4,985	1.2
Indicated	250	43.4	19.4	9.6	0.23	3,505	4,990	1.21
Inferred	130	42.9	18	10.3	0.24	3,515	5,045	1.21
<b>Total</b>	<b>520</b>	<b>43.5</b>	<b>19.6</b>	<b>9.6</b>	<b>0.23</b>	<b>3,510</b>	<b>4,990</b>	<b>1.21</b>

**Table ES 5 Coal Resources by Calorific Value (gar) (as at 31 December 2017)**

CV Range kcal/kg (gar)	Coal Resources (Mt)				TM %	IM %	Ash %	TS %	CV kcal/kg		RD g/cc
	Measured	Indicated	Inferred	Total	(ar)	(ad)	(ad)	(ad)	(gar)	(ad)	<i>in situ</i>
> 3,500	35	49	42	125	42.2	20.9	9.6	0.21	3,770	5,155	1.22
3,250 - 3,500	110	200	82	390	43.8	19.2	9.5	0.23	3,440	4,945	1.21
< 3,250	1	2.3	3.3	7	44.4	15.3	14	0.33	3,105	4,730	1.25
<b>Total</b>	<b>140</b>	<b>250</b>	<b>130</b>	<b>520</b>	<b>43.5</b>	<b>19.6</b>	<b>9.6</b>	<b>0.23</b>	<b>3,510</b>	<b>4,990</b>	<b>1.21</b>

**Table ES 6 Coal Resources by Thickness (as at 31 December 2017)**

Thickness Range (m)	Coal Resources (Mt)				Basal RL (m)	TM % (ar)	IM % (ad)	Ash % (ad)	TS % (ad)	CV kcal/kg (gar)	CV kcal/kg (ad)	RD g/cc <i>in situ</i>
	Measured	Indicated	Inferred	Total								
> 3	82	71	16	170	-100	43.9	19.4	9.1	0.23	3,440	4,935	1.20
1 to 3	58	158	15	230		43.3	20.0	9.8	0.23	3,575	5,035	1.21
0.5 to 1	3.2	18	97	120		43.2	16.4	10.6	0.27	3,370	4,955	1.23
<b>Total</b>	<b>140</b>	<b>250</b>	<b>130</b>	<b>520</b>		<b>43.5</b>	<b>19.6</b>	<b>9.6</b>	<b>0.23</b>	<b>3,510</b>	<b>4,990</b>	<b>1.21</b>

### Mineable ROM Coal

Mineable Run-of-Mine (“**ROM**”) Coal was estimated by applying mining and economic modifying factors to the *in situ* coal. The mining factors included coal recovery and dilution factors, assumed geotechnical slopes, lease boundaries and a minimum working section thickness. The Break-Even Stripping Ratio (“**BESR**”) was estimated by applying indicative economic modifying factors, including operating costs (“**OPEX**”) and projected coal prices, which were also used for pit optimization using Minex “Optimizer” software. OPEX and revenue are unchanged from the previous IQPR16 for Riau-1 which are derived from the appropriate Indonesian Government regulation No 7424. OPEX for third party coal sales is slightly increased however given that the pit optimisation and practical pit design is based on Riau-1, there is no change in the Mineable ROM Coal estimate.

The approach is generally as follows:

- Establish the mining factors including coal recovery and dilution;
- Establish the physical pit design parameters (e.g. slope angles);
- Establish the unit operating costs (“**OPEX**”) and product revenue parameters;
- Apply these inputs in the Optimizer software to generate a series of “nested” 3D pit “shells” and related tabulation of quantities and costs;
- From the OPEX and revenue assumptions, determine the indicative BESR;
- Select the appropriate optimized pit shell with an incremental stripping ratio (“**ISR**”) less than the estimated BESR so that “non-economic” coal is excluded from the pit shell; and
- Modify the optimised pit shell as necessary based on practical mining constraints to derive a “practical” or mineable pit shell.

The Optimizer identified two main pit shells, namely Pit North and Pit South with the base of the pit having multiple seams as the basal seam. Pit North is sub-divided into two sub-pits, Pit North M5 and Pit North M7. The pit designs were further modified by practical mining constraints as necessary to form “practical” or Mineable Pit Shells, as presented in **Figure ES 8**.

The Mineable Pit Shells were estimated to contain a total of approximately **153 Mt** of Mineable ROM Coal at an average Stripping Ratio (“**SR**”) of **5.9** bank cubic metres per tonne (“**bcm/t**”), as summarised in **Table ES 7** below are derived from Measured and Indicated Coal Resources as well as approximately 6 Mt of Inferred Coal Resources. The variance between Mineable ROM Coal and Coal Reserves (see Coal Reserves sub-section below) is 6 Mt of Inferred category coal (approximately 4% of the total within the practical pit shells) which occurs as minor isolated “polygons” in a number of seams, principally close to the South Pit highwall. The Consultant is of

the opinion that the inclusion of the minor Inferred tonnages is not a material issue in determining the economic viability of the Coal Reserves. This minor coal has also been included within the mining schedule.

**Table ES 7 Mineable ROM Coal Summary (as at 31 December 2017)**

Area	Waste (Mbcm)	Coal (Mt)	SR (bcm/t)
Pit North	100	14	7.1
Pit South	808	139	5.8
<b>Total</b>	<b>908</b>	<b>153</b>	<b>5.9</b>

*(Note: Mineable ROM Coal includes minor coal tonnage based on Inferred category Coal Resources, which in accordance with the JORC Code 2012 are excluded from Coal Reserves estimates.)*

### Coal Reserves

The Coal Reserves were estimated by including the Mineable ROM Coal within the resources boundary of Measured and Indicated categories, limited by the practical pit shells identified in the previous section. The Coal Reserves categories are based on a number of factors, including the level of confidence in the supporting Coal Resources and level of confidence in “Modifying Factors” (as defined in the JORC Code 2012). Coal Reserves estimates exclude coal seams less than 0.5 m in thickness and use estimated *in situ* RD calculated from the air dried RD using the Preston-Sanders (1993) formula to convert to moisture *in situ* (“Mis”) using TM.

The Coal Reserves for the Samantaka deposit as of the 31 December 2017 totalled **147 Mt**, of which **55 Mt** is categorised as Proved and **92 Mt** is categorised as Probable.

As noted above, 197 kt of coal have been mined in 2017 and economic modifying factors are unchanged from the IQPR16 report, Coal Reserves estimates therefore are unchanged from the previous estimate due to rounding to the second significant figure to reflect the order of accuracy of the estimates and in conformance with the JORC Code 2012 guidelines (Section 25). The comparison between this Statement and the previous Coal Reserves estimate is shown in **Table ES 8** below.

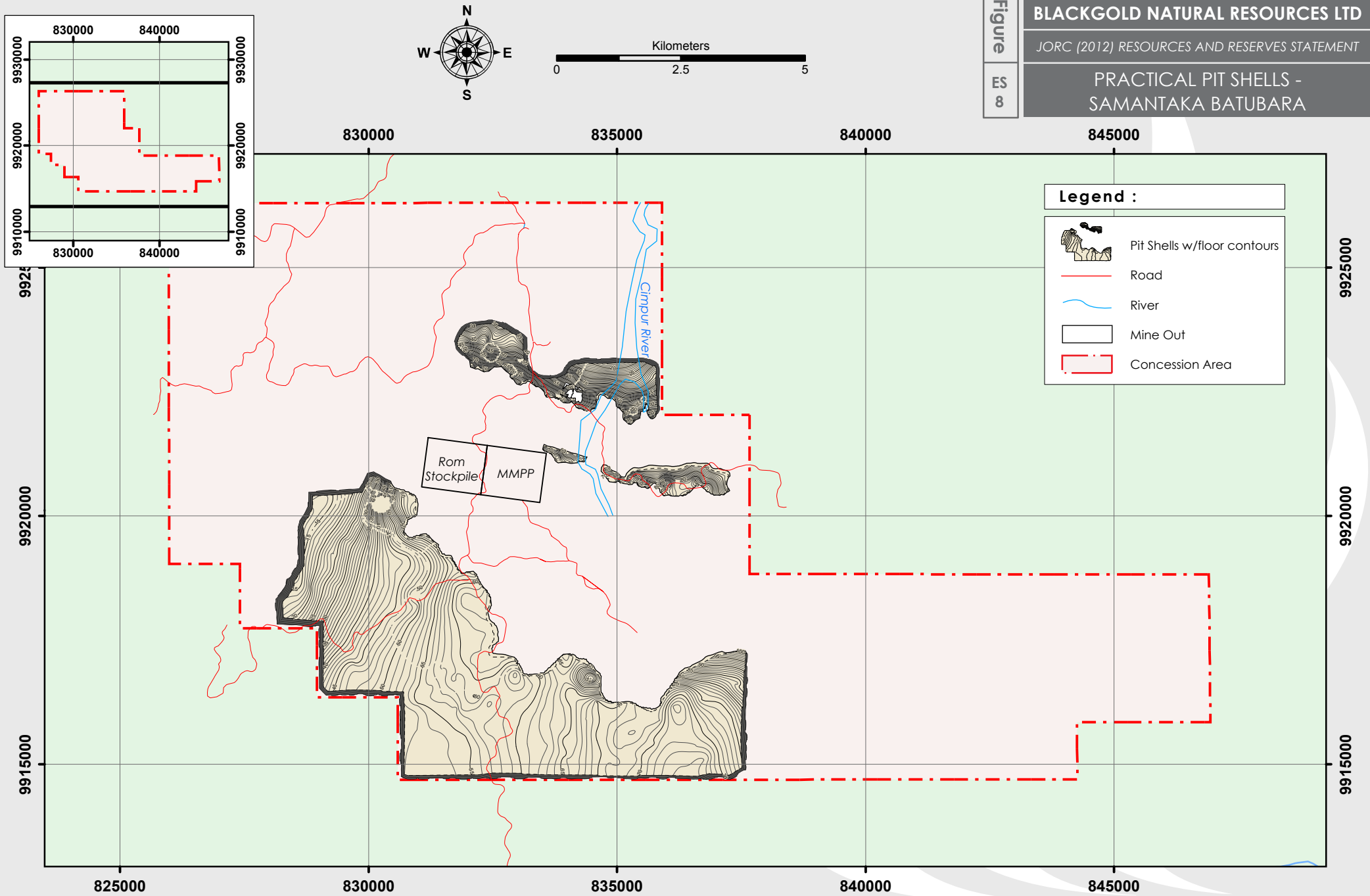
Coal Reserves; M5 is changed to reflect production, and totals have been rounded to reflect the order of accuracy of the estimates. Coal Reserves by category are presented in **Table ES 9**, while **Table ES 10** and **Table ES 11** shows the detailed Coal Reserves tonnes and quality by pit and by seam, respectively.

**It should be noted that Coal Resources are reported inclusive of Coal Reserves i.e. Coal Reserves are not additional to Coal Resources.**



PRACTICAL PIT SHELLS -  
SAMANTAKA BATUBARA

Figure  
ES  
8



**Table ES 8 Summary Coal Reserves Comparison**

		Coal Reserves (Mt)		
		Proved	Probable	Total
Dec-17	GMT	55	92	147
Jun-17	GMT	55	92	147
<b>Variance</b>		<b>0</b>	<b>0</b>	<b>0</b>
		<b>0%</b>	<b>0%</b>	<b>0%</b>

Coal Reserves totals have been rounded to the second significant figure to reflect the order of accuracy of the estimates and in conformance with the JORC Code 2012 guidelines (Section 25), therefore there is no reported change in the Coal Resources from the previous IQPR16.

**Table ES 9 Coal Reserves by Category (as at 31 December 2017)**

Category	Coal Reserves (Mt)	TM % (ar)	IM % (ad)	Ash % (ar)	TS % (ar)	CV kcal/kg (gar)	RD g/cc <i>in situ</i>
Proved	55	43.9	20.4	7.7	0.17	3,410	1.21
Probable	92	44.1	19.7	7.1	0.17	3,390	1.21
<b>Total</b>	<b>147</b>	<b>44.0</b>	<b>20.0</b>	<b>7.3</b>	<b>0.17</b>	<b>3,400</b>	<b>1.21</b>

**Table ES 10 Coal Reserves by Pit (as at 31 December 2017)**

Pit	Coal Reserves (Mt)			TM % (ar)	IM % (ad)	Ash % (ar)	TS % (ar)	CV kcal/kg (gar)	RD g/cc <i>in situ</i>
	Proved	Probable	Total						
North	3	11	14	45.2	15.0	6.1	0.15	3,290	1.24
South	52	81	133	43.9	20.5	7.5	0.17	3,410	1.20
<b>Total</b>	<b>55</b>	<b>92</b>	<b>147</b>	<b>44.0</b>	<b>20.0</b>	<b>7.3</b>	<b>0.17</b>	<b>3,400</b>	<b>1.21</b>

**Table ES 11 Coal Reserves by Seam (as at 31 December 2017)**

Seam	Coal Reserves (Mt)	TM % (ar)	IM % (ad)	Ash % (ar)	TS % (ar)	CV kcal/kg (gar)	RD g/cc <i>in situ</i>
M3	0.2	45.1	13.6	9.8	0.21	2,940	1.29
M4U	0.1	44.0	14.5	6.5	0.23	3,340	1.27
M4	15.3	44.4	20.1	8.2	0.17	3,370	1.21
M4L	0.1	43.4	16.1	12.7	0.28	2,790	1.32
M5UU	0.3	46.5	15.4	7.2	0.20	3,110	1.25
M5U	10.1	43.9	19.8	8.6	0.18	3,370	1.23
M5UL	0.3	44.6	15.3	10.4	0.23	3,030	1.28

M5	107.2	44.0	20.1	7.0	0.17	3,410	1.20
M5LU	0.7	43.5	19.1	8.9	0.21	3,230	1.23
M5L	9.8	44.0	20.0	8.0	0.17	3,400	1.22
M5LL	0.7	42.5	20.5	9.8	0.19	3,480	1.23
M7	1.5	40.3	15.1	7.7	0.14	3,610	1.26
<b>Total</b>	<b>147</b>	<b>44.0</b>	<b>20.0</b>	<b>7.3</b>	<b>0.17</b>	<b>3,400</b>	<b>1.21</b>

### Summary of Coal Reserves and Resources

The following **Table ES 12** is included specifically to meet the SGX requirements for reporting as per SGX Catalist Rules, Appendix 7D, Summary of Coal Reserves and Resources.

**Table ES 12 Coal Reserves and Resources Summary (as at 31 December 2017)**

Category	Mineral Type	Gross Attributable to Licence		Net Attributable to Issuer		
		Tonnes (Mt)	Grade/Rank	Tonnes (Mt)	Grade/Rank	Change from Previous Update (%)
<b><u>Reserves</u></b>						
Proved	Coal	55	Lignite	55	Lignite	-
Probable	Coal	92	Lignite	92	Lignite	-
<b>Total</b>	<b>Coal</b>	<b>147</b>	<b>Lignite</b>	<b>147</b>	<b>Lignite</b>	<b>-</b>

<b><u>Resources</u></b>						
Measured	Coal	140	Lignite	140	Lignite	-
Indicated	Coal	250	Lignite	250	Lignite	-
Inferred	Coal	130	Lignite	130	Lignite	-
<b>Total</b>	<b>Coal</b>	<b>520</b>	<b>Lignite</b>	<b>520</b>	<b>Lignite</b>	<b>-</b>

## **Project Status**

The Project is at a “brownfield” stage of development. Small-scale mining commenced in February 2016 and approximately 30,000 t of coal were produced in 2016. Approximately 197 kt of coal was extracted in 2017, bringing total production to 31 December 2017 to 227 kt. The existing mining activities are to fulfill the 5 years coal supply contracts up to 600 kilo tonnes per annum (“**ktpa**”) with the local Power Plant. Another 720 ktpa for 10 years coal supply contracts with third party industrial users will commence in 2018, since the facilities are now in the construction and commissioning phases. The ongoing bid in conformance with Riau-1 Mine-Mouth Power Plant (“**MMPP**”) will require approximately 3.5 million tonnes (“**Mtpa**”) for 30 years coal supply contract plus an additional coal buffer of 20%. The Riau-1 MMPP tender submission is for Perusahaan Listrik Negara, the Indonesian Government power authority (“**PLN**”) with planned capacity of 2 x 300 Mega Watt (“**MW**”). This Statement will form the basis for the Coal Resources and Coal Reserves presented therein.

A total of up to approximately **114 Mt** of coal is required to meet the current local supply contracts and the Riau-1 bid. However, Coal Reserves total 147 Mt. The Consultant is of the opinion that it is a reasonable expectation that the additional 33 Mt above the tonnage currently contracted or bid will find a market in the future. The additional tonnes occur in the eastern part of Pit south east of the minor Cimpur River and although included within the total Coal Reserves have been categorised as maximum Probable status.

At this stage of the Project, studies completed on the project area include Geological, Topographic, Geotechnical, Hydrogeological, Hydrological while the necessary Environmental Studies in support of the Government approvals process are in progress. Further detailed studies will be required to take the Project forward to the next stage in the form of a comprehensive technical and economic “Bankable” or “Definitive” Feasibility Study, including the ongoing process of environmental studies in support of Government approvals.

Infrastructure to support current non-MMPP coal includes coal handling facilities, workshops, office, mess and other associated support facilities. Coal is hauled to a ROM stockpile with 300 tonne per hour (“**tph**”) crushing facilities, with approximately a 30,000 t ROM stockpile. Coal is transported 125 km by 30 tonne (“**t**”) coal haul trucks from the ROM stockpile to the Kuala Cenaku port on the Indragiri River which was completed in late 2017. A 20,000 t product stockpile capacity is currently installed at the port, which will be upgraded up to 50,000 t capacity stockpile in 2018. A 500 tph barge loading conveyor (“**BLC**”) has been installed at the port to load barges of maximum 6,000 tonnes capacity.

Dedicated mine site facilities for the planned Riau-1 MMPP will include camp facilities, administrative offices, heavy and light vehicle workshops, wash-down bays, fuel (1.5 ML) and oil storage, warehousing for parts and tyres, medical and emergency response centres. Coal Handling Facilities (CHF) will consist of ROM stockpiles, 2 x 100 t capacity hoppers, 2 x 300 tph crusher and stockpile conveyors, product stockpiles and appropriately sized power generation facilities. It is recognized that further detailed site planning is required pending award of the Riau-1 contract.

## **Key Issues**

It should be noted that “The term ‘Ore (Coal) Reserves’ need not necessarily signify that extraction facilities are in place or operative, or that all necessary approvals and 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 timeframe required by the mine plans” (JORC Code 2012, Section 29).

There are a number of technical and planning issues that may impact the current Coal Resources and Coal Reserves estimates. These include the following:

- More detailed Geotechnical, Hydrogeological and Hydrological studies, particularly in the South Block, since the existing study only covers the North Block;
- More detailed pit delineation drilling, particularly along the main seam subcrops which define the pit limits;
- More detailed full coal quality sample analysis in the South Block for MMPP purpose;
- To date only limited assessment of the potential acid mine drainage (“AMD”) has been conducted with the presence of potentially acid forming material identified. Further testwork is required to fully identify such horizons to ensure that appropriate waste handling and dumping practices are followed;
- More detailed study on the proposed river diversion, particularly in the Eastern area where a small river, the Cimpur River, traverses the active proposed mining areas as early as Year 3 of mine operations;
- More detailed study on logging road diversion, particularly for the PT Riau Andalan Pulp and Paper (“RAPP”) logging road that crosses the middle of the proposed active mine area;
- Land access including compensation to land owners and pulpwood plantation owners;
- Extension of the existing approval of Izin Pinjam Pakai Kawasan Hutan (“IPPKH” – Land Use Permit) to cover the proposed Pit South area;
- Approval of the AMDAL currently under preparation;
- Actual future contractor prices;
- Changes in government regulations, particularly in relation to the coal pricing formula; and
- **The Client being successful in the awarding of the Riau-1 MMPP contract. This represents the key risk factor upon which this Statement depends. The Consultants are of the opinion, based on Client discussions, that there is a reasonable expectation that the current bid will proceed. At this stage, the Client has signed the Consortium Agreement and Heads of Agreement, received Letter of Intent and expects that the Power Purchase Agreement will be signed within 2018.**

This Statement may only be presented in its entirety. Parties wishing to publish or edit selected parts of the text, or use the review for public reporting, must obtain prior written approval from the Consultant and the signatory of this Report. This Statement has been prepared for the sole use of the Client. Any other party is subject to the third party disclaimer clauses contained in the body of this Report.

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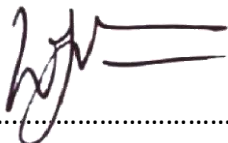
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## 1. STATEMENT OF JORC CODE 2012 COMPLIANCE

The estimate of Coal Resources in this Statement has been prepared by Mr. William (Bill) Park, BSc (Geology), BEcon, MAIG (Member of the Australian Institute of Geoscientists), MAusIMM (Member of the Australasian Institute of Mining and Metallurgy), MIAGI (Member of Indonesian Association of Geologist) and MPerhapi (Member of Association of Indonesian Mining Professionals). Bill is a qualified Geologist who has more than 40 years of relevant mining and geological experience in coal, working for major mining and consulting companies including senior technical and managerial positions. During this time, he has either managed or contributed significantly to numerous mining studies related to the estimation, assessment, evaluation and economic extraction of coal in Australia, New Zealand, the Philippines and Indonesia.

Bill has been based in Indonesia for most of the past 26 years and was employed in the position of full time Technical Manager for PT New Resource Mine Consulting (“**NRM**”), since its formation in 2011 to 2015 and from 2016 to the present holds the position of Principal Consultant. He has sufficient experience which is relevant to the style and type of deposit under consideration and to the activity he is undertaking to qualify him as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.

Bill also satisfies the requirements of a qualified person as per Catalist Rules 1204 (23) in that he has no conflict of interest, direct or indirect, present or prospective, or any pecuniary interest in BlackGold Natural Resources Limited or any related party. He will receive no financial benefits other than fees for professional services. He has not been found to be in breach of any relevant rule or law and is not the subject of any disciplinary proceedings or the subject of any investigation that might lead to a disciplinary proceeding by any regulatory authority or any professional association.

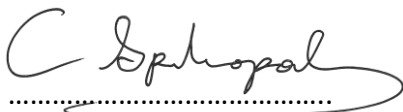


.....  
**William Park, BSc (Geology), BEcon, MAusIMM**

The Reserves Estimate has been prepared by Mr. Chris Spiliopoulos, BE (Mining) and MAusIMM (Member of the Australasian Institute of Mining and Metallurgy) who is a Principal Associate Mining Consultant with NRM. The estimates of Coal Reserves presented in this Statement have been carried out under the guidelines of the 2012 Edition of the Australasian Code for Reporting of exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012) and are based on information compiled and reviewed by Chris.

Chris is an Australian based Mining Engineer with over 25 years of experience in estimating, contract administration, management, technical and production roles for both owner operator and contractor operations in open cut and underground coal and metalliferous mines. His experience in project development in particular, and the management of cost estimates and technical proposals for mine operations, transport, ports, barging, shipping and associated infrastructure has covered Australia, Indonesia and Africa. Chris has lived and worked in Indonesia for over 12 years. He has sufficient experience which is relevant to the style and type of deposit under consideration and to the activity he is undertaking to qualify him as a Competent Person as defined in the 2012 Edition of the JORC Code.

Chris also satisfies the requirements of a qualified person as per SGX Catalist Rules 1204 (23) in that he has no conflict of interest, direct or indirect, present or prospective, or any pecuniary interest in BlackGold Natural Resources Limited or any related party. He will receive no financial benefits other than fees for professional services. He has not been found to be in breach of any relevant rule or law and is not the subject of any disciplinary proceedings or the subject of any investigation that might lead to a disciplinary proceeding by any regulatory authority or any professional association.

A handwritten signature in black ink, appearing to read 'C Spiliopoulos', with a horizontal line underneath it.

**Chris Spiliopoulos, BE (Mining), MAusIMM**

The estimate of Coal Resources and Coal Reserves in this Statement has been supervised by Mr. Krisjna Alimoeddin, TS (Geology), MAusIMM (Member of the Australasian Institute of Mining and Metallurgy), MIAGI (Member of Indonesian Association of Geologist) and MPerhapi (Member of Association of Indonesian Mining Professionals) in his capacity as a Qualified Person under Catalist Rules 1204 (23).

Krisjna is employed in the position of full time Vice President Director for PT GMT Indonesia ("GMT"). Krisjna is a qualified Geologist who has more than 20 years of relevant exploration and mining experience. He has sufficient experience which is relevant to the style and type of deposit under consideration and to the activity he is undertaking to qualify him as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.

Krisjna also satisfies the requirements of a qualified person as per SGX Catalist Rules 1204 (23) in that he has no conflict of interest, direct or indirect, present or prospective, or any pecuniary interest in BlackGold Natural Resources Limited or any related party and he will receive no financial benefits other than fees for professional services. He has not been found to be in breach of any relevant rule or law and is not the subject of any disciplinary proceedings or the subject of any investigation that might lead to a disciplinary proceeding by any regulatory authority or any professional association.



**Krisjna Alimoeddin, ST (Geology), MAusIMM**

## 2. INTRODUCTION

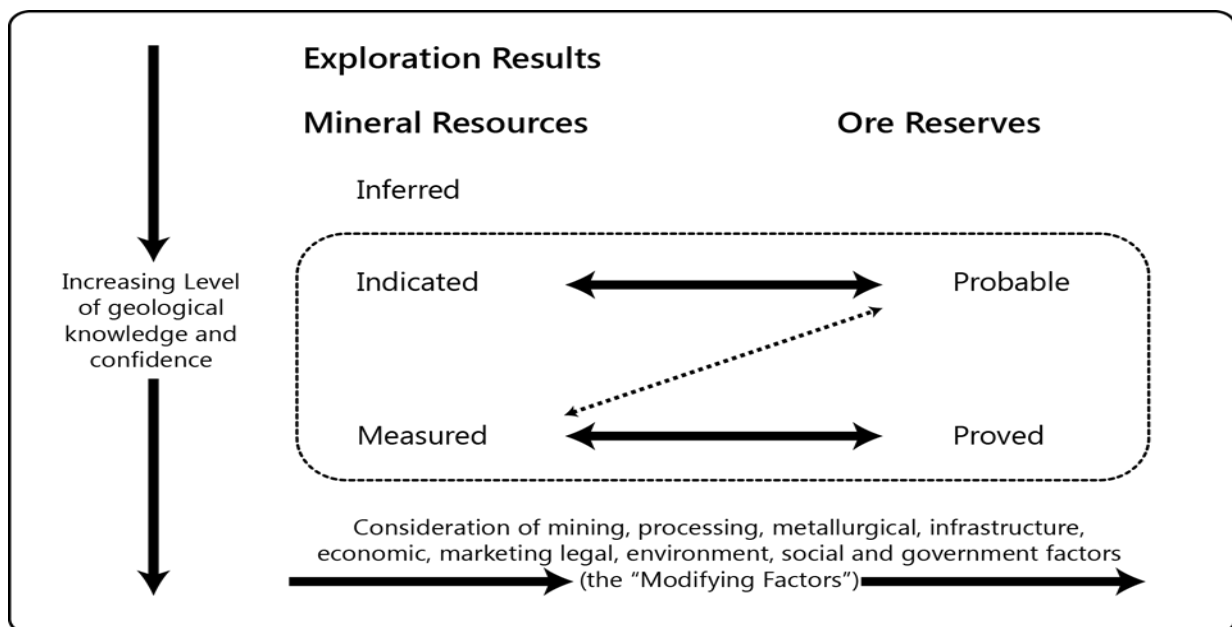
### 2.1 Overview

This report is produced by GMT solely for BlackGold Natural Resources Limited (“**BNR**” or the “**Client**”) to prepare a Statement (the “**Statement**”) of the Coal Resources and Reserves of the PT Samantaka Batubara coal mining concession (“**PTSB**” or the “**Project**”) as at 31 December 2017.

The Statement has been undertaken in compliance with the requirements of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (the “**JORC Code 2012**”) and the Australian Guidelines for the estimation and classification of Coal Resources 2014 Edition, prepared by the Coalfields Geology Council of New South Wales and the Queensland Resources Council (the “**Guidelines**”) specifically to meet the requirements of the Singapore Stock Exchange (“**SGX**”) which requires an annual update of the Statement.

The JORC Code 2012 “*framework for classifying tonnage and grade estimates to reflect different levels of geological confidence*” of Coal Resources “*and the different degrees of technical and economic evaluation*” subsequently applied in the estimation of Coal Resources and Coal Reserves are shown in **Figure 2-1** below.

**Figure 2-1 General Relationship between Exploration Results, Coal Resources and Coal Reserves (JORC Code, 2012)**



Within the JORC Code 2012 is a “Checklist of Assessment and Reporting Criteria” (*Table 1 – JORC Code 2012*). This checklist has been used as a systematic method to undertake the review of JORC Coal Resources and Coal Reserves compliance. The JORC Code 2012 Table 1 for Coal Resources and Coal Reserves estimation is included in **Appendix F**.

The JORC Code 2012 requires that for the Reporting of Ore (Coal) Reserves, “An ‘Ore (Coal) Reserves’ is the economically mineable part of a Measured and/or Indicated Mineral (Coal) Resources. 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” (JORC Code 2012, Section 29, paragraph 1).*

Given that the Project is at a “brownfield” stage of development, the Consultant is of the opinion that supporting studies including the Life of Mine plan (“**LOM**”), geotechnical studies, the environmental impact studies, coal transport and marketing agreements, to pre-feasibility (“**PFS**”) level of detail are adequate to support the outcomes of this Statement. It is recognised by GMT that further hydrological and planning studies are required in relation to diversion of the Cimpur River which traverses the Project. Further planning of the diversion of a logging road is also required. It is further recognised that the Coal Reserves Statement is dependent on the outcome of the ongoing Perusahaan Listrik Negara, the Indonesian Government power authority (“**PLN**”) Riau-1 Mine-Mouth Power Plant (“**MMPP**”) bid by BNR.

The Coal Resources and Coal Reserves of the Project are reported as of 31 December 2017. The estimates presented herein are in compliance with the requirements of the JORC Code 2012 and Guidelines.

The following JORC terms have been adopted in the Statement:

- **Coal Resources** as used in this Report are the same as “Mineral Resources” in the JORC Code 2012. Coal Resources refers to coal of such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, geological characteristics and continuity are known, estimated or interpreted from specific geological evidence or knowledge;
- The Coal Resources are sub-divided, in order of increasing geological confidence, into **Inferred**, **Indicated** and **Measured** Resources to reflect the confidence in the underlying resources data;
- **Coal Reserves** as used in this report are the same as “Ore Reserves” in the JORC Code 2012. The JORC Code 2012 requires that for the Reporting of Ore (Coal) Reserves, “An ‘Ore (Coal) Reserve’ is the economically mineable part of a Measured and/or Indicated Mineral (Coal) 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” (JORC Code 2012, Section 29, paragraph 1);
- Coal Reserves have been sub-divided in order of increasing confidence into **Probable** Coal Reserves and **Proved** Coal Reserves to reflect the confidence in the underlying resources data, supporting mine planning detail and other Modifying Factors. A Proved Coal Reserves can only be based on a Measured Coal Resources. Inferred Coal Resources cannot be included as a Coal Reserves;
- **Marketable** Coal Reserves allow for practical yields in a beneficiation plant, which is commonly known in the industry as “product coal”. In the case of PTSB’s coal, no yield is applied as coal is sold as ROM coal; and
- Coal Resources are reported inclusive of Coal Reserves, (that is, Coal Reserves are not additional to Coal Resources).

Additional non-JORC terminology applied within this Statement includes the following:

- **Geological Model** (or *in situ* model) is the computerised three dimensional representation of the coal deposit based on topographic survey data, coal seam data derived from outcrop, borehole or other data points, including coal thickness and quality;
- **Optimizer** is the Minex software applied to the geological model to determine the economic pit limits by the application of such factors as geological and mining losses, loss and dilution, geotechnical slope design and cost/revenue inputs;
- **Optimised Pit Shells** are the three dimensional economic pit limit determined using the Optimizer;
- **Mineable Pit Shells** are the “practical” or mineable pit design; and
- **Mineable Run of Mine (“ROM”) Coal** as used in this Report is coal in the Mineable Pit Shells after application of geological and mining losses, roof and floor loss and dilution. Mineable ROM coal may include some Inferred Coal Resources.

## 2.2 Approach

The process adopted for completing the Statement is described below:

- Data review and validation, including drillhole data, geophysical logs, coal quality and other relevant data.
- A geological model was prepared using Ventyx Minescape “Stratmodel” software;
- The geological model has been converted into Geovia “Minex” format for pit optimisation. Checks have been carried out to ensure quantities and qualities were within an acceptable level of variance (i.e. 3%) between models;
- Minimum mining thickness, coal losses and dilution factors have been applied to convert the *in situ* geological model to a ROM model using Minex; and
- Coal Reserves have been estimated using the practical or Mineable Pit Shells, which have been validated via pit optimisation.

The Coal Resources geological confidence limits have been overlaid on the Mineable Pit Shells and any Inferred tonnes are excluded from the Coal Reserves estimate (Note: The variance between Mineable ROM Coal within the pit shells and Coal Reserves is 6 Mt of Inferred category coal, or approximately 4% of total within the pit shells, which occurs as minor isolated “polygons” in a number of seams close to the Pit South highwall. Therefore, GMT is of the opinion that the inclusion of the minor Inferred tonnages does not have any material impact. This minor Inferred coal has also been included within the mining schedule.

- The Coal Reserves have been categorised as Probable or Proved based on the Coal Resources confidence, the level of detail in the mine planning and other supporting studies and the risks surrounding the project; and
- Internal checks have been undertaken and results and supporting information are documented in this Statement.

## 2.3 Scope of Work

The following Scope of Work (“SoW”) was completed on a staged basis as summarised below.

### Stage 1: Review of Additional Data, Approvals, Other

It is understood that no additional drilling or other exploration activities have been undertaken since the IQPR16, therefore the geological database and geological model used in the preparation of the IQPR17 are unchanged.

Additional related data, documentation and approvals that have advanced in 2017 will be subject to NRM review and duly referenced and/or summarised.

The SoW of the Consultants for Stage 1 was as follows:

- Update production statistics for 2017 and adjust Coal Resource and Reserve estimates accordingly;
- Update pit survey plan to end of 2017;
- Review status of Project documentation and approvals including (but not limited to) the following:
  - status of IPPKH approval over the South Block;
  - status of the AMDAL under preparation by a third party consultant;
  - status of Joint Venture agreements third parties (subject to confidentiality limitations); and
  - status of the Pre-Feasibility/Feasibility Studies for the MMPP
- Site visit by the Competent Person for Coal Reserves to inspect the status of the mine operations and the port facilities due for completion in October 2017;
- Review and revision as necessary of CAPEX and OPEX assumptions; and
- Review and identify any gaps in the Project data (including the potential geological risk such as variance in seam development, coal quality, other) and highlight any major risk parameters and provide recommendations for any additional work requirements (such as geotechnical / hydrological and environmental work, more detailed engineering design and costing, other) subject to ongoing tender.

### Stage 2: Revision of Life of Mine Plan and Statement

Based on Client discussions, the commencement date for two of several third party coal supply contracts have resulted in changes to the life-of-mine (“LOM”) plan. Additionally, the actual initial mine opening is different to that presented in the previous Statement, therefore the stage plans have varied. NRM has altered stage plans accordingly for the LOM. The outcome is a slightly higher waste volume which is reflected in the mining schedule (see **Section 5.8**)

Stage 2 SoW included the following:

- Revision of the mining schedule;
- Revision of appropriate tables and figures;
- Revision of the LOM based on the revised short term production strategy agreed with the Client, including the mining sequence, waste and coal quantities, dumping strategy, costs and coal quality within an annual basis for Year 1 to Year 5 and further 5-yearly basis beyond Year 5;
- Preparation of stage plans, showing pit and dump face positions based on the above LOM;
- Provide an opinion of the preferred mining methodology and an indicative equipment fleet to achieve the production target (as per previous Statement);
- Provide a re-estimation estimation of capital requirements (“CAPEX”) for the above (as necessary);
- Prepare an economic model to include both operating cost (“OPEX”) details and CAPEX estimates in line with accepted PFS standards; and
- Preparation of a JORC Code 2012 compliant Statement of Open Cut Coal Resources and Reserves to also meet the requirements of the SGX (or “IQPR17”).

## 2.4 Relevant Report and Studies

The following documents were used as reference material in the preparation of the Statement:

1. Preston, KB and Sanders, RH, “Estimating the *In Situ* Relative Density of Coal”, Australian Coal Geology, vol. 9, pp22-26, May 1993;
2. Australian Guidelines for the estimation and classification of Coal Resources 2014 Edition, prepared by the Coalfields Geology Council of New South Wales and the Queensland Resources Council;
3. Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code 2012 edition), effective December 2012;
4. PT Quantus Consultants Indonesia, Geotechnical and Hydrogeological Investigation, November 2015; and
5. PT GMT Indonesia, BlackGold Natural Resources Limited, PT Samantaka Batubara, JORC Code (2012) Compliant Statement of Open Cut Coal Resources and Reserves as at 9 June 2017, dated 7 August 2017.

## 2.5 Reliance on this Statement

The Client has consented to allow the disclosure of any deliverables to any third party which must be made in full along with all qualifications, assumptions and disclaimers relating to those deliverables.

The conclusions and opinions contained in this Report apply as at the date of the Report. Additional data and information may have become available since that date which may impact the conclusions and opinions.

**The ability to achieve forward-looking targets is dependent on numerous factors that include, but are not limited to, site-specific mining and geological conditions, management and personnel capabilities, availability of funding to properly operate and capitalise the operation, variations in cost elements and market conditions, developing and operating the mine in an efficient manner, unforeseen changes in legislation and new industry developments that are beyond the control of GMT and that cannot be anticipated.**

### 3. PROJECT DESCRIPTION

#### 3.1 Location and Background

The Project is located in Pauhranap Village, Peranap Sub-District, Indragiri Hulu Regency of Riau Province, Indonesia, approximately 150 kilometres (“km”) south east of Pekanbaru, the Capital of Riau Province (see previous **Figure ES 1**). The mining concession covers an area of 15,000 hectares (“Ha”) (see previous **Figure ES 2**).

The status of the concession is shown in **Table 3-1** below, while a copy of the Mining License (“IUP”) document can be found in **Appendix B**. The Client has advised that the status has been confirmed as “clear and clean” (“CnC”) by the Directorate General of Mineral and Coal with certificate number 148/Bb/03/2014 granted on 14 February 2014, under regulations of the Ministry of Energy and Mineral Resources of Republic Indonesia ([www.esdm.go.id](http://www.esdm.go.id)). A copy of the certificate is attached in **Appendix C**.

**Table 3-1 PTSB Mining Concession**

Concession	Area (Ha)	IUP No.	Date Issued	Term (years)	Status
PT Samantaka Batubara	15,000	Permit No. 001/IUP/545-02/II/2013	26 February 2013	10 years until 26 February 2023, extendable upon compliance with the prevailing laws and regulations.	Production

#### 3.2 Consultant Site Visits

The Competent Person for Coal Resources visited the site in February 2017. A previous site visit was conducted by Mr. Ony Eko Yusanto, NRM Project Manager Geology (Member of AusIMM – 323252) and Mr. Almu’minin Syarif, NRM Project Manager Mining (Member of AusIMM – 322556) conducted a site visit from 1 – 3 February 2017, including haul road and dump inspections. The Competent Person for Coal Reserves, who is signatory to this Statement conducted a site visit in December 2017. A number of site photos are included in **Appendix G**.

#### 3.3 Land Use and Morphology

Almost all of the mining concession is designated as “Production Forest” (Hutan Produksi Tetap or “HP”). It is understood that PTSB already has “Forest Use Permit” (Izin Pinjam Pakai Kawasan Hutan or “IPPKH”) approval for coal production covering an area of 1,004 Ha from the Forestry and Environment Ministry of Indonesia, No. SK 797/Menhut-II/2014 dated 24 September 2014. The IPPKH document can be found in **Appendix D**. An application has been submitted to extend the IPPKH to cover the southern part of the concession however, based on information from the Client, the application is ongoing. The Client also has an approved Analisis Dampak Lingkungan Hidup (“ANDAL”) covering the entire concession issued in December 2012 which is a pre-requisite to formal environmental approval, Analisis Mengenai Dampak Lingkungan Hidup (“AMDAL”) which is yet to be completed. The ANDAL document is included in **Appendix E**.

The Project area is predominantly forested hilly terrain and open rolling hills with a project elevation ranging from 44 to 159 m above mean sea level (“**MSL**”). Detailed topographic survey has been conducted over the entire concession. Ground topography survey by Total Station covers an area of 1,004 Ha, while aerial topography survey using ifSAR techniques covers the remaining area of 13,996 Ha. Project topography and other features are shown in the previous **Figure ES 3**.

### **3.4 Demographics and Culture**

Culturally, the indigenous people in the Project area are Sumatran Malay. The other main ethnicities in the area are Minang (from West Sumatra), who are traders, farmers or involved in the transportation business, with some of them also working as local government employees. There are transmigration villages along the gravel road being predominantly Javanese. The transmigrants work as farmers or employees and labourers. In the larger towns, there are also residents of Malay origin, being involved in various businesses and as employees.

The main religious groups in the area are closely dependent on the demographics of the communities, in the cities occupied by Malays and outsiders from various parts of Indonesia, the dominant religion is Islam. However, away from the cities and the smaller towns, Christian religion is more dominant, particularly the Batak tribe (North Sumatra).

The main usages of land in the area are for oil palm plantations, other plantation crops such as rubber, local small scale farming by local landholders, logging for timber and paper pulp industries and coal mining under development.

### **3.5 Mining Operation and Infrastructure**

The Project is at a “brownfield” stage of development. Small-scale mining commenced in February 2016 and approximately 30 kilo tonnes (“**kt**”) of coal were produced in 2016. Approximately 227 kt of coal has been extracted as of 31 December 2017. The existing mining activities are to fulfill the 5 years coal supply contracts up to 500 kt per annum (“**ktpa**”) with the local Power Plant operated by PLN Tenayan. An additional 720 ktpa to meet the existing 10 years coal supply contracts with third party industrial users will commence in 2018, with the required facilities now in the construction and commissioning phases. The ongoing bid in conformance with the proposed PLN Riau-1 MMPP will require approximately 3.5 million tonnes per annum (“**Mtpa**”) for 25 years coal supply contract plus an additional coal buffer of 20%. Riau-1 has a planned capacity of 2 x 300 Megawatt (“**MW**”). A total of approximately **96.5 to 114 million tonnes (“Mt”)** coal is therefore required to meet the current local supply contracts and the Riau-1 bid (see **Table 3-2** below within Marketing, **Section 3.6**).

At this stage, studies completed on the Project to support this Statement include Geological, Topographic, Geotechnical, Hydrogeological and Hydrological studies, and Life of Mine (“**LOM**”) planning, operating cost (“**OPEX**”) estimation and capital cost (“**CAPEX**”) to appropriate pre-feasibility (“**PFS**”) standards. Further detailed studies will be required to take the Project forward to the next stage in the form of a comprehensive technical and economic “Bankable” or “Definitive” Feasibility Study, including ongoing process of environmental studies in support of Government approvals.

Infrastructure to support non-MMPP coal observed during the recent site visit includes coal handling facilities, workshops, office, mess and other associated support facilities. Coal is hauled to a ROM stockpile with 300 tonne per hour (“**tph**”) crushing facilities, with approximately a 30,000 t ROM stockpile. Coal is transported 125 km by 30 tonne (“**t**”) coal haul trucks from the ROM stockpile to the Kuala Cenaku port on the Indragiri River which was completed in late 2017. A 20,000 t product stockpile capacity is currently installed at the port, which will be upgraded up to 50,000 t capacity stockpile in 2018. A 500 tph barge loading conveyor (“**BLC**”) has been installed at the port to load barges of maximum 6,000 tonnes capacity.

### 3.6 Marketing

The current small scale mining activities are designed to fulfill local contracts with Tenayan (“**Tenayan**”) Power Plant. However, additional coal supply contract with PT Soma Daya Utama (“**SDU**”) and PT Santosa Makmur Sejahtera Energy (“**SMS**”) will commence in 2018 and the 2 x 300 MW Riau-1 MMPP bid is ongoing with production anticipated to commence in Year 2021, subject to the award of the contract to the Client. The details of coal supply contracts are shown in **Table 3-2** below. (Note: total tonnage has been rounded to 1 Mt)

**Table 3-2 PTSB Coal Supply Contracts**

Customer	Coal Contract		Coal Supply	Contract Duration	Total Coal Supply Range	Coal Quality (CV gar)	Current Phase
	Contract Status	Date of Contract					
Tenayan	Awarded	December 2016	0.50 Mtpa	5 years	2.35 Mt	3,900 – 4,100	Ongoing
SDU	Awarded	November 2014	0.36 Mtpa	10 years	3.24 Mt	3,000 – 3,800	Construction
SMS	Awarded	November 2014	0.36 Mtpa	10 years	2.88 Mt	3,000 – 3,800	Commissioning
Riau-1*	-	-	3.50 Mtpa	25-30 years	87.5-105.0 Mt	3,400	Bidding
<b>Total</b>					<b>96.5-114 Mt</b>		

*Note \*:* The Riau 1 contract requires 25 years supply at approximately 3.5 million tonnes per annum plus an additional minimum 20% coal “buffer” to ensure adequate supply.



## 4. GEOLOGY, COAL QUALITY AND COAL RESOURCES ESTIMATES

### 4.1 Exploration History

Up to 31 December 2017, a total of 1,167 holes have been drilled with a total depth of 83,116 m. Drillhole locations are shown in the previous **Figure ES 5**. All drillhole data, including drill logs were reconciled against geophysical logs, coal quality and drillhole survey data were input into an electronic database. NRM geologists created a single 3-D “surface” model using Ventyx “Minescape” mining computer software. Minescape software is capable of modelling seam splits and faults.

#### North Block Exploration

The exploration drilling within the North Block was conducted in three stages. The first stage drilling followed a geological mapping programme in 2011. A total of 51 holes were drilled which included 4 quality holes. Most of the first stage drilling was supported by geophysical logging and drillhole collars were surveyed using Total Station. The second stage drilling was conducted from October 2012 to December 2012 with a total of 103 holes including 12 quality holes. All second stage drilling was supported by geophysical logging and most drillhole collars were surveyed using Total Station. A total of 656 holes including 118 quality holes and 7 geotechnical holes were drilled during the third stage drilling in 2015. The third stage drilling was also supported by geophysical logging and drill collars were surveyed using Total Station.

All boreholes were drilled by CV Berkah Rezeki Ibnu. Wellsite geology and drilling were supervised by PT Khansa Mulia and PT Geosindo Noesantara, whilst the downhole geophysical logging was performed by CV Martiel Cahaya Perkasa and PT Velseis Indonesia. Geophysical logs included natural gamma, short density, long density and caliper logs. Drill collar surveys were conducted in-house by PT Samantaka Batubara. All drillhole data was reviewed, including validation of drill logs and core recoveries against geophysical logs, and the Consultant is of the opinion that the data is to an acceptable standard for Coal Resources estimation.

All drillholes were drilled on lines perpendicular direction to the strike with line spacing of 200 m to 800 m. The drillholes are typically shallow with an average depth of approximately 65 m with a maximum depth of 150 m. The total depth of drilling in the North Block is 53,256 m.

#### South Block Exploration

The exploration drilling within the South Block was conducted in a single stage in 2011. A total of 357 holes were drilled, including 177 quality holes on drill line spacing of 400 m. Total depth drilled was 29,820 m with an average depth of 84 m and a maximum depth of 129 m. The exploration data was acquired by BNR in early 2017. No geotechnical drilling has been completed in the South Block.

### 4.2 Geology Overview

The Project lies within the western part of South Sumatra Basin which contains thick Tertiary sediments that unconformably overly basement rocks of Pre-Tertiary age formations, as shown in the previous **Figure ES 4**.

Based on Indonesia Regional Mapping created by the Geological Research and Development Centre, on the Buntok sheet for 1994 (Soetrisno, S. Supriatna, E. Rustandi, P. Sanyoto and K. Hasan), the Project is largely underlain by the Late Miocene to Pliocene age Muara Enim Formation (“**Tmpm**”) which covers 65% of the concession, the older Miocene age Air Benakat Formation (“**Tma**”) covers 15% and Upper Member of the Palembang Formation (“**Qtpu**”) covers 15% and the Early Miocene age Gumai Formation (“**Tmg**”) covers the remaining 5% (see previous **Figure ES 4**).

The Muara Enim Formation consists of alternating beds of fine to medium grained sandstone, siltstone claystone, intercalations of coal and tuffaceous layers deposited in a fluvio-deltaic environment. The Air Benakat Formation consists of claystone intercalated with fine grained sandstone, rare coal seams and tuff in the upper part of the formation, deposited in a shallow marine environment. The upper member of the Palembang Formation consist of tuff, tuffaceous sandstones beds and rare lignite, deposited predominantly in shallow marine environment. The Gumai Formation consists of limestones interbedded with siltstone, marl, sandstone and shale, deposited in a marine environment.

The geological structure is a gentle anticline striking N135°E. Seams dips on both the north and south limbs of the syncline are generally shallow at <10 degrees. No faulting has been identified within the concession area with any unidentified faulting likely to be small scale and of limited impact in an open cut mine.

### 4.3 Coal Seam Geology

Coal seams in the Project area are confined to the Muara Enim Formation. A total of 10 coal seams and 20 sub-seams have been identified. The major seams, Seam M5 and Seam M7 have average thicknesses of 3.6 m and 1.8 m, respectively.

The coal has been classified as having low to medium strength, is black in colour. It has a brownish streak and when broken has a sub-conchoidal fracture.

The generalised stratigraphic column showing seam nomenclature is shown in previous **Figure ES 6** and **Table 4-1**. Coal seam thicknesses and interburden thicknesses are shown in **Table 4-2** and **Table 4-3** while typical cross sections are shown in previous **Figure ES 7**. The major seam M5 group and Seam M7 group structure floor contours, thickness contours and typical geophysical logs are shown in **Figure 4-1** to **Figure 4-6**.

**Table 4-1 Seam Nomenclature – Stratigraphically Descending Order**

Coal Seam	Coal Sub Seam 1	Coal Sub Seam 2
<b>M2</b>	M2U	
	M2L	
<b>M3</b>	M3U	
	M3L	
<b>M4</b>	M4U	
	M4L	
<b>M5</b>	M5U	M5UU
		M5UL
	M5L	M5LU
		M5LL
<b>M6</b>	M6U	
	M6L	M6LU
		M6LL
<b>M6B</b>	M6BU	
	M6BL	
<b>M7</b>	M7U	
	M7L	
<b>M8</b>		
<b>M9</b>		
<b>M10</b>		

**Table 4-2 Seam Thickness**

Seam	Sub Seam 1	Sub Seam 2	No. of Data Points	Coal Thickness (m)		
				Average	Minimum	Maximum
<b>M2</b>	M2U		2	0.30	0.20	0.40
			26	0.45	0.20	0.90
	M2L		2	0.30	0.20	0.40
<b>M3</b>	M3U		10	0.85	0.20	1.60
			210	0.97	0.30	2.75
	M3L		10	0.45	0.19	0.66
<b>M4</b>	M4U		13	0.48	0.29	0.82
			233	1.15	0.07	2.00
	M4L		13	0.52	0.35	0.77

Seam	Sub Seam 1	Sub Seam 2	No. of Data Points	Coal Thickness (m)		
				Average	Minimum	Maximum
M5	M5U	M5UU	58	0.69	0.25	2.05
			176	1.30	0.15	2.90
	M5UL		56	0.85	0.20	2.50
			184	3.60	0.30	5.80
	M5L	M5LU	40	0.75	0.20	2.00
			201	1.21	0.30	3.20
		M5LL	38	0.78	0.20	2.94
M6	M6U		124	0.55	0.10	1.30
	M6L	M6LU	90	1.01	0.01	2.20
			37	0.45	0.20	0.95
			92	0.59	0.10	1.90
		M6LL	34	0.40	0.15	0.70
M6B	M6BU		10	0.47	0.10	0.85
			147	0.74	0.02	1.64
	M6BL		9	0.36	0.18	0.75
M7	M7U		17	0.87	0.30	1.82
			252	1.78	0.06	2.70
	M7L		17	0.66	0.20	1.44
M8			12	0.56	0.27	1.02
M9			24	0.89	0.30	2.40
M10			9	0.95	0.60	1.68

(Note: Thicknesses reported are true thickness, i.e. converted from the vertical seam thickness intersected in the drillholes, given the relatively low dips there is no significant difference between apparent and true thickness).

**Table 4-3 Interburden Thickness**

Seam Interval	No. of Data Points	Interburden Thickness (m)		
		Average	Minimum	Maximum
M2 to M3	23	19	6	58
M3 to M4	159	13	6	23
M4 to M5	93	17	7	23
M5 to M6	44	17	13	19
M6 to M6B	59	17	5	20
M6B to M7	38	24	3	69
M7 to M8	6	31	21	40
M8 to M9	3	30	13	57
M9 to M10	8	19	12	25

STRUCTURAL FLOOR CONTOUR  
SEAM M5 - SAMANTAKA BATUBARA

Figure  
4-1

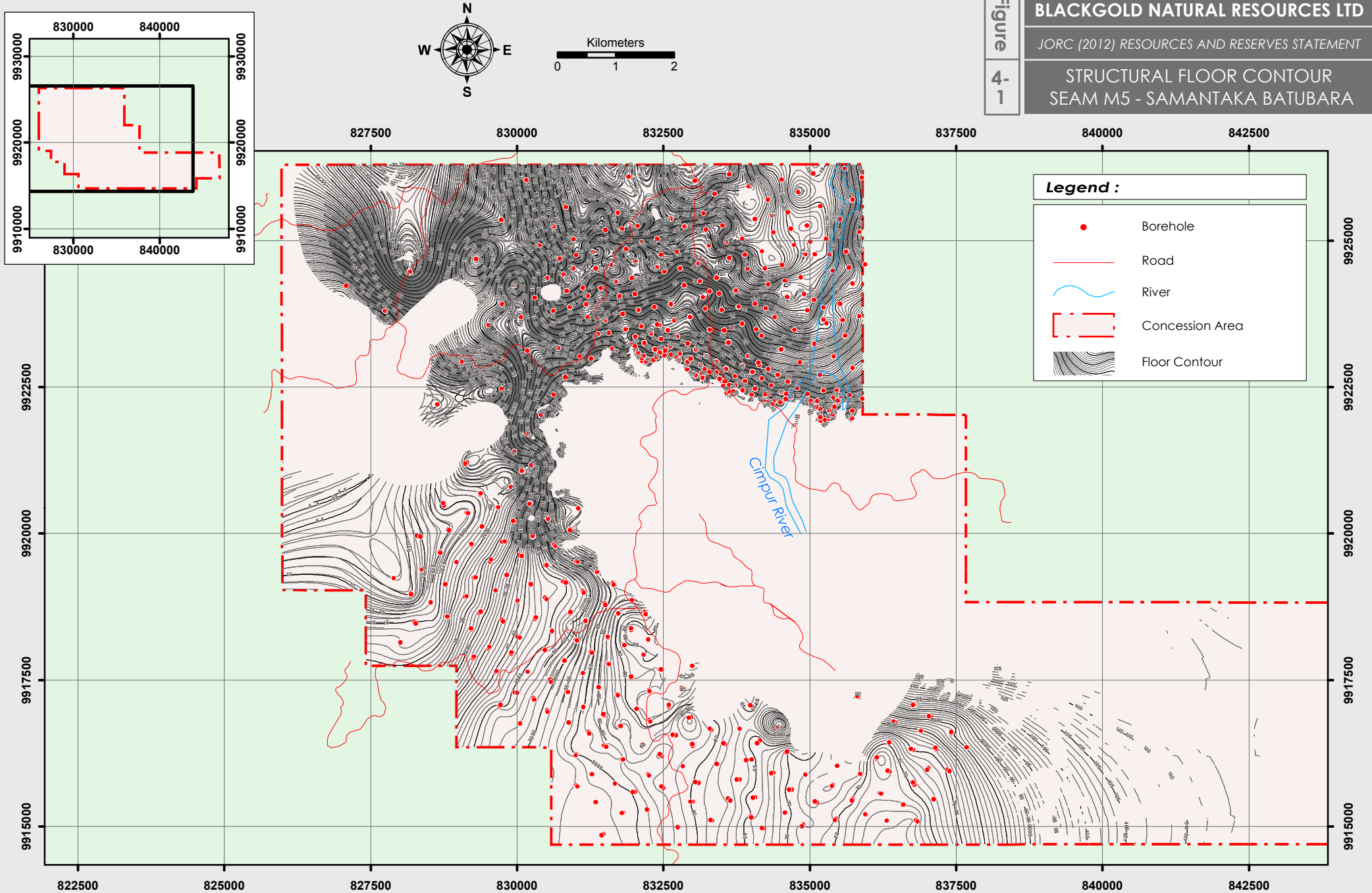
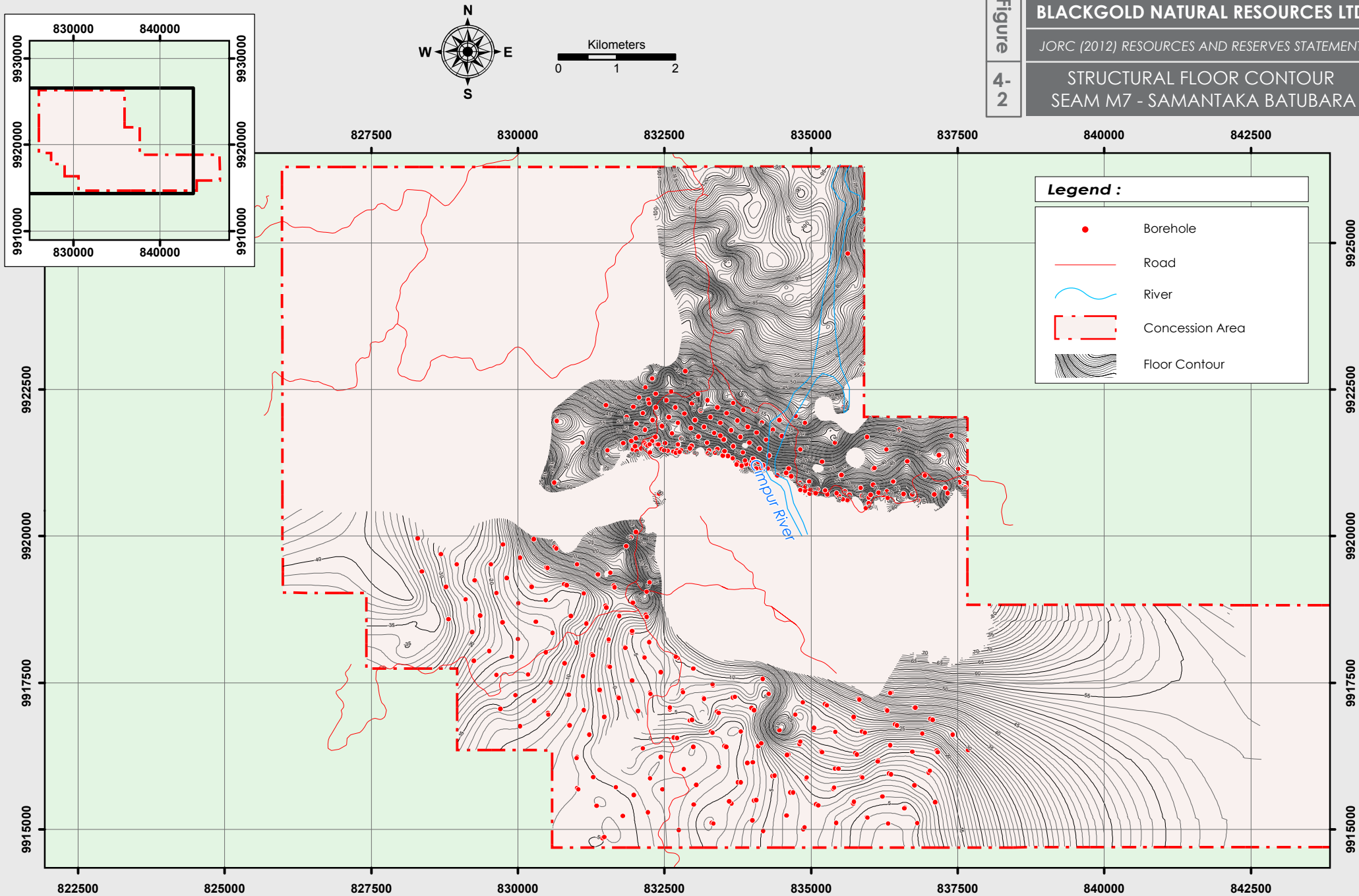
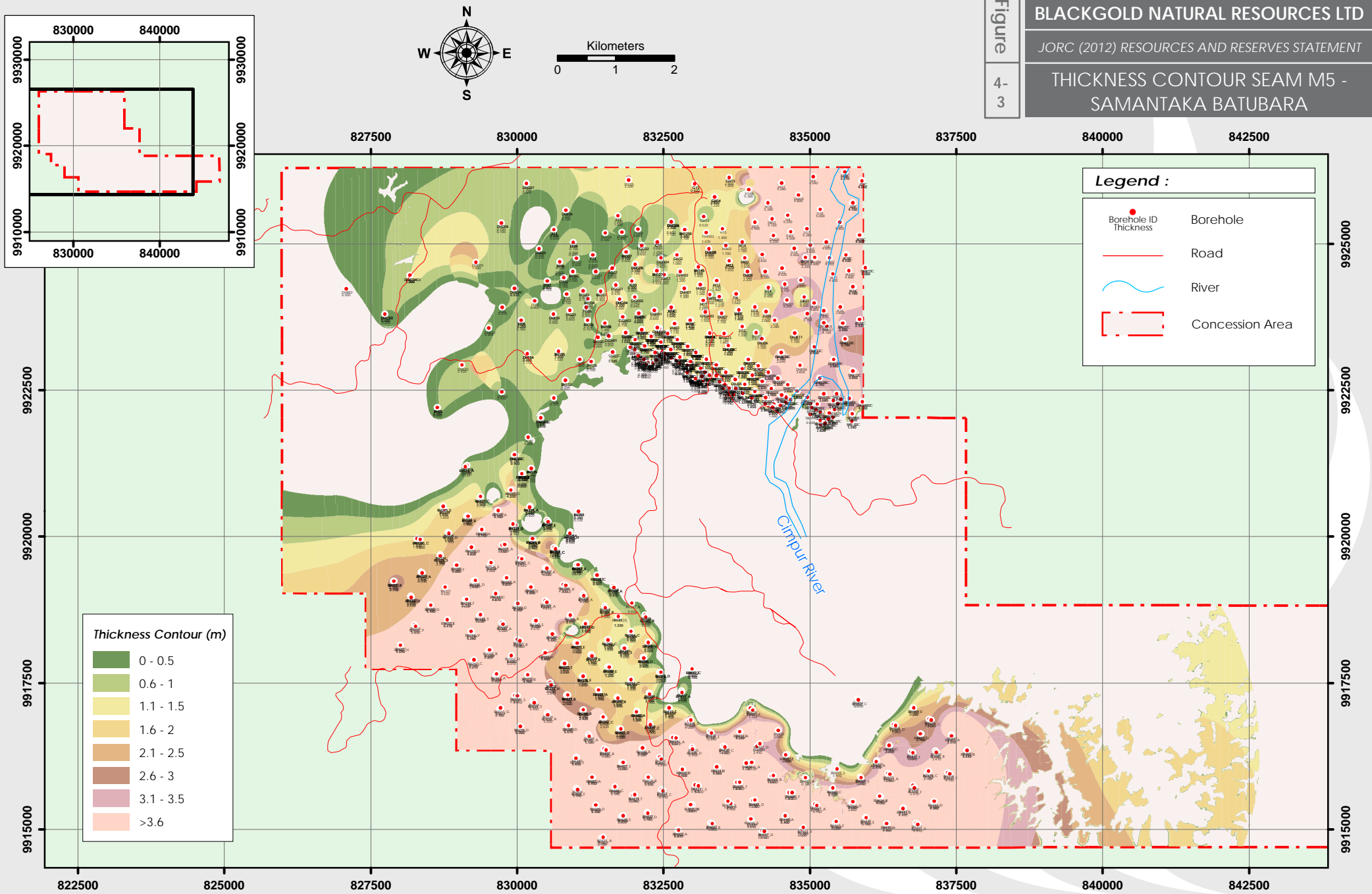


Figure  
4-2



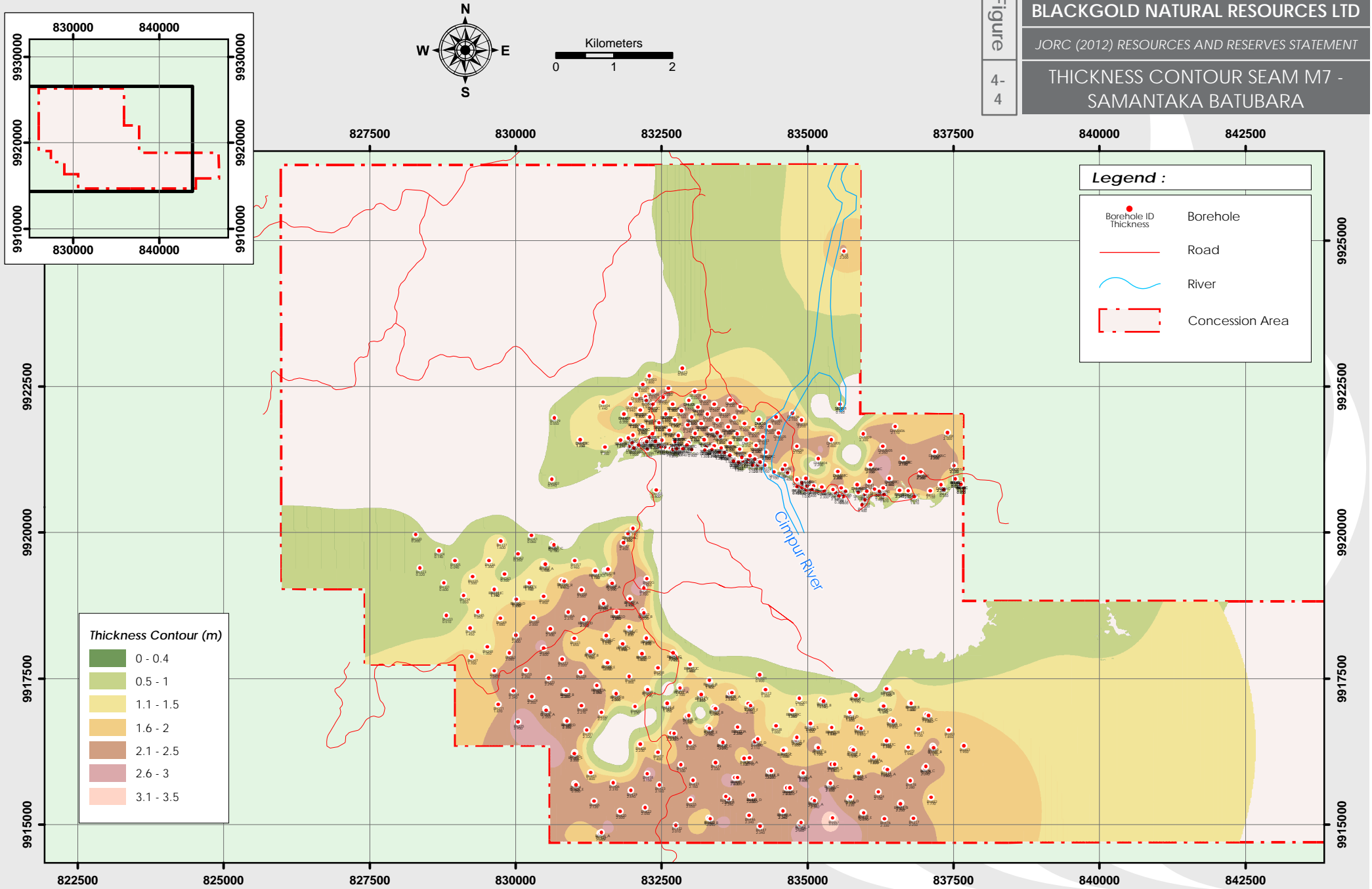
THICKNESS CONTOUR SEAM M5 - SAMANTAKA BATUBARA

Figure 4-3



THICKNESS CONTOUR SEAM M7 - SAMANTAKA BATUBARA

Figure 4-4





Legend :

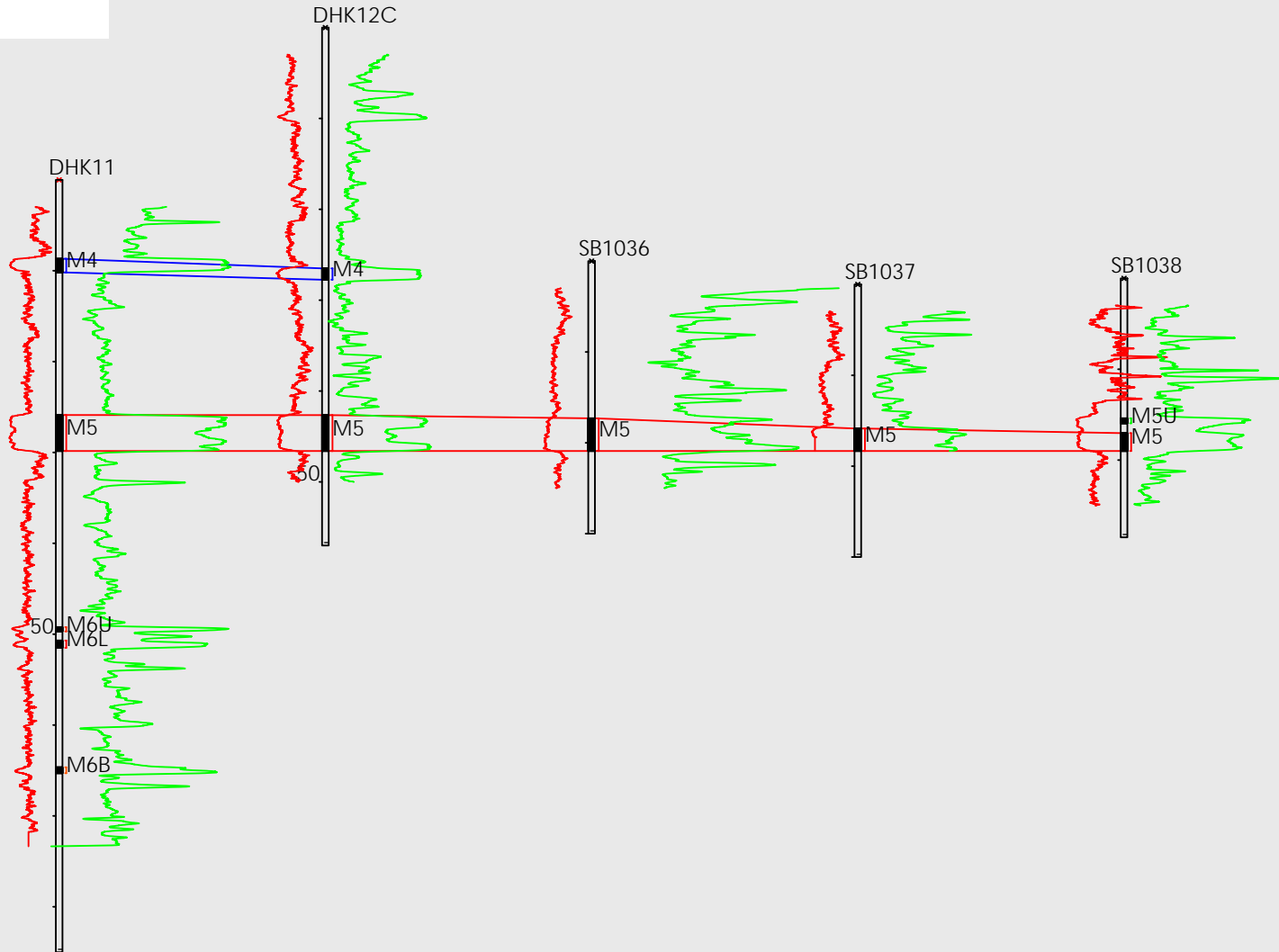
- Gamma Ray
- Desity (LSD)
- Coal Seam

Figure  
4-  
5

BLACKGOLD NATURAL RESOURCES LTD

JORC (2012) RESOURCES AND RESERVES STATEMENT

GEOPHYSICAL LOGS SEAM M5  
SAMANTAKA BATUBARA



Legend :

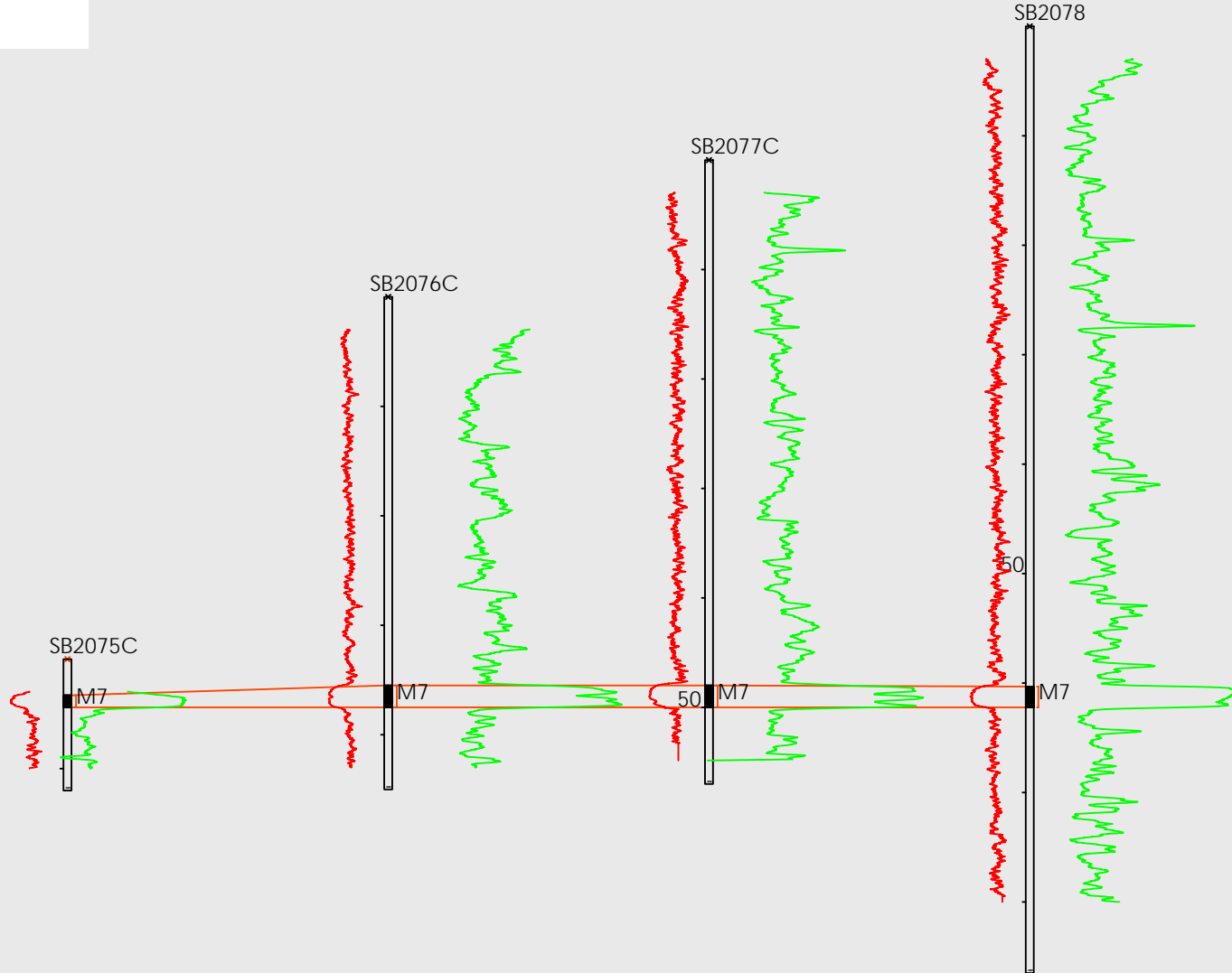
- Gamma Ray
- Desity (LSD)
- Coal Seam

Figure  
4-  
6

BLACKGOLD NATURAL RESOURCES LTD

JORC (2012) RESOURCES AND RESERVES STATEMENT

GEOPHYSICAL LOGS SEAM M7  
SAMANTAKA BATUBARA



## 4.4 Coal Quality

### 4.4.1 Field and Coal Sampling Procedures

All coal quality drillholes were “twin” holes drilled adjacent to existing “pilot” open holes. GMT is of the opinion that this method is the most reliable for obtaining a full coal seam core in addition to seam roof and floor strata samples, particularly in relatively flat-lying strata. Seam roof and floor strata and in-seam partings were sampled separately, however, it is noted that coal intervals were not sampled on a regular “ply-by-ply” basis which would have provided additional information in relation to coal seam quality variability. Although “ply-by-ply” sampling is considered preferable, GMT is of the opinion that this is not a material issue as the coal core holes are geophysically logged in the North Block and the adjoining pilot holes in the South Block are geophysically logged.

All cores were logged by PTSB geologists on site following appropriate core handling procedures. All cores were lithologically logged in splits in order to minimise disturbance of the sample. The core was photographed and wrapped in plastic to preserve the coal properties, particularly Total Moisture. This process was performed without delay to enable greater accuracy in the determination of *in situ* moisture content of coal. Non-coal seam roof and floor strata and partings >0.2 m were sampled and secured separately in sealed plastic bags. It is noted however that coal intervals were not typically sampled on a “ply-by-ply” basis. A limited number of main seam coal cores (7 in total) were sampled on a ply-by-ply basis with results identifying no significant internal coal quality variation. Furthermore, this rank of coal is not typically selectively mined except for removal of major parting material (e.g. >0.2 m).

**Figure 4-7** shows two examples of typical coal seam handling, with the first photo showing the core after removal from the core barrel and the second after plastic wrapping in the core box to preserve coal properties. **Figure 4-8** illustrates an example of the coal sampling methodology.

**Figure 4-7 Typical Coal Cores**

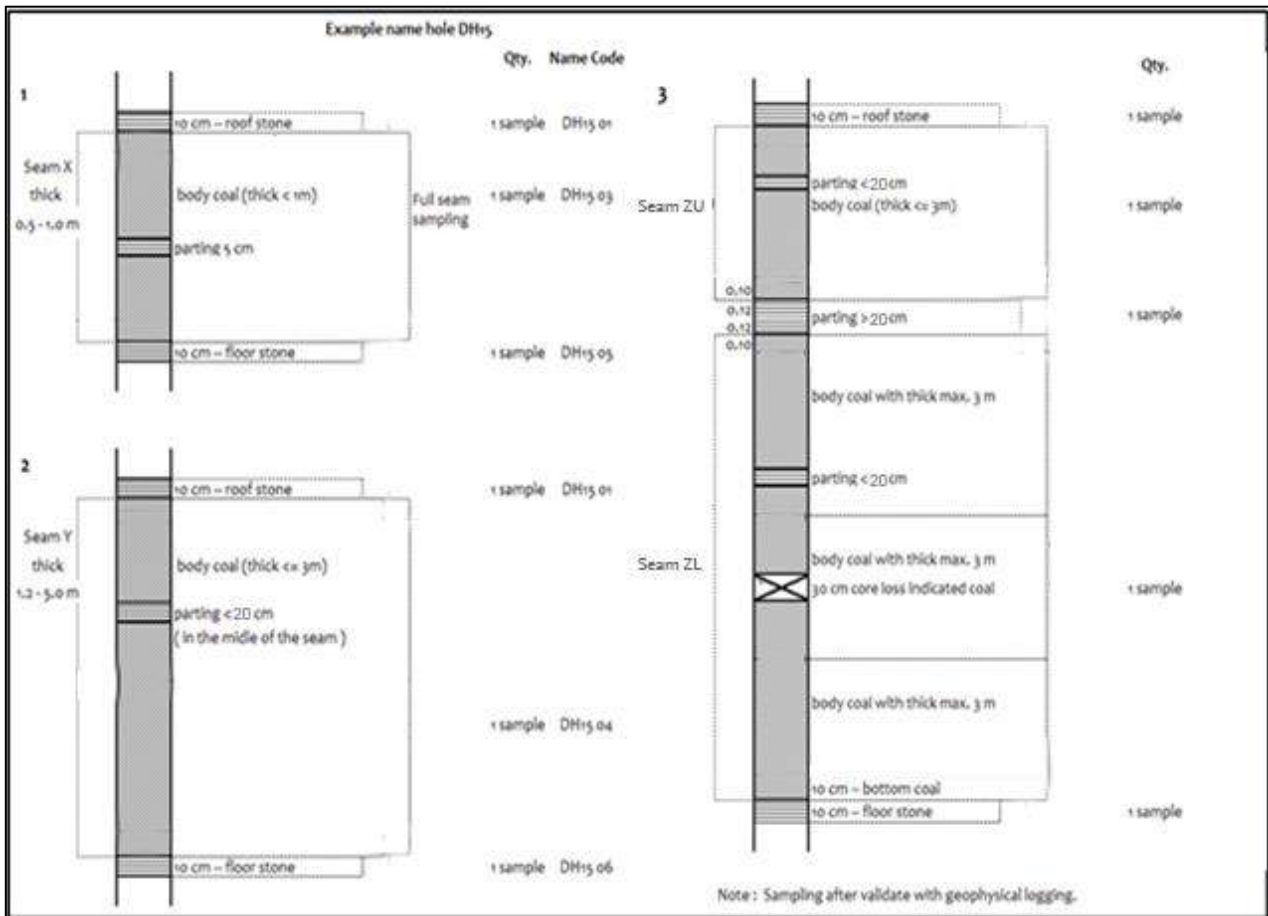


(Note: Drillhole DH-J 20C, depth interval 41.60 – 43.10 m)



(Note: Drillhole DH-J 20C, depth interval 41.60 – 43.10 m)

**Figure 4-8 Sampling Procedures**



(Note: Seams X, Y, ZU, and ZL are used as an example only)

#### 4.4.2 Analytical Program

Analytical test work was undertaken by recognised Indonesian Coal Laboratories, PT Geoservices (Ltd.) (“**Geoservices**”) in Padang, West Sumatera, Indonesia and PT Sucofindo (“**Sucofindo**”) laboratory at Pekanbaru, Riau, Indonesia. A total of 278 quality holes were analysed with 719 samples with complementary roof, floor and parting samples. The testing was done in conformance with the International standards as shown in **Table 4-5** below.

#### 4.4.3 Coal Quality Data Validation

All quality data was compiled into a single spreadsheet for preliminary quality review. A gradation was identified in the Project quality results with a moderate increase in rank from north to south. Only analyses for boreholes that have greater than 90% linear coal seam recovery have been used in the quality model. Iso-quality contours for the Seam M5 Group and Seam M7 Group for Ash Content (ad) and Calorific Value (gar) are shown **Figure 4-9** to **Figure 4-12**. Quality contours for the other seams are included in **Appendix J**. NRM geologists undertook further validation focusing on the main Seam M5 Groups and Seam M7 Groups by way of histograms and regressions between dependent variables (see **Appendix K**). The data set had few outliers and was deemed fit for purpose. All laboratory certificates are included in soft copy format in **Appendix L**.

#### 4.4.4 Project Coal Quality

Average *in situ* coal qualities for all seams in the Project are summarized in **Table 4-4**. There are 13 holes were also subject to a full analysis that included Ultimate Analysis, Ash Fusion Temperatures (“**AFT**”), Ash Analysis and Trace Elements (“**TE**”) as shown in **Table 4-6** to **Table 4-8**. The AFT (Reducing Atmosphere - Deformation) is typically >1,200 °C and Na<sub>2</sub>O <0.3% and therefore there is not expected to be any issues in relation to boiler “slagging. Trace element analyses identified no material issues.

**Table 4-4 Coal Quality by Seams (as at 31 December 2017)**

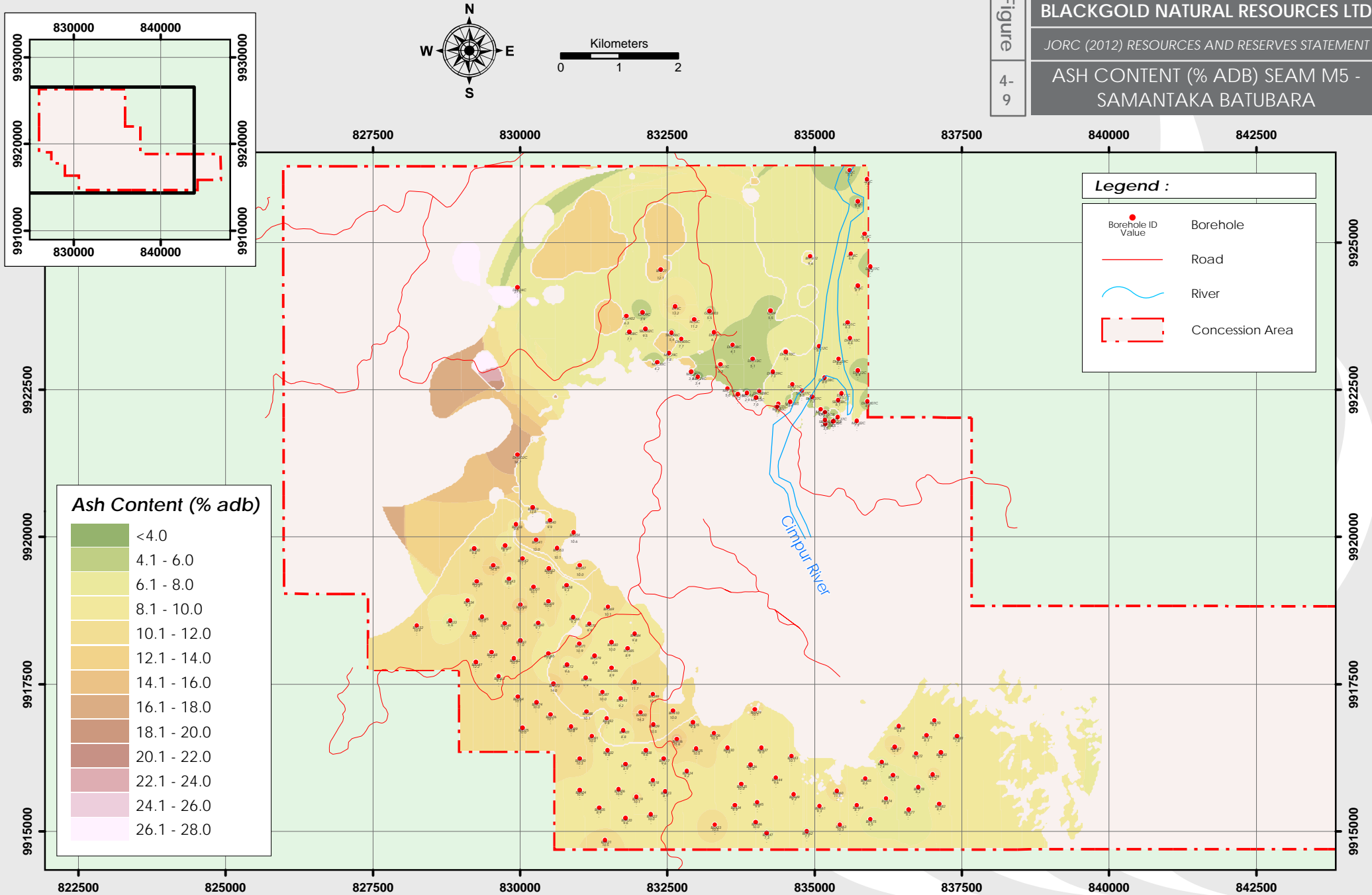
Seam	Sub Seam 1	Sub Seam 2	No. of Data Points	TM % (ar)	IM % (ad)	Ash % (ad)	TS % (ad)	VM % (ad)	FC % (ad)	CV kcal/kg (gar)	CV kcal/kg (ad)	RD g/cc (ad)	RD g/cc <i>in situ</i>	HGI
<b>M3</b>			35	43.1	16.6	10.5	0.26	39.1	33.8	3,340	4,900	1.40	1.24	51
<b>M4</b>	M4U		2	43.4	15.7	7.6	0.27	39.5	37.2	3,470	5,180	1.40	1.24	-
			62	43.7	18.4	10.1	0.22	39.6	32.0	3,420	4,960	1.36	1.22	50
	M4L		2	43.8	15.7	8.6	0.21	39.0	36.7	3,355	5,045	1.41	1.24	-
<b>M5</b>	M5U	M5UU	6	46.7	15.7	8.1	0.31	39.3	35.6	3,305	5,140	1.40	1.21	50
			53	43.7	18.3	11.0	0.27	38.7	31.9	3,425	4,965	1.36	1.21	49
		M5UL	6	44.7	15.3	14.6	0.34	37.4	32.6	3,120	4,730	1.46	1.25	55
			118	43.9	19.5	9.1	0.23	39.0	32.4	3,435	4,930	1.32	1.20	54
	M5L	M5LU	11	42.6	18.6	9.8	0.23	40.5	31.0	3,585	5,080	1.33	1.19	56
			46	43.3	17.3	9.5	0.24	39.6	33.2	3,470	5,075	1.37	1.22	54
M5LL		8	41.7	18.3	11.8	0.20	39.2	30.8	3,720	5,210	0.89	1.19	50	
<b>M6</b>			108	44.1	20.8	10.0	0.24	39.1	30.1	3,475	4,915	1.30	1.19	47
<b>M6B</b>			61	44.0	21.1	9.8	0.24	38.7	30.4	3,490	4,910	1.30	1.20	50
<b>M7</b>	M7U		2	39.2	12.3	14.9	0.23	38.6	34.1	3,450	4,990	1.44	1.27	64
			118	42.3	21.2	9.6	0.21	39.1	30.1	3,775	5,151	1.32	1.22	54
	M7L		1	39.0	13.9	11.5	0.21	39.8	34.8	3,595	5,175	1.43	1.28	61
<b>Weighted Average</b>				<b>43.5</b>	<b>19.6</b>	<b>9.6</b>	<b>0.23</b>	<b>39.1</b>	<b>31.7</b>	<b>3,510</b>	<b>4,990</b>	<b>1.33</b>	<b>1.21</b>	<b>52</b>

**Table 4-5 Laboratory Standards**

Analysis	Standard	
	Geoservices	Sucofindo
Total Moisture	ASTM D3302/DD3302M-2012	ASTM D3302-2010
Proximate Analysis		
Inherent Moisture	ASTM D3173-2011	ASTM D3172-2011
Volatile Matter	ASTM D3175-2011	ASTM D3175-2011
Fixed Carbon	ASTM D3172-2013	By Different
Ash Content	ASTM D3174-2012	ASTM D3174-2011
Total Sulphur	ASTM D4239 Method. A-2008	ASTM D4239 - 2011
Calorific Value	ASTM D5865-2013	ASTM 1989-2010
Relative Density	AS 1038 Part 21.1.1-2008	
Hardgrove Grindability Index	ASTM D409/D409M-2012	ASTM D409/D409M-2011
Carbon, Hydrogen & Nitrogen	ASTM D3573-2008	
Ash Analysis	AS 1038 Part 14.2-2003	
Phosphorus (P2O5)	AS 1038 Part 9.3-2000	
Sulfit (SO3)	ASTM D5016-2008	
Ash Fusion Temperature	ASTM D1857-2004 (2010)	
Fluorine (F)	ASTM D3761-2002	
Chlorine (Cl)	ASTM D4208-2013	
Trace Elements		
Arsenic (As)	ASTM D3683-2004	
Boron (B)	ASTM D3683-2004	
Selenium (Se)	ASTM D3683-2004	
Cadmium (Cd)	ASTM D3683-2004	
Lead (Pb)	ASTM D3683-2004	
Mercury (Hg)	ASTM D6414-2001 (Re Approved 2006)	
Nickel (Ni)	ASTM D3683-2004	
Manganese (Mn)	ASTM D3683-2004	
Berilium (Be)	ASTM D3683-2004	
Zink (Zn)	ASTM D3683-2004	
Chromium	ASTM D3683-2004	
Copper(Cu)	ASTM D3683-2004	
Stronsium (Sr)	ASTM D3683-2004	
Molybdenum (Mo)	ASTM D3683-2004	
Barium (Ba)	ASTM D3683-2004	
Cobalt (Co)	ASTM D3683-2004	
Antimon (Sb)	ASTM D3683-2004	

ASH CONTENT (% ADB) SEAM M5 - SAMANTAKA BATUBARA

Figure 4-9



**BLACKGOLD NATURAL RESOURCES LTD**

JORC (2012) RESOURCES AND RESERVES STATEMENT

**CALORIFIC VALUE (GAR) SEAM M5 - SAMANTAKA BATUBARA**

Figure 4-10

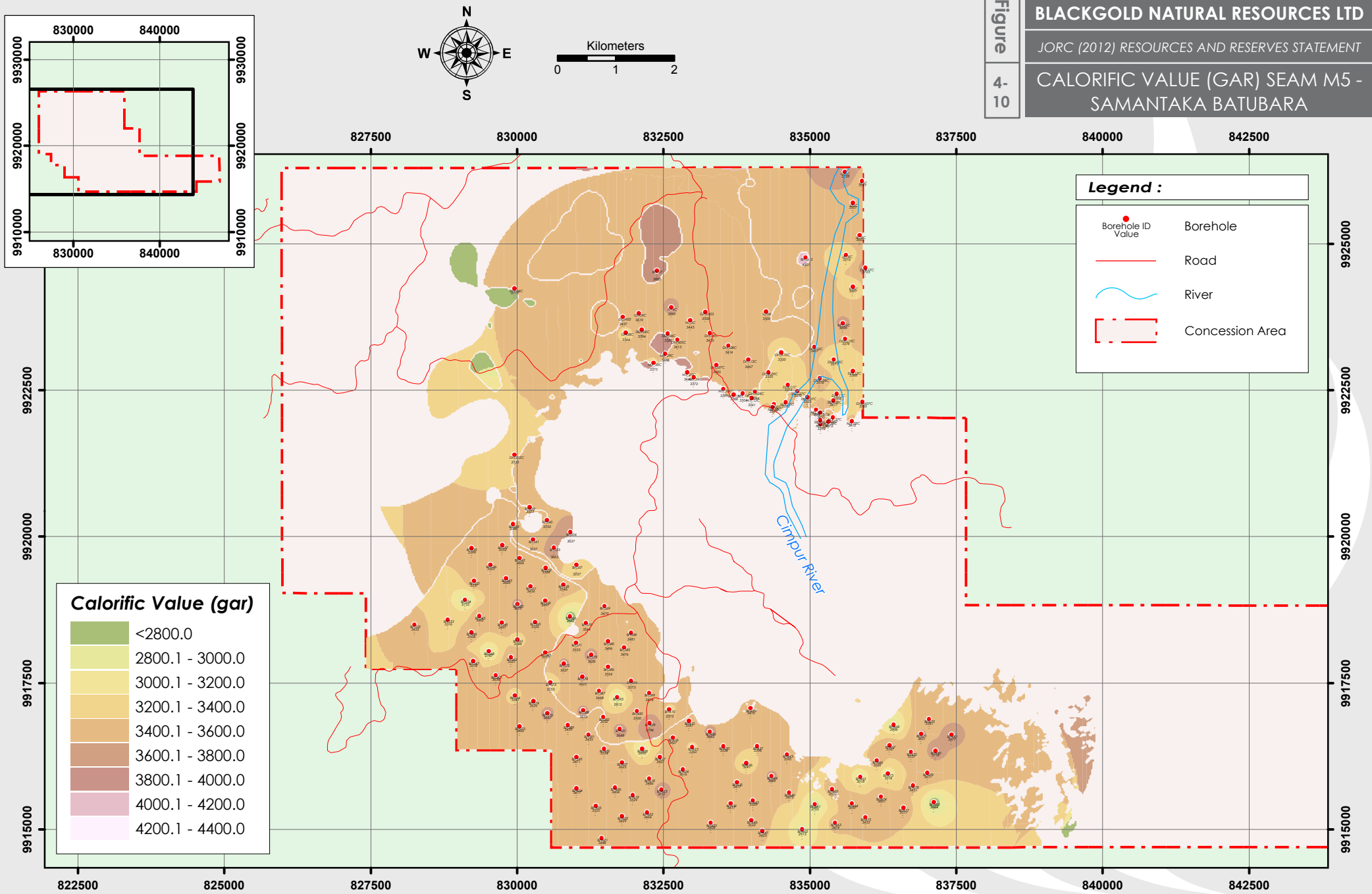
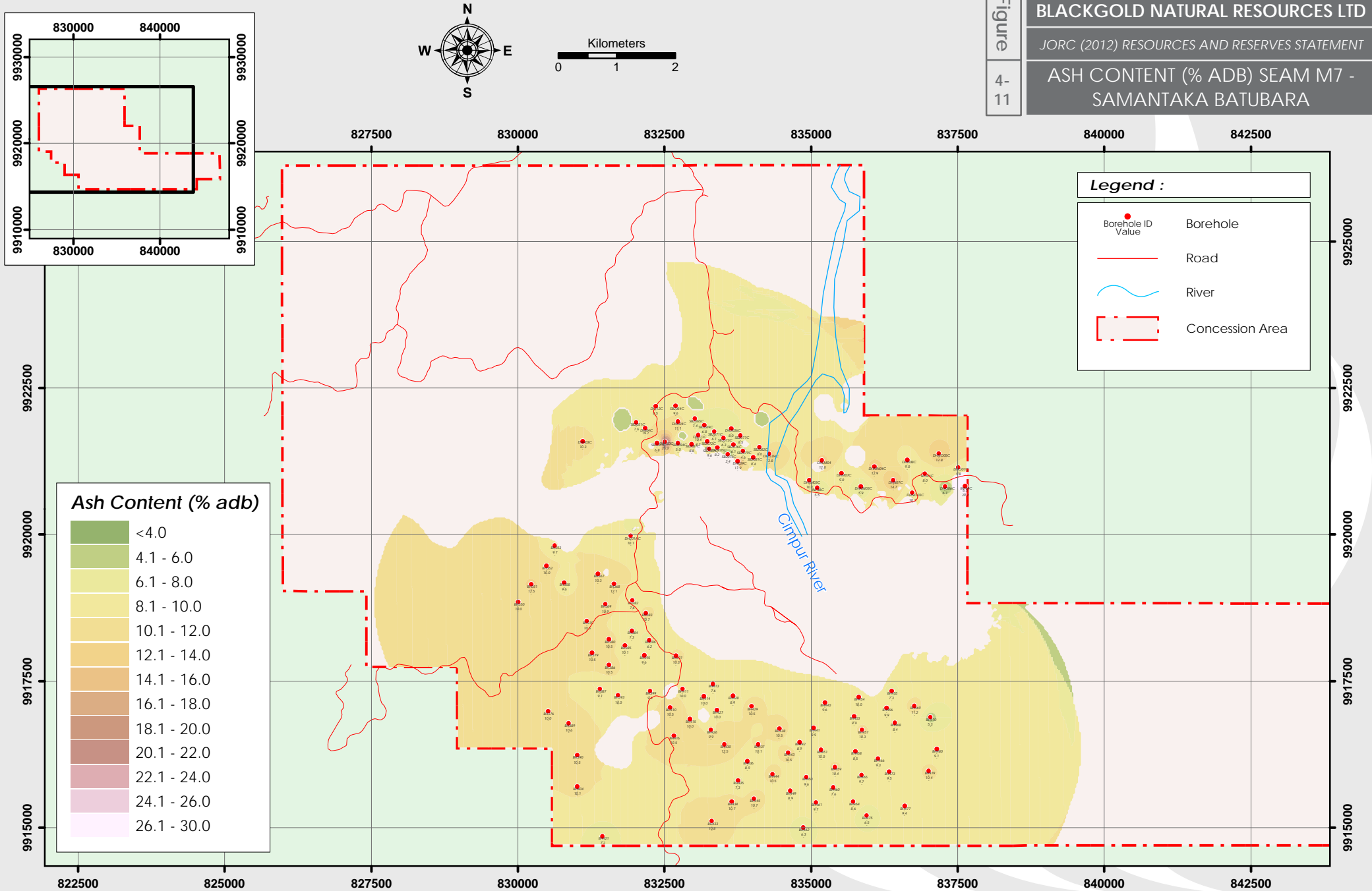
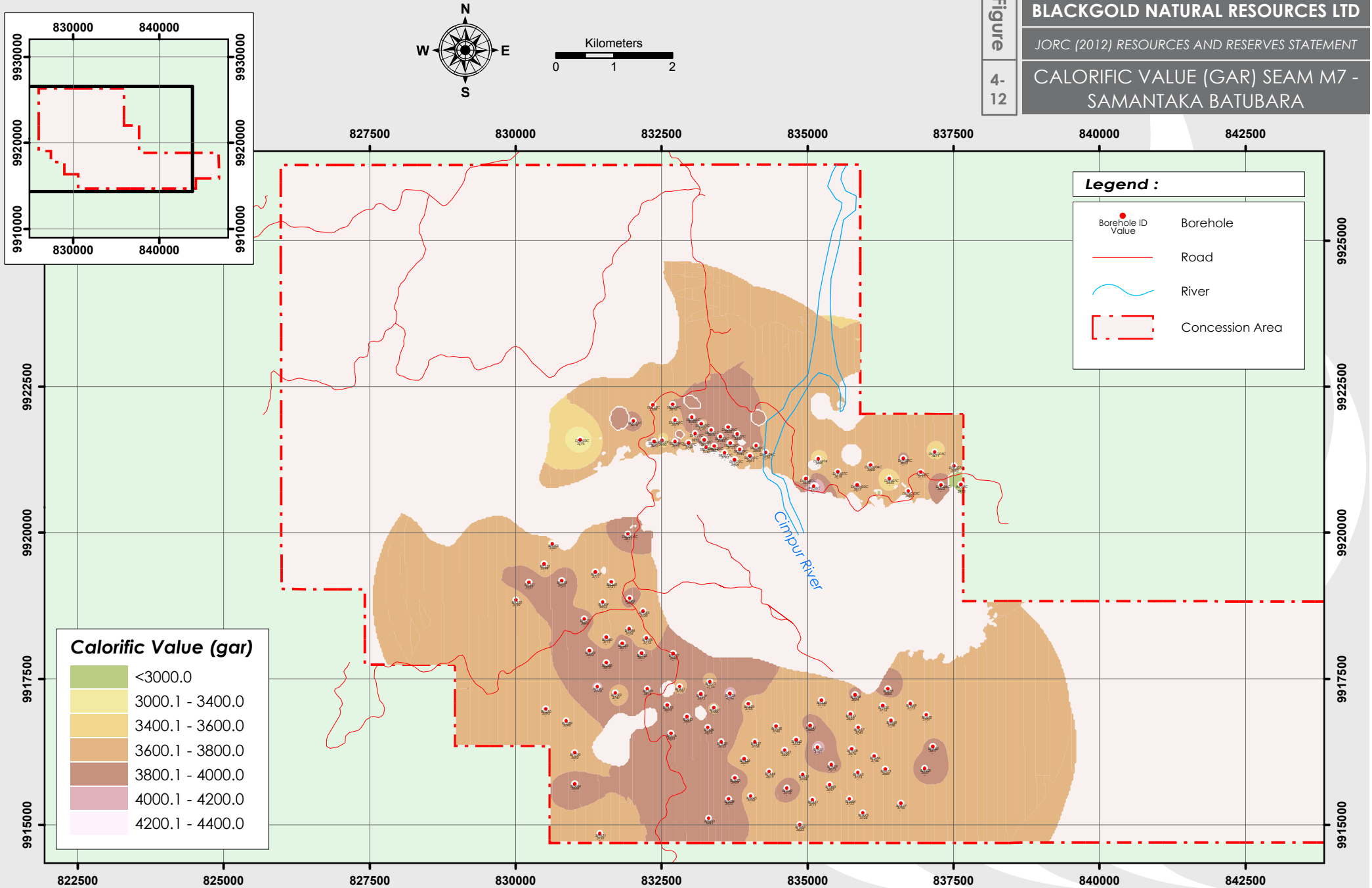




Figure 4-11



**Figure 4-12**



**Table 4-6 Coal Quality – Ash Fusion Temperatures (as at 31 December 2017)**

Seam	Hole No.	Lab. Sample Code	Ash Fusion Temperature (°C)							
			Reducing Atmosphere				Oxidising Atmosphere			
			Deformation	Sphere	Hemisphere	Flow	Deformation	Sphere	Hemisphere	Flow
M5	Sb2038c	PG15.00435	1,210	1,230	1,240	1260	1,220	1250	1260	1280
M5	Sb2041c	PG15.00436	1,290	1,320	1,360	1560	1,300	1340	1420	1600
M5U	Sb2024c	PG15.00437	1,180	1,220	1,240	1300	1,280	1330	1340	1360
M5U	Sb2004c	PG15.00438	1,210	1,240	1,260	1280	1,280	1320	1340	1360
M5U	Sb2017c	PG15.00439	1,270	1,270	1,280	1300	1,280	1330	1350	1360
M5	Sb2037c	PG15.00440	1,110	1,120	1,160	1220	1,250	1270	1270	1280
M3	Sb2006c	PG15.00441	1,340	1,410	1,420	1440	1,400	1460	1480	1500
M4	Sb2031c	PG15.00442	1,220	1,240	1,260	1280	1,240	1270	1280	1300
M3	Dhij08c	PG15.00411	1,230	1,230	1,230	1240	1,240	1280	1300	1320
M3	Dhkl08c	PG15.00395	1,250	1,250	1,260	1280	1,320	1330	1340	1350
M3	Dhkl09c	PG15.00398	1,190	1,210	1,220	1240	1,190	1210	1220	1240
M3	Dhkl10c	PG15.00403	1,120	1,180	1,200	1260	1,200	1210	1220	1260
M4	Dhk12c	PG15.00387	1,200	1,220	1,240	1260	1,220	1230	1240	1260

**Table 4-7 Coal Quality – Ash Analysis (as at 31 December 2017)**

Seam	Hole No.	Lab. Sample Code	Ash Analysis (%)											F (ppm) adb	Cl (ppm) adb
			SiO2 %	Al2O3 %	Fe2O3 %	CaO %	MgO %	TiO2 %	Na2O %	K2O %	Mn3O4 %	P2O5 %	SO3 %		
M5	Sb2038c	PG15.00435	29.1	15.6	14.1	27.85	5.50	0.67	0.18	0.32	1.360	0.099	5.10	29.68	74.96
M5	Sb2041c	PG15.00436	34.6	42.0	7.5	6.50	2.18	1.82	0.17	0.32	0.258	0.116	4.30	44.38	89.96
M5U	Sb2024c	PG15.00437	41.5	25.8	19.0	5.88	2.09	0.78	0.08	0.31	0.705	0.092	3.58	33.24	89.92
M5U	Sb2004c	PG15.00438	46.1	24.3	13.4	7.25	2.00	0.88	0.13	0.58	0.250	0.093	4.82	67.11	89.98
M5U	Sb2017c	PG15.00439	50.8	25.0	7.0	7.82	2.72	0.76	0.11	0.64	0.375	0.087	4.38	79.18	94.96
M5	Sb2037c	PG15.00440	31.6	18.3	21.5	16.68	3.24	0.71	0.12	0.23	1.028	0.093	6.30	27.23	109.94
M3	Sb2006c	PG15.00441	46.6	28.4	8.5	6.95	1.32	1.68	0.11	0.16	0.315	0.084	5.60	30.79	109.90
M4	Sb2031c	PG15.00442	54.6	18.9	6.1	9.75	1.88	1.18	0.11	0.16	0.230	0.095	6.82	37.78	104.99
M3	Dhij08c	PG15.00411	25.7	11.5	27.0	19.20	5.58	1.13	0.16	0.22	1.340	0.095	7.92	15.88	100.00
M3	Dhkl08c	PG15.00395	27.3	12.6	18.0	25.98	5.73	0.66	0.22	0.30	1.520	0.101	7.45	17.69	90.00
M3	Dhkl09c	PG15.00398	35.4	10.5	13.8	24.55	5.44	0.80	0.25	0.26	1.420	0.089	7.28	16.69	90.00
M3	Dhkl10c	PG15.00403	46.6	14.7	8.8	17.30	4.19	0.76	0.18	0.42	0.965	0.095	5.78	50.79	90.00
M4	Dhk12c	PG15.00387	30.7	14.0	15.5	24.95	5.61	0.69	0.33	0.43	1.120	0.095	6.42	22.30	75.00

**Table 4-8 Coal Quality – Trace Elements (as at 31 December 2017)**

Lab. Sample	Trace Element																
	As (ppm ad)	B (ppm ad)	Se (ppm ad)	Cd (ppm ad)	Pb (ppm ad)	Hg (ppm ad)	Ni (ppm ad)	Mn (ppm ad)	Be (ppm ad)	Zn (ppm ad)	Cr (ppm ad)	Cu (ppm ad)	Sr (ppm ad)	Mo (ppm ad)	Ba (ppm ad)	Co (ppm ad)	Sb (ppm ad)
PG15.00435	0.98	34	0.26	<0.5	22	0.06	135	10420	8.95	150	54	70	1164	16	3556	40	2.42
PG15.00436	0.77	25	1.26	1.68	20	<0.05	1486	2274	3.41	768	58	165	359	14	1980	279	3.07
PG15.00437	1.48	32	0.11	0.06	40	0.44	219	4940	6.52	110	78	75	378	4.93	1946	85	4.37
PG15.00438	2.70	16	0.10	<0.5	27	0.08	85	1806	183	100	133	90	374	7.43	1327	55	2.39
PG15.00439	2.32	27	0.10	<0.5	22	<0.05	364	3302	51	384	50	75	175	6.93	1651	85	1.68
PG15.00440	0.82	27	0.10	<0.5	37	0.08	155	7958	32	95	37	95	714	9.05	2718	50	0.81
PG15.00441	2.83	25	0.53	<0.5	<0.5	<0.05	465	2249	19	445	43	170	385	13	1629	425	3.79
PG15.00442	2.80	21	0.10	<0.5	25	<0.05	389	1742	85	349	131	130	514	105	2246	334	10.00
PG15.00411	2.09	40	0.10	<0.5	5.78	0.42	170	9556	110	100	49	100	1112	41	3766	170	3.63
PG15.00395	4.12	46	0.70	<0.5	3.19	<0.05	169	10100	20	85	35	75	1315	71	3778	214	2.38
PG15.00398	5.13	40	0.73	<0.5	2.33	<0.05	130	9935	12	210	56	75	1165	36	2846	125	1.92
PG15.00403	4.42	31	0.64	<0.5	2.77	<0.05	110	6795	74	209	55	105	813	30	1721	85	2.78
PG15.00387	3.85	32	0.10	<0.5	2.77	0.16	150	7632	95	50	45	65	1159	52	2505	175	1.86

#### 4.5 Geological Data Base and Modelling

The geological database, including drill logs, geophysical logs, coal quality results and survey data as of 30 April 2017 were reviewed by NRM geologists and are summarised below. The full geological database and model are included in **Appendix M**.

- a total of 1,167 drillholes including a total of 278 quality holes have been drilled/modelled;
- the average depth of the current drilling is 70 m with maximum depth of 150 m;
- total drillhole depth is 83,116 m;
- geophysical logs are available for 990 drillholes, geophysical logs run include natural gamma, *in situ* rock density and caliper (borehole diameter);
- all of drillholes collars were surveyed using Total Station; and
- all drillhole data was validated against geophysical logs.

Drilling statistics are summarised in **Table 4-9** below.

**Table 4-9 Drilling Statistics (as at 31 December 2017)**

Status Hole By Year	Total No. of Holes	No. of Geophys. Logged Holes	Survey Total Station	No. of Holes with Quality Analysis
2011	408	234	408	148
2012	103	103	103	12
2015	656	653	656	118
<b>Total</b>	<b>1,167</b>	<b>990</b>	<b>1,167</b>	<b>278</b>

Based on borehole data, the average depth of weathering is 2.8 m. **Table 4-10** shows statistics of the weathering depth.

**Table 4-10 Depth of Weathering Statistics (as at 31 December 2017)**

Weathering	Total Boreholes	Depth from Topography (m)		
		Min.	Max.	Avg.
Based on Boreholes	1,167	0.5	10.8	2.8

The modelled topographic surface was created from a combination of detailed ground topographic survey by Total Station and the Aerial Laser topography (ifSAR) survey method, carried out by PT Berkah Rezeki Ibnu in March 2015 (see previous **Figure ES 3**). Topography statistics within the concession are shown in **Table 4-11** with benchmark survey points provided in **Table 4-12**.

**Table 4-11 Topography Statistics**

Topography	Elevation (m)		
	Minimum	Maximum	Average
Topo. Original (Combination of Ground Topo and ifSAR)	44	159	87

**Table 4-12 Coordinates and Elevation of Benchmark Survey Points**

Point ID	UTM		Ellip. Hgt. (m)
	Easting	Northing	
<b>SBB 1A</b>	831931.516	9923498.419	67.390
<b>SBB 1B</b>	831916.226	9923490.125	66.719
<b>SBB 4A</b>	833891.787	9921869.913	66.667
<b>SBB 4B</b>	833904.201	9921859.274	66.776
<b>SBB 5A</b>	833896.510	9920086.298	80.520
<b>SBB 5B</b>	833871.913	9920087.980	81.150
<b>SBB 6A</b>	831932.415	9920105.463	79.458
<b>SBB 6B</b>	831933.862	9920085.658	75.307
<b>SBB 2A</b>	167995.400	9923511.010	61.531
<b>SBB 2B</b>	167994.090	9923484.210	65.109
<b>SBB 3A</b>	167986.570	9921875.550	78.277
<b>SBB 3B</b>	167959.240	9921883.230	76.014

Boreholes collar elevations were validated against the topographic surface and all holes were determined to be within a reasonable tolerance of the topographic surface, as detailed in **Table 4-13**.

**Table 4-13 Boreholes Collar Survey versus Topography**

Differences	No. of Holes	% of Total
Less than 1 m	911	78%
1 m to 2 m	171	15%
2 m to 3 m	46	4%
More than 3 m	39	3%
<b>Total</b>	<b>1,167</b>	<b>100%</b>

All drillhole data including drill logs were reconciled against geophysical logs, coal quality and drillhole survey data was input into an electronic database. NRM geologists created a single 3-D “surface” model using Ventyx “Minescape” mining computer software. The surface model includes topographic surface, weathering surface, seam roofs and floors. Minescape software is capable of modelling seam splits and faults. Coal sampling was undertaken with seam roof and floor strata and in-seam partings sampled separately, however, it is noted that coal intervals were not typically sampled on a “ply-by-ply” basis and generated by seam by the Minescape software. Proximate analysis, TM, TS, CV, RD *in situ* and RD lab data were modelled. Model and data file nomenclature are shown in **Table 4-14** below.

**Table 4-14 Geological Model Parameters**

<b>Software</b>	<b>Ventyx - Minescape</b>
<b>Topography (LiDAR) Grid Spacing</b>	25 m
<b>Geology Model Grid Spacing</b>	25 m
<b>Origin</b>	E: 834330.800, N: 9919837.000
<b>Hole Database</b>	dholes_smtk03.dgn
<b>Scheme Name</b>	Schema_Smtk03 (FEM,0 ; FEM, 1 ; FEM,0)
<b>Quality Model</b>	qual01
<b>Qualities Modelled</b>	TM, IM, ASH, VM, FC, TS, CV (ad), CV (gar), IRD (RD <i>in situ</i> ), RDA (RD Lab)
<b>Faults</b>	None

In summary, the Competent Person for Coal Resources estimation is of the opinion that the database is of a suitable standard and the model is of acceptable accuracy to be used for Coal Resources estimation to JORC Code 2012 standards.

#### 4.6 Moisture Adjustments

The RD used in modelling has been corrected from an “as analysed” basis to an *in situ* basis using the Preston-Sanders equation (1993), as follows:

$$RD_{is} = RD_{ad} \times (100 - IM_{ad}) / (100 + RD_{ad} \times (TM_{is} - IM_{ad}) - TM_{is})$$

Where	ad	=	air dried;
	RD	=	relative density;
	IM	=	inherent moisture; and
	Mis	=	moisture <i>in situ</i> .

## 4.7 Coal Resources Classification

Coal Resources are reported in accordance with the JORC Code 2012. Coal Resources estimates were prepared by NRM geologists and validated by Competent Person, Mr. William (Bill) Park under the supervision of Mr. Krisjna Alimoeddin of GMT. JORC Code 2012 criteria were applied in relation to Coal Resources estimation and categorisation. The JORC Code 2012 requires that there are “*reasonable prospects for eventual economic extraction*”.

The Coal Resources are sub-divided in order of increasing confidence into Inferred, Indicated and Measured categories:

- **Inferred** – For which quantity and quality can be estimated with a low degree of confidence. The level of confidence is such that mine plans cannot be generated. It should be noted that the JORC Code 2012 requires the Statement to identify the proportion of Inferred category coal that is based on extrapolation (JORC Code 2012, Section 21) as opposed to wider spaced drilling;
- **Indicated** – For which quantity and quality can be estimated with a reasonable degree of confidence. The level of confidence is such that mine plans can be generated and likely product coal quality can be determined; and
- **Measured** – For which quantity and quality can be estimated with a high degree of confidence. The level of confidence is such that detailed mine plans can be generated, mining and beneficiation costs, and wash plant yields and quality specifications, can be determined.

The choice of the appropriate category of Coal Resources depends upon the quantity, distribution and quality of data available and the level of confidence of the available data. The level of confidence was based on both the JORC Code 2012 and the Guidelines.

The revised Guidelines issued in 2014 consider that “Points of Observation may be classed by Quantity and Quality” and that “*Resources confidence outlines should be determined by the merging of Quantity confidence limits (tonnes) with Coal Quantity confidence limits*” and “*In most deposits the density of Quality Points of Observation is greater than the density of Coal Quality Points of Observation. As a result Coal Quantity Points are generally viewed as the principal delimitter of Resources categories*” (Guidelines, Sections 4.1.1 to 4.1.4).

The Guidelines 2014, also consider the use of “*Supportive Data*” (Section 4.2), specifically geophysical logging which has been commonly used in coal exploration since the mid-1970’s. “*Detailed calibration of downhole geophysical logs with seam core samples analysis may allow the estimation of the in situ density and raw ash in non-cored boreholes. In this case, the raw ash estimates could be used to improve the confidence level in continuity between Coal Quality Points of Observation.*” (Section 4.2.3).

Coal Resources are estimated based on information from “Points of Observation” which “*for quantity evaluation is normally obtained by measurements of surface or underground exposures and bore intersections*” and that “*Seams covered by downhole geophysical logs in non-cored boreholes can provide Quantity Points of Observation.*” (Guidelines 2014, Section 4.1.7).

The previous Guidelines 2003, suggested maximum distances between Points of Observation that should be used when estimating resources (as noted below):

- Measured - no more than 500 m apart (i.e. radius of influence of 250 m);
- Indicated - no more than 1,000 m apart (i.e. radius of influence of 500 m); and
- Inferred - no more than 4,000 m apart (i.e. radius of influence of 2,000 m).

Although not included in the updated Guidelines 2014, the Guidelines 2003 stated that these distances are only a broad guideline and that if the coal seams in the deposit are “*faulted, intruded, split, lenticular, or have significant lateral variations in thickness or quality*”, then the distance between Points of Observation should be decreased. The Competent Person has still adopted this principle.

The key factor used in the determination of appropriate categorisation is coal seam continuity, taking into account such factors as seam thickness (including evidence for seam splitting or “washouts”), coal quality and structural complexity. Other non-geological boundaries considered include geographical features (e.g. major drainage systems) and legal restrictions (e.g. lease boundaries). These limitations are in conformance with the Guidelines 2014 (Section 5.2).

Points of Observation used to define the Coal Resources are those drillholes with an appropriate level of confidence. The level of confidence of open holes with geophysical logs and no quality data in Coal Resources estimation was based on the availability of adjoining cored drillholes and seam quality variability. Open holes with no geophysical logging or coring data were excluded from the database and therefore excluded from the geological model.

The appropriate spacing of Points of Observation was based on categorising the deposit as “simple”, “moderate” or “complex” using the following criteria:

- Variability of seam thickness (including seam splitting and presence of washouts);
- Variability in coal quality parameters; and
- Structural complexity.

The categorisation of Geological Resources applied is summarised in **Table 4-15** below:

**Table 4-15 Geological Resources Categorisation Parameters**

Category	Simple	Moderate	Complex
Sedimentation	Main Seams (> 1.5 m)	Minor Seams (0.5 – 1.5 m)	
Coal Quality	X		
Structure	X		
Drill Spacing			
- Measured	< 500 m	< 250 m	< 100 m
- Indicated	500 - 1,000 m	250 - 500 m	100 - 200 m
- Inferred	1,000 - 2,000 m	500 - 1,000 m	200 - 400 m

Based on the above level of complexity of the deposit, Coal Resources were sub-divided into categories based on the following maximum drill spacing:



Main Seams

- Measured - no more than 500 m apart (i.e. radius of influence of 250 m);
- Indicated - no more than 1,000 m apart (i.e. radius of influence of 500 m); and
- Inferred - no more than 4,000 m apart (i.e. radius of influence of 2,000 m).

Minor Seams

- Measured - no more than 250 m apart (i.e. radius of influence of 125 m);
- Indicated - no more than 500 m apart (i.e. radius of influence of 250 m); and
- Inferred - no more than 1,000 m apart (i.e. radius of influence of 500 m).

The radius of influence for all seams for which Coal Resources were estimated is shown in **Table 4-16** below. NRM applied a greater radius for the thicker main seams, Seam M5 and Seam M7 than for thinner minor seams.

**Table 4-16 Geological Resources Radius by Seam**

Coal Seam	Coal Sub Seam 1	Coal Sub Seam 2	Coal Resources Radius (m)		
			Measured	Indicated	Inferred
<b>M2</b>	M2U		125	250	500
	M2L				
<b>M3</b>	M3U		125	250	500
	M3L				
<b>M4</b>	M4U		125	500	1,000
	M4L				
<b>M5</b>	M5U	M5UU	250	500	1,000
		M5UL			
	M5L	M5LU			
		M5LL			
<b>M6</b>	M6U		125	250	500
	M6L	M6LU			
		M6LL			
<b>M6B</b>	M6BU		125	250	500
	M6BL				
<b>M7</b>	M7U		250	500	1,000
	M7L				

The above level of confidence categories are typically modified on a seam-by-seam basis on the following factors:

- Minimum Number of Drillholes – for inclusion in the Coal Resources estimation, a minimum of four overlapping drillholes were required for the relevant category (including a minimum of three quality holes for Measured category, two holes for Indicated and one hole for Inferred category within Coal Resources polygons based on a limited number of intersections), in order to avoid isolated polygons;
- Down-Dip Drilling – where seams have been intersected only in drillholes close to the subcrop, i.e. data is only available along strike and not down dip, a maximum Indicated category is applied;
- Localised Seam Splitting – Coal Resources category is downgraded according to the degree of complexity of the splitting; and
- Coal Quality Data – adequate representative coal quality data is required to meet the JORC Code 2012 criteria that data *“is sufficient to confirm geological and grade (quality) continuity”* in relation to Indicated and Measured categories (JORC Code 2012, Sections 22 and 23, respectively) and specifically for Measured category *“that the tonnage and grade of the mineralisation (in this case, coal) can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability.”* In neither the JORC Code 2012 nor the Guidelines (2014) is there a requirement for 100% of holes used in Coal Resources estimation to be quality holes. If either no quality data or limited wider-spaced quality data is available, seams will be excluded from Coal Resources estimates.

Based on the Guidelines 2014, boundaries for Measured category were based on Coal Quality Points of Observation. For Indicated category, Coal Quality remained the principal determinate but in localised areas Quantity Points were taken into account. For Inferred category the Quantity Points were the principal determinate subject to there being an adequate distribution of Coal Quality Points of Observation. The Competent Person is of the opinion that the above methodology conforms to the Guidelines 2014 requirement for *“the merging of Quantity confidence limits (tonnes) with Coal Quantity confidence limits”*.

#### **4.8 Coal Resources Estimation**

The parameters applied to the estimation of Coal Resources are:

- Coal Resources are contained within the PTSB Concession, IUP No. 001/IUP/545-02/II/2013;
- Coal Resources estimates are based on the geological database as of 31 December 2017;
- A valid Point of Observation is a drillhole with an appropriate level of confidence. This estimate utilises cored holes with >90% linear core recovery in coal. The level of confidence applied to non-cored holes with geophysical logs is based on the availability of adjoining cored drillholes and the apparent seam variability or consistency based on the geophysical logs. As appropriate, the level of confidence was downgraded if seam variability is apparent;
- Coal seams with no quality data have been excluded from the estimates;
- The upper limit of the seams is the Base of Weathering, which is beneath the Project topographic surface;

- A minimum seam thickness of 0.5 m has been applied to this Coal Resources estimate;
- The maximum parting thickness included in the seams is 0.2 m, all partings greater than 0.2 m have been used to define seam splitting so that this material is designated as interburden;
- No geological losses have been applied;
- Resources have been estimated on an *in situ* basis using Relative Density at an estimated *in situ* moisture basis;
- Coal Resources are required to meet the criteria of “*reasonable prospects for eventual economic extraction*” (JORC Code, 2012) and for this reason the following constraints were applied:
  - reporting to a basal elevation RL -100 m, which is equivalent to a maximum pit depth of approximately 180 m below the surface topography; and
  - the lowermost Seams M8 and M9 have been excluded from Coal Resources estimates on the basis that the vertical incremental SR from Seam M7 to M9 is relatively high (>20 bcm/t) and thus does not meet the “*reasonable prospects for eventual economic extraction*”;
- The JORC Code 2012 also requires that “*In all cases, the considered time frame should be disclosed and discussed by the Competent Person*”. The time frame applied in relation to this Statement is 30 years, which is based upon the projected life of the Riau-1 MMPP;
- Estimates have been rounded to the second significant figure to reflect the order of accuracy of the estimates, in conformance with the JORC Code 2012 guidelines in Section 25; and
- Individual seam (or sub-seam) estimates <100 kt have been excluded from the Coal Resources estimates to reflect the order of accuracy of the estimates.

**The total Coal Resources are estimated at 520 Mt, of which 140 Mt are categorised as Measured, 250 Mt Indicated and 130 Mt as Inferred.** The Coal Resources estimation is summarised in **Table 4-17** and sub-divided by category as shown in **Table 4-18**.

Coal Resources have been further sub-divided on the basis of seam, coal quality and coal thickness as shown in **Table 4-19**, **Table 4-20** and **Table 4-21** respectively. (Note: Coal Resources totals may not be identical to the sum of individual sub-totals due to the effect of rounding).

Coal Resources limits for Seam M5 group and Seam M7 group are shown in **Figure 4-13** and **Figure 4-14** respectively. Coal Resources limits for all other seams are shown in **Appendix N**.

**Table 4-17 Coal Resources Summary (as at 31 December 2017)**

Coal Resources (Mt)				TM %	IM %	Ash %	TS %	CV kcal/kg	CV kcal/kg	RD g/cc
Measured	Indicated	Inferred	Total	(ar)	(ad)	(ad)	(ad)	(gar)	(ad)	<i>in situ</i>
140	250	130	520	43.5	19.6	9.6	0.23	3,510	4,990	1.21

(Note: Coal Resources are reported to a basal RL of -100 m)

**Table 4-18 Coal Resources by Category (as at 31 December 2017)**

Category	Coal Resources (Mt)	TM % (ar)	IM % (ad)	Ash % (ad)	TS % (ad)	CV kcal/kg (gar)	CV kcal/kg (ad)	RD g/cc <i>in situ</i>
Measured	140	43.6	19.9	9.6	0.23	3,515	4,985	1.20
Indicated	250	43.4	19.4	9.6	0.23	3,505	4,990	1.21
Inferred	130	42.9	18.0	10.3	0.24	3,515	5,045	1.21
<b>Total</b>	<b>520</b>	<b>43.5</b>	<b>19.6</b>	<b>9.6</b>	<b>0.23</b>	<b>3,510</b>	<b>4,990</b>	<b>1.21</b>

**Table 4-19 Coal Resources by Seam (as at 31 December 2017)**

Seam	Sub Seam 1	Sub Seam 2	Coal Resources (kt)				
			Measured	Indicated	Inferred	Total	
M3	M3U		-	-	2,100	2,100	
			-	11,000	13,000	24,000	
	M3L		-	100	900	1,000	
M4	M4U		-	440	-	440	
			-	32,000	6,900	39,000	
	M4L		-	540	-	540	
M5	M5U	M5UU	540	1,500	2,200	4,300	
			12,000	11,000	12,000	35,000	
		M5UL	500	1,800	3,300	5,600	
			81,800	71,000	16,000	170,000	
	M5L	M5LU	970	1,100	700	2,700	
			11,000	11,000	16,000	39,000	
M5LL		930	900	800	2,700		
M6	M6U		-	-	7,000	6,900	
			-	35,000	9,700	44,000	
	M6L	M6LU		-	-	2,000	2,000
				-	-	5,300	5,300
M6LL			-	-	1,700	1,700	
M6B	M6BU		-	-	200	200	
			-	23,000	14,000	37,000	
	M6BL		-	-	200	200	
M7	M7U		-	400	-	400	
			34,000	46,000	13,000	94,000	
	M7L		-	200	-	200	
<b>Total</b>			<b>140 Mt</b>	<b>250 Mt</b>	<b>130 Mt</b>	<b>520 Mt</b>	

**Table 4-20 Coal Resources by Calorific Value (gar) (as at 31 December 2017)**

CV Range kcal/kg (gar)	Coal Resources (Mt)				Basal RL (m)	TM % (ar)	IM % (ad)	Ash % (ad)	TS % (ad)	CV kcal/kg (gar)	CV kcal/kg (ad)	RD g/cc <i>in situ</i>
	Measured	Indicated	Inferred	Total								
> 3,500	35	49	42	130	-100	42.2	20.9	9.6	0.21	3,770	5,155	1.22
3,250 - 3,500	110	200	82	390		43.8	19.2	9.5	0.23	3,440	4,945	1.21
< 3,250	1.0	2.3	3.3	6.6		44.4	15.3	14.0	0.33	3,105	4,730	1.25
<b>Total</b>	<b>140</b>	<b>250</b>	<b>130</b>	<b>520</b>		<b>43.5</b>	<b>19.6</b>	<b>9.6</b>	<b>0.23</b>	<b>3,510</b>	<b>4,990</b>	<b>1.21</b>

**Table 4-21 Coal Resources by Seam Thickness (as at 31 December 2017)**

Thickness Range (m)	Coal Resources (Mt)				Basal RL (m)	TM % (ar)	IM % (ad)	Ash % (ad)	TS % (ad)	CV kcal/kg (gar)	CV kcal/kg (ad)	RD g/cc <i>in situ</i>
	Measured	Indicated	Inferred	Total								
> 3	82	70.9	16	170	-100	43.9	19.4	9.1	0.23	3,440	4,935	1.20
1 to 3	.8	160	15.2	230		43.3	20.0	9.8	0.23	3,575	5,035	1.21
0.5 to 1	3.2	18	97	10		43.2	16.4	10.6	0.27	3,370	4,955	1.23
<b>Total</b>	<b>140</b>	<b>250</b>	<b>130</b>	<b>520</b>		<b>43.5</b>	<b>19.6</b>	<b>9.6</b>	<b>0.23</b>	<b>3,510</b>	<b>4,990</b>	<b>1.21</b>

#### 4.9 Previous Coal Resources Estimation

Previous Coal Resources for the PTSB concession were estimated by GMT as at 9 June 2017. The Coal Resources comparison is presented in **Table 4-22**.

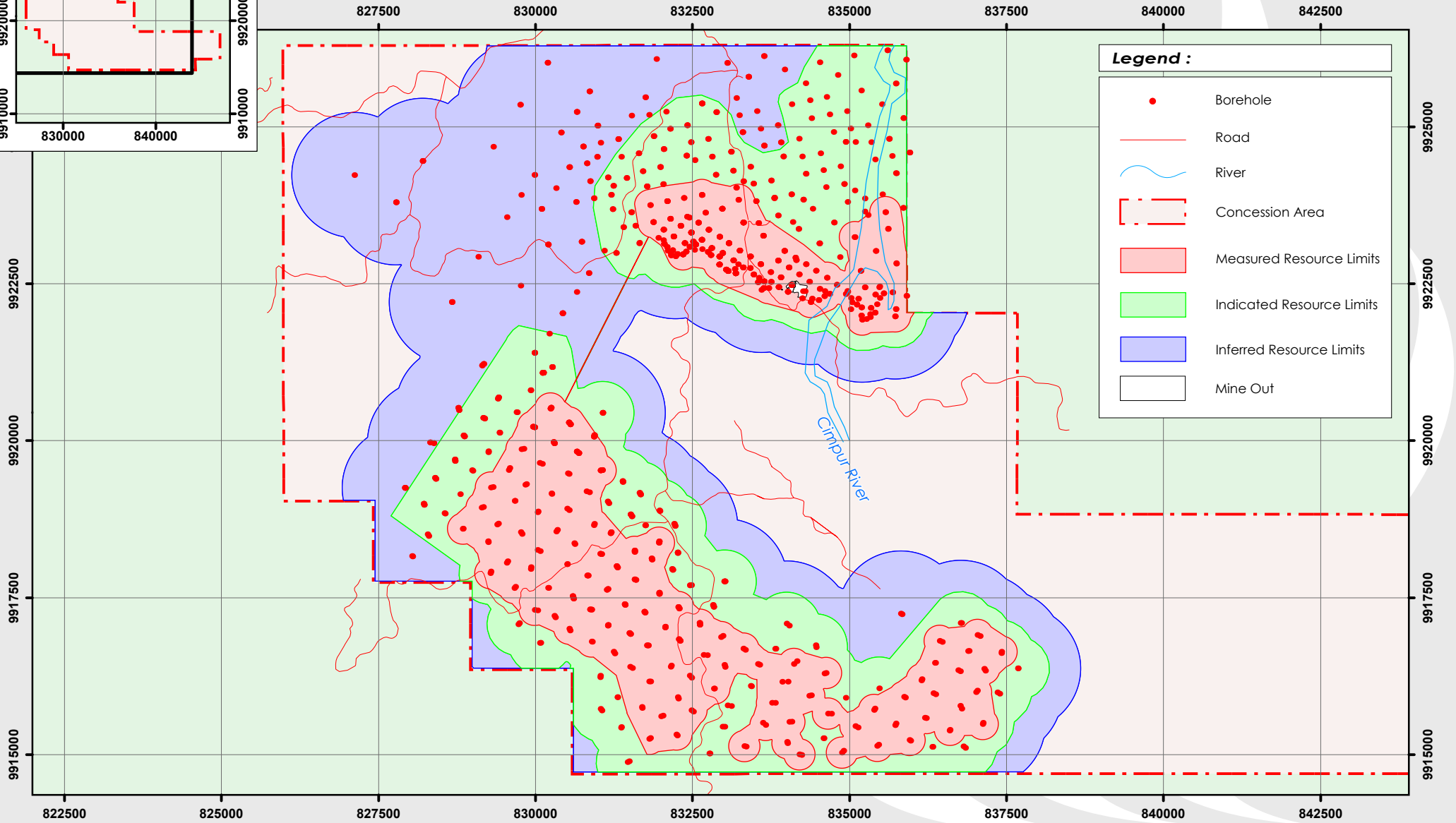
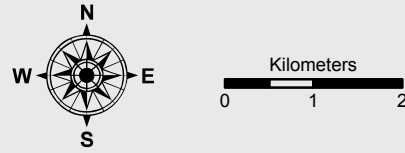
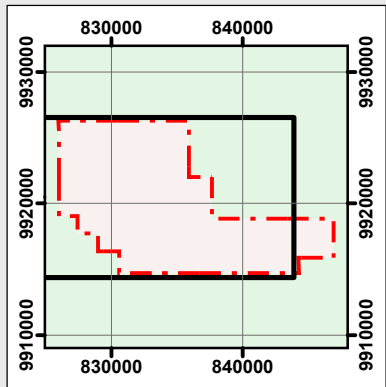
**Table 4-22 Summary Coal Resources Comparison**

		Coal Resources (Mt)			
		Measured	Indicated	Inferred	Total
Dec-17	GMT	140	250	130	520
June-16	GMT	140	250	130	520
<b>Variance</b>		<b>0</b>	<b>00</b>	<b>0</b>	<b>0</b>
		<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

No additional exploration drilling was undertaken in 2017. Actual coal mined in 2017 totalled 197 thousand tonnes ("kt") principally from Seam M5 with only minor tonnage (approximately 10 kt) from Seam M4. Coal Resources totals have been rounded to the second significant figure to reflect the order of accuracy of the estimates and in conformance with the JORC Code 2012 guidelines (Section 25), therefore there is no reported change in the Coal Resources from the previous IQPR16.

COAL RESOURCE LIMIT SEAM M5 - SAMANTAKA BATUBARA

Figure 4-13

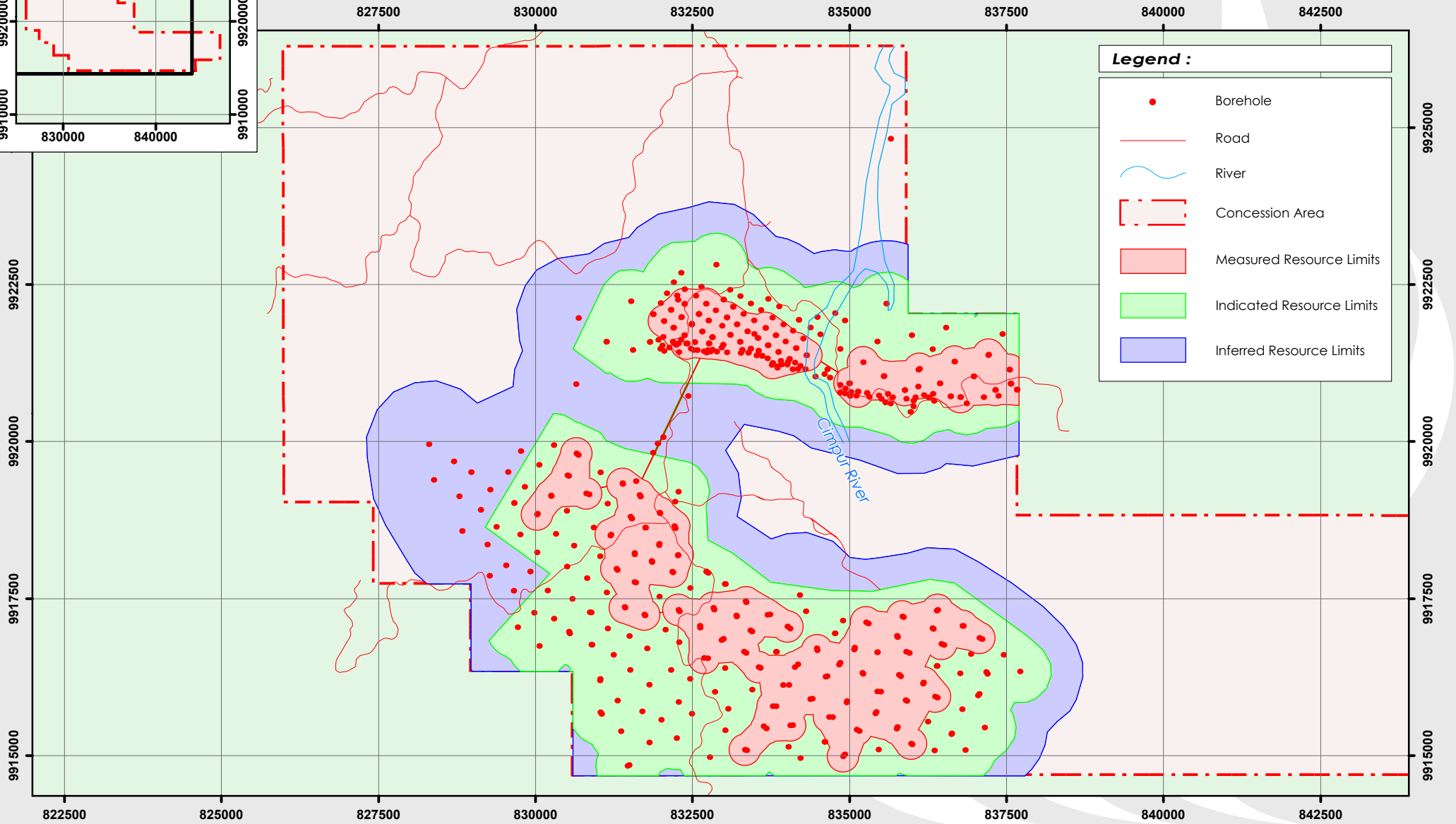
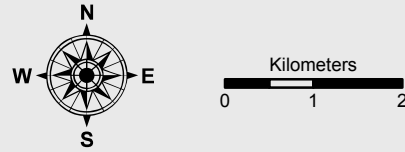
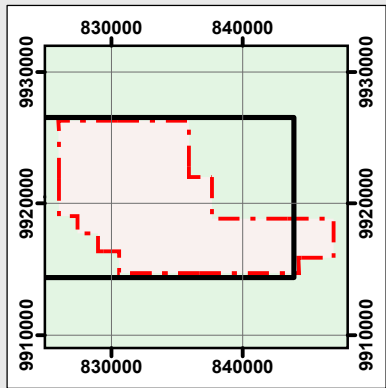


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JORC (2012) RESOURCES AND RESERVES STATEMENT

**COAL RESOURCE LIMIT SEAM M7 -  
SAMANTAKA BATUBARA**

**Figure  
4-14**



**Legend :**

- Borehole
- Road
- River
- - - Concession Area
- Measured Resource Limits
- Indicated Resource Limits
- Inferred Resource Limits

## 5. COAL RESERVES ESTIMATES

### 5.1 Introduction

This section describes the process of converting the Coal Resources into Coal Reserves.

This Statement of Coal Reserves has been undertaken in accordance with the JORC Code 2012. Under the JORC Code 2012 (Section 29), *“Ore Reserves’ are the economically mineable part of a Measured and/or Indicated Mineral Resources. 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.”* This Coal Reserves Statement is based on mining studies to PFS level of accuracy. Modifying Factors include mining, processing and infrastructure, economic, marketing, legal, environmental, social and government regulatory considerations.

*“The choice of the appropriate category of Ore Reserves is determined primarily by the relevant level of confidence in the Mineral Resources and after considering any uncertainties in the consideration of the Modifying Factors. Allocation of the appropriate category must be made by a Competent Person.”* (JORC Code 2012, Section 32).

In order to convert the Coal Resources to Coal Reserves, it must be demonstrated that extraction could be justified after applying reasonable investment assumptions. A level of uncertainty in any one or more of the Modifying Factors may result in Measured Resources converting to Probable Reserves. A high level of uncertainty in any one or more of the Modifying Factors may preclude the conversion of the affected Resources to Reserves.

GMT is of the opinion that most work has been completed to an appropriate level commensurate with the international standards and meets the criteria of a PFS as identified in the JORC Code 2012 as follows:

- A PFS is a comprehensive study of a range of options for the technical and economic viability;
- The study has advanced to a stage where a preferred mining method is established;
- It includes a financial analysis based on reasonable assumptions; and
- It evaluates any other relevant factors which are sufficient to determine if all or part of the Coal Resources may be converted to Coal Reserves at the time of reporting.

GMT is of the opinion that further detailed studies are required in some areas particularly in relation to the Cimpur River diversion and the RAPP logging road diversion. On this basis, areas potentially affected by the river and logging road diversions have been downgraded from Measured Coal Resources into maximum Probable category in the Coal Reserves.

### 5.2 Coal Resources Statement

The Coal Resources estimate that is the basis for the Coal Reserves estimate is summarised in **Section 4.8** of this Report. The Competent Person who prepared the Coal Resources estimate is Mr. William (Bill) Park. Bill is the Principal Consultant at NRM and is a member of the Australasian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy. Coal Resources quoted in this Report are inclusive of Coal Reserves.



### 5.3 Project Status

Small scale mining has commenced at the PTSB mining concession. At this stage of the Project, studies completed on the project area include Geological, Topographic, Geotechnical, Hydrogeological, and Hydrology. Further detailed studies will be required to take the Project forward to the next stage in the form of a comprehensive technical and economic “Bankable” or “Definitive” Feasibility Study, including the ongoing process of environmental studies in support of Government approvals.

A comprehensive Life of Mine document was developed by NRM mine planning engineers to support this Coal Reserves Statement and therefore adequately meets requirements in the JORC Code 2012.

The Competent Person notes the following points in regards to the Project:

- The planned pit shells are based primarily on the main seam (Seam M5 group and Seam M7) which are well-developed across the entire deposit, and
- Simple geological structure.

The Coal Reserves Competent Person believes that the scale of the mine operations to be developed will be principally subject to success in the Riau-1 bid and the construction of the MMPP.

### 5.4 Cut-off Parameters and Pit Limits

NRM geologists used Geovia Minex “Optimizer” software to validate the economic pit limits for the deposit. The Optimizer is based on the Lerchs-Grossmann technique that is commonly used to define economic pit limits for both metalliferous and coal mines. The Optimizer algorithm investigates a number of different Forcing Factors (“FF”) where 100% FF represents application of 100% of the nominated coal price and 50% FF represents application of half the coal price. This produces a series of nested pit shells that depict the increase and decrease in cash positive Mineable ROM Coal with varying coal price. The Optimizer determines the maximum size pit that can be mined until the final walls represent marginal or BESR.

The approach is generally as follows:

- Establish the mining factors including coal recovery and dilution;
- Establish the physical pit design parameters (e.g. slope angles);
- Establish the unit operating costs (“OPEX”) and product revenue parameters as shown in **Table 5-1** below. It should be noted that waste and coal mining rates vary between Riau-1 and other customers due to the scale of operations and therefore the differing capabilities and equipment of contractors to be employed;
- Apply these inputs in the Optimizer software to Measured, Indicate and Inferred coal Resources in order to generate a series of “nested” 3D pit “shells” and related tabulation of quantities and costs;
- From the OPEX and revenue assumptions, determine the indicative BESR;
- Select the appropriate “optimised” pit shell with an ISR less than the estimated BESR to ensure that “non-economic” coal is excluded from the pit shell; and

- Modify the optimised pit shell as necessary based on practical mining constraints to derive “practical” or mineable pit shell.

**Table 5-1 Optimizer Cost Inputs**

No.	Type of Costs	Unit	Riau-1	Non-Riau-1
1	Waste Mining	USD/bcm	2.04	1.84
2	Coal Mining	USD/t	1.17	1.23
3	Coal Hauling to CPP/ROM	USD/t	1.20	1.23
4	Coal Handling at CPP/ROM	USD/t	-	0.19
5	Coal Hauling from CPP to Power Plant	USD/t	0.27	-
6	Coal Hauling from CPP to Port	USD/t	-	7.19
7	Coal Crushing at Port	USD/t	-	0.34
8	Coal Stockpile Handling at Port	USD/t	-	-
9	Coal Processing	USD/t	1.19	-
10	Barge Loading	USD/t	-	1.39
11	Coal Barging	USD/t	-	8.07
12	Overhead	USD/t	1.66	-
13	Other - SKAB/Marketing Surveying	USD/t	-	1.00
14	Other - Reclamation	USD/t	-	0.50
15	Other - Fixed Fee (Land Rent)	USD/t	-	0.10
16	Other – Mine Overheads / Safety / Training / Offsite admin	USD/t	-	0.36
17	Other - DAS	USD/t	-	0.13
18	Other - PNB/IPP/KH	USD/t	-	0.49
19	Other - CSR	USD/t	-	0.02
20	Depreciation and Amortisation	USD/t	1.00	-
21	Monitoring Cost	USD/t	0.50	-
22	Fixed Fee (A)	USD/t	0.02	-
23	Production Cost (B)	USD/t	19.00	-
24	Margin - 25% (C)	USD/t	4.75	-
25	Royalty - 3% (D)	USD/t	0.71	-
26	Royalty	USD/t	-	-
<b>COAL PRICE</b>		<b>USD/t</b>	<b>24.50</b>	<b>*</b>

(\*Note: The above coal price for Riau-1 is based on OPEX and margin derived from Mineral Resources (Decree No. 7424 K/30/MEM/2016). Actual OPEX applied by the Consultant in the Financial Model (see **Appendix P**) are based on “industry standard” rates which is the reason for the variance on a number of cost inputs between Table 5-1 and Appendix P. The Consultant does not consider these variances material to the financial analysis and there is no impact on the selected pit shells for Riau 1. Coal prices applied for the other coal contracts for the purposes of pit optimisation are as per contracts with buyers which were sighted and verified, but which for reasons of Client confidentiality have not been stated in the table above).

The BESR, ISR and Average SR for the pit shells are provided in **Table 5-2**.

**Table 5-2**      **ISR and BESR**

<b>Market Purposes</b>	<b>Pit M5 Area</b>	<b>Pit M7 Area</b>		
BESR (bcm/ROM t)	8.2	14.8	21.5	18.6
ISR (bcm/ROM t)	8.1	14.4	8.1	8.1
Average SR (bcm/ROM t)	5.9	12.3	5.9	5.9

The Optimizer identified two main pit shells, namely the smaller Pit North and larger Pit South. The Pit North is further sub-divided into two smaller sub-pits, Pit North M5 and Pit North M7. The pit designs were further modified by practical mining constraints as necessary to form “practical” or Mineable Pit Shells, as shown in **Figure 5-1**. (Note: Pit North M7 coal has been designated exclusively for the supply of coal to Tenayan. Other contracts, including Riau-1 MMPP will be supplied from Pit North M5 and Pit South).

## 5.5 Mining Factors

### 5.5.1 Mining Method and Operational Constraints

The LOM plan developed for this project uses haul back mining techniques. Back-fill dumping has commenced and was observed during the recent site visit. The methodology employs small to medium sized excavators that are able to selectively mine coal and waste on sub-horizontal benches. The method is suitable for shallow to moderate dipping deposits, with the dumping of waste initially carried out on an ex-pit dump, but progressing to an in-pit dump once sufficient dump room is available.

### 5.5.2 Conversion Process from In Situ to ROM

The *in situ* structural and air dried quality models were used to determine *in situ* coal and waste volumes and qualities. The *in situ* coal was then modified in order to simulate the mining process and the effects this has upon coal recovery, losses and dilution. These modifications included the following:

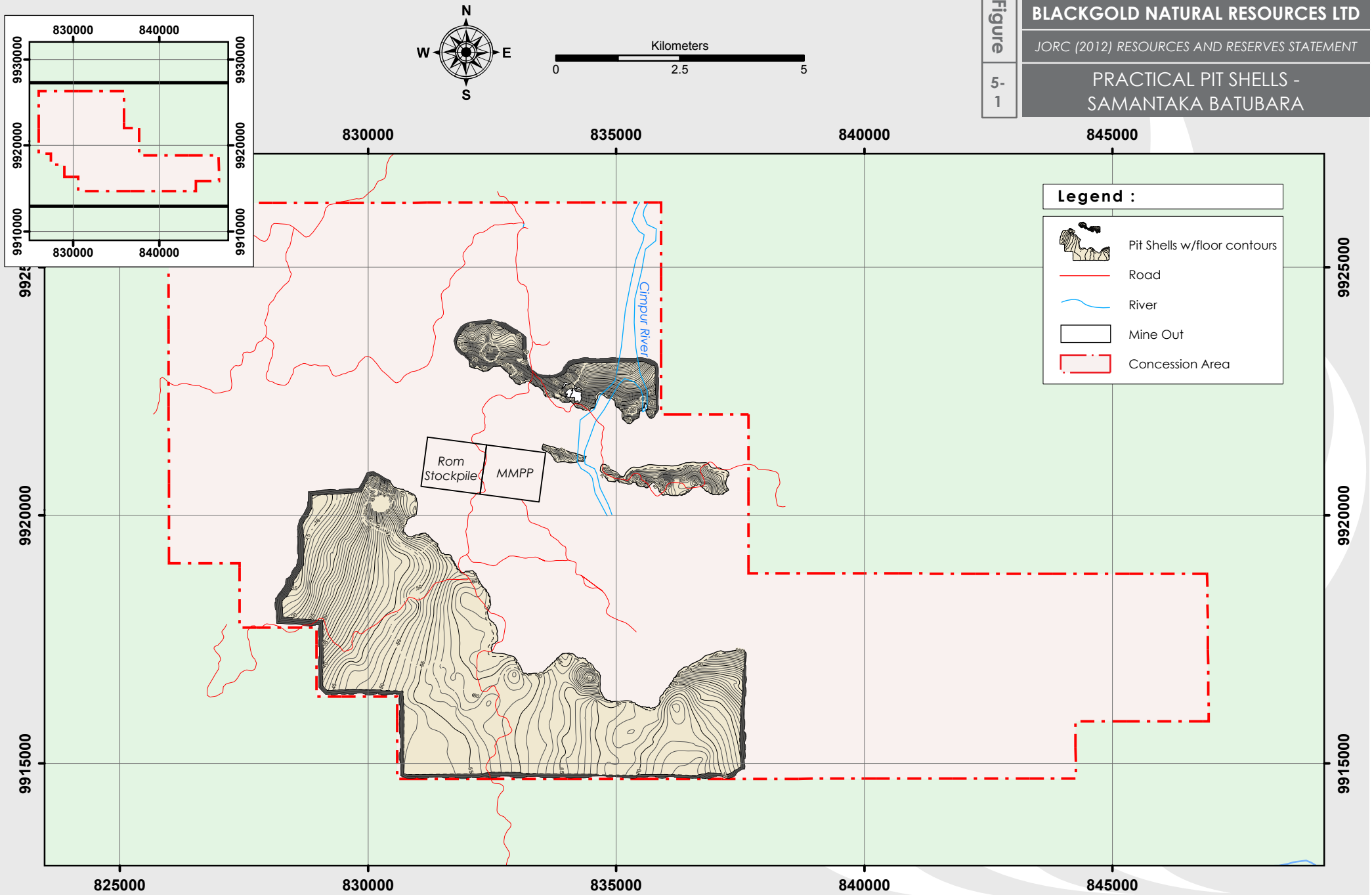
- Qualities and Defaults - Ensuring that both waste and coal records have appropriate quality parameters;
- Minimum Separable Parting - Applying a minimum included parting in coals. This occurs when the parting is not sufficiently thick to allow it to be selectively mined without coal;
- Minimum Recoverable Thickness - Applying a minimum recoverable coal thickness;
- Loss and Dilution and Global recovery - Applying loss and dilution factors; and
- Moisture Adjustments - Applying moisture adjustments to the coal.

### 5.5.3 Qualities and Defaults

Coal qualities were modelled over the entire mining lease. Waste qualities were modelled with results as shown in **Table 5-3**. These values represent the near seam material and are only referenced if a thin parting is included in the recovered coal working section or when dilution is applied to the coal. These values are considered reasonable for Indonesian coal measures.

PRACTICAL PIT SHELLS -  
SAMANTAKA BATUBARA

Figure  
5-1

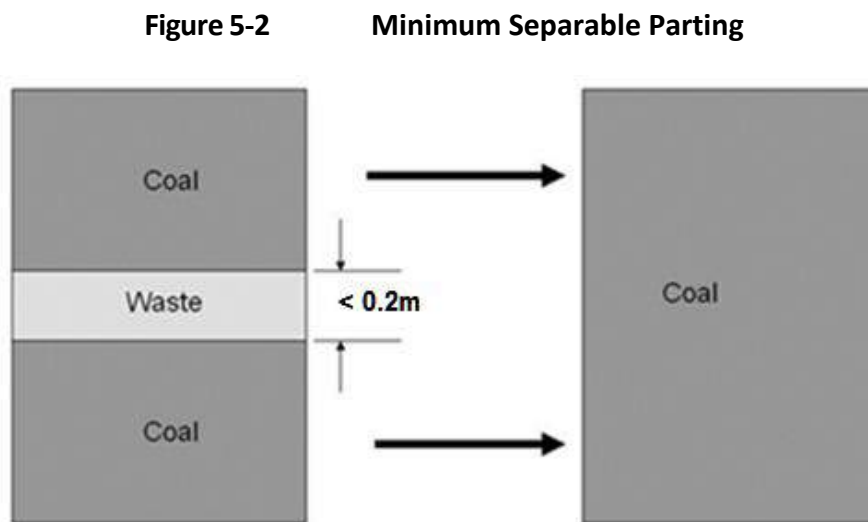


**Table 5-3 Default Waste Quality**

Quality	Waste Default Value
Ash (ad)	60%
Relative Density (ins)	2.2 g/cc
Inherent Moisture (ad)	2.6%
Total Moisture (ar)	6.3%
CV (adb)	1,000 kcal/kg
Total Sulphur (ad)	0.70%

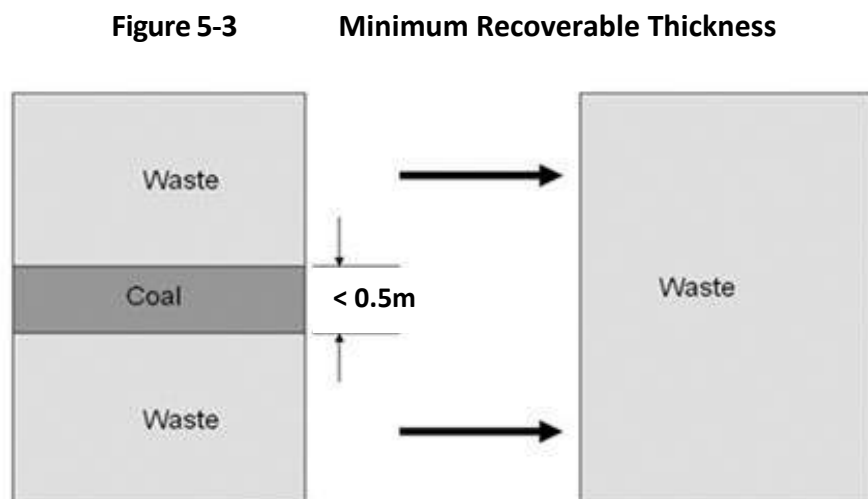
#### 5.5.4 Minimum Separable Parting

Partings less than 20 cm were included in the recovered coal working section as shown in **Figure 5-2**.



#### 5.5.5 Minimum Recoverable Thickness

If the resultant coal working section was less than 50 cm thick, it was treated as waste, as shown in **Figure 5-3**.



### 5.5.6 Loss and Dilution and Global Recovery

Loss and dilution was applied, along with a global mining recovery factor as shown in **Table 5-4**

**Table 5-4 Loss and Dilution Factors**

Parameter	Value
Loss (combined roof and floor)	6 cm
Dilution (combined roof and floor)	3 cm
Global Recovery	94%

### 5.5.7 Moisture Adjustments

The moisture of the coal was adjusted to a ROM basis to represent ROM/Product coal. Since no washing of coal occurs, it was assumed that the ROM moisture essentially equals product moisture. The process applied is as follows:

- Conversion of relative density (RD) from the laboratory basis (as analysed) to *in situ* basis using the Preston Sanders (1993) formula and Total Moisture % as Moisture *in situ* %, based on Equilibrium Moisture % being less than  $\pm 2.0$  % different to Total Moisture %;
- Conversion of coal tonnes to ROM moisture basis, assuming that ROM moisture is equivalent to TM% (ar); and
- Adjustment of CV to gross as received (“gar”) basis.

### 5.5.8 Mineable ROM Coal

The Optimizer algorithm investigates a number of different FF where 100% FF represents application of 100% of the nominated coal price and 50% FF represents application of half the coal price. This produces a series of nested pit shells that depict the increase and decrease in cash positive resources with varying coal price.

Based on the above process, two main pits were identified, Pit North and Pit South. Pit North is further sub-divided into two sub-pits, Pit North M5 and Pit North M7. The pit shells are shown in previous **Figure 5-1**.

The Pit North length from North to South is approximately 1 km and approximately 4 km in width, while Pit South length is approximately 10 km and approximately 3 km in width. Principally the pits are limited by physical constraints e.g. limit of the concession, particularly in the western-south area.

The Mineable Pit Shells are estimated to include approximately **153 Mt** of Mineable ROM Coal as summarised in **Table 5-5** below. It should be noted that minor isolated “polygons” of Inferred category coal have been defined as coal (rather than waste) for the purposes of pit optimisation. GMT does not consider this to be a material issue in determining the economic viability of the Coal Reserve. This minor coal has also been included within the mining schedule (see **Section 5.8**).

**Table 5-5 Mineable ROM Coal Summary (as at 31 December 2017)**

Area	Waste (Mbcm)	Coal (Mt)	SR (bcm/t)	TM % (ar)	IM % (ad)	Ash % (ar)	TS % (ar)	CV kcal/kg (gar)	RD g/cc <i>in situ</i>
Pit North	99.7	14.0	7.1	45.2	15.0	6.1	0.15	3,300	1.24
Pit South	808.1	138.7	5.8	43.9	20.5	7.5	0.17	3,410	1.20
<b>Total</b>	<b>908</b>	<b>153</b>	<b>5.9</b>	<b>44.0</b>	<b>20.0</b>	<b>7.4</b>	<b>0.17</b>	<b>3,400</b>	<b>1.21</b>

*(Note: Mineable ROM Coal includes coal tonnage based on Inferred category Coal Resource, which, in accordance with the JORC Code 2012, are excluded from Coal Reserves estimates.)*

Further hydrology studies are required to address future planning of the diversion of the minor Cimpur River, in the eastern part of the concession, as well as the further study of RAPP logging road diversion in the middle of the concession. The Mineable Pit Shells were then evaluated so that only Measured and Indicated Coal Resources were estimated and classified as Coal Reserves (see **Section 5.22**).

## 5.6 Metallurgical Factors

The coal is delivered unwashed as per the mine plan and mine operations to date, therefore no metallurgical factors have been applied.

## 5.7 Geotechnical and Hydrology Factors

### 5.7.1 Geotechnical Overview

Geotechnical studies were conducted by PT Quantus Consultants Indonesia (“QCI”) in 2015, an independent third party consultant. As of the date of reporting, a total of 7 fully cored geotechnical boreholes have been drilled in the North Block (see previous Figure ES-5).

The majority of the material is typically extremely low to low strength with rock strength ranging from 0.3 to 7 MPa. Within extremely low to low strength rock, it is anticipated that the vast majority of material will be “free dig” with limited need for ripping.

Based on a minimum Factor of Safety of 1.3, as per industry standards. The QCI report recommends an overall pit wall angle of approximately 35°, based on a maximum individual slope of 50° with a maximum vertical height between berms of 10 m, and minimum 7.5 m bench. Dump design is based on an overall maximum slope of 17° with individual dump slopes of 33° and berm widths of 20 m. Maximum planned external dump height of no more than 20 m (or > 2 “lifts”). However, GMT has taken a conservative approach in its design of the dump area (see further **Section 5.11.1**).

### 5.7.2 Hydrology Overview

Based on the geotechnical report from QCI, no climate stations were observed. Rainfall data with long term records was collected from the nearest station which was located on Teluk Kuantan, Rengat, and Muara Tebo, which shows average annual rainfall ranging from 2,320 mm to 2,770 mm with maximum annual rainfall of approximately 3,525 mm.

### 5.7.3 Acid Mine Drainage Overview

To date, limited assessment of the potential acid mine drainage (“AMD”) has been conducted with QCI identifying the presence of potentially acid forming material. External waste dump design will ensure that potential acid forming material (“PAF”) is encapsulated to prevent acid mine drainage, including minimising contact with water (leaching prevention) and oxygen (oxidation prevention), selective handling of overburden and exposed coal must be covered by overburden material before final voids become flooded. GMT does not consider this to be a material issue in operating cost or practicality given that the operations will be largely carried out by a major contractor (for Pit North M5 and South Pit) which assumes that good mining and waste handling practices will be adopted. To date no additional AMD testwork has been undertaken as waste removal quantities are minimal and confined to the existing shallow pit. As production expands it will become important to routinely test for PAF material.

## 5.8 Mine Planning and Scheduling

A Life of Mine (“LOM”) plan has been developed based on the practical pit limits determined from the optimisation process. All schedule paths were developed using the detailed interactive scheduler in Minex. The detailed scheduler allows for a good visualisation of equipment interactions and ensures that the mining progresses are appropriately scheduled from the top to the bottom of the pits. The planned mine life is based on supporting the coal requirement of the ongoing coal contract with Tenayan, supporting the commencement of SDU and SMS coal delivery in 2018 and also for the 30 years Riau-1 bid requirements.

It should be noted that the mining schedule includes minor coal tonnage based on Inferred category Coal Resources (approximately 4% of the total within the Mineable Pit Shells) which occurs as minor isolated “polygons” across the deposit in a number of seams.

At this deposit, the major issues that drive the development of the mining operation are Stripping Ratio (“SR”), Cimpur River diversion and RAPP logging road diversion.

Coal delivery to PLN Tenayan commenced during 2017 with trial barge cargoes from Pit North M5. For the purposes of this Statement, it is assumed that the proposed coal delivery to Tenayan will be delivered from Pit North M7, sequencing from west to east for the remainder of the contract term.

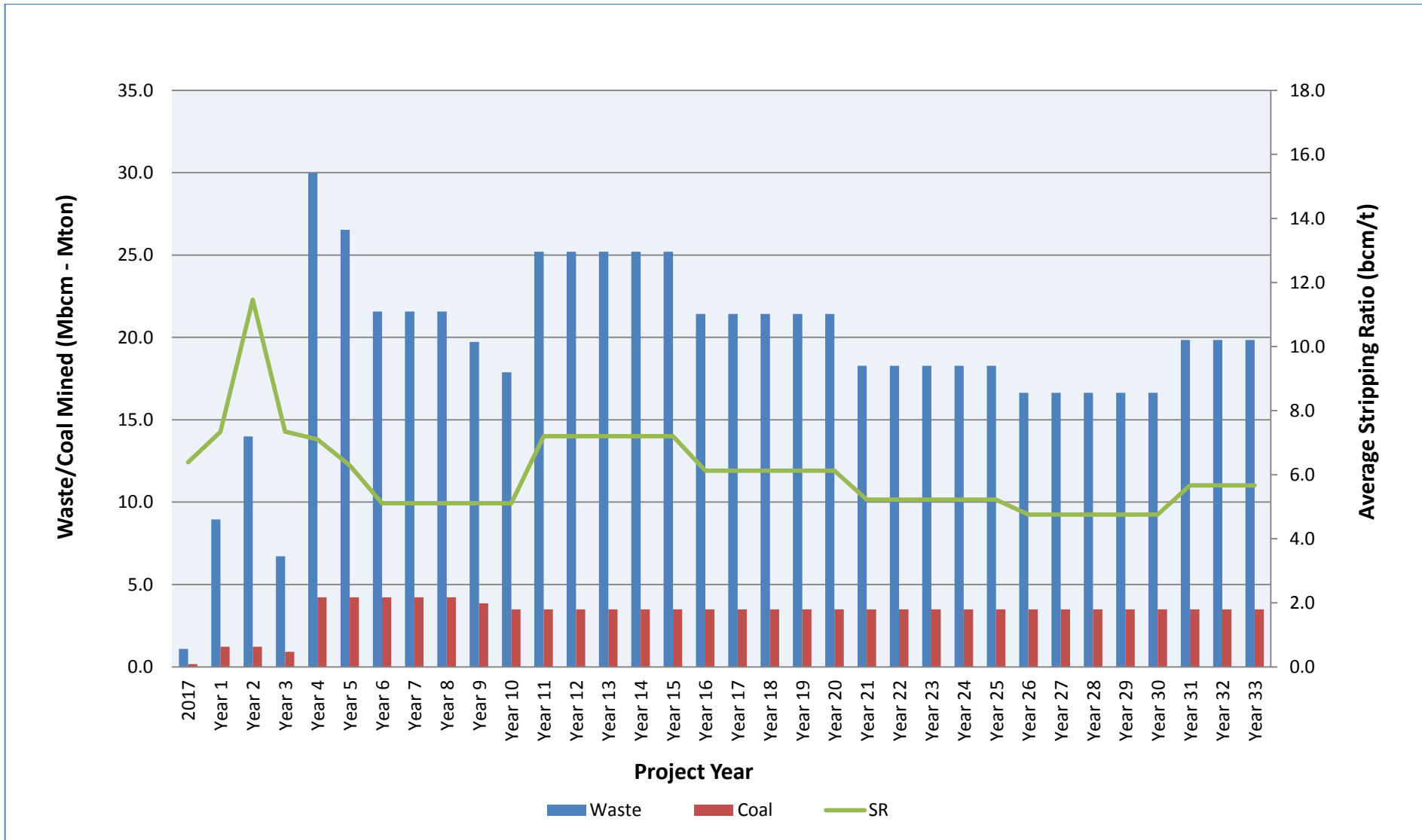
The 2 x 360 ktpa coal deliveries to SDU and SMS are assumed to commence in 2018, while the Riau-1 coal supply is scheduled to commence in 2021. The dedicated coal for supplying SDU, SMS and Riau-1 requirements will be delivered from Pit North M5 and Pit South. Pit South is scheduled to commence in 2024, as Pit North M5 is mined out. Pit South has a lower SR and mining progress will continue within this pit until the end of the Project.

**Figure 5-4** and **Table 5-6** present the forecast coal and waste schedule. (Note: Waste and coal totals have been rounded to the nearest 1 million to reflect the accuracy of the estimates). Annual stage plans for the Years 1 to 5 and 5-yearly beyond this are shown in **Figure 5-5** to **Figure 5-15**.

**The mine plan has altered significantly in Years 1 to 5 principally due to later commencement of delivery to SDU and SMS. This has resulted in an overall increase in waste and coal quantities in Years 1 to 5 but no material change in the average SR. The principal determinate of the waste and volume movements is the commencement date of coal deliveries to Riau-1.**

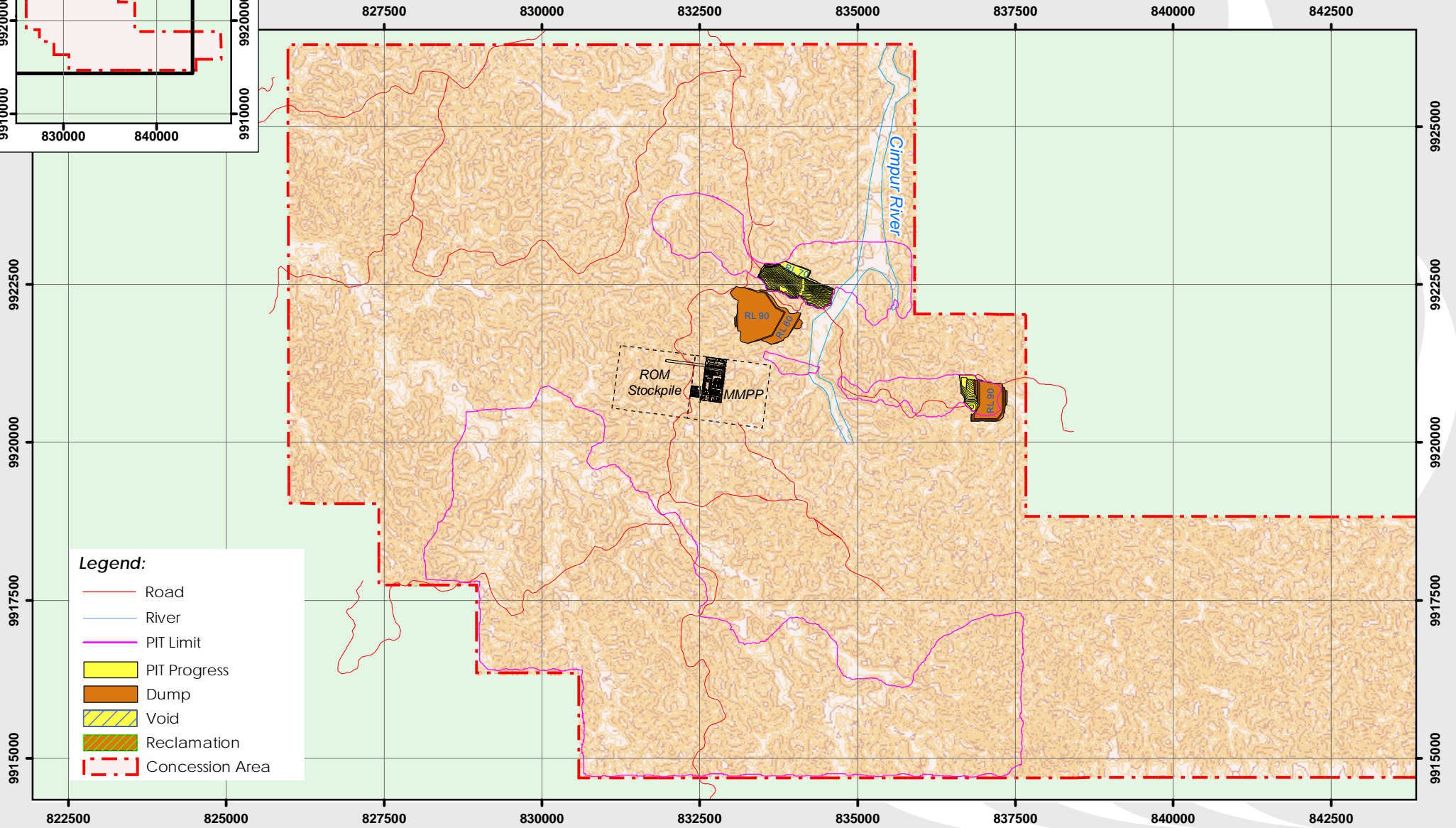
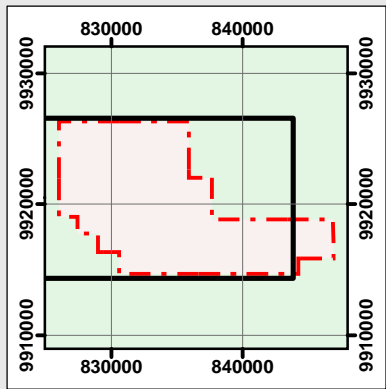


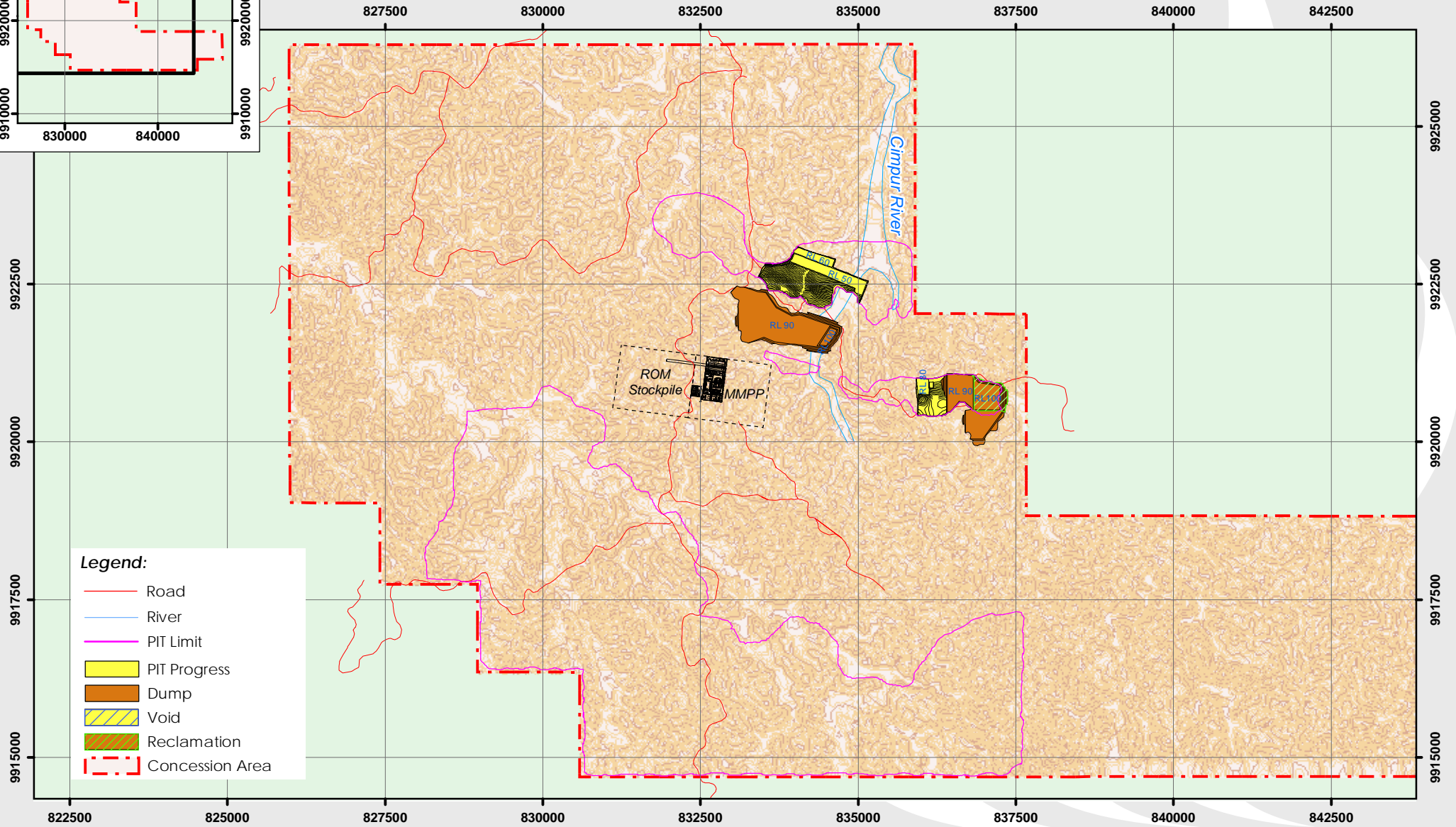
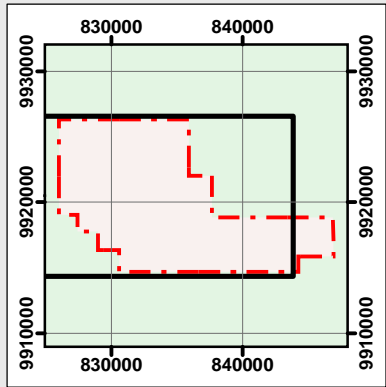
**Figure 5-4 Waste and Coal Schedule**



**Table 5-6 Schedule Summary**

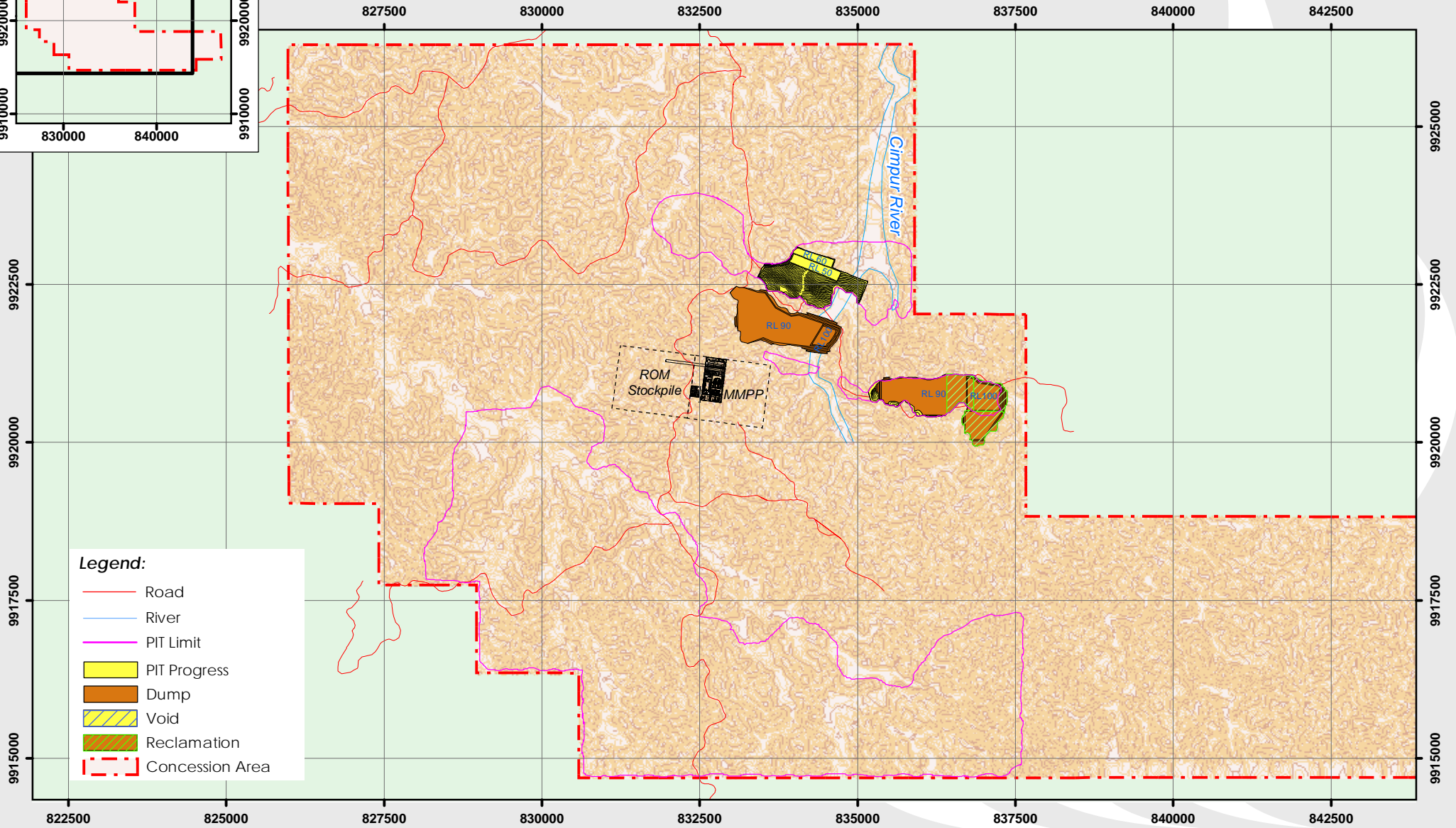
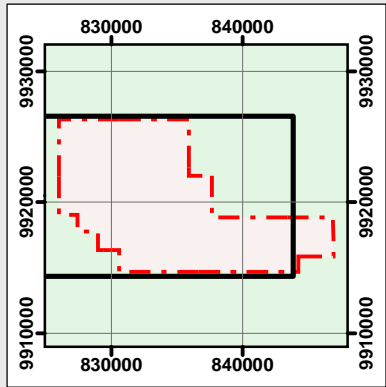
<b>Year</b>	<b>Waste (Mbcm)</b>	<b>Coal (Mt)</b>	<b>SR (bcm/t)</b>
Year 1	9.0	1.2	7.3
Year 2	14.0	1.2	11.5
Year 3	6.7	0.9	7.3
Year 4	30.0	4.2	7.1
Year 5	26.5	4.2	6.3
Years 6-10	102.3	20	5.1
Years 11-15	126.0	17.5	7.2
Years 16-20	107.1	17.5	6.1
Years 21-25	91.4	17.5	5.2
Years 26-30	83.2	17.5	4.8
Years 31-33	59.5	10.5	5.7
<b>Total</b>	<b>655.7</b>	<b>112.3</b>	<b>5.8</b>



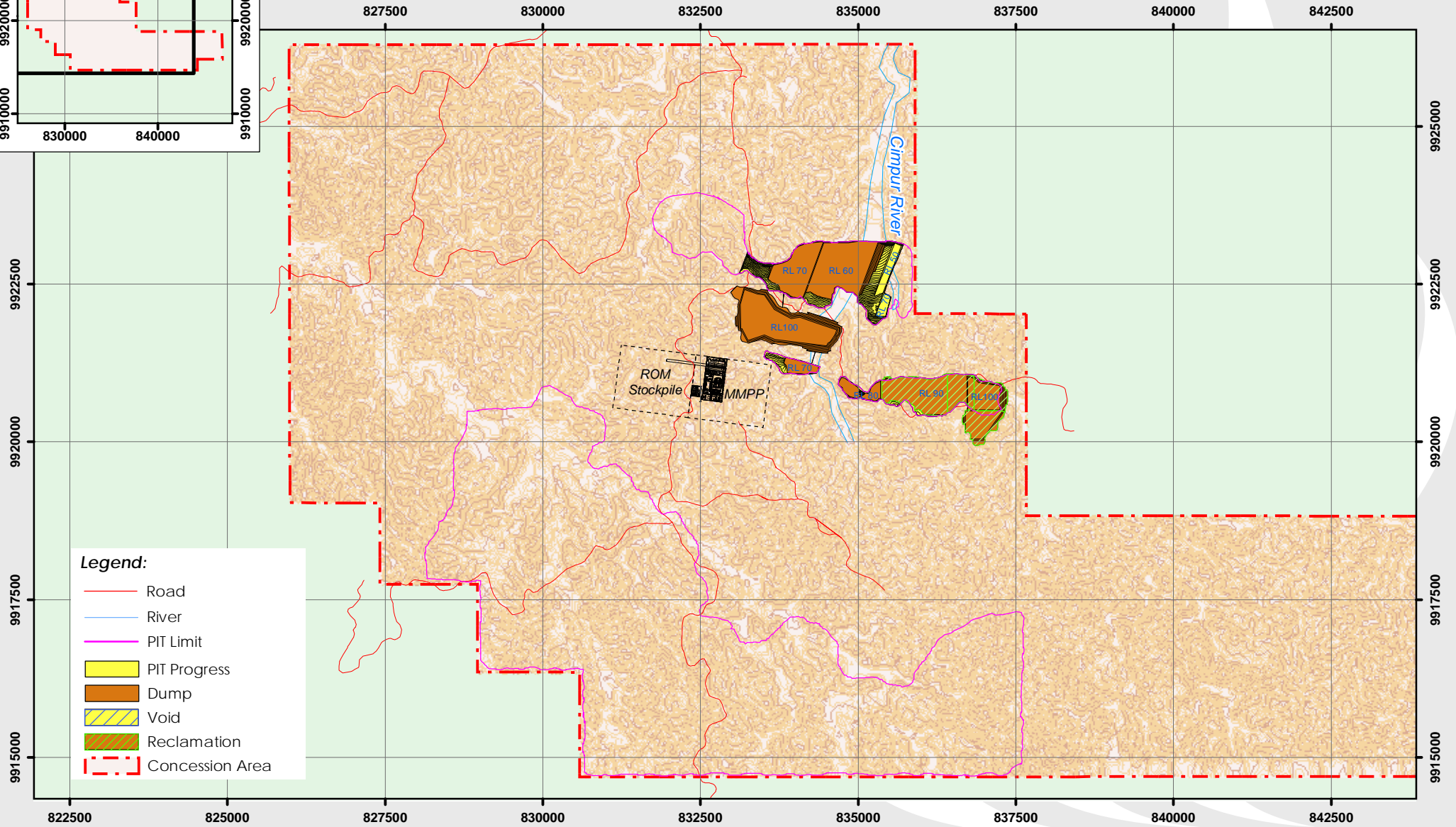
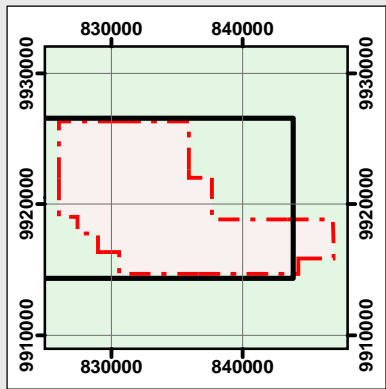


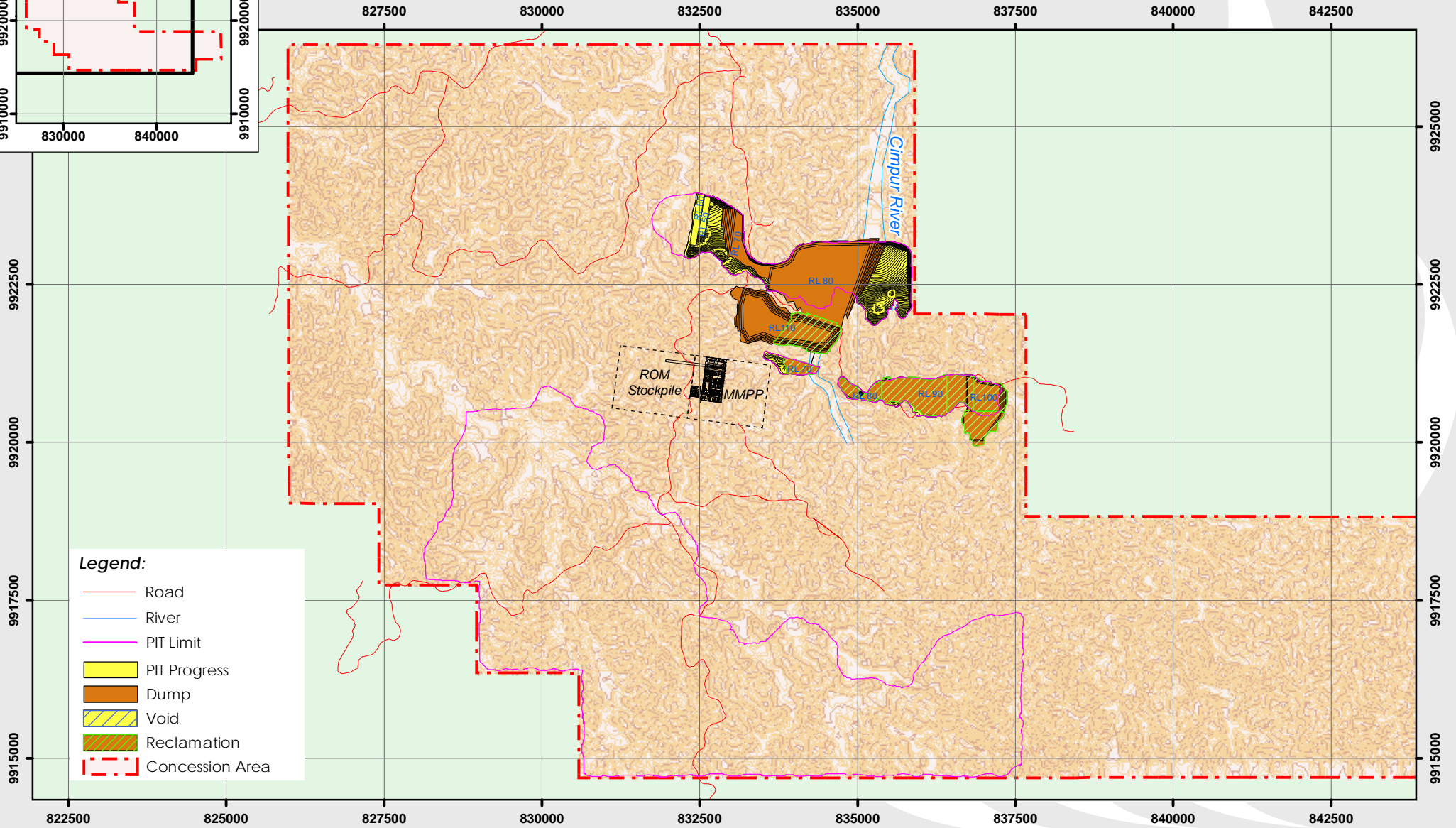
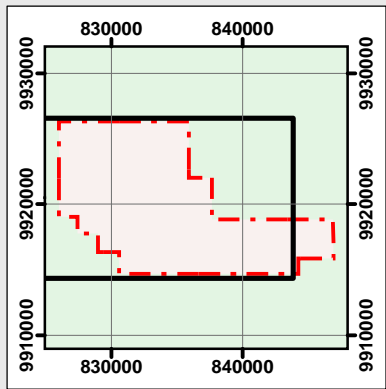
- Legend:**
- Road
  - River
  - PIT Limit
  - PIT Progress
  - Dump
  - ▨ Void
  - Reclamation
  - - - Concession Area

Figure  
5-  
7



- Legend:**
- Road
  - River
  - PIT Limit
  - PIT Progress
  - Dump
  - Void
  - Reclamation
  - Concession Area

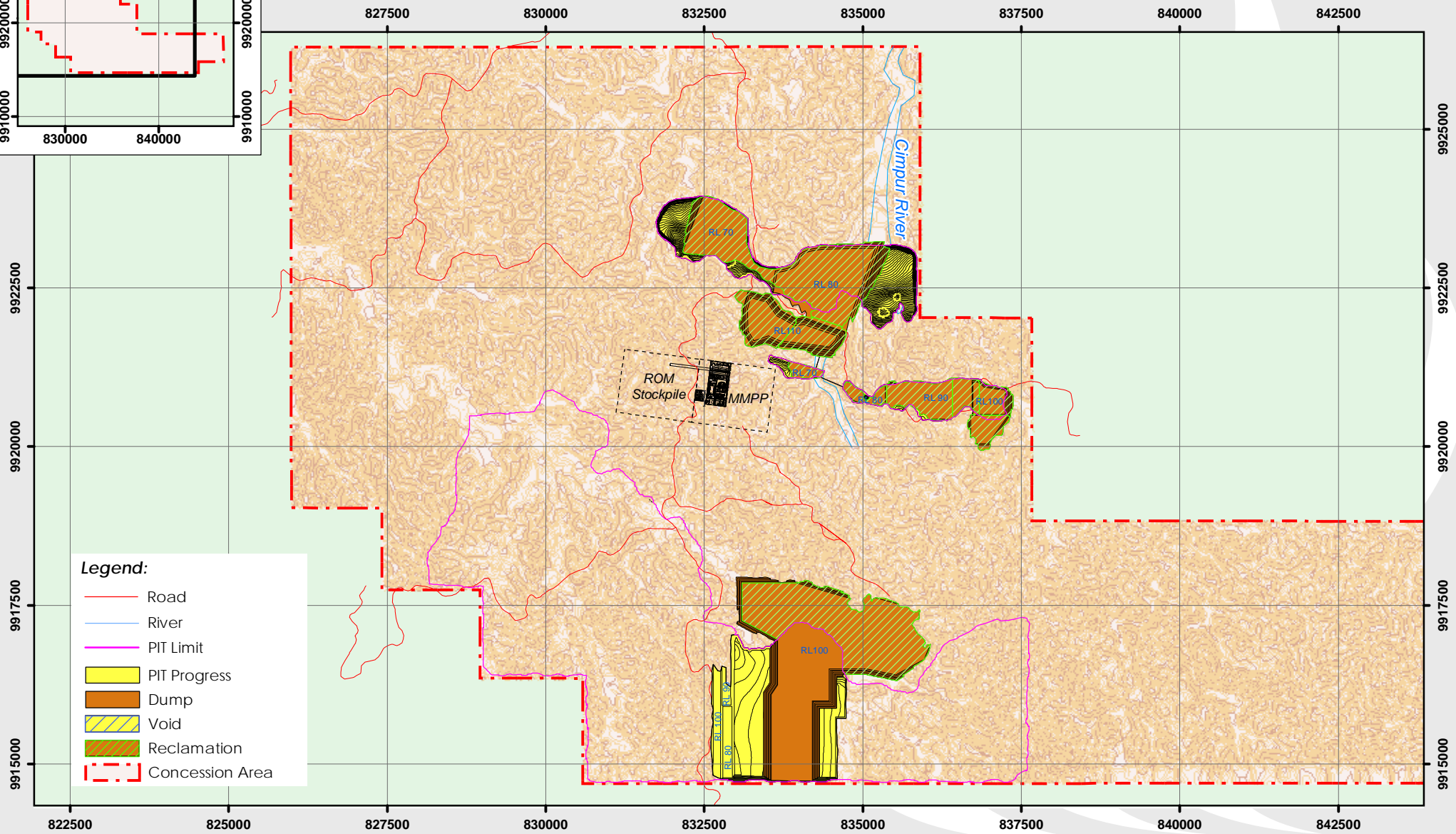
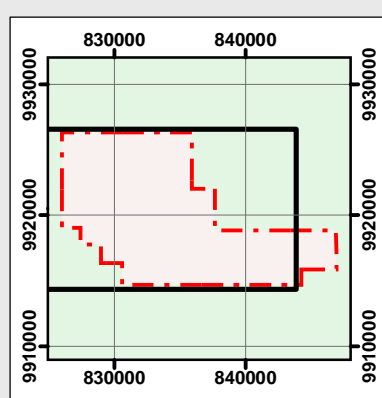




- Legend:**
- Road
  - River
  - PIT Limit
  - PIT Progress
  - Dump
  - Void
  - Reclamation
  - - - Concession Area

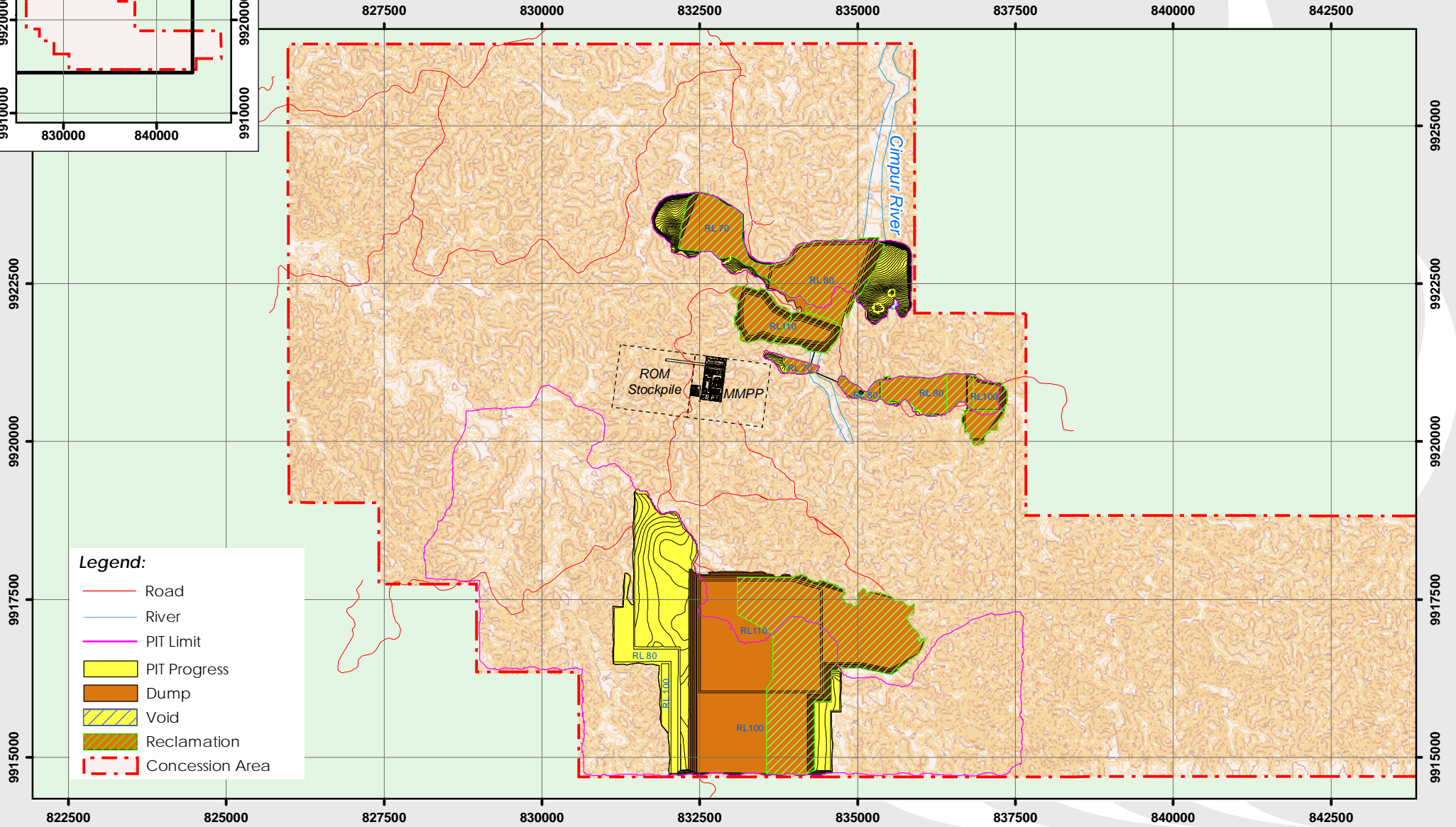
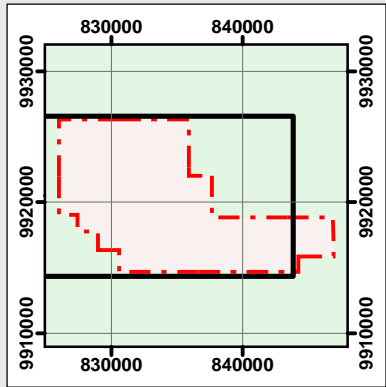
Figure  
5-  
10

**BLACKGOLD NATURAL RESOURCES LTD**  
*JORC (2012) RESOURCES AND RESERVES STATEMENT*  
**MINING STAGE PLAN END OF YEAR 10**  
**SAMANTAKA BATUBARA**



- Legend:**
- Road
  - River
  - PIT Limit
  - PIT Progress
  - Dump
  - Void
  - Reclamation
  - Concession Area

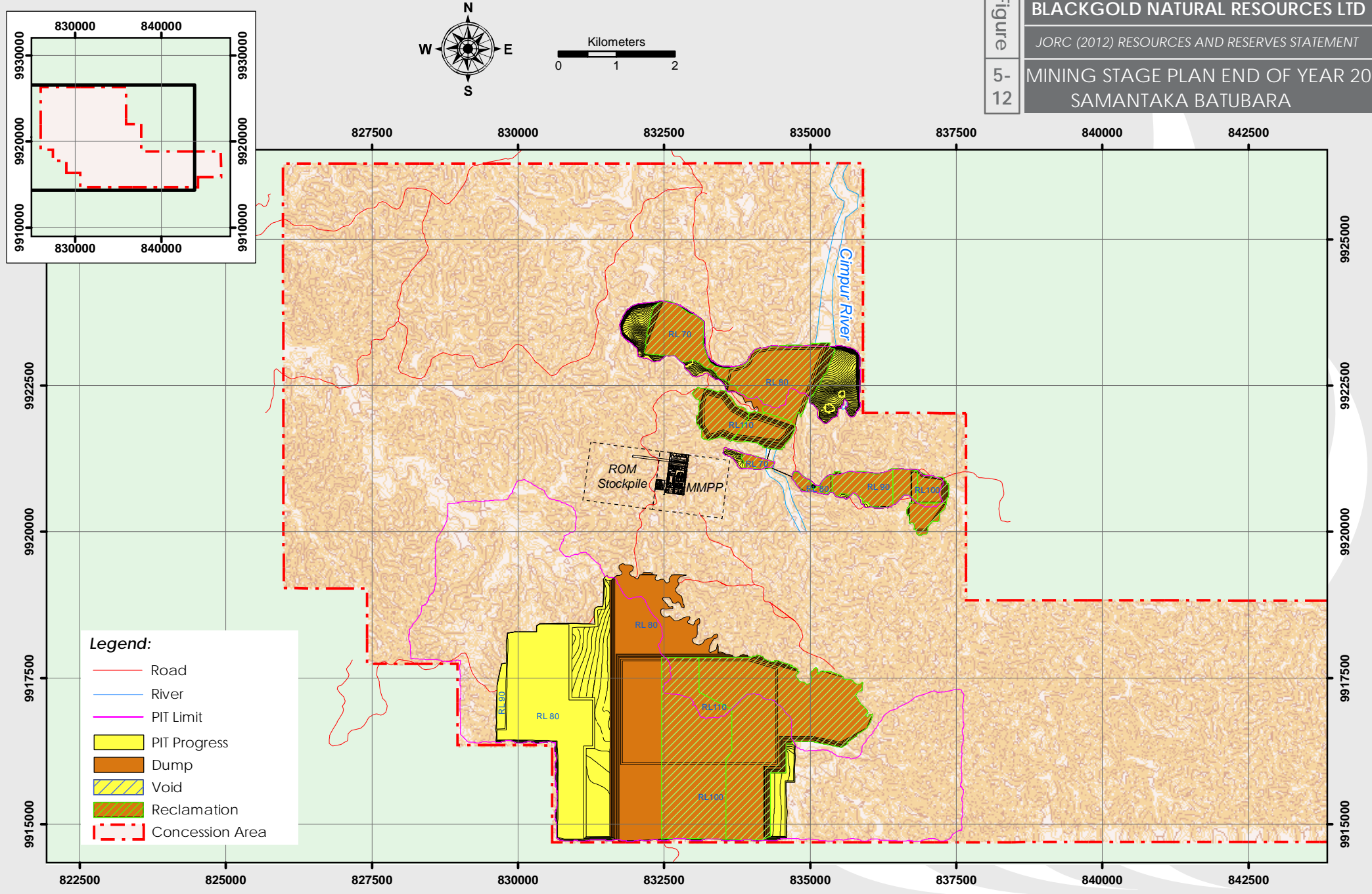




- Legend:**
- Road
  - River
  - PIT Limit
  - PIT Progress
  - Dump
  - Void
  - Reclamation
  - Concession Area

Figure  
5-  
12

**BLACKGOLD NATURAL RESOURCES LTD**  
*JORC (2012) RESOURCES AND RESERVES STATEMENT*  
**MINING STAGE PLAN END OF YEAR 20**  
**SAMANTAKA BATUBARA**



- Legend:**
- Road
  - River
  - PIT Limit
  - PIT Progress
  - Dump
  - ▨ Void
  - ▨ Reclamation
  - - - Concession Area

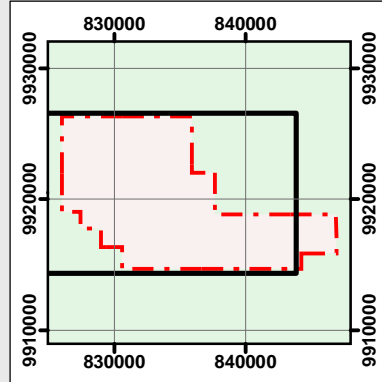
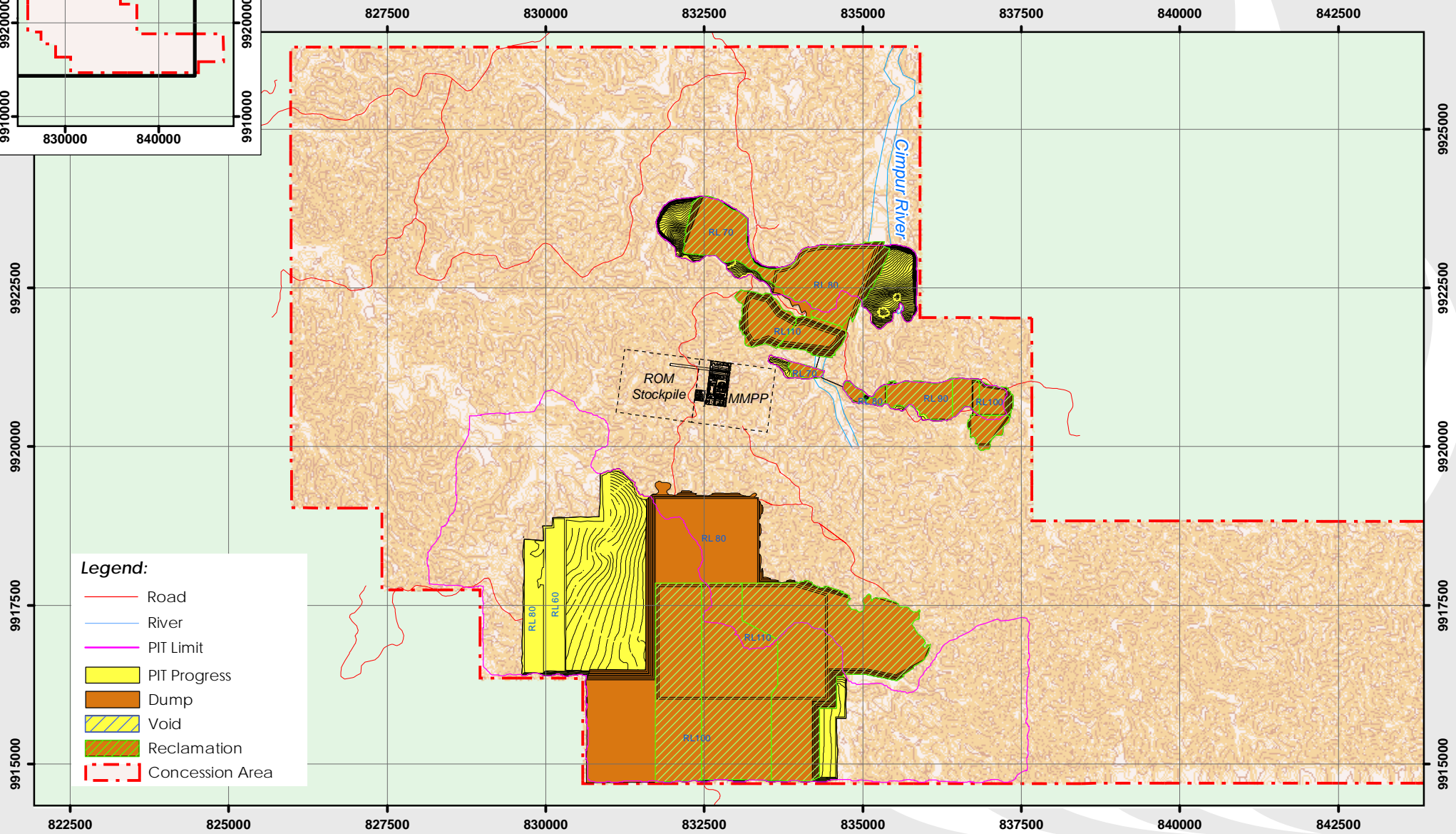
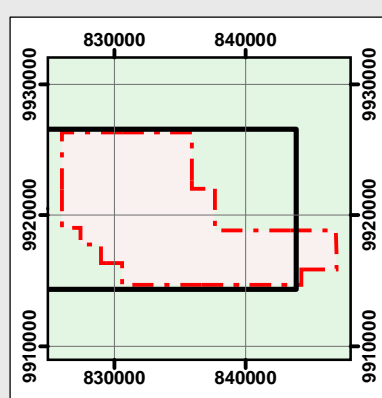


Figure  
5-  
13

**BLACKGOLD NATURAL RESOURCES LTD**  
*JORC (2012) RESOURCES AND RESERVES STATEMENT*  
**MINING STAGE PLAN END OF YEAR 25**  
**SAMANTAKA BATUBARA**



- Legend:**
- Road
  - River
  - PIT Limit
  - PIT Progress
  - Dump
  - ▨ Void
  - ▨ Reclamation
  - - - Concession Area

Figure  
5-  
14

**BLACKGOLD NATURAL RESOURCES LTD**  
JORC (2012) RESOURCES AND RESERVES STATEMENT  
MINING STAGE PLAN END OF YEAR 30  
SAMANTAKA BATUBARA

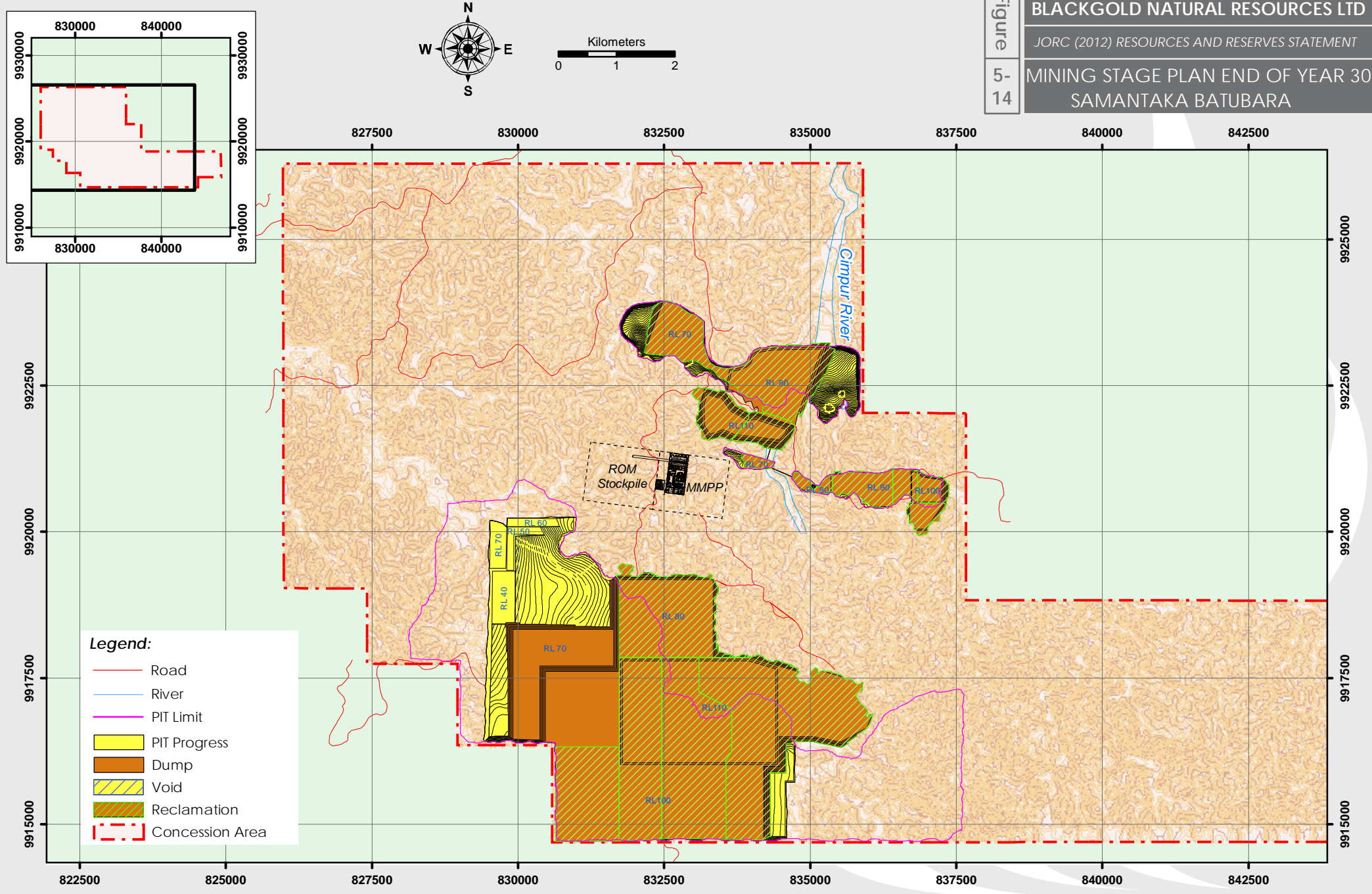
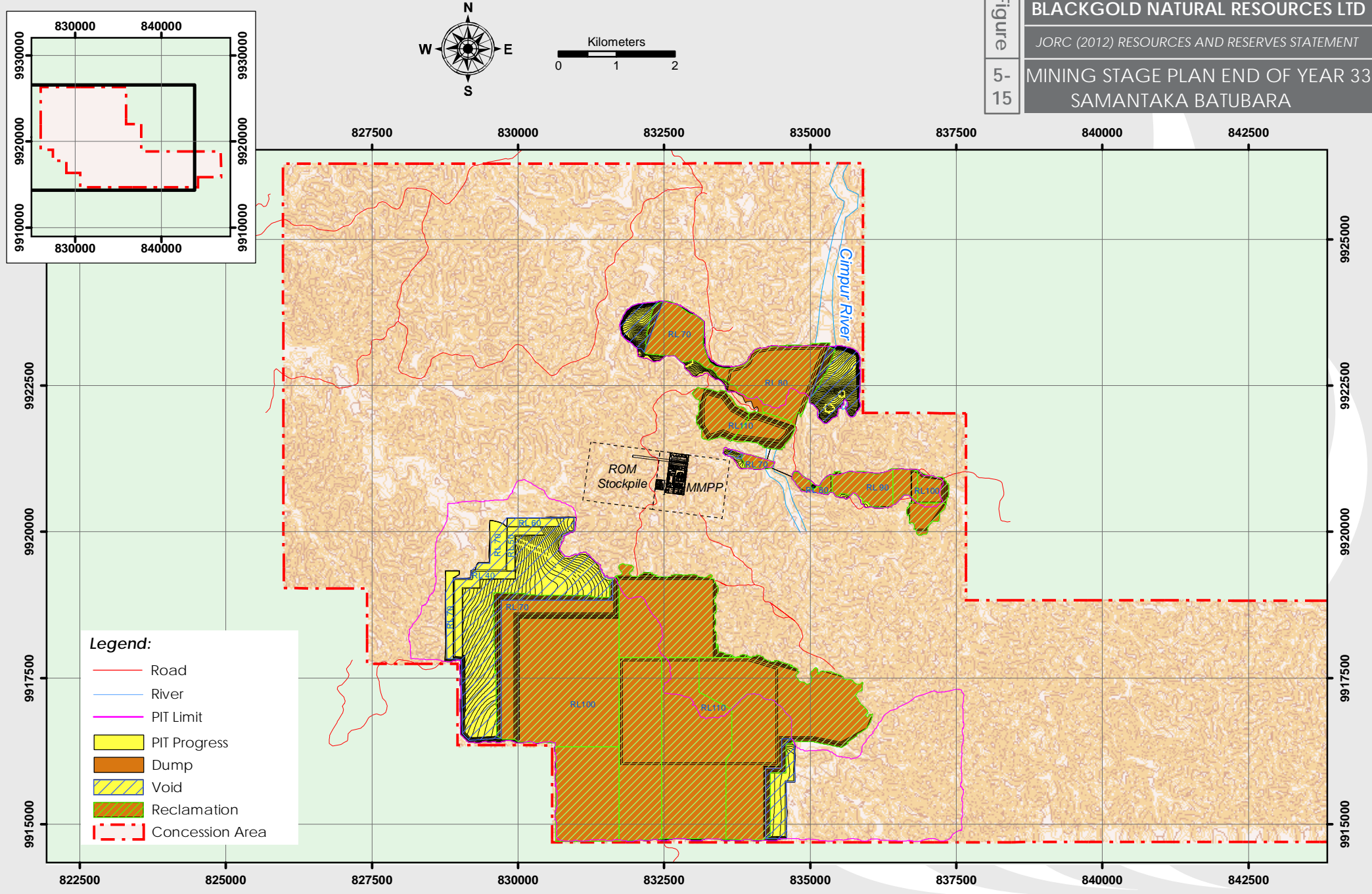


Figure  
5-  
15

**BLACKGOLD NATURAL RESOURCES LTD**  
JORC (2012) RESOURCES AND RESERVES STATEMENT  
MINING STAGE PLAN END OF YEAR 33  
SAMANTAKA BATUBARA



## 5.9 Equipment Selection

A conventional contractor truck and hydraulic excavator mining methodology were selected. The waste and coal volumes vary significantly as the production ramps-up to meet the additional requirements for Riau-1. The maximum equipment selection by activity and equipment class with indicative fleet numbers are as shown in **Table 5-7** below.

**Table 5-7 Equipment Fleet Selection**

Activity	Equipment Class	Units
<b>A. Waste Mining</b>		
Excavator	Komatsu 200 t	6
	Komatsu 40 t	15
Haul Truck	Komatsu 100 t	32
	DT Mercy 32 t	60
<b>B. Coal Mining</b>		
Excavator	Komatsu 40 t	5
Haul Truck	DT Mercy 29 t	25
<b>C. Ancillary Fleet</b>		
Scrub Dozer	KOM D85E equivalent	10
Pit/Dump Dozer	KOM D375 equivalent	12
Grader	KOM G970 equivalent	5
Water and Fuel Truck	Beiben 25 KL	5
Civil Excavator	Komatsu 20 t	8
LV	Support	26
Compactor	Ingersoll Rand SD 100	3
<b>D. ROM Coal Handling</b>		
Wheel Loader	Komatsu WA - 500	6
Haul Truck	DT Mercy 29 t	7
Small Excavator	Komatsu 20 t	5
Dozer	KOM D375 equivalent	2
LV	Support	7
<b>E. Coal Hauling Fleet to Port</b>		
Haul Truck	DT Mercy 29 t	85
	DT Mercy 80 t	96
Civil Excavator	Komatsu 20 t	3
Grader	KOM G970 equivalent	8
Compactor	Ingersoll Rand SD 100	4
Water and Fuel Truck	Beiben 25 KL	13
LV	Support	6
<b>F. Fleet at Port</b>		
Front End Loader	Komatsu WA - 500	1
Civil Excavators	Komatsu 20 t	3
Dozer	KOM D85E equivalent	3
LV	Support	4

Activity	Equipment Class	Units
<b>G. Others</b>		
Fuel Truck	Beiben	4
Service Truck	Beiben	4
Grader	KOM G970 equivalent	3
Compact	Ingersoll Rand SD 100	2
Water Truck	Beiben	2
LV	Support	21

## 5.10 Description of Waste and Coal Operations

Vegetation is first removed, followed by the selective mining and stockpiling of topsoil. Pre-strip and topsoil activities will be undertaken using 40 t excavators loading into 32 t waste haul trucks. Large 200 t excavators are used for the majority of waste excavation which is hauled to waste dumps at an average distance of 2 km with 100 t capacity rigid body dump trucks.

Small 20 t excavators are used to clean-up the coal surface and coal is then extracted by 40 t excavators into 29 t coal haul trucks and transported an average distance of 4 km to the Mine Coal Handling Facility (“CHF”) for crushing and stockpiling.

### 5.10.1 Ground Clearing and Top Soil Management

Areas to be cleared and stripped of topsoil include:

- All work areas, including mining areas within pit limits;
- Stockpile and dump areas;
- Access roads;
- Camp areas;
- Infrastructure areas including workshops, storage, offices; and
- Coal processing and handling areas.

Equipment requirements for clearing and topsoil removal include:

- KOM D85E type wide-track scrub dozers for clearing vegetation and ripping topsoil;
- 20 t and 40 t tracked excavators for loading vegetation and topsoil; and
- 32 t payload dump trucks for removal of vegetation and topsoil.

### 5.10.2 Waste Removal

Waste removal will be undertaken by conventional diesel excavator and truck mining fleets. The major waste removal fleet proposed will consist of 6 x 200 t excavators with 32 x 100 t rigid body dump trucks. To achieve the maximum annual waste capacity of approximately 26 Mbcm, the 200 t excavators will achieve average usage of 5,500 hours annually with productivity of 675 bcm/hr.

A fleet of smaller 15 x 40 t excavators and 60 x 32 t road trucks will be utilised for pre-development and stripping works prior to the application of the larger 200 t excavators.

Preliminary geotechnical investigation by QCI indicates that the predominant rock type is mudstone with secondary sandstone and a tertiary mixture of mudstone and sandstone with very

low strength which suggests that the waste material does not require blasting and can be free-dug with dozer ripping undertaken when required.

Waste material will be hauled to final disposal dumps in accordance with the dumping sequence. External dumps will be minimised. Once initial strips are complete and the operation reaches a steady state, waste will be placed in-pit in successive dump strips.

The truck and excavator operation will allow selective placement and hence considerable control over the construction of both in-pit and out-pit spoil dumps. Average one way haul distance over the LOM is anticipated to be 2 km.

The floor and typical waste dump areas should allow for the efficient operation of dump trucks provided regular ramp and road maintenance is carried out and drainage is well managed. Attention would be given to ensuring that excavator working space, access ramps and roads remain elevated, and are not progressively “boxed in” below surrounding ground level by grading and wind-row build up.

Ancillary fleet considerations for waste removal include the following equipment types and activities:

- KOM D85E and Cat D10 dozers for Pit and Dump Maintenance;
- Cat 14M graders, SD 100 Compactors and 25 kl Water Trucks for Pit, Dump and Road Maintenance ; and
- 20 t small track excavators for civil works.

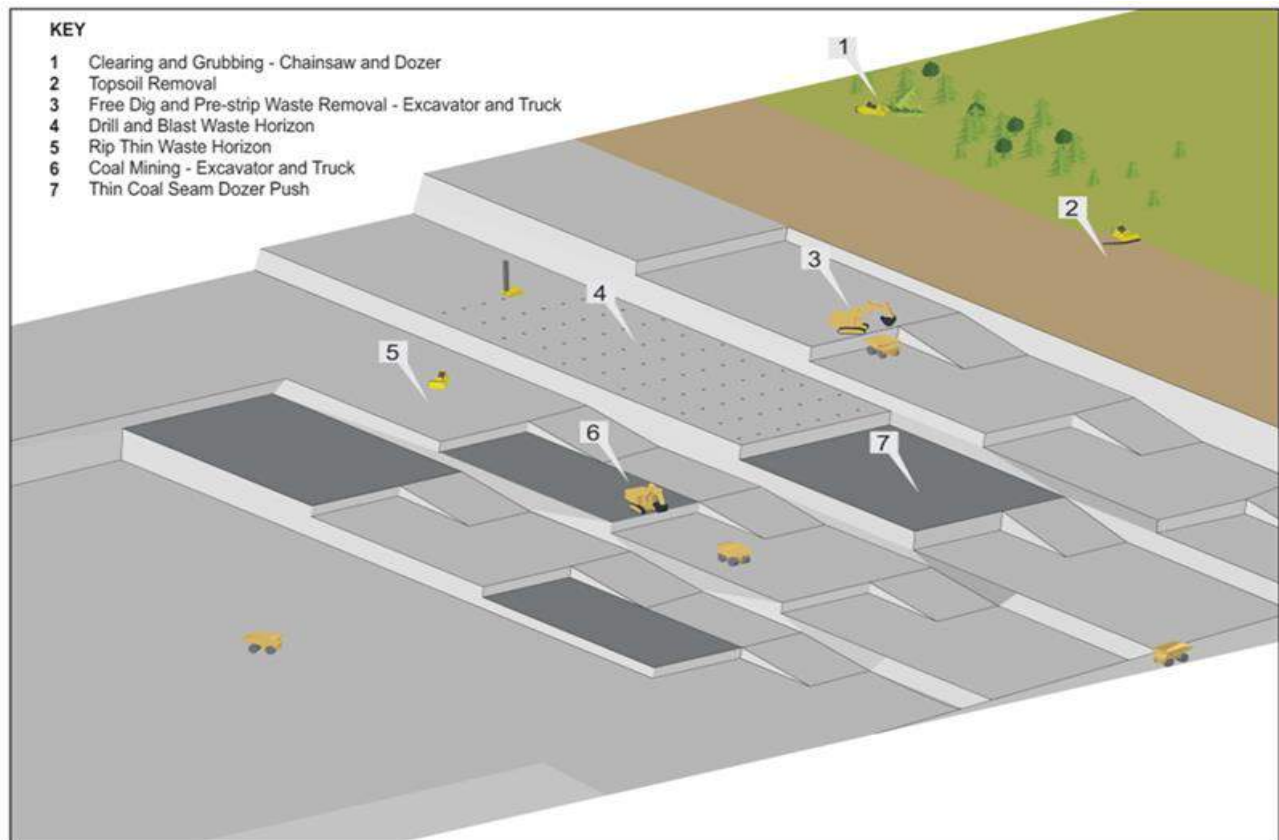
A schematic diagram of the waste mining concept is shown in **Figure 5-16** below.

### 5.10.3 *Coal Mining*

Waste mining operations with 200 t excavators will stand-off at least 0.2 m from the top of coal. The upper coal interface will then be cleaned by 20 t excavators with a straight edge bucket to ensure the removal of all contaminating waste. ROM coal will then be mined with the 40 t excavator loading 29 t dump trucks destined for the Coal Handling Facility (CHF). Average one way haul distance over the LOM is anticipated to be 4 km.

Coal exposure and recovery operations will be managed and monitored by pit grade control geologists who will ensure coal extraction is maximised and coal losses and dilution are minimised. Final recovery of coal on the seam floor will include cleaning by 20 t excavators with the straight edge bucket.



**Figure 5-16 Mining Concept**

#### 5.10.4 Water Management

The mine “footprint” which includes pits, external dumps and the CHF are typically gently undulating topography with only a single minor watercourse (approximate 5 m width and 1 m depth) which traverses the eastern part of the both pits and which will require diversion. This minor watercourse known as the Cimpur River has been avoided in the mine planning up to Year 4 of the mining sequence prior to which an appropriate diversion plan needs to be developed by qualified third party consultants.

Further geotechnical, hydrological and environmental studies will be required before the Cimpur River diversion can be undertaken in Year 3 of the mining sequence as the river is used as a local water supply for a village located downstream. It is recognised that this activity could cause local social issues. Therefore, the river diversion planning would include remedial measures such as establishing alternative water supply for the affected village, such as water bores and community water tanks and as necessary, use of water tankers to provide water from upstream (if practicable) as temporary measures until the diversion channel is established and any related sedimentation issues are diminished.

For the current level of study of this Report, “water management” is restricted to surface water management which includes:

- Minimising surface water flows entering the pits using earth bunding;
- Pit dewatering by pumping;
- Allowance for water drainage around waste dumps; and
- Construction of sediment ponds to trap suspended solids before discharge from the site.

### 5.10.5 ROM Coal Crushing and Stockpiling

The ROM Coal Handling Facilities (“CHF”) facility for the Riau-1 MMPP will consist of ROM coal stockpiling, 2 x 100 t capacity hoppers, 2 x 300 tph crushers and stockpile conveyors (which constitute the “battery limit” of mining) to deliver coal to MMPP product stockpiles. All coal will be crushed to minus 50 mm with a peak crushing capacity of 3.5 Mtpa.

A 30,000 t stockpile capacity is currently installed, while an upgraded capacity of 150,000 t is planned to be operated from 2018 onwards. Separate smaller capacity ROM stockpiles to handle Seam M5 and Seam M7 coal for smaller third party contracts will be established at Port KBS on the Pangabuan River with 300 tph crushing capacity. The location of this facility is shown in the previous **Figure ES 1**.

### 5.10.6 Coal Transport

Mined coal for the MMPP will be delivered directly from the pit hopper where it will be crushed and conveyed directly to the MMPP.

Coal for third party will be transported by a 55 t coal haul trucks from the pit to the ROM stockpile. The coal will be barged by using a 1,000 tph barge loading conveyor (“**BLC**”) to a maximum of 6,000 tonnes barge size.

## 5.11 Mine Rehabilitation

### 5.11.1 Waste Dump Treatment

Dump design geometry has been evaluated by the geotechnical consultant (see previous **Section 5.7.1**). However, NRM has taken a conservative approach in its design of the dump area, adopting a gentler degree of overall slope and a wider berm width. Final outer slopes will be 17 degrees, constructed in lifts of approximately 10 vertical meters in height. Each 10 m lift will be set back from the lift below in order to establish a 20 m width berm, which will host a berm drain. A bund will be constructed around the outer edge of the berm to retain extreme rainfall runoff events. The need to encapsulate PAF waste in the dumps has been mentioned previously in **Section 5.7.3**.

Drains will be constructed along the berms, which will intercept runoff from the outer face of each lift. The dimensions and gradient of these berms will be adequate to handle a 1 in 100 year rainfall event. The berm drains will exit into either a grassed waterway or a rock stabilised drains that will discharge into settlement ponds. The settlement ponds will have provision to periodically release water into existing natural waterways once water quality criteria have been met.

The drainage system for the dump surface will be constructed progressively with the dump construction. Grassed waterways will be constructed to intercept runoff and convey it to main rock stabilised drains on the outer slopes, and ultimately into sedimentation dams and existing natural watercourses.

### 5.11.2 Final Landforms and Voids

It is proposed to construct final highwalls to a safe configuration and allow the remaining 288 Ha pit voids covering an area of approximately 40 Ha in Pit North and approximately 248 Ha in Pit South, which will fill naturally with groundwater to the level of the local water table. The area

would be demarcated with closed access ramps and appropriate signage erected in prominent locations.

Any coal in the highwall would be covered with spoil to prevent oxidation, spontaneous combustion and contamination issues.

#### 5.11.3 *Topsoiling*

Once the waste dump has reached its design dimension, the outer slopes and berms of the dump will be progressively covered with topsoil and re-vegetated. Prior to the spreading of topsoil, the waste material will be prepared by excavation of broad, shallow waterways and the reshaping of the surface to produce low angle longitudinal flow path grades. The runoff from the re-shaped area will be directed into sediment ponds.

Compaction has been identified as being a major factor in not achieving suitable post mining land productivity when rehabilitating ground after mining. The reshaped surface will be deep ripped where required to remove the compaction from the dumping operation. The surface will then be re-graded with a dozer to allow access for the equipment to re-spread the soil profile materials.

Topsoil spreading techniques will be developed that minimise the compaction of the soil profile. These techniques will be confirmed in the relevant Plan of Operations.

#### 5.11.4 *Re-vegetation*

The outer slopes of the dumps will be seeded with a mixture of native and introduced grasses and legumes as well as a mixture of indigenous trees and shrubs. The tree seeds and grass seeds will be planted in a configuration that will reduce the initial competition between the germinating tree seeds.

Grasses and legumes will assist in penetrating the soil profile, thereby providing organic matter for natural biological activity and the improvement of soil structure. The drainage waterways on the dumps will be planted with grasses suited to waterways in order to provide erosion protection as soon as possible.

#### 5.11.5 *Water Treatment*

Potable water requirements for camps and offices are estimated at 25 m<sup>3</sup> per day. Raw water supply to the water treatment plant could be sourced from either the Cimpur River or from the MMPP water supply to be sourced from the Indragiri River approximately 20 km from the proposed MMPP site if supply from the Cimpur River is inadequate during prolonged dry seasons. The system will include river pumps, piping to the treatment plant, water purification via a series of clarifiers, multi-media, iron and active carbon filters to remove sediment, coli-form, iron and magnesium and storage tanks for the storage of treated water.

Water for industrial use including workshops and wash-bays will be collected from the clean water catchments and will require limited treatment to remove coarse sediment. Water trucks can utilise raw water directly for their source.

## 5.12 Infrastructure

The site infrastructure will include workshops, office and associated infrastructure. Infrastructure to support Mining and Coal Handling operations has been scoped and costed by the Coal Reserves Consultant based on experience in previous coal operations. Such facilities will be developed in the Mine, CHF, and Camp areas.

Mine site facilities will include:

- Administrative Offices;
- Heavy and Light Vehicle Workshops;
- Wash-down bays;
- Fuel (1.5 ML) and Oil Storage;
- Warehousing for Parts and tyres;
- Medical and Emergency Response Centres; and
- Power Generation House.

Coal Handling Facilities (CHF) will consist of:

- ROM stockpiles;
- 2 x 100 t capacity hoppers;
- 2 x 300 tph crusher and stockpile conveyors;
- Product stockpiles; and
- Power Generator House.

Camp Facilities will consist of:

- Separate Staff and Wages accommodation;
- Kitchen and Mess facilities;
- Ablutions and Laundry;
- Recreational and Mosque facilities;
- Water and Sewerage Treatment Plants; and
- Power Generator House.

The preliminary mine layout of the Project is presented in **Figure 5-17**. It is recognized that further detailed site planning is required pending award of the Riau-1 contract.

## 5.13 Operating and Capital Costs

### 5.13.1 Operating Costs

In order to develop realistic OPEX inputs for the Optimizer a conceptual cost model that represented the Project was developed. Based on this conceptual cost model, the Optimizer operating cost inputs were derived. No capital expenses were included in the Optimizer inputs. As the cost inputs adopted assumed a contractor operation, mobile fleet capital costs are included in operating costs. Key operating costs are shown previously in **Table 5-1**.

### 5.13.2 Capital Costs

PFS CAPEX estimates were developed by the Client and include Pre-Operational Works, Infrastructure, Mining Equipment, Fixed Plant, Coal Haul Road Construction, River and Road Diversions and allowances for working capital. **Table 5-8** below summarises capital costs for the

Riau-1 MMPP adopted in the mine financial model. The capital cost related to the other coal third party requirement is presented in **Table 5-9**.

**Table 5-8 Capital Costs Summary – Riau-1 MMPP**

Description	Unit	Amount
<b>1. Establishment</b>	<b>USD M</b>	<b>10.4</b>
Mobilisation Mining Owner	USD M	0.2
Owner Establishment	USD M	1.3
Land Compensation	USD M	8.9
<b>2. Development</b>	<b>USD M</b>	<b>26.9</b>
Owner Cost & Project Delivery Cost	USD M	1.3
Coal Handling Processing	USD M	16.2
Site Development	USD M	4.4
Facilities and Infrastructure	USD M	4.9
<b>3. Replacement</b>	<b>USD M</b>	<b>15.7</b>
<b>Total</b>	<b>USD M</b>	<b>52.9</b>

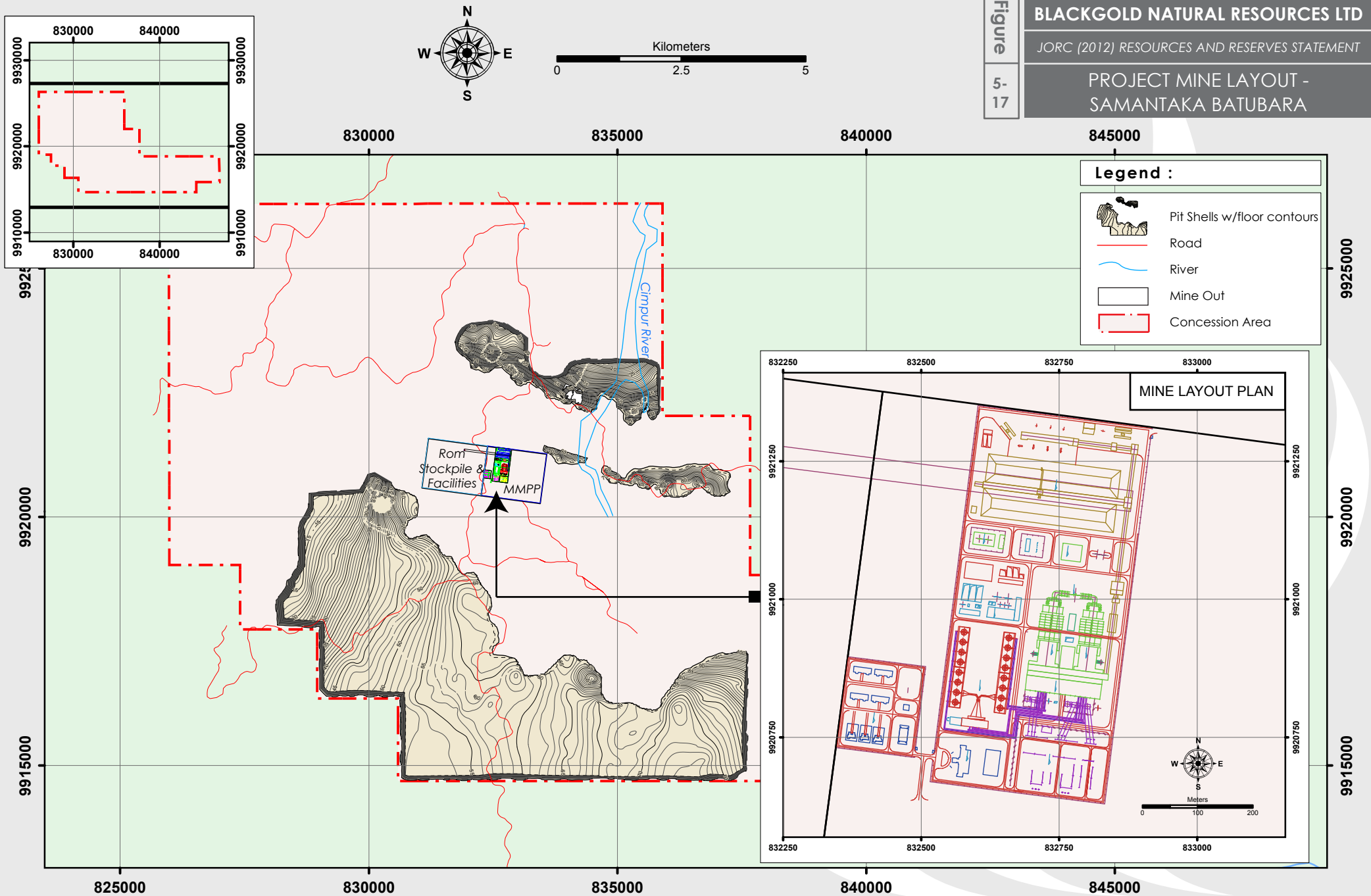
**Table 5-9 Capital Costs Summary – Other Coal Third Parties**

Description	Unit	Amount
Permits for Jetty	USD M	0.6
Land acquisition	USD M	0.6
Permits IPPKH for rest of mine area	USD M	1.5
Permits IUP (Dead rent)	USD M	0.4
Reclamation Cost	USD M	0.8
Professional Fee (Coal Resources and Reserves updates)	USD M	0.9
Contractor Facilities (built by Owner)	USD M	0.5
Company Infrastructure	USD M	0.9
Access roads, LV roads	USD M	1.0
Contractor Mobilisation	USD M	0.1
<b>Total</b>	<b>USD M</b>	<b>7.3</b>

The Consultant has compared current CAPEX estimates with those presented in the previous Statement. It should be noted that Riau-1 CAPEX estimates have increased by USD 0.1 M within the category of Owner costs and Project delivery costs while third party CAPEX estimates have decreased by USD 0.2 M with minor variances in the categories for permits for the jetty and IPPKH, professional fees for Coal Resource and Reserve consultants and Company infrastructure. These changes are as per the advice of the Client and are not considered material by the Consultant.

PROJECT MINE LAYOUT -  
SAMANTAKA BATUBARA

Figure  
5-  
17



## 5.14 Marketing and Product Coal Specifications

The coal produced is a low energy thermal lignite coal. There are 2 (two) coal product's specifications marketable within the Project:

- Seam M7

Seam M7 will be dedicated for the Tenayan Power Plant coal supply contract with the total of 2.5 Mt coal requirements for 5 years period of coal delivery. Seam M7 coal specifications are as follow: TM 40.3% (ar), IM 15.1% (ar), Ash 7.7% (ar), TS 0.14% (ar) and CV 3,610 kcal/kg (gar); and

- Seam M3, Seam M4 group and Seam M5 group

Seam M3, Seam M4 group and Seam M5 group will be dedicated for SDU, SMS and Riau-1 coal supply contracts with the total of 111.1 Mt coal requirements. The weighted average coal specifications are as follow: TM 44.0% (ar), IM 20.1% (ar), Ash 7.4% (ar), TS 0.17% (ar) and CV 3,400 kcal/kg (gar).

## 5.15 Revenue

Revenue per product tonne is based on the agreed contracts between PTSB and coal buyers, or the bidding coal price. The coal price was input into the Optimizer for further mine optimisation process. Riau-1 Project coal price is regulated by the Indonesia government as shown previously in **Table 5-1**

## 5.16 Financial Model

A financial model has been prepared based on the assumed coal revenue (**Section 5.15**), OPEX (**Section 5.13.1**) and Capital Expenditure ("CAPEX") (**Section 5.13.2**)

Numerous economic parameters relating to operations and the options under the study were defined to produce the cost estimate. **Table 5-10** below summarises these parameters.

**Table 5-10 Financial Parameters**

Financial Parameter	Unit	Project
Model Currency	-	USD
US Dollar Exchange Rate	USD/USD	1
Taxation Rate	%	25
Value Added Tax Rate	%	10
Open Pit Royalty Rate	%	3
Discount Rate	%	11.7
Depreciation Mode	-	Straight Line
End of Project Depreciation	-	Write-off

A summary of the financial model, showing key production, OPEX and CAPEX inputs on an annual basis are included in hard copy format in **Appendix P**. It should be noted that the Discount Rate has been increased by GMT from 10.5% per annum to 11.7% in agreement with Client on the basis of perceived increased "Sovereign Risk" in Indonesia. For reasons of Client confidentiality, the full

“working” model is not included in this Statement. Disclosure of any deliverables to any third party must be made in full along with all qualifications, assumptions and disclaimers relating to those deliverables unless GMT agrees otherwise (see **Section 2.5**, Reliance on this Statement).

**The Coal Reserves Competent Person believes that the mine operations are economically viable, however it is understood that the scale of the mine operations to be developed will be principally subject to success in the Riau-1 bid and the construction of the MMPP.**

### 5.17 Environment and Social

Based on the initial survey, land ownership in the area is either under traditional ownership status or is owned by the pulpwood plantation owners, PT Citra Sumber Sejahtera. The records for local land ownership are kept only at the village record, with no official government document available. Most of these lands are inherited by the current owner from their parents or elders. Some of the lands of the Project are used by local villagers as an access to their own farms/plantations.

Land use is designated as a “Production Forest” (Hutan Produksi Tetap or “HP”). The southern part of the concession is overlain by softwood plantation owned by PT Citra Sumber Sejahtera (“CSS”). It is understood that PTSB already has a “Forest Use Permit” (Izin Pinjam Pakai Kawasan Hutan or “IPPKH”) for coal production covering an area of 1,004 Ha in the northern part of the mining concession from the Indonesian Forestry and Environment Ministry, No. SK 797/Menhut-II/2014 dated 24 September 2014. The IPPKH document can be found in **Appendix D**. An application has been submitted to extend the IPPKH to cover the southern part of the concession however, based on information from the Client, the application is ongoing.

The Client has also an approved Analisis Dampak Lingkungan Hidup (“**ANDAL**”) covering the entire concession issued in December 2012 which is a pre-requisite to formal environmental approval, Analisis Mengenai Dampak Lingkungan Hidup (“**AMDAL**”) which is yet to be completed. The ANDAL document is included in **Appendix E**.

GMT is of the opinion that no major risk factors have been identified in terms of environmental or social impact. The only potential issues are in relation to delays in the regulatory process, i.e. completion and approval of the AMDAL, river diversion approval and extension of the IPPKH permit to cover Pit South operations and infrastructure, including the MMPP site. The identified social issues include land compensation and the potential impact of the Cimpur River diversion on downstream village.

### 5.18 Classification

Coal Reserves have been classified based on the confidence of the Coal Resources, the level of detail in the mine planning, and the level of risk associated with the Project. Generally, Indicated Resources have been classified as Probable Reserves and Measured Resources within the pit shells have been classified as Proved Reserves with the exception of areas potentially impacted by the river and road diversions which have been down-graded to Probable status pending completion of more detailed planning. The Coal Reserves down-graded to Probable classification total approximately 39 Mt. This includes Coal Reserves within an area bounded to the east by the RAPP logging road (allowing for a minimum 100 m buffer zone to the west of the logging road). It is estimated 6.4 Mt coal would be sterilised, if the Cimpur river diversion does not proceed.



No Inferred Resources have been used in the Coal Reserves estimate, although minor Inferred coal has been included in the Mineable Pit Shells and the mine schedule.

### 5.19 Internal Reviews

Validation of results were undertaken by the Consultants at the following points:

- Conversion from Minescape to Minex model;
- Optimizer pit shells versus practical pit shells;
- Generation of *in situ* coal volumes and tonnes;
- Generation of working section volumes and tonnes; and
- Generation of Coal Reserves.

The JORC Code 2012 provides guidelines which set out minimum standards, recommendations and guidelines for the Public Reporting of Exploration Results, Mineral Resources and Ore Reserves. Within the code is a “Checklist of Assessment and Reporting Criteria” (Table 1 – JORC Code 2012). This checklist has been used as a systematic method to undertake the review of JORC Code 2012 compliance (see **Appendix F**).

### 5.20 Discussion of Relative Accuracy and Confidence

The difference between the Coal Resources and Coal Reserves are explained by the following:

- Mining losses and dilution have been applied in the estimation of Coal Reserves;
- The Measured and Indicated Coal Resources polygons extend beyond pit limits; and
- Inferred Coal Resources are not included in the Coal Reserves.

### 5.21 Other Relevant Factors

The following list is not exhaustive; however, it outlines the key issues that may impact the mining quantities, economic Pit Shells, Coal Resources and Coal Reserves categorisation in the future:

- Further drilling to identify subcrop areas in the low wall;
- Further detailed Geotechnical, Hydrology and Geohydrological Studies;
- Land access including compensation to landowners and forestry permits;
- Possible relocation of existing villages;
- Cimpur River diversion;
- RAPP logging road diversion;
- Technical study and permits for proposed river diversion;

- Operating costs once actual mining contractor quotations are received;
- Updates to detailed mine planning;
- Future escalation in operating costs, particularly in relation to potential external contractor costs and any rise in fuel costs;
- Future coal prices;
- Changes in government regulations; and
- **The Client being successfully awarded the Riau-1 MMPP contract.**

## 5.22 Statement of Coal Reserves

The Coal Reserves for the Project as of 31 December 2017 totalled 147 Mt, of which 55 Mt is categorised as Proved and 92 Mt as Probable. The Coal Reserves category polygons applied to the major seams are shown in Figure 5-18 to Figure 5-20. Coal Reserves limits for other seam are included in Appendix O.

The Coal Reserves are summarised in Table 5-11. The detailed Coal Reserves by category and by seam are shown in Table 5-12 and Table 5-13 respectively. The Coal Reserves totals have been rounded to the nearest 1 Mt to reflect the order of accuracy of the estimate.

**Table 5-11 Coal Reserves Summary (as at 31 December 2017)**

Pit	Coal Reserves (Mt)			TM % (ar)	IM % (ad)	Ash % (ar)	TS % (ar)	CV kcal/kg (gar)	RD g/cc <i>in situ</i>
	Proved	Probable	Total						
North	3	11	14	45.2	15.0	6.1	0.15	3,290	1.24
South	52	81	133	43.9	20.5	7.5	0.17	3,410	1.20
<b>Total</b>	<b>55</b>	<b>92</b>	<b>147</b>	<b>44.0</b>	<b>20.0</b>	<b>7.3</b>	<b>0.17</b>	<b>3,400</b>	<b>1.21</b>

**Table 5-12 Coal Reserves by Category (as at 31 December 2017)**

Category	Coal Reserves (Mt)	TM % (ar)	IM % (ad)	Ash % (ar)	TS % (ar)	CV kcal/kg (gar)	RD g/cc <i>in situ</i>
Proved	55	43.9	20.4	7.7	0.17	3,410	1.21
Probable	92	44.1	19.7	7.1	0.17	3,390	1.21
<b>Total</b>	<b>147</b>	<b>44.0</b>	<b>20.0</b>	<b>7.3</b>	<b>0.17</b>	<b>3,400</b>	<b>1.21</b>

**Table 5-13 Coal Reserves by Seam (as at 31 December 2017)**

Seam	Coal Reserves (Mt)			TM % (ar)	IM % (ad)	Ash % (ar)	TS % (ar)	CV kcal/kg (gar)	RD g/cc <i>in situ</i>
	Proved	Probable	Total						
M3	-	0.2	0.2	45.1	13.6	9.8	0.21	2,940	1.29
M4U	-	0.1	0.1	44.0	14.5	6.5	0.23	3,340	1.27
M4	-	15.3	15.3	44.4	20.1	8.2	0.17	3,370	1.21
M4L	-	0.1	0.1	43.4	16.1	12.7	0.28	2,790	1.32
M5UU	0.3	-	0.3	46.5	15.4	7.2	0.20	3,110	1.25
M5U	7.3	2.8	10.1	43.9	19.8	8.6	0.18	3,370	1.23
M5UL	0.3	-	0.3	44.6	15.3	10.4	0.23	3,030	1.28
M5	38.3	68.9	107.2	44.0	20.1	7.0	0.17	3,410	1.20
M5LU	0.7	-	0.7	43.5	19.1	8.9	0.21	3,230	1.23
M5L	6.9	2.9	9.8	44.0	20.0	8.0	0.17	3,400	1.22
M5LL	0.7	-	0.7	42.5	20.5	9.8	0.19	3,480	1.23
M7	-	1.5	1.5	40.3	15.1	7.7	0.14	3,610	1.26
<b>Total</b>	<b>55</b>	<b>92</b>	<b>147</b>	<b>44.0</b>	<b>20.0</b>	<b>7.3</b>	<b>0.17</b>	<b>3,400</b>	<b>1.21</b>

### 5.23 Previous Reserves Estimates

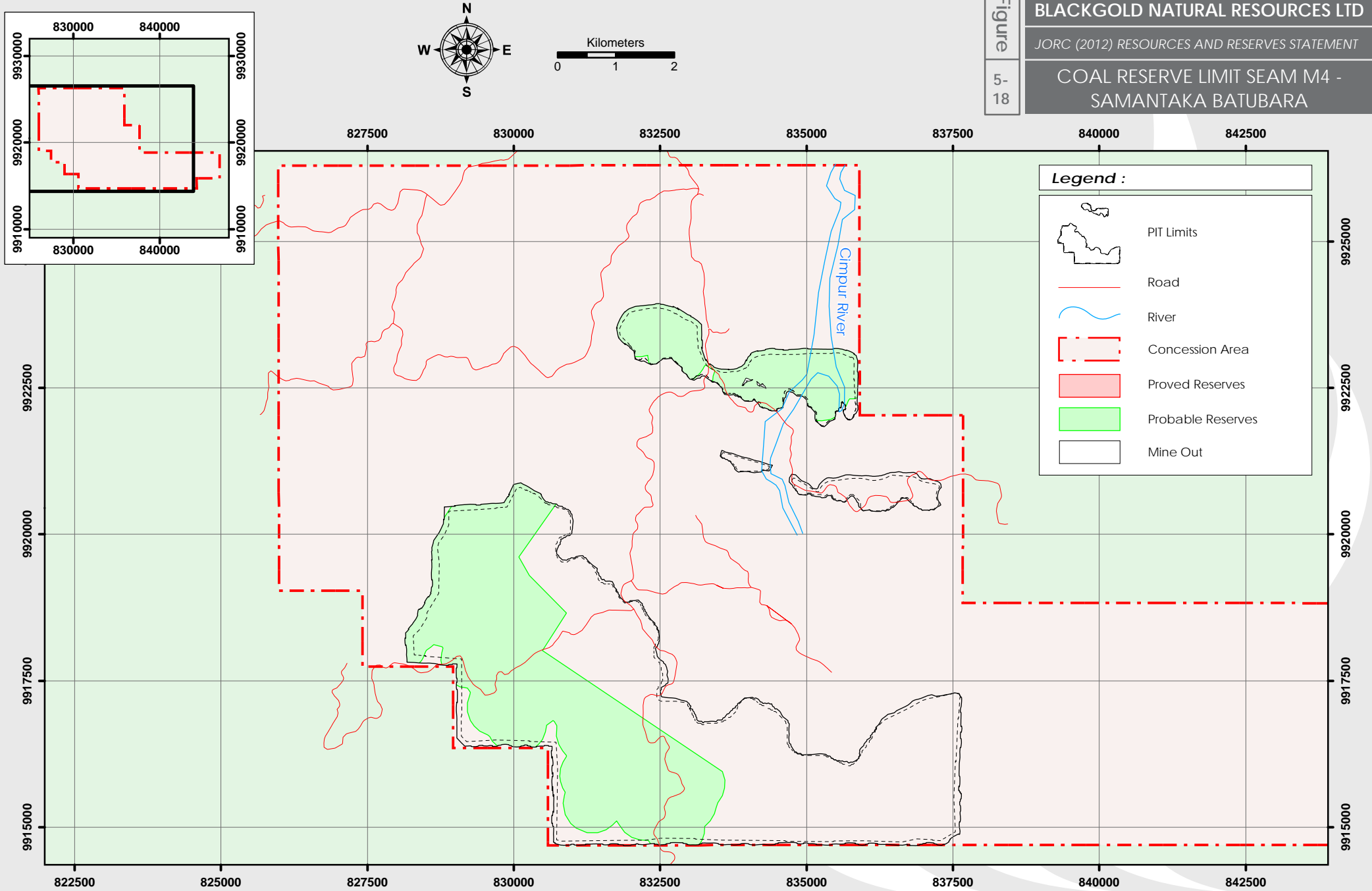
Coal Reserves were estimated for the Project by GMT for the IQPR16 document as at 9 June 2017. The Coal Reserves comparison is presented in **Table 5-14**.

**Table 5-14 Summary Coal Reserves Comparison**

		Coal Reserves (Mt)		
		Proved	Probable	Total
Dec-17	GMT	55	92	147
Jun-17	GMT	55	92	147
<b>Variance</b>		<b>0</b>	<b>0</b>	<b>0</b>
		<b>0%</b>	<b>0%</b>	<b>0%</b>

Coal Reserves totals have been rounded to the second significant figure to reflect the order of accuracy of the estimates and in conformance with the JORC Code 2012 guidelines (Section 25), therefore there is no reported change in the Coal Resources from the previous IQPR16.

Figure 5-18



COAL RESERVE LIMIT SEAM M5 - SAMANTAKA BATUBARA

Figure 5-19

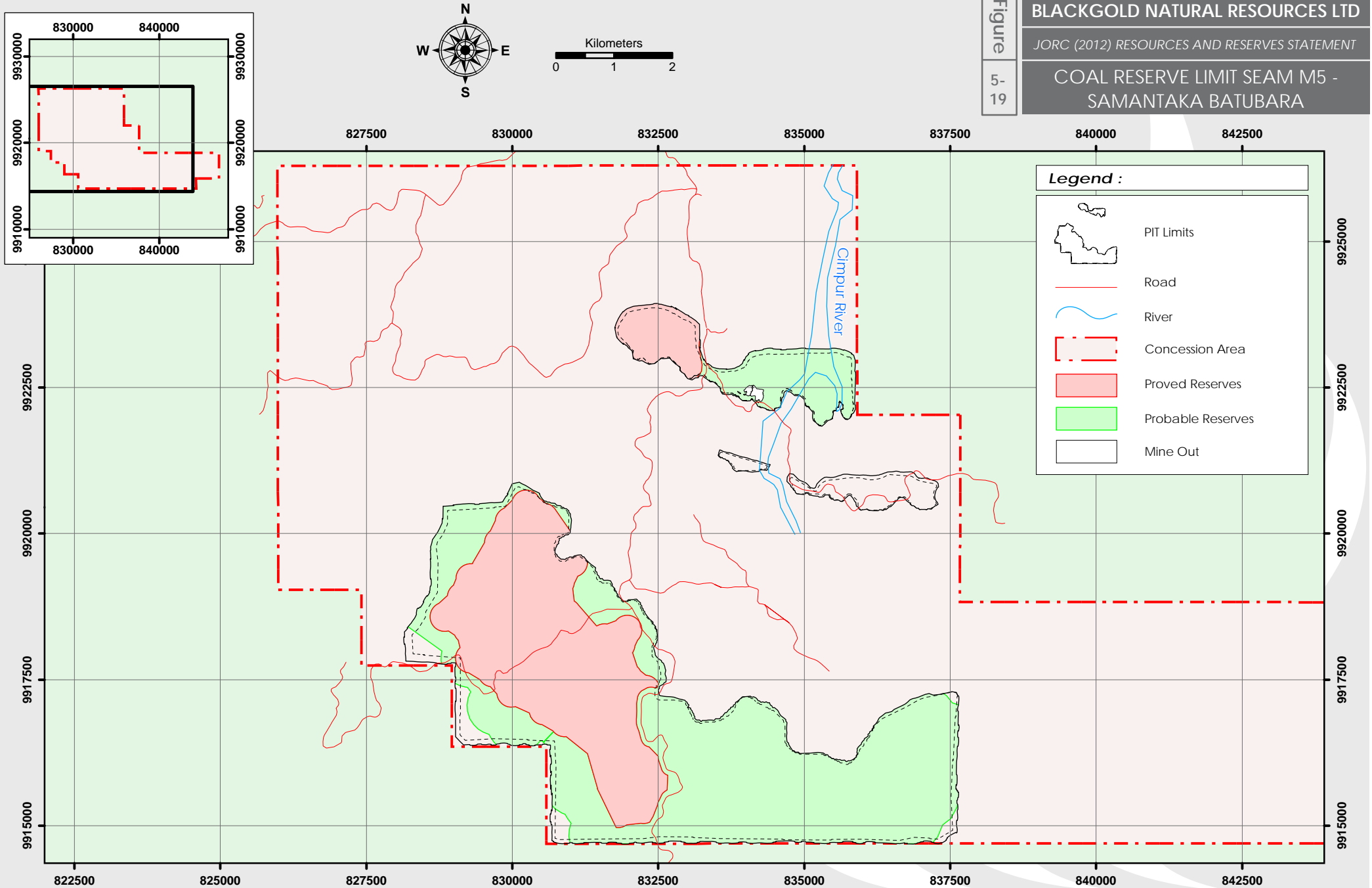
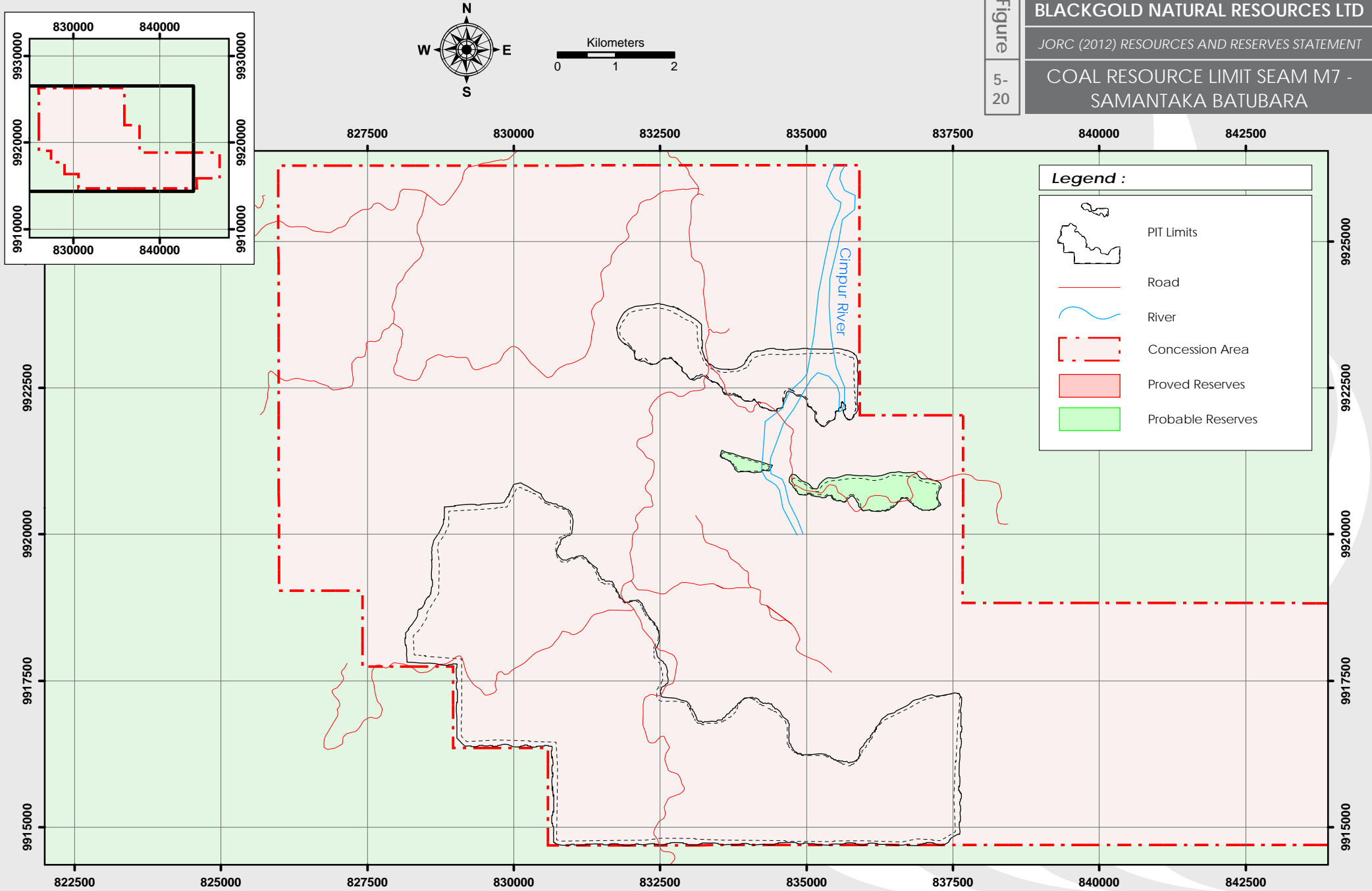


Figure  
5-  
20



**Appendix A List of Abbreviations**

<b>Abbreviation</b>	<b>Meaning</b>
AFT	Ash Fusion Temperatures
ad	Air dried
AMDAL	Analisis Mengenai Dampak Lingkungan Hidup (Environmental permit)
ANDAL	Analisis Dampak Lingkungan Hidup (Environmental impact)
ar	As received
Ash	Ash content
ASTM	American Society for Testing and Materials
AusIMM	Australasian Institute of Mining and Metallurgy
bcm/t	Bank cubic metre per tonne
BEcon	Bachelor of Economics
BESR	Break-Even Stripping Ratio
BLC	Barge loading conveyor
BM	Bachelor of Mining
BNR	BlackGold Natural Resources Limited
BSc	Bachelor of Science
CAPEX	Capital expenditure
CHF	Coal Handling Facility
CnC	Clean and Clear
CV	Calorific Value
daf	Dry ash free
FC	Fixed Carbon
FF	Forcing Factors (as applied in pit optimisation)
gar	Gross as received
Geoservices	PT Geoservices
GMT	PT GMT Indonesia
Guidelines	The Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves, 2014
Ha	Hectare
HGI	Hardgrove Grindability Index
HP	Kutan Produksi (Production forest)
ifSAR	Interferometric Synthetic Aperture Radar
IM	Inherent Moisture
IPPKH	Izin Pinjam Pakai Kawasan Hutan (Forest use area)
ISR	Incremental Stripping Ratio
ITR	Independent Technical Review
IUP	Izin Usaha Pertambangan (Indonesian mining concession)

<b>Abbreviation</b>	<b>Meaning</b>
JORC Code 2012	2012 Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia
kcal/kg	Unit of energy (kilocalorie) per kilogram
km	Kilometre(s)
kt	Thousand tonnes
ktpa	Thousand tonnes per annum
LOM	Life of Mine
m	Metre
Mis	Moisture <i>in situ</i>
MRL	CV Mitra Riau Lestari
MSL	Mean Sea Level
Minescape	Software of geological model
Minex	Software of geological model
MMPP	Mine-Mouth Power Plant
Mt	Million metric tonnes
Mtpa	Million tonnes per annum
NRM	PT New Resource Mine Consulting
OPEX	Operating Expenditure
PFS	Pre-feasibility Study
PTSB	PT Samantaka Batubara
QCI	PT Quantus Consultants Indonesia
RAPP	PT Riau Andalan Pulp and Paper
RD	Relative Density
RL	Reduced Level
ROM	Run-of-Mine
Seam	A stratum or bed of coal or other mineral; generally applied to large deposits of coal.
SGX	Singapore Stock Exchange
SoW	Scope of Work
SR	Stripping Ratio
Sucofindo	PT Sucofindo
t	Metric tonne
TE	Trace Elements
TM	Total Moisture
tph	Tonnes per hour
TS	Total Sulphur



**Appendix B Concession Document – Mining License (IUP)**



## BUPATI INDRAGIRI HULU

KEPUTUSAN BUPATI INDRAGIRI HULU

Nomor : 00 /IUP/545-02/II/2013

TENTANG :

PERSETUJUAN PENINGKATAN IZIN USAHA PERTAMBANGAN EKSPLORASI  
MENJADI IZIN USAHA PERTAMBANGAN OPERASI PRODUKSI  
KEPADA PT. SAMANTAKA BATUBARA

BUPATI INDRAGIRI HULU

- Membaca : surat direktur PT. Samantaka Batubara Nomor : 043/SBB/LGL/VIII/2012 perihal permohonan peningkatan IUP eksplorasi menjadi IUP Operasi Produksi;
- Menimbang : 1. bahwa berdasarkan hasil evaluasi terhadap aspek administrasi, teknik dan lingkungan terhadap permohonan PT. Samantaka Batubara telah memenuhi syarat diberikan persetujuan peningkatan kegiatan IUP Eksplorasi menjadi IUP Operasi Produksi;
2. Surat Keputusan Bupati Indragiri Hulu Nomor 506 Tahun 2012 tanggal 28 Desember 2012 tentang Kelayakan Lingkungan Hidup Rencana Kegiatan Penambangan Batubara seluas ±19.040 Ha di Kecamatan Peranap (Desa Pauh Ranap dan Gumanti), Kec. Batang Peranap (Desa Punt Kayu), Kec. Rakit Kulim (Desa Talang Durian Cacar) Kab. Inhu Propinsi Riau oleh PT. Samantaka Batubara .
- Mengingat : 1. Undang-undang Nomor 6 Tahun 1965 tentang Pembentukan Kabupaten Daerah Tingkat II Indragiri Hulu dan Kabupaten Daerah Tingkat II Indragiri Hilir;
2. Undang-undang Nomor 32 Tahun 1999 tentang Perlindungan dan Pengelolaan Lingkungan Hidup;
3. Undang-undang Nomor 53 Tahun 1999 tentang Pembentukan Kabupaten Pelalawan, Rokan Hulu, Rokan Hilir, Siak, Karimun, Natuna, Kuantan Singingi dan Kota Batam;
4. Undang-undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah (LN Tahun 2004 Nomor 125, TLN 4427), sebagaimana telah diubah dengan Undang-undang Nomor 8 Tahun 2005 tentang Penetapan Peraturan Pemerintah Pengganti Undang-undang Nomor 3 Tahun 2005 tentang Perubahan Atas Undang-undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah menjadi Undang-undang;
5. Undang-undang Nomor 25 Tahun 2007 tentang Penanaman Modal;
6. Undang-undang Nomor 26 Tahun 2007 tentang Penataan Ruang;
7. Undang-undang Nomor 4 Tahun 2009 tentang Pertambangan Mineral dan Batubara;
8. Peraturan Pemerintah Nomor 27 Tahun 1999 tentang Analisis Mengenai Dampak Lingkungan Hidup;
9. Peraturan Pemerintah Nomor 38 Tahun 2007 tentang Pembagian Urusan Antara Pemerintah Pusat, Pemerintah Daerah Provinsi, Pemerintah Daerah Kabupaten/Kota;
10. Peraturan Pemerintah Nomor 26 Tahun 2008 tentang Rencana Tata Ruang Wilayah Nasional;
11. Peraturan Pemerintah Nomor 23 Tahun 2010 tentang Kegiatan Usaha Pertambangan Mineral dan Batubara;
12. Peraturan Daerah Kabupaten Indragiri Hulu Nomor 18 Tahun 2008 tentang Organisasi Perangkat Daerah Kabupaten Indragiri Hulu;

13. Peraturan Bupati Indragiri Hulu Nomor 13 Tahun 2008 tentang Tugas Pokok, Fungsi dan Uraian Tugas Dinas Daerah Kabupaten Indragiri Hulu.
14. Keputusan Bupati Indragiri Hulu Nomor 03/IUP/545-02/II/2011 tentang Persetujuan Izin Usaha Pertambangan Eksplorasi kepada PT. Samantaka Batubara

Memutuskan :

Menetapkan : KEPUTUSAN BUPATI INDRAGIRI HULU TENTANG PERSETUJUAN PENINGKATAN IUP EKSPLORASI MENJADI IUP OPERASI PRODUKSI KEPADA PT. SAMANTAKA BATUBARA

PERTAMA : Memberikan Izin Usaha Pertambangan Operasi Produksi kepada :

Nama Perusahaan	:	PT. Samantaka Batubara
Nama Direktur	:	Andreas Rinaldi
Nama Komisaris Utama	:	Philip Cecil Rickard
Alamat Kantor	:	Graha BIP Lantai 8 Jl. Gatot Subroto Kav. 23 Jakarta
Nomor Telp. Kantor	:	021- 7354780
Nomor Fax. Kantor	:	021- 7354936
Pemegang Saham	:	
1. Nilai Pemegang Saham	:	99% (persen)
Nama Pemegang Saham	:	PT.BlackGold Asia Resources Pte Ltd
Pekerjaan	:	-
Alamat	:	Graha BIP Lantai 8 Jl. Gatot Subroto Kav. 23 Jakarta Selatan
2. Nilai Pemegang Saham	:	1 % (persen)
Nama Pemegang Saham	:	PT. Serasi Duta Pratama
Pekerjaan	:	-
Alamat	:	Graha BIP Lantai 8 Jl. Gatot Subroto Kav. 23 Jakarta Selatan
Komoditas	:	Batubara
Lokasi Penambangan	:	
Kecamatan	:	Batang Peranap, Peranap dan Rakit Kulim
Kabupaten	:	Indragiri Hulu
Provinsi	:	Riau
Kode Wilayah	:	BB004/INHU
Luas	:	15.000 Ha

Dengan peta dan daftar koordinat wilayah IUP yang diterbitkan oleh Bupati Indragiri Hulu sebagaimana tercantum dalam Lampiran I dan Lampiran II keputusan ini.

Jangka waktu berlakunya IUP Operasi Produksi : 10 (sepuluh) tahun

- KEDUA : Pemegang IUP Operasi Produksi mempunyai hak untuk melakukan kegiatan konstruksi, produksi, pengangkutan dan penjualan serta pengolahan dan pemurnian dalam wilayah IUP untuk jangka waktu 10 (sepuluh) tahun terhitung mulai tanggal ditetapkannya keputusan ini.
- KETIGA : IUP Operasi Produksi ini dilarang dipindah-tangankan kepada pihak lain tanpa persetujuan Bupati Indragiri Hulu.
- KEEMPAT : PT. Samantaka Batubara sebagai pemegang IUP Operasi Produksi dalam melaksanakan kegiatannya mempunyai hak dan kewajiban sebagaimana tercantum dalam Lampiran III Keputusan ini.
- KELIMA : Selambat-lambatnya 60 (enam puluh) hari kerja setelah diterbitkannya Keputusan ini sudah harus menyampaikan Rencana Kerja dan Anggaran Biaya (RKAB) kepada Bupati Indragiri Hulu cq. Kepala Dinas Pertambangan dan Energi Kabupaten Indragiri Hulu.

- KEENAM : Terhitung sejak 90 (sembilan puluh) hari kerja persetujuan Rencana Kerja dan Anggaran Biaya (RKAB) sebagaimana dimaksud dalam Diktum Kelima pemegang IUP Operasi Produksi sudah harus memulai aktifitas di lapangan
- KETUJUHH : Tanpa mengurangi ketentuan peraturan perundang-undangan, maka IUP Operasi Produksi ini dapat diberhentikan sementara, dicabut atau dibatalkan apabila pemegang IUP Operasi Produksi tidak memenuhi kewajiban dan larangan sebagaimana dimaksud dalam Diktum Ketiga, Keempat dan Kelima dalam Keputusan ini.
- KEDELAPAN : Dengan ditetapkannya keputusan ini, maka Keputusan Bupati Indragiri Hulu Nomor : 03 /IUP/545-02/VII/2011 tanggal 28 Februari 2011 tentang Pemberian izin Usaha Pertambangan Eksplorasi Kepada PT. Samantaka Batubara dinyatakan tidak berlaku lagi.
- KESEMBILAN : Keputusan Bupati ini mulai berlaku pada tanggal ditetapkan, dengan ketentuan apabila kemudian hari terdapat kekeliruan akan diadakan perubahan sebagaimana mestinya.

Ditetapkan di : Rengat  
Pada tanggal : 26 Februari 2013

  
BUPATI INDRAGIRI HULU,  
  
YOPI ARIANTO, SE

Tembusan :

1. Menteri Energi dan Sumber Daya Mineral.
2. Menteri Keuangan.
3. Sekretaris Jenderal Departemen Energi dan Sumber Daya Mineral.
4. Inspektur Jenderal Departemen Energi dan Sumber Daya Mineral.
5. Direktur Jenderal Pajak, Departemen Keuangan.
6. Direktur Jenderal Perbendaharaan, Departemen Keuangan.
7. Direktur Jenderal Pendapatan Daerah, Departemen Dalam Negeri.
8. Gubernur Riau.
9. Kepala Biro Hukum dan Humas Setjen Departemen Energi dan Sumber Daya Mineral.
10. Kepala Biro Keuangan Setjen Departemen Energi dan Sumber Daya Mineral.
11. Sekretaris Direktorat Jenderal Mineral, Batubara dan Panas Bumi.
12. Direktur Teknik dan Lingkungan Mineral, Batubara dan Panas Bumi.
13. Direktur Pembinaan Program Mineral, Batubara dan Panas Bumi.
14. Direktur Pembinaan Pengusahaan Mineral dan Batubara.
15. Direktur Pajak Bumi dan Bangunan, Departemen Keuangan.
16. Kepala Dinas Pertambangan dan Energi Provinsi Riau.
17. Camat Batang Peranap.
18. Camat Peranap
19. Camat Rakit Kulim

MENCETAHUI:  
  
DINAS PERTAMBANGAN  
DAN ENERGI  
KABUPATEN INDRAGIRI HULU  
Riau  
NIP. 19641231 199203 2 035  
  
SYAFRUDAWATI

LAMPIRAN I :

KEPUTUSAN BUPATI INDRAGIRI HULU

NOMOR : 001 /UP/545-02/III/2013

TANGGAL : 26 FEBRUARI 2013

KUANTAN SINGINGI

B. Peranap

B. Pantai

B. Palangrap

Batang Peranap

INDRAGIRI HULU

Peranap

Rakit Kulim

Batang Cenaku

S. Cenoko



UTARA

SKALA 1 : 150.000

Provinsi JAMBI

PETA WILAYAH IZIN USAHA PERTAMBANGAN OPERASI PRODUKSI

DIPERUNTUKKAN BAGI : PT. SAMANTAKA BATUBARA

TANGGAL PROSES : JANUARI 2013

KODE WILAYAH : BB004/INHU

LOKASI DAN KEGIATAN

PROVINSI : RIAU

KABUPATEN : INDRAGIRI HULU

KECAMATAN : BATANG PERANAP, PERANAP, RAKIT KULIM

KOMODITAS TAMBANG : BATUBARA

TAHAP : OPERASI PRODUKSI

LUAS WILAYAH : 15.000 Ha.



BUPATI INDRAGIRI HULU,

YOPI ARIANTO, SE.

LAMPIRAN II : Keputusan Bupati Indragiri Hulu  
 Nomor : 001/IUP/545-02/II/2013  
 Tanggal : 26 Februari 2013

LAMPIRAN DAFTAR KOORDINAT

Nama Perusahaan : PT. SAMANTAKA BATUBARA  
 Lokasi  
 • Provinsi : Riau  
 • Kabupaten : Indragiri Hulu  
 • Kecamatan : Peranap dan Batang Peranap  
 • Komoditas : Batubara  
 • Kode Wilayah : BB004/INHU  
 Luas Wilayah : ± 15.000 Ha  
 IUP Eksplorasi

No.	BUJUR TIMUR ( BT )			LINTANG SELATAN ( LS )		
	o	'	"	o	'	"
1.	101	55	42.65	-0	43	53.62
2.	101	56	28.73	-0	43	53.62
3.	101	56	28.73	-0	44	35.68
4.	101	57	18.84	-0	44	35.68
5.	101	57	18.84	-0	45	20.86
6.	101	58	11.20	-0	45	20.86
7.	101	58	11.20	-0	46	14.78
8.	102	5	33.26	-0	46	14.33
9.	102	5	32.81	-0	45	36.75
10.	102	6	59.61	-0	45	36.75
11.	102	6	58.55	-0	44	0.14
12.	102	1	60.00	-0	43	60.00
13.	102	1	60.00	-0	42	16.00
14.	102	1	3.00	-0	42	16.00
15.	102	1	2.78	-0	39	57.11
16.	101	55	42.09	-0	39	57.59



BUPATI INDRAGIRI HULU,

YOPI ARIANTO, SE

## LAMPIRAN III

### HAK DAN KEWAJIBAN :

#### A. HAK

1. Memasuki wilayah IUP sesuai dengan peta dan daftar koordinat.
2. Melaksanakan kegiatan IUP Operasi Produksi (konstruksi, produksi, pengolahan/pemurnian, pengangkutan dan penjualan) sesuai dengan ketentuan peraturan perundang-undangan.
3. Membangun fasilitas penunjang kegiatan IUP Operasi Produksi (konstruksi, produksi, pengolahan/pemurnian, pengangkutan dan penjualan) di dalam maupun di luar wilayah IUP.
4. Dapat menghentikan sewaktu-waktu kegiatan IUP Operasi Produksi (konstruksi, produksi, pengolahan/pemurnian, pengangkutan dan penjualan) di setiap bagian atau beberapa wilayah IUP dengan alasan bahwa kelanjutan dari kegiatan IUP Operasi Produksi (konstruksi, produksi, pengolahan/pemurnian, pengangkutan dan penjualan) tersebut tidak layak atau praktis secara komersial maupun keadaan kahar, keadaan yang menghalangi sehingga menimbulkan penghentian sebagian atau seluruh kegiatan usaha pertambangan.
5. Mengajukan permohonan pengusahaan mineral lain yang bukan merupakan asosiasi mineral utama yang diketemukan dalam wilayah IUP.
6. Mengajukan pernyataan tidak berminat terhadap pengusahaan mineral lain yang bukan merupakan asosiasi mineral utama yang diketemukan dalam wilayah IUP.
7. Memanfaatkan sarana dan prasarana umum untuk keperluan kegiatan IUP Operasi Produksi (konstruksi, produksi, pengolahan/pemurnian, pengangkutan dan penjualan) setelah memenuhi ketentuan peraturan perundang-undangan.
8. Dapat melakukan kerjasama dengan perusahaan lain dalam rangka penggunaan setiap fasilitas yang dimiliki oleh perusahaan lain baik yang berafiliasi dengan perusahaan atau tidak, sesuai dengan ketentuan peraturan perundang-undangan.
9. Dapat membangun sarana dan prasarana pada wilayah IUP lain setelah mendapat izin dari pemegang IUP bersangkutan.

#### A. KEWAJIBAN

1. Memilih yurisdiksi pada Pengadilan Negeri tempat dimana lokasi wilayah IUP berada.
2. Selambat-lambatnya 6 (enam) bulan setelah ditetapkan keputusan ini, pemegang IUP Operasi Produksi sudah melaksanakan dan menyampaikan laporan pematokan batas wilayah IUP Operasi Produksi kepada Bupati Indragiri Hulu cq. Kepala Dinas Pertambangan dan Energi Kabupaten Indragiri Hulu.
3. Hubungan antara pemegang IUP Operasi Produksi dengan pihak ketiga menjadi tanggung jawab pemegang IUP sesuai dengan aturan perundang-undangan.
4. Melaporkan rencana investasi
5. Menyampaikan Rencana Penutupan Tambang (RPT) sebelum kegiatan produksi berakhir dan menempatkan jaminan penutupan tambang sesuai ketentuan perundang-undangan yang berlaku.
6. Menyampaikan rencana reklamasi dan menempatkan jaminan reklamasi sebelum uji
7. Menyampaikan Rencana Kerja dan Anggaran Biaya (RKAB) selambat-lambatnya pada bulan November yang meliputi rencana tahun depan dan realisasi kegiatan setiap tahun berjalan kepada Bupati Indragiri Hulu cq. Kepala Dinas Pertambangan dan Energi Kabupaten Indragiri Hulu dengan tembusan kepada menteri dan Gubernur Riau
8. Menyampaikan laporan kegiatan triwulan yang harus diserahkan dalam jangka waktu 30 (tigapuluh) hari setelah akhir dari triwulan takwin secara berkala kepada Bupati Indragiri Hulu .
9. Apabila ketentuan batas waktu penyampaian RKAB dan pelaporan sebagaimana dimaksud pada angka 6 (enam) dan angka 7 (tujuh) tersebut diatas terlampaui, maka pemegang IUP Operasi Produksi akan diberikan peringatan tertulis.
10. Menyampaikan laporan produksi dan pemasaran sesuai dengan ketentuan perundang undangan

11. Menyampaikan rencana pengembangan dan pemberdayaan masyarakat sekitar wilayah pertambangan serta melaporkan pelaksanaan secara berkala kepada Bupati Indragiri cq. Kepala Dinas Pertambangan dan Energi Kabupaten Indragiri Hulu .
12. Menyampaikan Rencana Kegiatan Tahunan Teknis dan Lingkungan (RKTTL) setiap tahun sebelum penyampaian RKAB kepada Bupati Indragiri cq. Kepala Dinas Pertambangan dan Energi Kabupaten Indragiri Hulu.
13. Mematuhi ketentuan perpajakan sesuai ketentuan peraturan perundang-undangan.
14. Membayar Iuran Tetap setiap tahun dan membayar Iuran Produksi/Royalty sesuai dengan ketentuan perundang-undangan Iuran Produksi.
15. Mengangkat seorang Kepala Teknik Tambang (KTT) yang bertanggung jawab atas kegiatan IUP Operasi Produksi, (Konstruksi, Produksi, Pengolahan/Pemurnian, Pengangkutan dan Penjualan ), keselamatan dan kesehatan kerja pertambangan serta pengelolaan lingkungan pertambangan
16. Permohonan perpanjangan IUP Operasi Produksi diajukan 6 (enam) bulan sebelum berakhirnya masa izin dengan disertai pemenuhan persyaratan.
17. Kelalaian atas ketentuan tersebut pada butir 16, mengakibatkan IUP Operasi Produksi berakhir menurut hukum dan segala usaha pertambangan dihentikan. Dalam jangka waktu paling lama 6 (enam) bulan sejak berakhirnya keputusan ini pemegang IUP harus mengangkat keluar segala sesuatu yang menjadi miliknya, kecuali benda-benda/bangunan- bangunan yang dipergunakan untuk kepentingan umum.
18. Apabila dalam jangka waktu sebagaimana dimaksud dalam butir 17, pemegang IUP Operasi Produksi tidak melaksanakan maka barang/asset pemegang IUP menjadi milik pemerintah.
19. Pemegang IUP Operasi Produksi membolehkan dan menerima kedatangan petugas dari pemerintah sewaktu-waktu melakukan pemeriksaan dan harus menyediakan data-data dan keterangan apabila diperlukan.
20. Mengutamakan pemanfaatan tenaga kerja setempat, barang dan jasa dalam negeri sesuai dengan peraturan perundang-undangan.
21. Mengutamakan pembelian dalam negeri dari pengusaha lokal yang ada di daerah tersebut sesuai dengan ketentuan peraturan perundang-undangan.
22. Mengutamakan seoptimal mungkin penggunaan perusahaan jasa pertambangan lokal dan nasional serta melaporkan pelaksanaannya.
23. Dilarang melibatkan anak perusahaan dan atau afiliasinya dalam bidang usaha jasa pertambangan di wilayah IUP yang diusahakannya, kecuali dengan izin Menteri.
24. Menyerahkan seluruh data hasil kegiatan IUP Operasi Produksi kepada Bupati Indragiri Hulu cq. Kepala Dinas Pertambangan dan Energi kabupaten Indragiri Hulu dengan tembusan kepada Menteri dan Gubernur Riau.
25. Menyampaikan proposal yng sekurang-kurangnya menggambarkan aspek teknis, keuangan, produksi dan pemasaran serta lingkungan sebagai persyaratan pengajuan perluasan konsesi IUP Operasi Produksi
26. Memberikan ganti rugi kepada pemegang hak atas tanah dan tegakan yang terganggu akibat kegiatan IUP Opreasi produksi.
27. Mengutamakan pemenuhan kebutuhan dalam Negeri (DMO) sesuai dengan ketentuan peraturan perundang-undangan.
28. Penjualan produksi kepada afiliasi harus mengacu pada harga pasar
29. Kontrak penjualan jangka panjang (minimal 3 tahun) harus mendapat persetujuan terlebih dahulu dari Menteri.
30. Perusahaan wajib mengolah produksinya di dalam negeri.
31. Pembangunan sarana dan prasarana pada kegiatan konstruksi antara lain meliputi :
  - a. Fasilitas-fasilitas dan peralatan pertambangan
  - b. Instalasi dan peralatan peningkatan mutu batubara
  - c. Fasilitas Bandar yang dapat meliputi dok-dok, pelabuhan, dermaga, jembatan, tongkang, pemecah air, fasilitas terminal, bengkel, daerah penimbunan, gudang dan peralatan bongkar muat
  - d. Fasilitas transportasi dan komunikasi yang dapat meliputi jalan, jembatan, kapal feri, pelabuhan udara, rel, tempat pendaratan pesawat, hangar, garasi, pompa, BBM, fasilitas radio, dan telekomunikasi, serta fasilitas jaringan telegraph dan telepon.
  - e. Perkotaan, yang dapat meliputi rumah-rumah tempat tinggal, toko-toko, sekolah-sekolah, rumah sakit, teater dan bangunan lain, fasilitas dan peralatan pegawai kontraktor termasuk tanggungan pegawai tersebut.



- f. Listrik, fasilitas air dan air buangan meliputi pembangkit tenaga listrik (dapat berupa tenaga air, uap, gas atau diesel), jaringan listrik, dam, saluran air, sistem penyediaan air dan sistem buangan limbah (tailing), air buangan pabrik dan air buangan rumah tangga.
  - g. Fasilitas lain yang dapat meliputi namun tidak terbatas seperti bengkel mesin, bengkel pengecoran dan reparasi.
  - h. Semua fasilitas tambahan atau fasilitas lain, pabrik dan peralatan yang dianggap perlu atau cocok untuk operasi perusahaan yang berkaitan dengan wilayah IUP atau untuk menyediakan pelayanan atau melaksanakan aktifitas pendukung atau aktifitas yang sifatnya insidental.
32. Jika terjadi tumpang tindih wilayah usaha pertambangan dengan kawasan hutan, maka pemegang izin usaha pertambangan wajib untuk mengurus izin pinjam pakai kawasan hutan sesuai dengan peraturan yang berlaku dan kegiatan operasi produksi (penambangan) baru dapat dilakukan jika pemegang izin usaha pertambangan telah memiliki izin pinjam pakai kawasan dari Departemen Kehutanan.

**Appendix C Concession Document – Clean and Clear Certificate**



## SERTIFIKAT *CLEAR AND CLEAN*

Nomor : 148 /Bb/03/2014

diberikan kepada

Nama : PT SAMANTAKA BATUBARA  
Alamat : Graha BIP Lt. 8 Jalan Jend. Gatot Subroto Kav. 23,  
Jakarta 12930  
Keputusan : Bupati Indragiri Hulu, Provinsi Riau  
Nomor : 001/IUP/545-02/II/2013  
Tahap : Operasi Produksi  
Jenis Komoditas : Batubara

Ditetapkan di Jakarta

pada tanggal : 14 Februari 2014

Direktur Jenderal Mineral dan Batubara,



Dr. Ir. R. Sukhyar

4-11-14

**Pada saat diterbitkannya sertifikat ini perusahaan telah memenuhi persyaratan :**

**1. Administrasi :**

- a. Wilayah tidak tumpang tindih
- b. Dokumen perizinan

**2. Teknis :**

- a. Laporan eksplorasi
- b. Laporan studi kelayakan
- c. Persetujuan dokumen lingkungan

**3. Kewajiban keuangan :**

luran tetap sampai dengan periode tahun 2013



**Keterangan :**

Apabila terdapat kekeliruan dalam penerbitan sertifikat ini, akan dilakukan perbaikan sesuai peraturan perundang-undangan yang berlaku.

## **Appendix D Forestry Permit**



**MENTERI KEHUTANAN  
REPUBLIK INDONESIA**

**KEPUTUSAN MENTERI KEHUTANAN REPUBLIK INDONESIA  
NOMOR : SK.797/Menhut-II/2014**

**TENTANG**

**IZIN PINJAM PAKAI KAWASAN HUTAN UNTUK OPERASI PRODUKSI BATUBARA DAN SARANA PENUNJANGNYA PADA KAWASAN HUTAN PRODUKSI TETAP ATAS NAMA PT. SAMANTAKA BATUBARA, DI KABUPATEN INDRAGIRI HULU, PROVINSI RIAU SELUAS 1.004,89 (SERIBU EMPAT DAN DELAPAN PULUH SEMBILAN PERSERATUS) HEKTAR**

**MENTERI KEHUTANAN REPUBLIK INDONESIA,**

- Menimbang : a. bahwa berdasarkan surat Menteri Kehutanan Nomor S.295/Menhut-VII/2014 tanggal 8 Juli 2014, PT. Samantaka Batubara diberikan persetujuan prinsip penggunaan kawasan hutan untuk kegiatan operasi produksi batubara dan sarana penunjangnya seluas  $\pm$  3.083 (tiga ribu delapan puluh tiga) hektar, untuk tahap pertama diberikan seluas  $\pm$  1.020 (seribu dua puluh) hektar pada Kawasan Hutan Produksi Terbatas, terletak di Kabupaten Indragiri Hulu, Provinsi Riau, dengan kompensasi membayar Penerimaan Negara Bukan Pajak (PNBP) Penggunaan Kawasan Hutan dan melakukan penanaman dalam rangka rehabilitasi daerah aliran sungai dengan ratio 1 : 1 ditambah dengan luas rencana areal terganggu dengan kategori L3;
- b. bahwa PT. Samantaka Batubara telah memenuhi kewajiban sebagaimana surat Menteri Kehutanan Nomor S.295/Menhut-VII/2014 tanggal 8 Juli 2014 dan Peraturan Menteri Kehutanan Nomor P.16/Menhut-II/2014 tentang Pedoman Pinjam Pakai Kawasan Hutan, yaitu :
1. Pernyataan Direktur PT. Samantaka Batubara di hadapan Edi Priyono, S.H., Notaris di Jakarta sesuai Akta Nomor 12 tanggal 17 Juli 2014, sanggup:
    - a) Melaksanakan reklamasi dan revegetasi pada kawasan hutan yang sudah tidak dipergunakan tanpa menunggu selesainya jangka waktu pinjam pakai kawasan hutan;
    - b) Melaksanakan perlindungan hutan sesuai ketentuan peraturan perundang-undangan;
    - c) Memberikan kemudahan bagi aparat kehutanan baik pusat maupun daerah pada saat melakukan monitoring dan evaluasi di lapangan;
    - d) Memenuhi kewajiban keuangan sesuai peraturan perundang-undangan, meliputi:
      - 1) Membayar penggantian nilai tegakan, Provisi Sumber Daya Hutan (PSDH), Dana Reboisasi (DR);
      - 2) Membayar Penerimaan Negara Bukan Pajak (PNBP) Penggunaan Kawasan Hutan
      - 3) Kewajiban keuangan lainnya akibat diterbitkan izin pinjam pakai kawasan hutan;
    - e) Melakukan ...

- e) Melakukan penanaman dalam rangka rehabilitasi daerah aliran sungai dengan ratio 1 : 1, ditambah dengan luas rencana areal terganggu dengan kategori L3;
  - f) Melakukan pemberdayaan masyarakat di sekitar areal pinjam pakai kawasan hutan;
2. Melaksanakan tata batas, sesuai dengan Berita Acara Penataan Batas Dalam Rangka Pelaksanaan Penataan Batas Areal Persetujuan Prinsip Penggunaan Kawasan Hutan untuk Kegiatan Operasi Produksi Batubara dan Sarana Penunjangnya pada Kawasan Hutan Produksi Terbatas (HPT) atas nama PT. Samantaka Batubara, di Kabupaten Indragiri Hulu, Provinsi Riau, tanggal 23 Agustus 2014, dan sesuai Laporan Hasil Penataan Batas Nomor LP.03/BPKH XIX-3/2014 Bulan Agustus 2014, diketahui luasnya 1.004,89 (seribu empat dan delapan puluh sembilan perseratus) hektar;
  3. Menyampaikan baseline penggunaan kawasan hutan;
  4. Menyampaikan rencana reklamasi dan revegetasi pada kawasan hutan yang dimohon izin pinjam pakai kawasan hutan;
  5. Mengkoordinasikan kegiatan kepada Instansi Kehutanan Provinsi dan Instansi Kehutanan Kabupaten;
- c. bahwa berdasarkan Pasal 1 ayat (1) Peraturan Pemerintah Nomor 33 Tahun 2014 tentang Jenis dan Tarif Atas Jenis Penerimaan Negara Bukan Pajak yang Berasal dari Penggunaan Kawasan Hutan untuk Kepentingan Pembangunan di Luar Kegiatan Kehutanan yang Berlaku pada Kementerian Kehutanan, jenis Penerimaan Negara Bukan Pajak dalam Peraturan Pemerintah ini adalah Penerimaan Negara Bukan Pajak yang berasal dari penggunaan kawasan hutan untuk kepentingan pembangunan di luar kegiatan kehutanan yang luas kawasan hutannya di atas 30% (tiga puluh persen) dari daerah aliran sungai dan/atau provinsi;
  - d. bahwa berdasarkan Pasal 6 ayat (2) huruf b angka 2 Peraturan Menteri Kehutanan Nomor P.16/Menhut-II/2014 tentang Pedoman Pinjam Pakai Kawasan Hutan, izin pinjam pakai kawasan hutan pada provinsi yang luas kawasan hutannya di atas 30% (tiga puluh perseratus) dari luas daerah aliran sungai, pulau, dan/atau provinsi, dengan ketentuan penggunaan untuk komersial dikenakan kompensasi membayar Penerimaan Negara Bukan Pajak Penggunaan Kawasan Hutan dan melakukan penanaman dalam rangka rehabilitasi daerah aliran sungai dengan ratio 1:1 ditambah dengan luas rencana areal terganggu dengan kategori L3;
  - e. bahwa berdasarkan Pasal 13 Peraturan Pemerintah Nomor 24 Tahun 2010 tentang Penggunaan Kawasan Hutan, sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 61 Tahun 2012, dalam hal pemegang persetujuan prinsip telah memenuhi seluruh kewajiban Menteri menerbitkan izin pinjam pakai kawasan hutan;

f. bahwa ...

- f. bahwa sesuai surat Direktur Jenderal Planologi Kehutanan Nomor S.948/VII-PKH/2014 tanggal 17 September 2014:
1. Calon areal izin pinjam pakai kawasan hutan atas nama PT. Samantaka Batubara seluruhnya berada dalam Izin Pinjam Pakai Kawasan Hutan untuk eksplorasi migas 2D dan 3D atas nama BPMIGAS-Ranhill Pamai Taluk Energy Pte, Ltd, sesuai Keputusan Menteri Kehutanan Nomor SK.554/Menhut-II/2012 tanggal 4 Oktober 2012, berlaku sampai dengan tanggal 3 Oktober 2014;
  2. BPMIGAS-Ranhill Pamai Taluk Energy Pte, Ltd, tidak keberatan terhadap penggunaan kawasan hutan untuk operasi produksi batubara dan sarana penunjangnya oleh PT. Samantaka Batubara, melalui Surat Pernyataan General Manager Ranhill Pamai Taluk Energy Pte, Ltd, Nomor RPTE/14/0029L/GM tanggal 11 Juni 2014;
  3. Terkait dengan kebijakan penundaan izin baru, sesuai dengan Amar KEDUA huruf a Instruksi Presiden Nomor 6 Tahun 2013 tentang Penundaan Pemberian Izin Baru dan Penyempurnaan Tata Kelola Hutan Alam Primer dan Lahan Gambut, penggunaan kawasan hutan yang telah mendapat persetujuan prinsip penggunaan kawasan hutan tidak termasuk yang ditunda perizinannya;
  4. Permohonan izin pinjam pakai kawasan hutan untuk operasi produksi batubara dan sarana penunjangnya atas nama PT. Samantaka Batubara sesuai Keputusan Menteri Kehutanan Nomor SK. 673/Menhut-II/2014 tanggal 8 Agustus 2014, berada pada Kawasan Hutan Produksi Tetap, untuk Tahap I diberikan seluas 1,004,89 (seribu empat dan delapan puluh sembilan perseratus) hektar;
- g. bahwa berdasarkan pertimbangan sebagaimana dimaksud pada huruf a sampai dengan huruf f, perlu menetapkan Keputusan Menteri Kehutanan tentang Izin Pinjam Pakai Kawasan Hutan Untuk Operasi Produksi Batubara dan Sarana Penunjangnya pada Kawasan Hutan Produksi Tetap atas nama PT. Samantaka Batubara di Kabupaten Indragiri Hulu, Provinsi Riau seluas 1.004,89 (seribu empat dan delapan puluh sembilan perseratus) hektar;

- Mengingat :
1. Undang-Undang Nomor 41 Tahun 1999 tentang Kehutanan, sebagaimana telah diubah dengan Undang-Undang Nomor 19 Tahun 2004;
  2. Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah, sebagaimana telah beberapa kali diubah terakhir dengan Undang-Undang Nomor 12 Tahun 2008;
  3. Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup;
  4. Undang-Undang Nomor 18 Tahun 2013 tentang Pencegahan dan Pemberantasan Perusakan Hutan;
  5. Peraturan Pemerintah Nomor 44 Tahun 2004 tentang Perencanaan Kehutanan;

6. Peraturan ...



6. Peraturan Pemerintah Nomor 45 Tahun 2004 tentang Perlindungan Hutan, sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 60 Tahun 2009;
7. Peraturan Pemerintah Nomor 6 Tahun 2007 tentang Tata Hutan dan Penyusunan Rencana Pengelolaan Hutan, serta Pemanfaatan Hutan, sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 3 Tahun 2008;
8. Peraturan Pemerintah Nomor 38 Tahun 2007 tentang Pembagian Urusan Pemerintahan antara Pemerintah, Pemerintahan Daerah Provinsi dan Pemerintahan Daerah Kabupaten/Kota;
9. Peraturan Pemerintah Nomor 33 Tahun 2014 tentang Jenis dan Tarif Atas Jenis Penerimaan Negara Bukan Pajak yang Berasal dari Penggunaan Kawasan Hutan untuk Kepentingan Pembangunan di Luar Kegiatan Kehutanan yang Berlaku pada Kementerian Kehutanan;
10. Peraturan Pemerintah Nomor 76 Tahun 2008 tentang Rehabilitasi dan Reklamasi Hutan;
11. Peraturan Pemerintah Nomor 15 Tahun 2010 tentang Penyelenggaraan Penataan Ruang;
12. Peraturan Pemerintah Nomor 24 Tahun 2010 tentang Penggunaan Kawasan Hutan, sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 61 Tahun 2012;
13. Peraturan Presiden Nomor 47 Tahun 2009 tentang Pembentukan dan Organisasi Kementerian Negara, sebagaimana telah beberapa kali diubah terakhir dengan Peraturan Presiden Nomor 55 Tahun 2013;
14. Keputusan Presiden Nomor 84/P Tahun 2009 tentang Pembentukan Kabinet Indonesia Bersatu II, sebagaimana telah diubah dengan Keputusan Presiden Nomor 50/P Tahun 2013;
15. Peraturan Presiden Nomor 24 Tahun 2010 tentang Kedudukan, Tugas dan Fungsi Kementerian Negara serta Susunan Organisasi, Tugas dan Fungsi Eselon I, sebagaimana telah beberapa kali diubah terakhir dengan Peraturan Presiden Nomor 56 Tahun 2013;
16. Instruksi Presiden Nomor 6 Tahun 2013 tentang Penundaan Pemberian Izin Baru dan Penyempurnaan Tata Kelola Hutan Alam Primer dan Lahan Gambut;
17. Peraturan Menteri Kehutanan Nomor P.56/Menhut-II/2008 tentang Tata Cara Penentuan Luas Areal Terganggu dan Areal Reklamasi dan Revegetasi untuk Perhitungan Penerimaan Negara Bukan Pajak Penggunaan Kawasan Hutan;
18. Peraturan Menteri Kehutanan Nomor P.60/Menhut-II/2009 tentang Pedoman Penilaian Keberhasilan Reklamasi Hutan;
19. Peraturan Menteri Keuangan Nomor 91/KMK.02/2009 tentang Tata Cara Pengenaan, Pemungutan dan Penyetoran Penerimaan Negara Bukan Pajak yang Berasal dari Penggunaan Kawasan Hutan untuk Kepentingan Pembangunan di Luar Kegiatan Kehutanan;

20. Peraturan Menteri Kehutanan Nomor P.40/Menhut-II/2010 tentang Organisasi dan Tata Kerja Kementerian Kehutanan, sebagaimana telah diubah dengan Peraturan Menteri Kehutanan Nomor P.33/Menhut-II/2012;
21. Peraturan Menteri Kehutanan Nomor P.63/Menhut-II/2011 tentang Pedoman Penanaman Bagi Pemegang Izin Pinjam Pakai Kawasan Hutan Dalam Rangka Rehabilitasi Daerah Aliran Sungai;
22. Peraturan Menteri Kehutanan Nomor P.65/Menhut-II/2013 tentang Policy Advisor Bidang Kehutanan pada Izin Pinjam Pakai Kawasan Hutan untuk Kegiatan Pertambangan Operasi Produksi;
23. Peraturan Menteri Kehutanan Nomor P.16/Menhut-II/2014 tentang Pedoman Pinjam Pakai Kawasan Hutan;
24. Peraturan Menteri Kehutanan Nomor P.52/Menhut-II/2014 tentang Tata Cara Pengenaan, Pemungutan dan Penyetoran Provisi Sumber Daya Hutan (PSDH) dan Dana Reboisasi (DR), Penggantian Nilai Tegakan dan Ganti Rugi Tegakan;
25. Peraturan Menteri Kehutanan Nomor P.62/Menhut-II/2014 tentang Izin Pemanfaatan Kayu;
26. Keputusan Menteri Kehutanan Nomor SK.673/Menhut-II/2014 tentang Perubahan Peruntukan Kawasan Hutan menjadi Bukan Kawasan Hutan seluas  $\pm$  1.638.249 (satu juta enam ratus tiga puluh delapan ribu dua ratus empat puluh sembilan) hektar, Perubahan Fungsi Kawasan Hutan seluas  $\pm$  717.543 (tujuh ratus tujuh belas ribu lima ratus empat puluh tiga) hektar dan Penunjukan Bukan Kawasan Hutan menjadi Kawasan Hutan seluas  $\pm$  11.552 (sebelas ribu lima ratus lima puluh dua) hektar di Provinsi Riau;
27. Keputusan Direktur Jenderal Planologi Kehutanan atas nama Menteri Kehutanan Nomor SK. 3706/Menhut-VII/IPSDH/2014 tentang Penetapan Peta Indikatif Penundaan Izin Baru Pemanfaatan Hutan, Penggunaan Kawasan Hutan, dan Perubahan Peruntukan Kawasan Hutan dan Areal Penggunaan Lain (Revisi VI);

- Memperhatikan:
1. Keputusan Bupati Indragiri Hulu Nomor 001/IUP/545-02/II/2013 tanggal 26 Februari 2013 tentang Persetujuan Peningkatan Izin Usaha Pertambangan Eksplorasi menjadi Izin Usaha Pertambangan Operasi Produksi kepada PT. Samantaka Batubara, untuk jangka waktu 10 (sepuluh) tahun sampai dengan tanggal 26 Februari 2023;
  2. Pernyataan Direktur PT. Samantaka Batubara di hadapan Edi Priyono, S.H., Notaris di Jakarta sesuai Akta Nomor 12 tanggal 17 Juli 2014;
  3. Berita Acara Penataan Batas Dalam Rangka Pelaksanaan Penataan Batas Areal Persetujuan Prinsip Penggunaan Kawasan Hutan untuk Kegiatan Operasi Produksi Batubara dan Sarana Penunjangnya pada Kawasan Hutan Produksi Terbatas (HPT) atas nama PT. Samantaka Batubara, Kabupaten Indragiri Hulu, Provinsi Riau, tanggal 23 Agustus 2014;

MEMUTUSKAN: ...

**MEMUTUSKAN :**

Menetapkan : **KEPUTUSAN MENTERI KEHUTANAN TENTANG IZIN PINJAM PAKAI KAWASAN HUTAN UNTUK OPERASI PRODUKSI BATUBARA DAN SARANA PENUNJANGNYA PADA KAWASAN HUTAN PRODUKSI TETAP ATAS NAMA PT. SAMANTAKA BATUBARA DI KABUPATEN INDRAGIRI HULU, PROVINSI RIAU SELUAS 1.004,89 (SERIBU EMPAT DAN DELAPAN PULUH SEMBILAN PERSERATUS) HEKTAR.**

KESATU : Memberikan izin pinjam pakai kawasan hutan untuk operasi produksi batubara dan sarana penunjangnya pada Kawasan Hutan Produksi Tetap atas nama PT. Samantaka Batubara di Kabupaten Indragiri Hulu, Provinsi Riau seluas 1.004,89 (seribu empat dan delapan puluh sembilan perseratus) hektar, sebagaimana Peta Lampiran Keputusan, dengan rincian penggunaan sebagai berikut :

- a. Areal penambangan (Pit), seluas 785,19 (tujuh ratus delapan puluh lima dan sembilan belas perseratus) hektar;
- b. Sarana penunjang, seluas 219,70 (dua ratus sembilan belas dan tujuh puluh perseratus) hektar, terdiri dari:
  1. Waste dump, seluas 55 (lima puluh lima) hektar;
  2. Top Soil, seluas 50 (lima puluh) hektar;
  3. Stockpile, seluas 31 (tiga puluh satu) hektar;
  4. Fasilitas Kantor, seluas 55 (lima puluh lima) hektar;
  5. Settling Pond, seluas 16 (enam belas) hektar;
  6. Jalan angkut tambang (di luar pit), seluas 3,70 (tiga dan tujuh puluh perseratus) hektar;
  7. Jalan angkut tambang (di dalam pit), seluas 9 (sembilan) hektar.

KEDUA : Pemberian izin sebagaimana dimaksud dalam Amar KESATU adalah untuk pelaksanaan kegiatan operasi produksi batubara dan sarana penunjangnya, bukan untuk kegiatan lain serta arealnya tetap berstatus sebagai kawasan hutan.

KETIGA : PT. Samantaka Batubara, berhak :

- a. berada, menempati dan mengelola serta melakukan kegiatan-kegiatan yang meliputi kegiatan operasi produksi batubara dan sarana penunjangnya, serta melakukan kegiatan-kegiatan lainnya yang berhubungan dengan itu dalam kawasan hutan yang dipinjam pakai;
- b. memanfaatkan hasil kegiatan yang dilakukan sehubungan dengan kegiatan operasi produksi batubara dan sarana penunjangnya pada kawasan hutan yang dipinjam pakai;
- c. melakukan penebangan pohon dalam rangka pembukaan lahan dengan membayar penggantian nilai tegakan dan Provisi Sumber Daya Hutan (PSDH) dan/atau Dana Reboisasi (DR) sesuai dengan ketentuan peraturan perundang-undangan.

KEEMPAT : PT. Samantaka Batubara, wajib:

- a. membayar Penerimaan Negara Bukan Pajak Penggunaan Kawasan Hutan dan melakukan penanaman dalam rangka rehabilitasi daerah aliran sungai dengan ratio 1:1 ditambah dengan luas rencana areal terganggu dengan kategori L3;

b. menyampaikan ...

- b. menyampaikan Bank Garansi dari bank pemerintah yang besarnya 100% (seratus persen) berdasarkan rekapitulasi LHC;
- c. melaksanakan reklamasi dan revegetasi pada kawasan hutan yang sudah tidak dipergunakan, menggunakan bibit tanaman jenis pioner dan unggulan setempat tanpa menunggu selesainya jangka waktu izin pinjam pakai kawasan hutan, serta mempekerjakan Tenaga Teknis Pengelola Hutan Produksi Lestari Rehabilitasi dan Reklamasi Pertambangan (GANISPHPL-REHAREKTAM);
- d. membayar penggantian nilai tegakan dan PSDH dan DR serta kewajiban keuangan lainnya sesuai peraturan perundang-undangan, dengan mempekerjakan Tenaga Teknis Pengelolaan Hutan Produksi Lestari Pengujian Kayu Bulat Rimba (GANISPHPL- PKB-R);
- e. melakukan pemeliharaan batas pinjam pakai kawasan hutan;
- f. melaksanakan perlindungan hutan sesuai peraturan perundang-undangan;
- g. memberdayakan masyarakat setempat melalui Program Bina Desa Hutan dan mempekerjakan Tenaga Teknis Pengelolaan Hutan Produksi Lestari Kelola Sosial (GANISPHPL-KESOS);
- h. membangun sistem informasi kepada publik yang berkaitan dengan kerusakan lingkungan hidup dan pemberdayaan masyarakat;
- i. memiliki tenaga Policy Advisor Bidang Kehutanan yang diikat dengan kontrak berdasarkan Key Performance Indikator (KPI) antara Policy Advisor Bidang Kehutanan dengan Pemegang Izin;
- j. menanggung seluruh biaya sebagai akibat adanya pinjam pakai kawasan hutan;
- k. melakukan koordinasi dengan instansi kehutanan provinsi dan kabupaten serta BPMIGAS-Ranhill Pamai Taluk Energy Pte, Ltd, paling lambat 1 (satu) bulan sejak tanggal izin pinjam pakai kawasan hutan ditetapkan;
- l. memberikan kemudahan bagi aparat kehutanan baik pusat maupun daerah pada saat melakukan monitoring dan evaluasi di lapangan;
- m. menyerahkan rencana kerja pemenuhan kewajiban sebagaimana dimaksud pada huruf a sampai dengan huruf i, selambat-lambatnya 100 (seratus) hari kerja setelah ditetapkan Keputusan Izin Pinjam Pakai Kawasan Hutan;
- n. membuat laporan secara berkala setiap 6 (enam) bulan sekali kepada Menteri Kehutanan mengenai penggunaan kawasan hutan yang dipinjam pakai, dengan tembusan :
  - 1. Direktur Jenderal Planologi Kehutanan;
  - 2. Direktur Jenderal Bina Usaha Kehutanan;
  - 3. Direktur Jenderal Perlindungan Hutan dan Konservasi Alam;
  - 4. Direktur Jenderal Bina Pengelolaan Daerah Aliran Sungai dan Perhutanan Sosial;
  - 5. Kepala Dinas Kehutanan Provinsi Riau;
  - 6. Kepala Dinas Kehutanan Kabupaten Indragiri Hulu;
  - 7. Kepala Balai Pemantapan Kawasan Hutan Wilayah XIX Pekanbaru; dan
  - 8. Kepala Balai Pengelolaan Daerah Aliran Sungai Indragiri Rokan;

Laporan memuat :

1. rencana dan realisasi penggunaan kawasan hutan;
2. rencana dan realisasi reklamasi dan revegetasi;
3. pemenuhan kewajiban membayar Penerimaan Negara Bukan Pajak Penggunaan Kawasan Hutan;
4. rencana dan realisasi penanaman dalam wilayah daerah aliran sungai sesuai peraturan perundang-undangan; dan
5. pemenuhan kewajiban lainnya sesuai izin pinjam pakai kawasan hutan;

o. membuat laporan keuangan yang diaudit oleh akuntan publik, khusus untuk kewajiban huruf a sampai dengan huruf i setiap 6 (enam) bulan dilampiri pos biaya kewajiban kepada Menteri Kehutanan dengan tembusan Sekretaris Jenderal Kementerian Kehutanan dan Direktur Jenderal Planologi Kehutanan.

**KELIMA** : Ketentuan untuk melakukan penanaman dalam rangka rehabilitasi Daerah Aliran Sungai (DAS) sebagaimana dimaksud dalam Amar KEEMPAT huruf a mengacu pada Peraturan Menteri Kehutanan Nomor P.63/Menhut-II/2011.

**KEENAM** : PT. Samantaka Batubara, dilarang:

- a. memindahtangankan izin pinjam pakai kawasan hutan kepada pihak lain atau pengubahan nama perusahaan tanpa persetujuan Menteri Kehutanan;
- b. menjaminkan atau mengagunkan areal izin pinjam pakai kawasan hutan kepada pihak lain;
- c. melakukan penebangan pohon dalam kawasan hutan dengan radius atau jarak sampai dengan:
  1. 200 (dua ratus) meter dari tepi mata air dan kiri kanan sungai di daerah rawa;
  2. 100 (seratus) meter dari kiri kanan tepi sungai;
  3. 50 (lima puluh) meter dari kiri kanan tepi anak sungai.

**KETUJUH** : Menyelesaikan hak-hak pihak ketiga, apabila terdapat hak-hak pihak ketiga di dalam areal pinjam pakai kawasan hutan dengan meminta bimbingan dan fasilitasi ke pemerintah daerah setempat.

**KEDELAPAN** : Izin pinjam pakai kawasan hutan ini akan dicabut dan pemegang izin dikenakan sanksi sesuai dengan ketentuan peraturan perundang-undangan, apabila pemegang izin melakukan pelanggaran atas ketentuan-ketentuan sebagaimana dimaksud dalam izin, dengan ketentuan:

- a. Direktur Jenderal Planologi Kehutanan menerbitkan peringatan paling banyak 3 (tiga) kali dengan tenggang waktu masing-masing paling sedikit 30 (tiga puluh) hari kerja sejak diterimanya surat peringatan; dan
- b. Dalam hal terbitnya peringatan sebagaimana dimaksud pada huruf a tidak dilaksanakan dan pemegang izin tidak melakukan usaha perbaikan dalam waktu 30 (tiga puluh) hari kerja sejak diterimanya surat peringatan yang ketiga.

**KESEMBILAN** : Izin pinjam pakai kawasan hutan berlaku dan melekat sebagai izin pemanfaatan kayu, serta izin pemasukan dan penggunaan peralatan.

**KESEPULUH** : ...

KESEPULUH : Penentuan areal terganggu, reklamasi dan revegetasi serta tata cara pengenaan, pemungutan dan penyeteroran PNPB Penggunaan Kawasan Hutan berpedoman pada Peraturan Menteri Kehutanan Nomor P.56/Menhut-II/2008 dan Peraturan Menteri Keuangan Nomor 91/KMK.02/2009.

KESEBELAS : a. Permohonan perpanjangan dilakukan oleh Pemegang Izin paling lambat 6 (enam) bulan sebelum berakhirnya jangka waktu izin;  
b. Untuk perpanjangan izin sebagaimana dimaksud pada huruf a, Instansi Kehutanan melakukan evaluasi atas :

1. Kawasan hutan yang dipinjam pakai masih dipergunakan untuk kegiatan operasi produksi batubara dan sarana penunjangnya oleh pemegang izin atau afiliasinya atau oleh pihak yang diperbolehkan berdasarkan ketentuan peraturan perundang-undangan;
2. Tidak ada pelanggaran yang dilakukan oleh pemegang izin terhadap ketentuan-ketentuan dalam izin;
3. Telah memenuhi semua kewajiban dalam Keputusan.

KEDUA BELAS: Keputusan mulai berlaku pada tanggal ditetapkan dengan jangka waktu paling lama sampai dengan tanggal 26 Februari 2023, dan berakhir dengan sendirinya apabila tidak diperpanjang.

Ditetapkan di Jakarta  
pada tanggal 24 September 2014

Salinan sesuai dengan aslinya  
**KEPALA BIRO HUKUM DAN ORGANISASI,**

**MENTERI KEHUTANAN  
REPUBLIK INDONESIA,**

ttd

  
**KRISNA RYA**

**ZULKIFLI HASAN**

Salinan Keputusan disampaikan kepada Yth. :

1. Menteri Energi dan Sumber Daya Mineral;
2. Sekretaris Jenderal Kementerian Kehutanan;
3. Direktur Jenderal Planologi Kehutanan;
4. Direktur Jenderal Bina Usaha Kehutanan;
5. Direktur Jenderal Bina Pengelolaan DAS dan Perhutanan Sosial;
6. Direktur Jenderal Perlindungan Hutan dan Konservasi Alam;
7. Direktur Jenderal Mineral dan Batubara;
8. Gubernur Riau;
9. Bupati Indragiri Hulu;
10. Kepala Dinas Kehutanan Provinsi Riau;
11. Kepala Dinas Pertambangan Provinsi Riau;
12. Kepala Dinas Kehutanan Kabupaten Indragiri Hulu;
13. Kepala Dinas Pertambangan Kabupaten Indragiri Hulu;
14. Kepala Balai Pemantapan Kawasan Hutan Wilayah XIX Pekanbaru;
15. Kepala Balai Pemantauan Pemanfaatan Hutan Produksi Wilayah III Pekanbaru;
16. Kepala Balai Pengelolaan Daerah Aliran Sungai Indragiri Rokan;
17. General Manager Ranhill Pamai Taluk Energy Pte, Ltd;
18. Direktur Utama PT. Samantaka Batubara.

## **Appendix E ANDAL Document**



## BUPATI INDRAGIRI HULU

### KEPUTUSAN BUPATI INDRAGIRI HULU NOMOR 507 TAHUN 2012

TENTANG

IZIN LINGKUNGAN ATAS KEGIATAN PERTAMBANGAN BATUBARA SELUAS ± 19.040 HA,  
DI KECAMATAN PERANAP (DESA PAUH RANAP DAN GUMANTI), KECAMATAN BATANG PERANAP  
(DESA PUNTI KAYU), DAN KECAMATAN RAKIT KULIM (DESA TALANG DURIAN CACAR)  
KABUPATEN INDRAGIRI HULU PROPINSI RIAU OLEH PT. SAMANTAKA BATUBARA

BUPATI INDRAGIRI HULU,

- Menimbang :
- bahwa Kegiatan Pertambangan Batubara Seluas ± 19.040 Ha, di Kecamatan Peranap (Desa Pauh Ranap dan Gumanti), Kecamatan Batang Peranap (Desa Pundi Kayu), dan Kecamatan Rakit Kulim (Desa Talang Durian Cacar) Kabupaten Indragiri Hulu Propinsi Riau oleh PT. Samantaka Batubara merupakan kegiatan yang wajib memiliki Izin Lingkungan;
  - bahwa sebagai pelaksanaan ketentuan Pasal 2 Peraturan Pemerintah Nomor 27 Tahun 2012 tentang Izin Lingkungan, perlu untuk menetapkan Keputusan Bupati Indragiri Hulu tentang Izin Lingkungan atas Kegiatan Pertambangan Batubara Seluas ± 19.040 Ha, di Kecamatan Peranap (Desa Pauh Ranap dan Gumanti), Kecamatan Batang Peranap (Desa Pundi Kayu), dan Kecamatan Rakit Kulim (Desa Talang Durian Cacar) Kabupaten Indragiri Hulu Propinsi Riau oleh PT. Samantaka Batubara;
- Mengingat :
- Undang-Undang Nomor 12 Tahun 1956 tentang Pembentukan Daerah Otonom Kabupaten Dalam Lingkungan Propinsi Sumatera Tengah (Lembaran Negara Republik Indonesia Tahun 1956 Nomor 25) sebagaimana telah diubah dengan Undang-Undang Nomor 6 Tahun 1965 tentang Pembentukan Daerah Tingkat II Indragiri Hilir dengan mengubah Undang-Undang Nomor 12 Tahun 1956 tentang Pembentukan Daerah Otonom Kabupaten Dalam Wilayah Propinsi Sumatera Tengah (Lembaran Negara Republik Indonesia Tahun 1965 Nomor 49, Tambahan Lembaran Negara Nomor 2754);

2. Undang-Undang ...



Jl. Lintas Timur Pematang Reba No. 1 Rengat Barat Kode Pos 29351 Riau  
Telp. (0769) 341010, 341515



2. Undang-Undang Nomor 5 Tahun 1990 tentang Konservasi Sumber Daya Alam Hayati dan Ekosistemnya (Lembaran Negara Republik Indonesia Tahun 1990 Nomor 49, Tambahan Lembaran Negara Republik Indonesia Nomor 3419);
3. Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah (Lembaran Negara Republik Indonesia Tahun 2004 Nomor 125, Tambahan Lembaran Negara Republik Indonesia Nomor 4437), sebagaimana telah diubah, terakhir dengan Undang-Undang Nomor 12 Tahun 2008 tentang Perubahan Kedua Atas Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah (Lembaran Negara Republik Indonesia Nomor 59, Tambahan Lembaran Negara Nomor 4844);
4. Undang-Undang Nomor 26 Tahun 2007 tentang Penataan Ruang (Lembaran Negara Republik Indonesia Tahun 2007 Nomor 68, Tambahan Lembaran Negara Republik Indonesia Nomor 4725);
5. Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Lembaran Negara Republik Indonesia Tahun 2009 Nomor 140, (Tambahan Lembaran Negara Republik Indonesia Nomor 5059);
6. Undang-Undang Nomor 12 Tahun 2011 tentang Pembentukan Peraturan Perundang-undangan (Lembaran Negara Republik Indonesia Tahun 2011 Nomor 82, Tambahan Lembaran Negara Republik Indonesia Nomor 5234);
7. Peraturan Pemerintah Nomor 27 Tahun 2012 tentang Izin Lingkungan (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 48, Tambahan Lembaran Negara Republik Indonesia Nomor 5285);
8. Peraturan Menteri Negara Lingkungan Hidup Nomor 05 Tahun 2008 tentang Tata Kerja Komisi Penilai Analisis Mengenai Dampak Lingkungan Hidup;
9. Peraturan Menteri Negara Lingkungan Hidup Nomor 05 Tahun 2012 tentang Jenis Rencana Usaha dan/atau Kegiatan Yang Wajib Memiliki dengan Analisis Mengenai Dampak Lingkungan Hidup (AMDAL);
10. Peraturan Menteri Negara Lingkungan Hidup Nomor 16 Tahun 2012 tentang Pedoman Penyusunan Dokumen Lingkungan Hidup (Berita Negara Republik Indonesia Tahun 2012 Nomor 990, Berita Negara Republik Indonesia Tahun 2012 Nomor 991);
11. Peraturan Daerah Kabupaten Indragiri Hulu Nomor 18 Tahun 2008 tentang Organisasi Perangkat Daerah Pemerintah Kabupaten Indragiri Hulu (Lembaran Daerah Kabupaten Indragiri Hulu Tahun 2008 Nomor 18) sebagaimana telah diubah dengan Peraturan Daerah Kabupaten Indragiri Hulu Nomor 3 Tahun 2010 tentang Perubahan Peraturan Daerah Kabupaten Indragiri Hulu Nomor 18 Tahun 2008 tentang Organisasi Perangkat Daerah Pemerintah Kabupaten Indragiri Hulu (Lembaran Daerah Kabupaten Indragiri Hulu Tahun 2010 Nomor 3).
12. Peraturan Bupati Indragiri Hulu Nomor 8 Tahun 2011 tentang Tugas Pokok, Fungsi dan Uraian Tugas Lembaga Teknis Daerah Kabupaten Indragiri Hulu, Perubahan Atas Peraturan Bupati Indragiri Hulu Nomor 14 Tahun 2008 tentang Tugas Pokok, Fungsi dan Uraian Tugas Lembaga Teknis Daerah (Berita Acara Kabupaten Indragiri Hulu Tahun 2011 Nomor 8).

Memperhatikan ...

- Memperhatikan :
1. Hasil Rapat Komisi Penilai AMDAL Kabupaten Indragiri Hulu pada tanggal 13 November 2012 di Ruang Rapat Bappeda Kabupaten Indragiri Hulu di Pematang Reba, mengenai penilaian Analisis Dampak Lingkungan (ANDAL), Rencana Pengelolaan Lingkungan Hidup (RKL), Rencana Pemantauan Lingkungan Hidup (RPL) Kegiatan Pertambangan Batubara Seluas ± 19.040 Ha, di Kecamatan Peranap (Desa Pauh Ranap dan Gumanti), Kecamatan Batang Peranap (Desa Puntti Kayu), dan Kecamatan Rakit Kulim (Desa Talang Durian Cacar) Kabupaten Indragiri Hulu Propinsi Riau oleh PT. Samantaka Batubara;
  2. Keputusan Bupati Indragiri Hulu Nomor 506 Tahun 2012 tentang Kelayakan Lingkungan Hidup atas Rencana Kegiatan Pertambangan Batubara Seluas ± 19.040 Ha, di Kecamatan Peranap (Desa Pauh Ranap dan Gumanti), Kecamatan Batang Peranap (Desa Puntti Kayu), dan Kecamatan Rakit Kulim (Desa Talang Durian Cacar) Kabupaten Indragiri Hulu Propinsi Riau oleh PT. Samantaka Batubara.

**MEMUTUSKAN :**

- Menetapkan  
PERTAMA :
- Izin Lingkungan Atas Kegiatan Pertambangan Batubara Seluas ± 19.040 HA, Di Kecamatan Peranap (Desa Pauh Ranap Dan Gumanti), Kecamatan Batang Peranap (Desa Puntti Kayu), Dan Kecamatan Rakit Kulim (Desa Talang Durian Cacar) Kabupaten Indragiri Hulu Propinsi Riau Oleh PT. Samantaka Batubara.
- KEDUA :
- Memberikan Izin Lingkungan kepada :
1. Nama Perusahaan : PT. SAMANTAKA BATUBARA
  2. Jenis Usaha dan/atau Kegiatan : Pertambangan Batubara
  3. Penanggung Jawab Kegiatan : ANDREAS RINALDI (Direktur)
  4. Alamat Kantor : Graha BIP Lt-8 Jl. Jend. Gatot Subroto Kav. 23 Jakarta Selatan 12930
  5. Lokasi Kegiatan : Kecamatan Peranap (Desa Pauh Ranap dan Gumanti), Kecamatan Batang Peranap (Desa Puntti Kayu), dan Kecamatan Rakit Kulim (Desa Talang Durian Cacar)
- KETIGA : Ruang lingkup kegiatan dalam izin lingkungan ini mencakup kegiatan yang tercantum dalam Keputusan Kelayakan Lingkungan Hidup PT. Samantaka Batubara.
- KEEMPAT : PT. Samantaka Batubara dalam melaksanakan kegiatannya harus memenuhi persyaratan memiliki :
1. izin perlindungan dan pengelolaan lingkungan hidup untuk tahapan konstruksi dan operasi yang terdiri atas :
    - a. Izin Pembuangan Air Limbah ke Sungai
    - b. Izin Penyimpanan Sementara Limbah Bahan Berbahaya dan Beracun
  2. izin usaha dan/ atau izin lainnya yang terkait dengan kegiatannya :
    - a. Izin Pinjam Pakai Kawasan Hutan

b.Izin Usaha ...

- b. Izin Usaha Pertambangan Operasi Produksi Batubara
- c. Izin Mendirikan Bangunan
- d. Izin penyimpanan dan penggunaan bahan peledak dari POLRI

- KELIMA : Instansi pemberi izin wajib memperhatikan izin lingkungan sebagai syarat penerbitan izin dalam pelaksanaan kegiatan sebagaimana dimaksud dalam diktum KEMPAT.
- KEENAM : PT. Samantaka Batubara, dalam melaksanakan kegiatannya harus memenuhi kewajiban melakukan pengelolaan dampak sebagaimana tercantum dalam Rencana Pengelolaan Lingkungan Hidup dan Rencana Pemantauan Lingkungan Hidup (RKL-RPL) yang merupakan bagian tidak terpisahkan dari Keputusan ini.
- KETUJUH : Selain kewajiban sebagaimana dimaksud dalam diktum KEENAM, PT. Samantaka Batubara dalam melaksanakan kegiatannya juga diminta melaksanakan hal-hal sebagai berikut :
- a. melakukan koordinasi dengan instansi terkait, berkaitan dengan pelaksanaan kegiatan ini;
  - b. mengupayakan aplikasi 3R (*reduce, reuse, dan recycle*) terhadap limbah-limbah yang dihasilkan;
  - c. pengelolaan limbah bahan berbahaya dan beracun akan diserahkan kepada pihak ketiga yang memiliki izin sesuai peraturan perundangan;
  - d. menerapkan *Standart Operating Procedure* (SOP) pengelolaan limbah;
  - e. melakukan sosialisasi kegiatan kepada masyarakat setempat sebelum kegiatan dilaksanakan;
  - f. menghindari dan mencegah terjadinya kerusakan hutan, terjadinya erosi, tanah longsor dan kebakaran hutan dalam pelaksanaan kegiatan di lapangan;
  - g. melakukan reklamasi dan/atau revegetasi atas bagian hutan yang dipergunakan untuk penambangan batubara dan sarana penunjangnya dan areal terganggu lainnya;
  - h. melaksanakan dan mengevaluasi secara periodik kegiatan pelaksanaan pengelolaan lingkungan hidup dan pemantauan lingkungan hidup sebagaimana yang tercantum dalam keputusan ini dan dokumen Rencana Pengelolaan Lingkungan Hidup dan Rencana Pemantauan Lingkungan Hidup (RKL-RPL), serta menyampaikan laporan pelaksanaan Izin Lingkungan setiap 6 (enam) bulan sekali ke Badan Lingkungan Hidup Kabupaten Indragiri Hulu terhitung sejak tanggal ditetapkannya keputusan ini.
  - i. meningkatkan kinerja pengelolaan dan pemantauan lingkungan hidup (*continuous improvement*) melalui pengembangan teknologi dan metoda pengelolaan lingkungan hidup dan pemantauan lingkungan hidup yang tercantum dalam dokumen RKL-RPL sejalan dengan perkembangan ilmu pengetahuan dan teknologi di bidang pengelolaan lingkungan hidup.
  - j. melaksanakan dan mengevaluasi secara periodik sistem tanggap darurat (*emergency response system*) untuk menanggulangi kecelakaan yang berpotensi menimbulkan pencemaran lingkungan.

k.melaksanakan ...

- k. melaksanakan program pengembangan masyarakat (*community development*) sesuai dengan potensi dan aspirasi serta kebutuhan masyarakat setempat berdasarkan hasil kesepakatan yang pelaksanaannya dikoordinasikan dengan Pemerintah Daerah Kabupaten Indragiri Hulu.
- l. mengutamakan penggunaan tenaga kerja lokal yang sesuai dengan spesifikasi dan kualifikasi yang dibutuhkan dalam pelaksanaan kegiatan serta berkoordinasi dengan instansi terkait.
- m. mendokumentasikan seluruh kegiatan pengelolaan lingkungan yang dilakukan terkait dengan kegiatan-kegiatan tersebut;
- n. menyampaikan hasil pelaksanaan ketentuan dalam izin lingkungan secepatnya setelah selesainya pelaksanaan kegiatan ini, terhitung sejak tanggal ditetapkannya keputusan ini, kepada :
  1. Bupati Indragiri Hulu di Rengat;
  2. Kepala Badan Lingkungan Hidup Kabupaten Indragiri Hulu;
  3. Kepala Dinas Pertambangan dan Energi Kabupaten Indragiri Hulu;
  4. Kepala Badan Penanaman Modal Daerah dan Pelayanan Perijinan Terpadu Kabupaten Indragiri Hulu.

- KEDELAPAN : Penerbitan izin sebagaimana dimaksud dalam diktum KEEMPAT wajib mencantumkan segala persyaratan dan kewajiban yang tercantum dalam diktum KEENAM dan KETUJUH Keputusan Izin Lingkungan Kegiatan Pertambangan Batubara Seluas ± 19.040 Ha, di Kecamatan Peranap (Desa Pauh Ranap dan Gumanti), Kecamatan Batang Peranap (Desa Pundi Kayu), dan Kecamatan Rakit Kulim (Desa Talang Durian Cacar) Kabupaten Indragiri Hulu Propinsi Riau oleh PT. Samantaka Batubara.
- KESEMBILAN : Izin Lingkungan ini berlaku sama dengan masa berlakunya masa izin usaha dan/ atau kegiatan.
- KESEPULUH : Penanggung jawab usaha dan/atau kegiatan wajib mengajukan permohonan perubahan izin lingkungan apabila terjadi perubahan atas rencana usaha dan/ atau kegiatannya sesuai dengan kriteria perubahan yang tercantum dalam Pasal 50 Peraturan Pemerintah Nomor 27 Tahun 2012 tentang Izin Lingkungan.
- KESEBELAS : Menyampaikan laporan pelaksanaan persyaratan dan kewajiban sebagaimana dimaksud dalam diktum KETIGA dan KEEMPAT, setiap 6 (enam) bulan sekali setelah pelaksanaan kegiatan dan sejak Keputusan Bupati Indragiri Hulu ini ditetapkan kepada :
  1. Bupati Indragiri Hulu di Rengat;
  2. Kepala Badan Lingkungan Hidup Kabupaten Indragiri Hulu;
  3. Kepala Dinas Pertambangan dan Energi Kabupaten Indragiri Hulu;
  4. Kepala Badan Penanaman Modal Daerah dan Pelayanan Perijinan Terpadu Kabupaten Indragiri Hulu.

KEDUABELAS ...

- KEDUABELAS** : Menyampaikan laporan pelaksanaan persyaratan dan kewajiban sebagaimana dimaksud dalam diktum KEENAM dan diktum KETUJUH, di luar dari komponen fisik, kimia, dan biologi, setiap 6 (enam) bulan sekali sejak Keputusan ini ditetapkan kepada instansi terkait yang membidangi usaha dan/atau kegiatan.
- KETIGABELAS** : Apabila dalam pelaksanaan usaha dan/atau kegiatan, timbul dampak lingkungan hidup di luar dari dampak yang dikelola sebagaimana dimaksud dalam diktum KEENAM dan diktum KETUJUH, penanggung jawab usaha dan/atau kegiatan wajib melaporkan kepada instansi terkait, sebagaimana dimaksud dalam diktum KESEBELAS dan diktum KEDUABELAS.
- KEEMPATBELAS** : Pemrakarsa wajib menyelesaikan dan berkoordinasi dengan perusahaan perkebunan besar swasta, perkebunan masyarakat dan areal lahan-lahan lain yang bersinggungan/ tumpangtindih dengan rencana kegiatan penambangan batubara PT. Samantaka Batubara.
- KELIMABELAS** : Keputusan ini mulai berlaku pada tanggal ditetapkan dengan ketentuan apabila terdapat kekeliruan dalam keputusan ini, akan diadakan perubahan dan perbaikan sebagaimana mestinya.

Ditetapkan di Rengat  
pada tanggal **28** Desember 2012

**BUPATI INDRAGIRI HULU**



**YOPI ARIANTO**

Keputusan ini disampaikan kepada Yth. :

1. Menteri Dalam Negeri dan Otonomi Daerah di Jakarta;
2. Menteri Lingkungan Hidup di Jakarta;
3. Menteri Energi dan Sumber Daya Mineral di Jakarta;
4. Menteri Kehutanan di Jakarta;
5. Gubernur Riau di Pekanbaru;
6. Kepala Badan Lingkungan Hidup Propinsi Riau di Pekanbaru;
7. Kepala Dinas Pertambangan dan Energi Propinsi Riau di Pekanbaru;
8. Kepala Dinas Pertambangan dan Energi Kabupaten Indragiri Hulu di Rengat;
9. Pimpinan PT. Samantaka Batubara di Jakarta.

### Appendix F Table 1 – JORC Code 2012 Compliance Checklist Summary

#### Section 1 - JORC Code 2012 Sampling Techniques and Data

(Criteria in this Section applies to all successive sections)

No.	Section / Criteria	Comment
1	Coal sampling techniques	All cores were lithologically logged in splits in order to minimise disturbance of the sample. The core was photographed and wrapped in plastic to preserve the coal properties, particularly Total Moisture. This process was performed without delay to enable greater accuracy in the determination of in situ moisture content of coal. Non-coal seam roof and floor strata and in-seam partings >0.2 m were sampled separately and secured separately in sealed plastic bags. It is noted that coal intervals were sampled on a “ply-by-ply” basis on only a limited number (7 coal seams) which showed no significant in-seam coal quality variability. Although “ply-by-ply” sampling is considered preferable, the Consultant is of the opinion that this is not a material issue as the coal core holes are geophysically logged in the North Block and the adjoining pilot holes in the South Block are geophysically logged.
2	Drilling Techniques	Vertical open hole drilling was used throughout the Project area, with “twin” partly cored quality holes drilled adjacent to existing open holes with geophysical loss, in order to identify relevant coal intervals to be cored. A total of 7 full cored geotechnical holes were drilled in the North Block.
3	Drill sample recovery	All cores had a coal recovery of >90%.
4	Logging	A site geologist was present at all times and preliminary core logs were derived from “cuttings” and core depths. Almost of holes were geophysically logged and drill logs and coal sample depths subsequently reconciled against the geophysical logs.
5	Sub-sampling techniques and sample preparation	See Item 1 above in relation to coal sampling procedures. All core samples were prepared by either PT Geoservices Ltd (“Geoservices”) or PT Sucofindo (“Sucofindo”) laboratories, both of which are recognised coal superintending companies, using the appropriate international standards.
6	Quality of assay data and laboratory tests	All analyses were undertaken by either Geoservices at Padang, West Sumatra, Indonesia or Sucofindo at Pekanbaru, Riau, Indonesia. A total of 278 quality drillholes were analysed by ASTM method. A limited number of “cross-check” samples were analysed by both laboratories with no material variance noted. Standard tests on all cores included Proximate Analysis, TM, TS, CV, RD and HGI. A limited number of samples from the North Block were subject to more detailed analyses, including AFT, Ash Analysis, Ultimate Analysis and Trace Element analyses. It is recognised that further detailed analyses are required for the South Block.

No.	Section / Criteria	Comment
7	Verification of sampling and assaying	Verification of coal sampling was undertaken by the Consultant for all quality drillholes using core photographs, geophysical logs and core logs. No significant variations were identified. No adjustment of assay data was done (all original Laboratory Certificates are included in <b>Appendix L</b> . All “twin” holes were located within several metres of the open “pilot hole and given the simple structure (i.e. low dips and no identifiable faulting), seam intervals between pilot and twin holes showed minimal variance.
8	Location of data points	Boreholes collars were surveyed by Total Station and elevations compared with topographic survey data derived from Total Station survey.
9	Data spacing and distribution	Spacing of drill lines in the North Block is typically 200 - 400 m with local wider spaced “reconnaissance” drilling at 800 m. The South Block was drilled on 400 m drill lines. The Consultant considers the drill spacing adequate for classification of Coal Resources to Measured. All drillhole collars were surveyed by Total Station and the Consultant validated hole elevation by comparison with topographic data which was a combination of Total Station survey and ifSAR aerial survey. The Consultant is satisfied that seam elevations (and therefore drillhole locations) are within reasonable tolerance. No independent re-survey of holes was undertaken.
10	Orientation of data in relation to geological structure	Boreholes were designed perpendicular to the strike of deposit. Numbers of holes were intercept seam to down dip to ensure seam continuity and quality. All drillholes were drilled vertically due to the shallow dip of strata.
11	Sample security	Sample was kept in a core box and wrapped with plastic before sampling and delivery to the laboratory.
12	Audits or reviews	GMT geologists were present on site at various stages of the North Block coal coring programme to ensure that appropriate standards were being followed for coal core handling and sampling.

## Section 2 - JORC Code 2012 Reporting of Exploration Results

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

No.	Section / Criteria	Comment
1	Mineral Tenement and land tenure status	The mining concession is held under IUP No. 001/IUP/545-02/II/2013 dated 26 February 2013 for a term of 10 years, extendable upon compliance with the prevailing laws and regulations.
2	Exploration done by other parties	The exploration drilling within the South Block and Stage 1 drilling in the North Block of the mining concession conducted in 2011, by the previous concession owner, PT East Asia Power Indonesia.

No.	Section / Criteria	Comment
3	Geology	The Project lies within the western part of South Sumatra Basin which contains a thick Tertiary sedimentary succession that unconformably overlies basement rocks of Pre-Tertiary and older age formations. The geological structure is a moderate anticline with the deposit striking N135oE and N315°E. Seams dip generally shallow at <10 degrees. No faulting has been identified within the concession area, any unidentified faulting is likely to be small scale and of limited impact to an open cut mine.
4	Drillhole Information	The exploration drilling within the Northern area of PTSB coal mining concession was conducted in three stages. The first stage drilling followed a geological mapping program in 2011. A total of 51 holes were drilled in the first stage included 4 quality holes. Most Stage 1 drilling was supported by geophysical logging and drillhole collars were surveyed using Total Station. The Stage 2 drilling was conducted from October to December 2012 with a total of 103 holes including 12 quality holes. All second stage drilling was supported by geophysical logging and most drillhole collars were surveyed using Total Station. A total of 656 Stage 3 holes including 118 quality holes were drilled in 2015. Drilling was supported by geophysical logging and collars surveyed using Total Station.
5	Data aggregation methods	For the composite quality data GMT used weighted averaging based on tonnage.
6	Relationship between mineralisation widths and intercept lengths	As the strata is low dipping, there is minimal variance between actual and apparent coal seam thickness as intersected in drillholes.
7	Diagrams and Figures	See List of Figures within the Table of Contents section following the Executive Summary.
8	Balanced reporting	All data was documented in the Report.
9	Other substantive exploration data	Geotechnical, Hydrological, Hydrogeological and Topographic.
10	Further work	Finishing AMDAL, Hydrology Study in relation to the Cimpur River diversion, Completion of IPPKH and Land Compensation. Detailed subcrop drilling to better delineate potential pit limits.

### Section 3 – JORC Code 2012 Estimation and Reporting of Mineral Resources

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

No.	Section / Criteria	Comment
1	Database integrity	Almost all boreholes in the Project were geophysically logged and coal seam data (including quality) was entered into the geological database and was reconciled independently by the Consultant against the logs and each hole already checked using geophysical logging.



No.	Section / Criteria	Comment
2	Site visits	The Competent Person for Coal Resources visited the site from 25 – 27 February 2017. A previous site visit was conducted by Mr. Ony Eko Yusanto, NRM Project Manager Geology (Member of AusIMM – 323252) and Mr. Almu’minin Syarif, NRM Project Manager Mining (Member of AusIMM – 322556) conducted a site visit from 1 – 3 February 2017, including haul road and dump inspections. The Competent Person for Coal Reserves, who is signatory to this Statement has not been to the site as of the date of reporting for the reason that other senior personnel with appropriate experience have visited the site on a number of occasions, the Project is in a “brownfield” stage of development and that he has visited adjoining coal mining concessions on a number of previous occasions and is familiar with the specific issues involved in operating in this region.
3	Geological interpretation	The geological structure is relatively simple with a gentle anticline separating drilling programmes in the North and South Blocks. Geophysical logging of almost all drillholes allowed the Consultant to undertake seam correlation with a high degree of confidence. Geological interpretation was determined to be consistent with coal seam and other strata outcrops.
4	Dimensions	Based on drilling data in the project identified the deposit is a multiple-seam deposit, there are 10 seams and 20 sub-seams. The major Seam M3, Seam M5 and Seam M7 have average thicknesses of 1.0 m, 3.6 m and 1.8 m, respectively. Weathering depth is based on drilling data.
5	Estimation and modelling techniques	A computer model was created using Mincom Minescape software, a surface modelling technique designed specifically for coal seam modelling. The model was converted to Minex software for the purposes of pit optimisation. Check estimates were undertaken between the Mincom and Minex models by the Consultant and overall variance between the models was determined to be <3%.
6	Moisture	Coal samples were analysed for TM (ar) and Inherent Moisture (ad).

No.	Section / Criteria	Comment
7	Cut-off parameters	<ul style="list-style-type: none"> <li>• Coal Resources are contained within the PTSB Concession, IUP No. 001/IUP/545-02/II/2013 dated 26 February 2013 for a term of 10 years, extendable upon compliance with the prevailing laws and regulations;</li> <li>• Coal Resources estimates are based on the geological database as at 31 January 2017;</li> <li>• A valid Point of Observation is a drillhole with an appropriate level of confidence. This estimate utilises cored holes with &gt;90% linear core recovery in coal. The level of confidence applied to non-cored holes with geophysical logs is based on the availability of adjoining cored drillholes and the apparent seam variability or consistency based on the geophysical logs. As appropriate, the level of confidence was downgraded if seam variability was apparent;</li> <li>• The upper limit of the seams is the Base of Weathering, which is beneath the Project topographic surface;</li> <li>• A minimum seam thickness of 0.5 m has been applied to this Resources estimate;</li> <li>• The maximum parting thickness included in the seams is 0.1 m, all partings greater than 0.1 m have been used to define seam splitting so that this material is now designated as interburden;</li> <li>• No geological losses have been applied;</li> <li>• No specific coal quality cut-off parameters were applied as both coal analyses and supporting geophysical logs show that there is a clear distinction between coal and non-coal intervals.</li> <li>• Resources have been estimated on an <i>in situ</i> basis using Relative Density at an estimated <i>in situ</i> moisture basis, which for this Project is deemed to be equivalent to the TM% (ar);</li> <li>• Coal Resources are reported to a basal Relative Level (RL) of -100 m, which is to a maximum depth of approximately 180 m below the surface topography. These depth limitations are applied based on the maximum depth of drilling, and hence confidence, and to meet the criteria of “reasonable prospects for eventual economic extraction” (JORC Code 2012); and</li> <li>• Coal Resources estimates have been rounded to two significant figures in compliance with the JORC Code 2012, Section 25, in order to reflect the accuracy of estimates.</li> </ul>
8	Mining factors or assumptions	A minimum thickness of 0.5 m was applied due to the potential additional mining costs of mining thin low value coal.
9	Metallurgical factors or assumptions	Not applied as the coal is to be marketed as ROM coal with no beneficiation.
10	Environmental factors or assumptions	Not applied as the Consultant is of the opinion that outstanding environmental permitting issues, including the AMDAL, extension of the IPPKH and river diversion will not be material issues.

No.	Section / Criteria	Comment
11	Bulk density	Based on <i>in situ</i> density as calculated from laboratory RD using the Preston-Sanders formula.
12	Classification	The classification of Coal Resources by the Competent Person was based on drill spacing, data collection methods and the geological continuity. See also <b>Section 4.7</b> .
13	Audits or reviews	As per findings in this review, plus internal reconciliation and peer review.
14	Discussion of relative accuracy/ confidence	Based on the review of data by seam, validation of drill logs, geophysical logs and core logs, checking consistency thickness and quality by statistic, contour etc., the Competent Person is of the opinion that the Coal Resources categorisation is appropriate.

#### Section 4 – JORC Code 2012 Estimation and Reporting of Ore Reserves

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

No.	Section / Criteria	Comment
1	Mineral Resources estimate for conversion to Ore Reserves	<p>The Resources Statement is signed by Mr. William (Bill) Park. The Reserves Statement is signed by Mr. Chris Spiliopoulos. Mr. Park is a member of the AIG and AusIMM and Mr. Spiliopoulos is also a member of the AusIMM. Mr. Park and Mr. Spiliopoulos have sufficient relevant experience to qualify as Competent Persons under the Australasian Code for Reporting of Identified Mineral Resources and Reserves (the JORC Code 2012). See also <b>Section 4.8</b>.</p> <p>The Coal Resources reported are inclusive of the Coal Reserves.</p> <p>The Mincom geological model is included in <b>Appendix M</b>.</p>
2	Site visits	<p>A site visit was conducted by Mr. Ony Eko Yusanto, NRM Project Manager Geology (Member of AusIMM – 323252) and Mr. Almu'minin Syarif, NRM Project Manager Mining (Member of AusIMM – 322556) conducted a site visit from 1 – 3 February 2017, including haul road and dump inspections. The Competent Person for Coal Reserves, who is signatory to this Statement has not been to the site as of the date of reporting for the reason that other senior personnel with appropriate experience have visited the site on a number of occasions, the Project is in a “brownfield” stage of development and that he has visited adjoining coal mining concessions on a number of previous occasions and is familiar with the specific issues involved in operating in this region. The Consultant is therefore of the opinion that this is not a material issue.</p>

No.	Section / Criteria	Comment
3	Study status	<p>The Consultant has completed a LOM to appropriate PFS standards, with key Modifying Factors having been considered, including economic viability, geotechnical, hydrological, infrastructure, marketing, environmental, social and regulatory permitting. It is recognized that further geotechnical/hydrogeological work is required for the South Block (although the strata and seams are correlatable with the North Block). Detailed studies are required for planned Cimpur River and RAPP road diversions. Environmental and IPPKH permitting is still in process.</p> <p>The Project is a brownfield site in Riau, Indonesia with small scale mining having commenced in 2016.</p>
4	Cut-off parameters	<p>Mineable Pit Shells based on the Lerchs-Grossman pit optimisation procedure. These pit shells have been used to estimate Coal Reserves. Other constraints included the Resources classification polygons, lease boundaries. No specific coal quality cut-off parameters were applied as analyses show that there is a clear distinction between coal and non-coal intervals based on both coal quality analyses and geophysical logs.</p>
5	Mining factors or assumptions	<p>The mining method used to determine the Ore Reserves was conventional open pit mining using backhoe style hydraulic excavators loading off-highway dump trucks for both waste and ore mining.</p> <p>Coal Resources were converted to Coal Reserves using pit optimisation "Optimizer" software with the application of relevant Modifying Factors, i.e. loss and dilution, geotechnical slope parameters for pits and external dumps. (See <b>Sections 5.4 and 5.5</b>)</p> <p>Geotechnical factors applied for pit walls and waste dumps are included in <b>Sections 5.7.1, 5.10.2 and 5.11.1</b>. Geotechnical studies indicate that waste material is low to very low strength and therefore will not require blasting, with some ripping as required. Limited study of potential acid forming strata has indicated potential for AMD which will require further testing and appropriate encapsulation of deleterious material waste dumps.</p> <p>Reasonable factors have been used for roof and floor loss (6 cm), dilution (combined roof and floor, 3 cm), minimum seam thickness (0.5 m), and minimum coal parting thickness (0.2 m) as well as diluting material properties. Coal quality is as per the geological model combined with loss, dilution and moisture adjustments. Minor coal tonnages based on localised Inferred category coal were included in the pit optimisation process and in mine scheduling.</p>
6	Metallurgical factors or assumptions	<p>The coal produced at the Project is not washed resulting in 100% yield. Therefore, Coal Reserves is equal to Marketable Reserves.</p>
7	Environmental	<p>Hydrology and AMD overview, Ground Clearing and Top Soil Management, Water Management, Mine Rehabilitation and Status of Approvals are included in <b>Section 5.7.2, 5.7.3, 5.10.1, 5.10.4, 5.11 and Section 5.17</b>, respectively.</p>

No.	Section / Criteria	Comment
8	Infrastructure	<p>The site infrastructure will include workshops, office and associated infrastructure. Infrastructure to support Mining and Coal Handling operations has been scoped and costed based on experience in previous coal operations. Such facilities will be developed in the Mine, CHF, and Camp areas. Detailed infrastructure layout plans are in progress which will determine the “footprint” and potential environmental impact of such construction, including land compensation. The Consultant is of the opinion that adequate capital allowance has been made for environmental and social costs.</p>
9	Costs	<p>GMT has been supplied budget mining, processing, and transport costs and applicable royalties by the Client. GMT has reviewed these costs and is of the opinion the costs used (both capital and operating) are appropriate for this style of deposit and are in line with similar sized mines in Indonesia.</p> <p>Capital costs are predominantly related to the requirements of the Riau-1 MMPP coal supply. The Consultant has extensive recent experience in costing infrastructure requirements for a number of other PLN tenders (specifically Sumsel 9 and Sumsel 10).</p> <p>All costs and revenues were estimated in USD.</p>
10	Revenue factors	<p>Revenue per product tonne is based on the agreed contract between PTSB and coal buyers, or the Riau-1 MMPP coal price formula as decreed by the relevant Indonesian Government regulation. The coal price was input into the Optimizer for further mine optimisation process.</p>
11	Market assessment	<p>The coal produced is a low energy thermal lignite coal. There are 2 (two) coal product’s specifications marketable within the Project:</p> <ul style="list-style-type: none"> <li>• Seam M7 Seam M7 will be dedicated for PLN Tenayan coal supply contract with the total of 2.35 Mt coal requirements for 5 years period of coal delivery. Seam M7 coal specifications: TM 40.3% (ar), IM 15.1% (ar), Ash 7.7% (ar), TS 0.14% (ar) and CV 3,610 kcal/kg (gar).</li> <li>• Seam M3, Seam M4 group and Seam M5 group Seam M3, Seam M4 group and Seam M5 group will be dedicated for SDU, SMS and Riau 1 coal supply contracts with the total of 111.3 Mt coal requirements. The weighted average coal specifications: TM 44.0% (ar), IM 20.1% (ar), Ash 7.4% (ar), TS 0.17% (ar) and CV 3,400 kcal/kg (gar).</li> </ul>
12	Economic	<p>The Competent Person believes that the mine is economically viable and the scale of operations that will be developed subject to success in winning the Riau-1 bid and the construction of the MMPP. A hard copy summary of key elements of the financial model is included in <b>Appendix P</b>.</p>

No.	Section / Criteria	Comment
13	Social	The indigenous inhabitants of the concession area are the Pauhranap people. The land use is designated as Production Forest and no significant villages lie within the proposed area of operations. The major Pit South is largely overlain by softwood plantation owned and operated by PT Citra Sumber Sejahtera. It is understood that at the present time no land compensation agreement has been reached with PT Citra Sumber Sejahtera. The North Pit is largely owned by smaller landowners and to date approximately 365 Ha has been compensated to facilitate current mine operations. The Consultant is of the opinion that adequate allowance has been made in capital costs to cover land compensation expenses.
14	Other	N.A.
15	Classification	<p>Coal Reserves have been classified based on the confidence of the Coal Resources, the level of detail in the mine planning, and the level of risk associated with the project. Generally, Indicated Resources have been classified as Probable Reserves and Measured Resources within the pit shells have been classified as Proved Reserves. GMT has downgraded some Measured resources to Probable reserves (approximately 39 Mt), pending completion of a detailed study of river diversion and logging road diversion. (See <b>Section 5.18</b>). Whether the Cimpur river diversion is not approved or delayed, it is estimated that approximately 6 Mt tonnes would be sterilised.</p> <p>No Inferred Resources have been used in the Coal Reserves estimate. However minor Inferred category coal has been included within the optimisation process and determination of the practical pit limits and also included in the mine schedule. This is not considered to be a material issue by the Consultant.</p>
16	Audits or reviews	As per findings in this review, plus internal reconciliation and peer review.
17	Discussion of relative accuracy/ confidence	A cash flow model was created using the coal pricing and costs described above. The cash flow analysis demonstrated a positive return for the Project. The Consultant is of the opinion that Coal Reserves classification accurately reflects their view as to the level of confidence in the Reserves estimates.

(Note: N.A. – Not Applicable)

**Appendix G Site Photos**







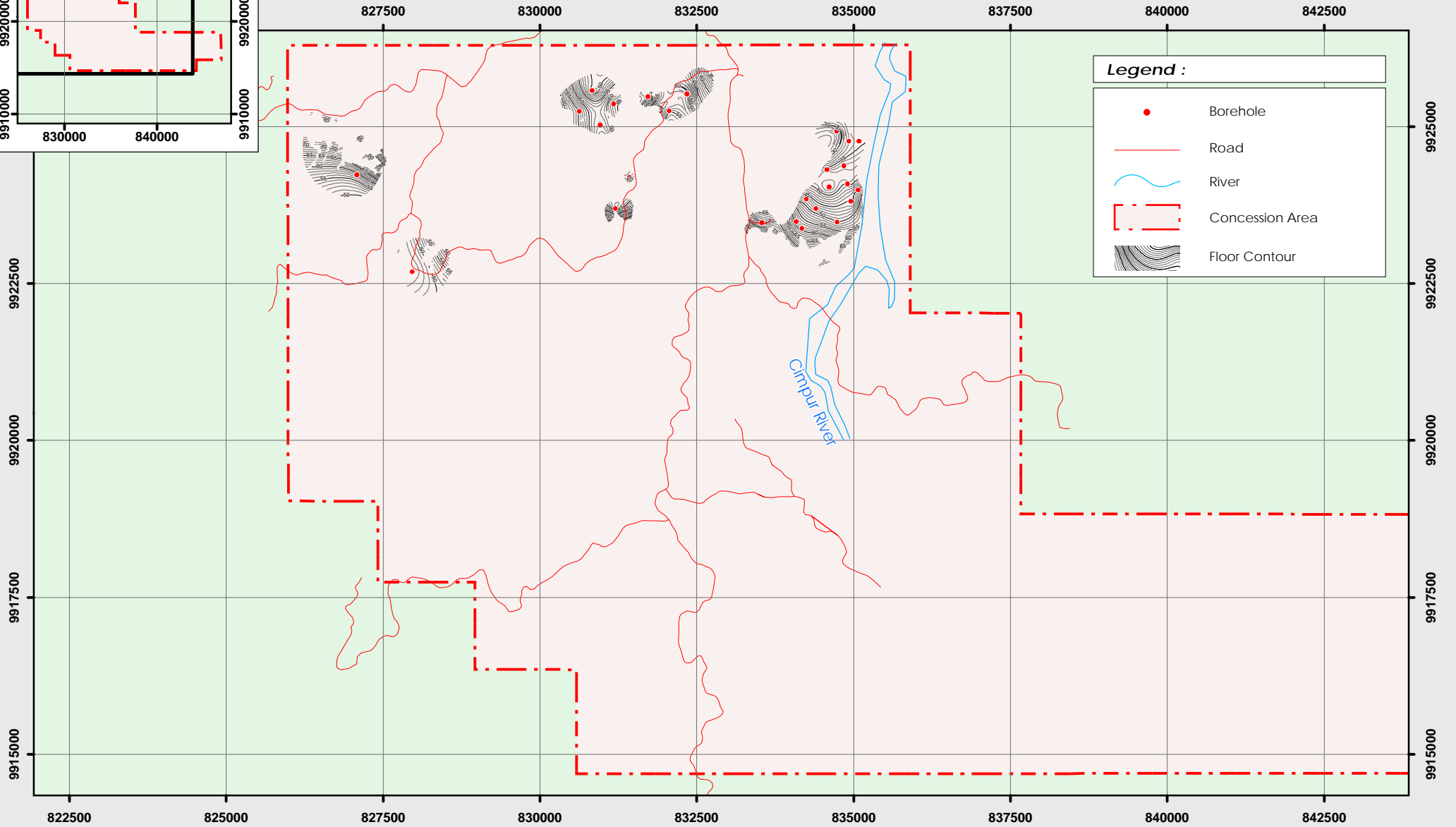
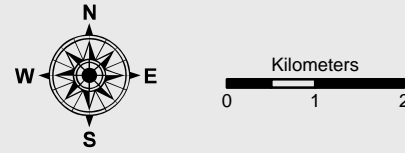
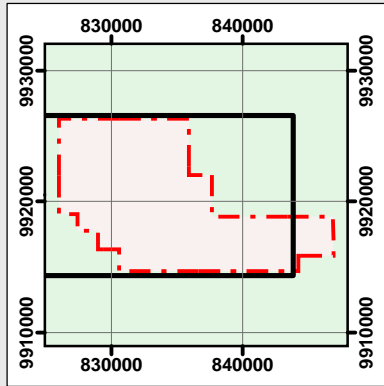






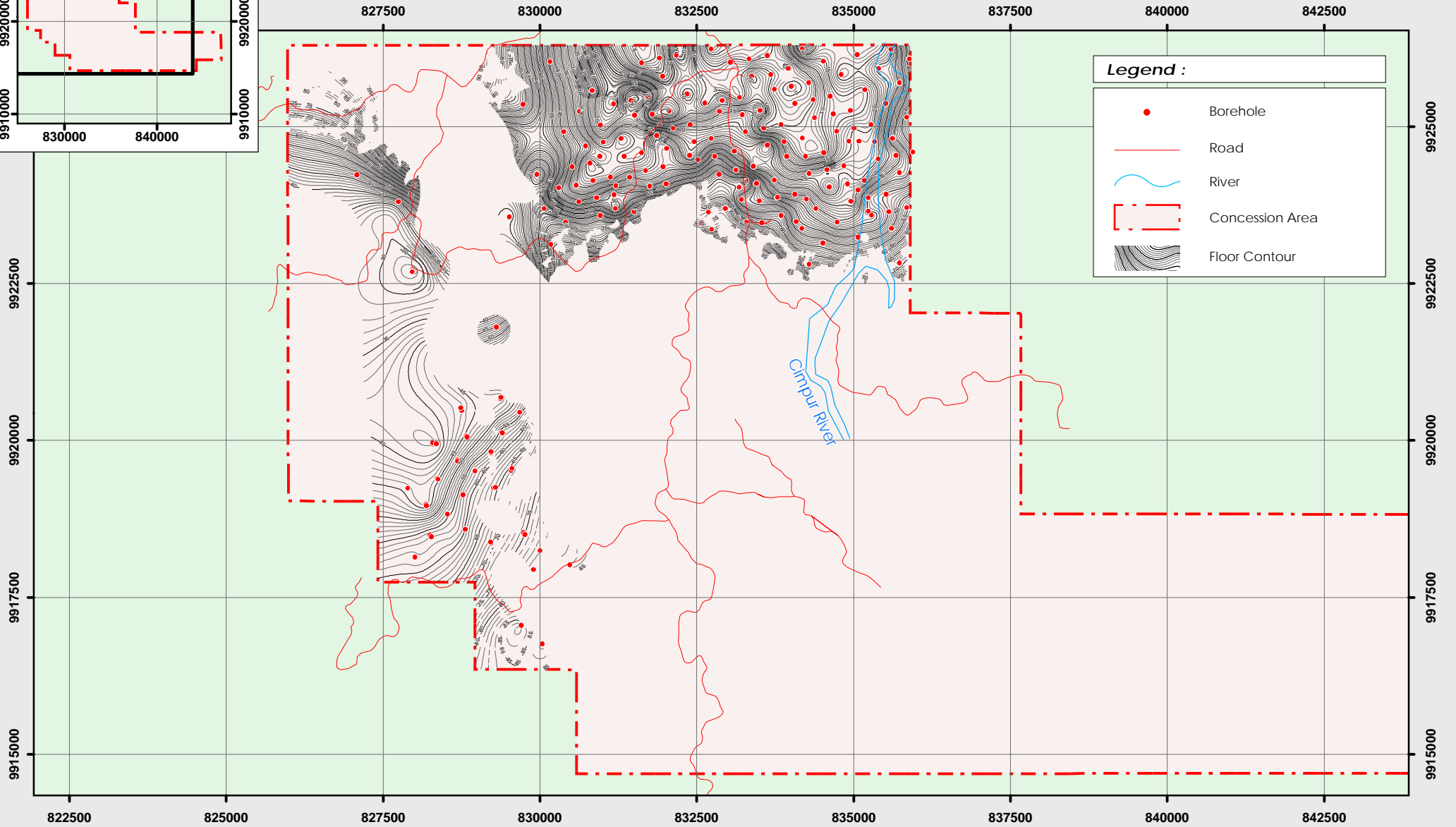
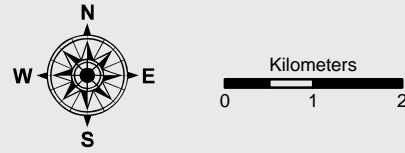
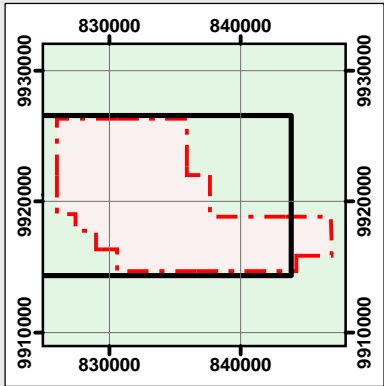


## **Appendix H Structural Floor Contours**



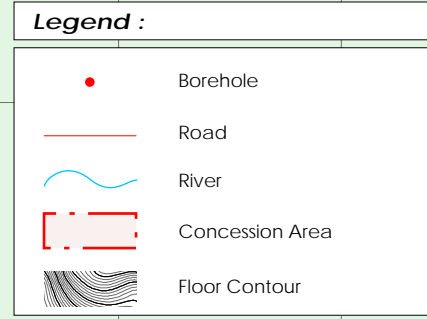
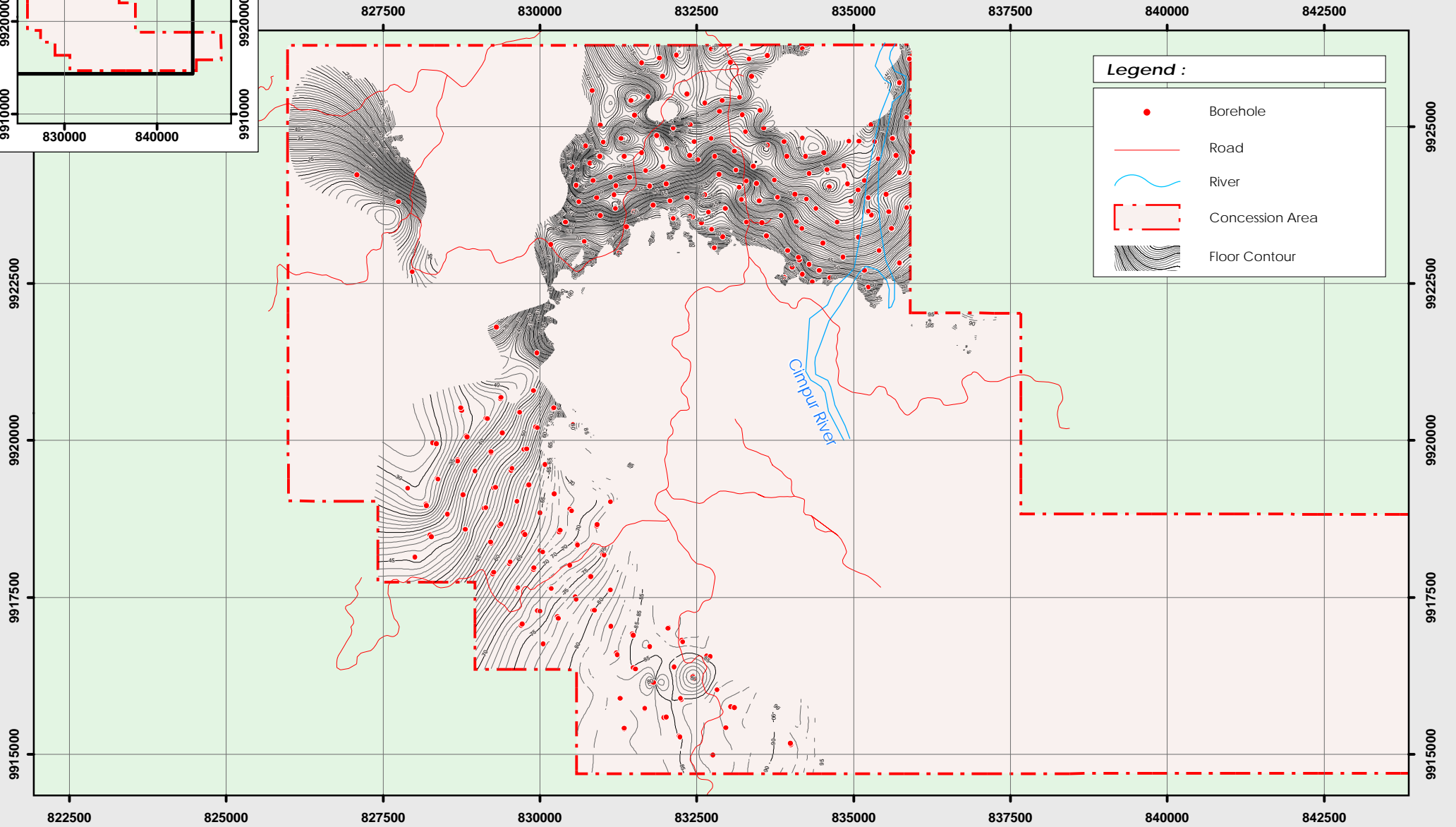
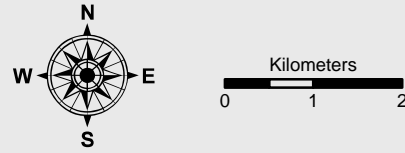
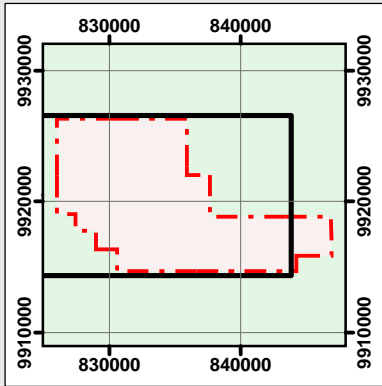
**Legend :**

- Borehole
- Road
- River
- Concession Area
- Floor Contour

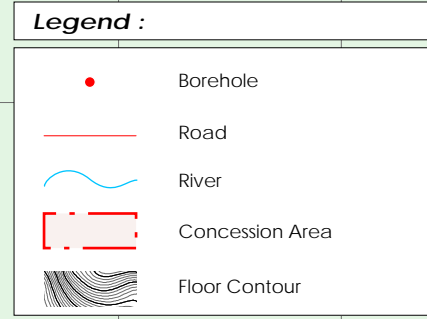
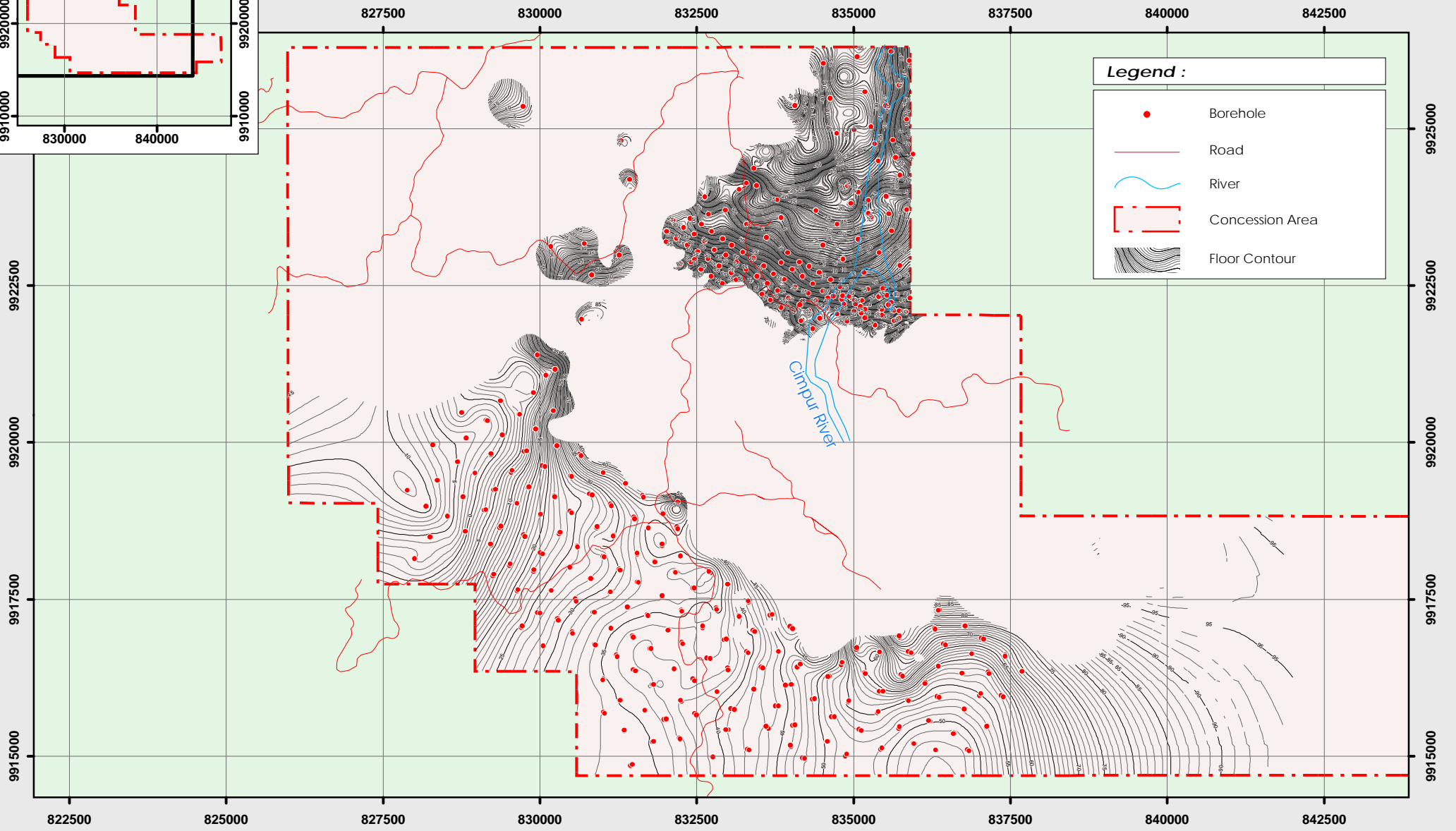
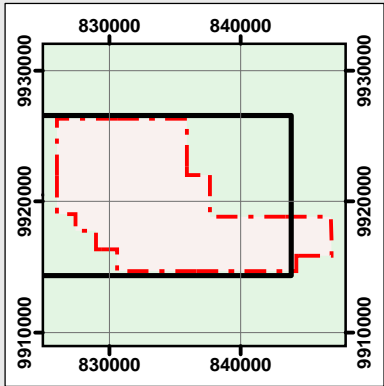


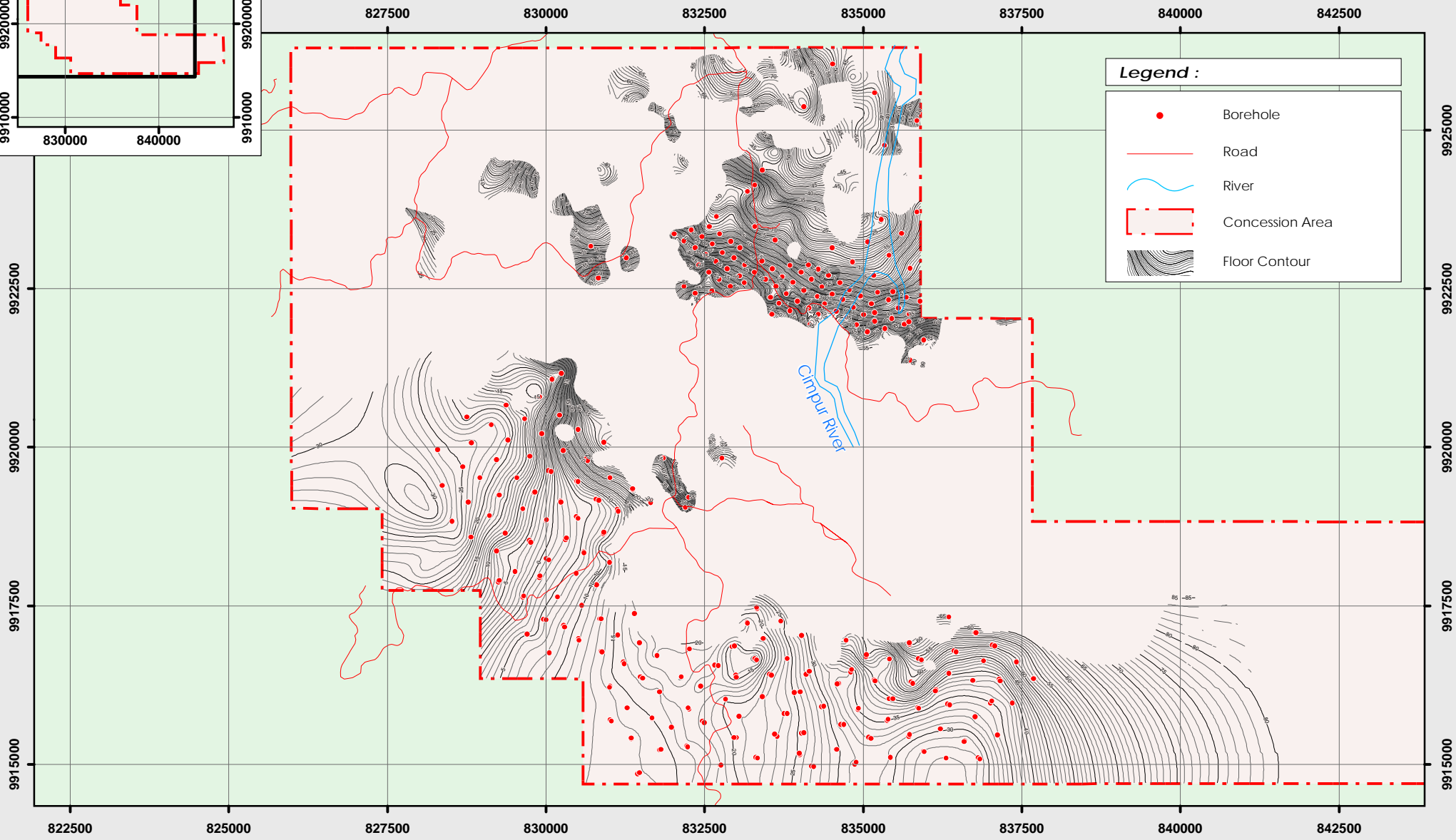
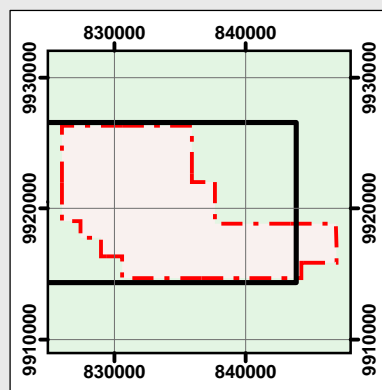
**Legend :**

- Borehole
- Road
- River
- Concession Area
- Floor Contour



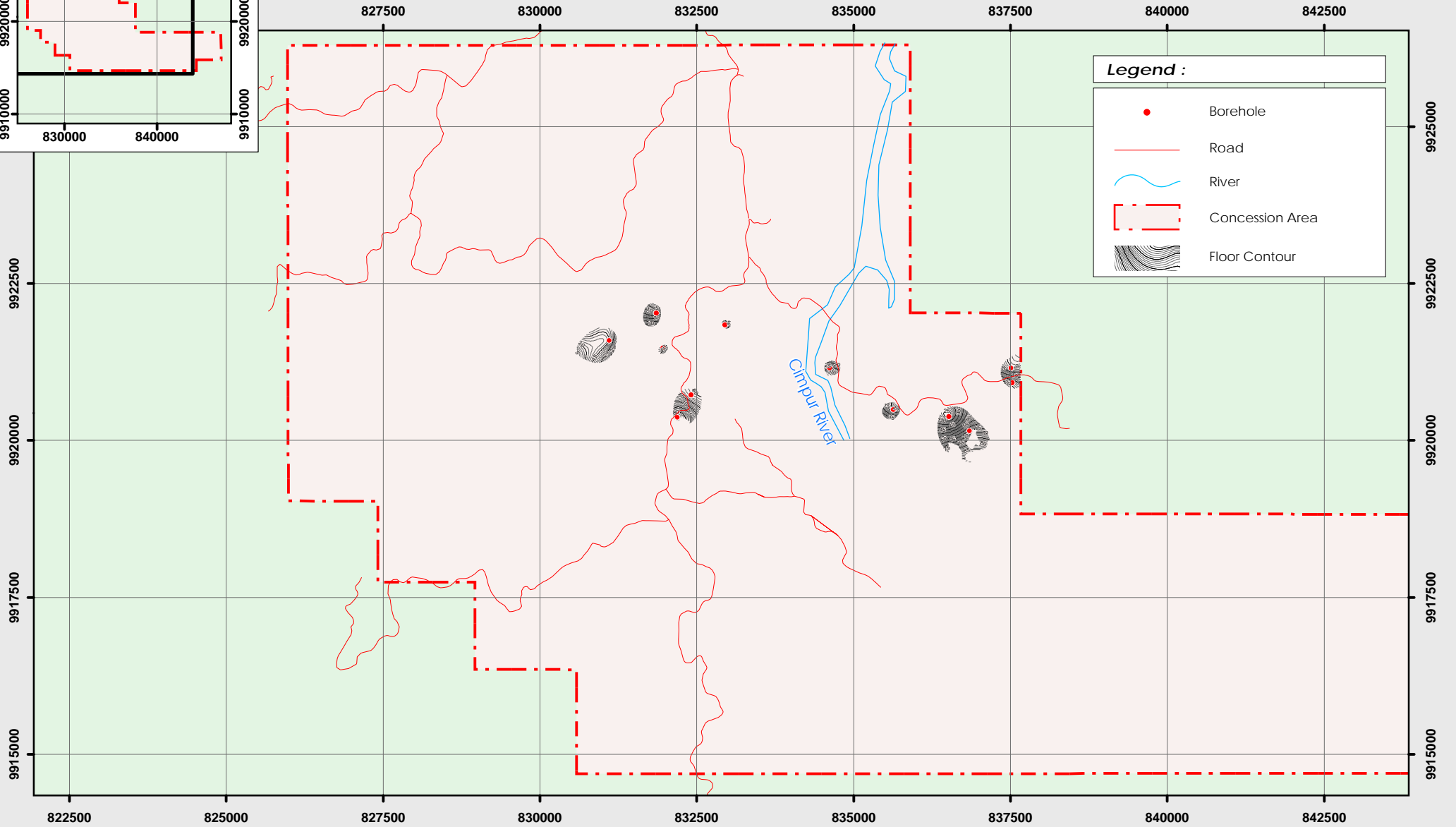
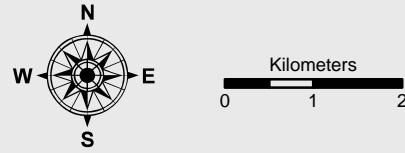
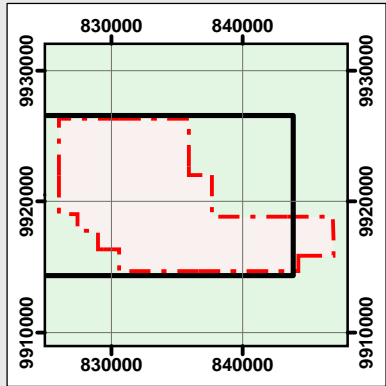






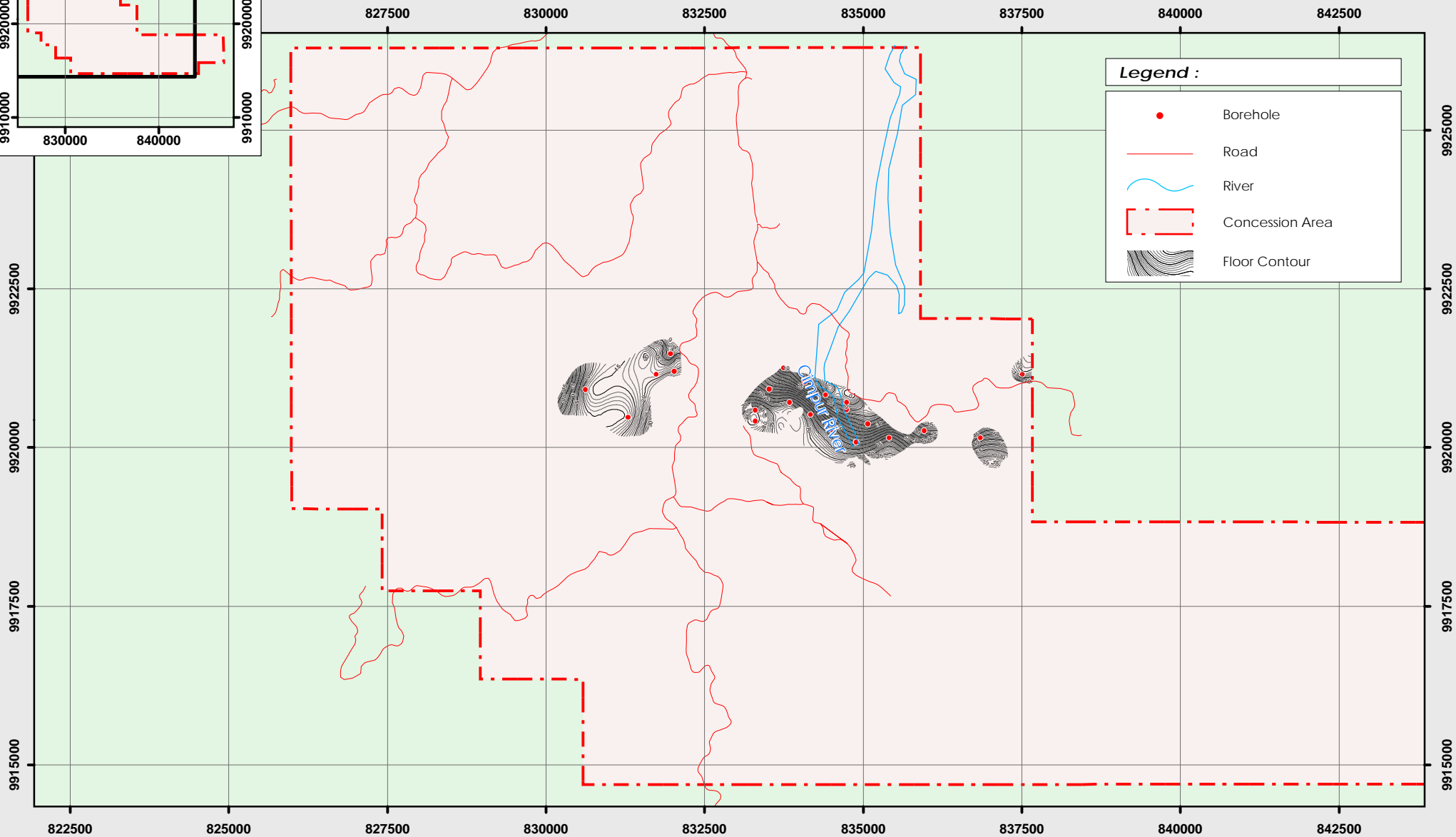
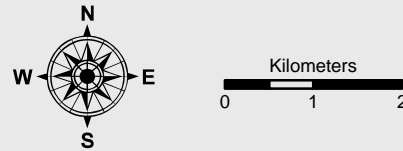
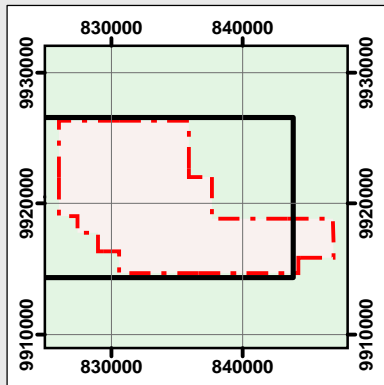
**Legend :**

- Borehole
- Road
- River
- Concession Area
- Floor Contour



**Legend :**

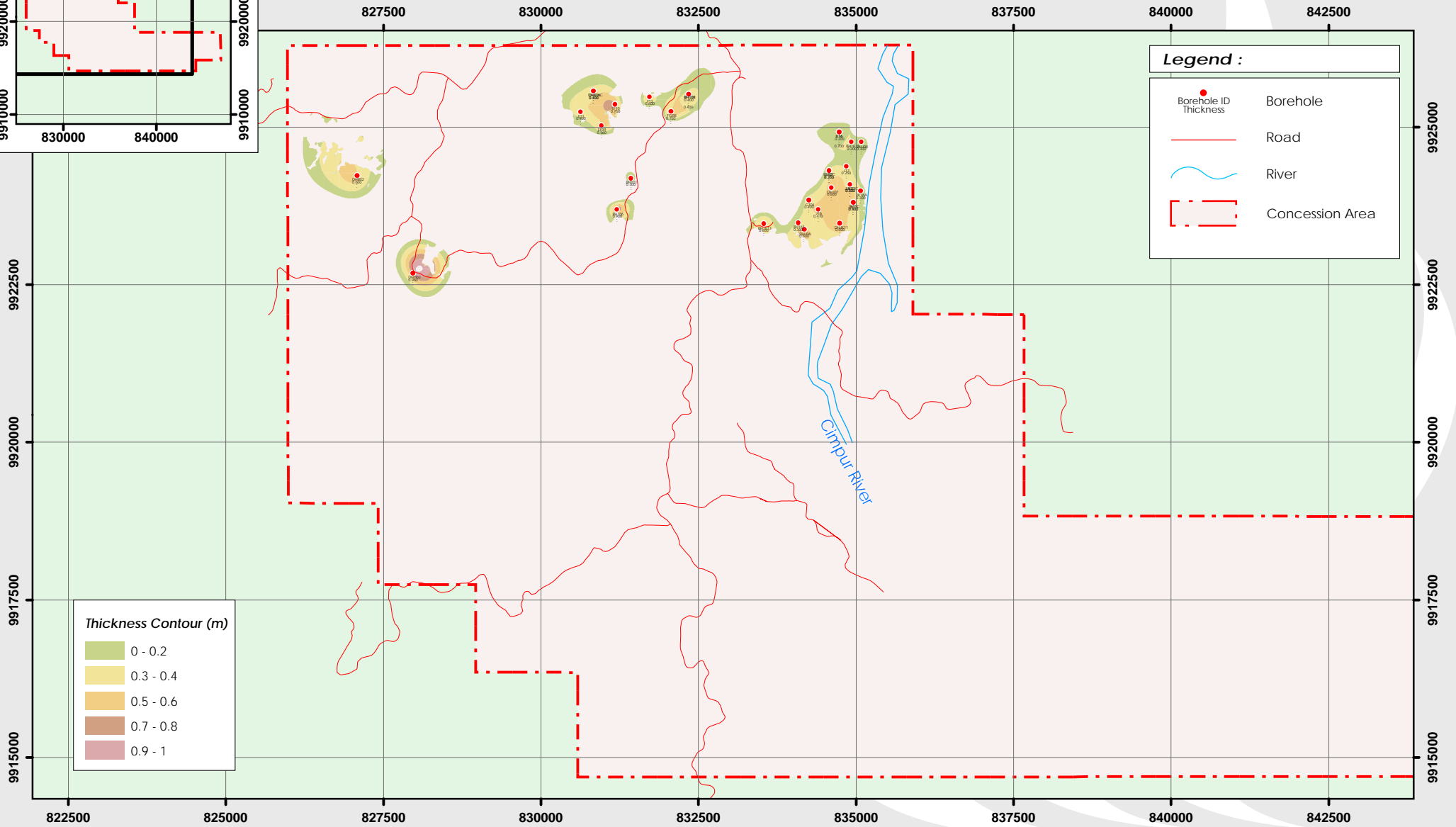
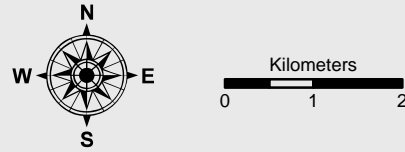
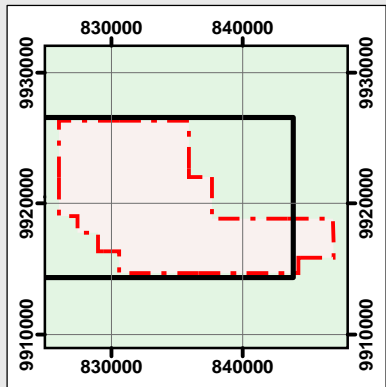
- Borehole
- Road
- River
- Concession Area
- Floor Contour



## **Appendix I Thickness Contours**

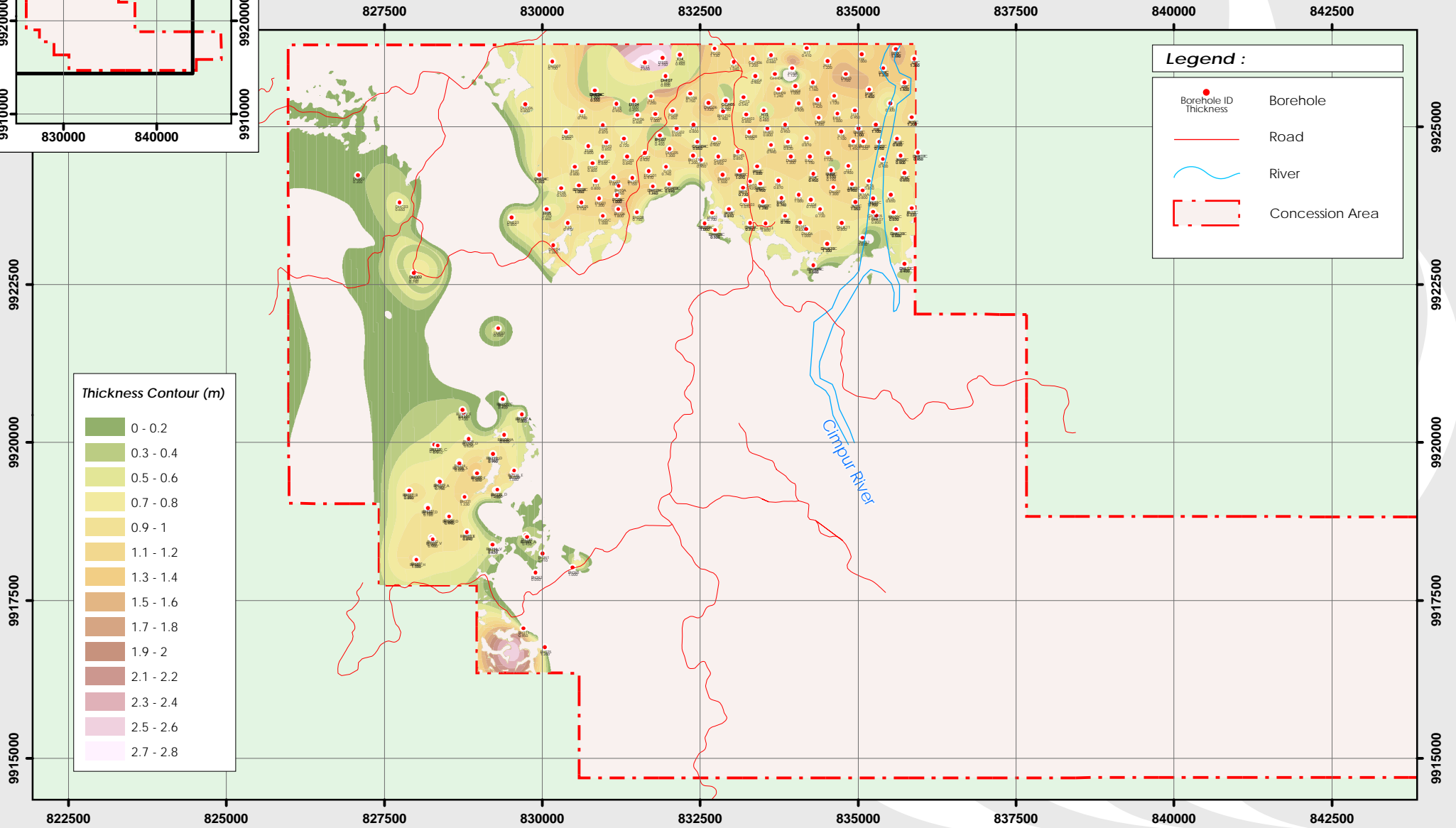
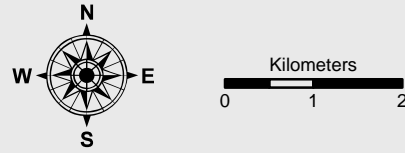
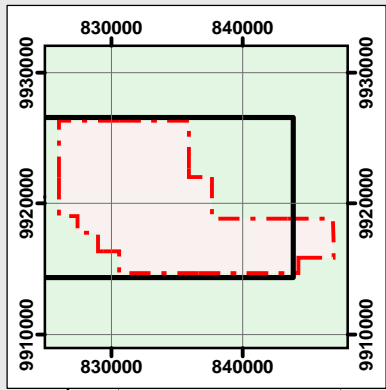
THICKNESS CONTOUR SEAM M2 - SAMANTAKA BATUBARA

Appendix  
1  
1



THICKNESS CONTOUR SEAM M3 - SAMANTAKA BATUBARA

Appendix  
1  
2



**Legend :**

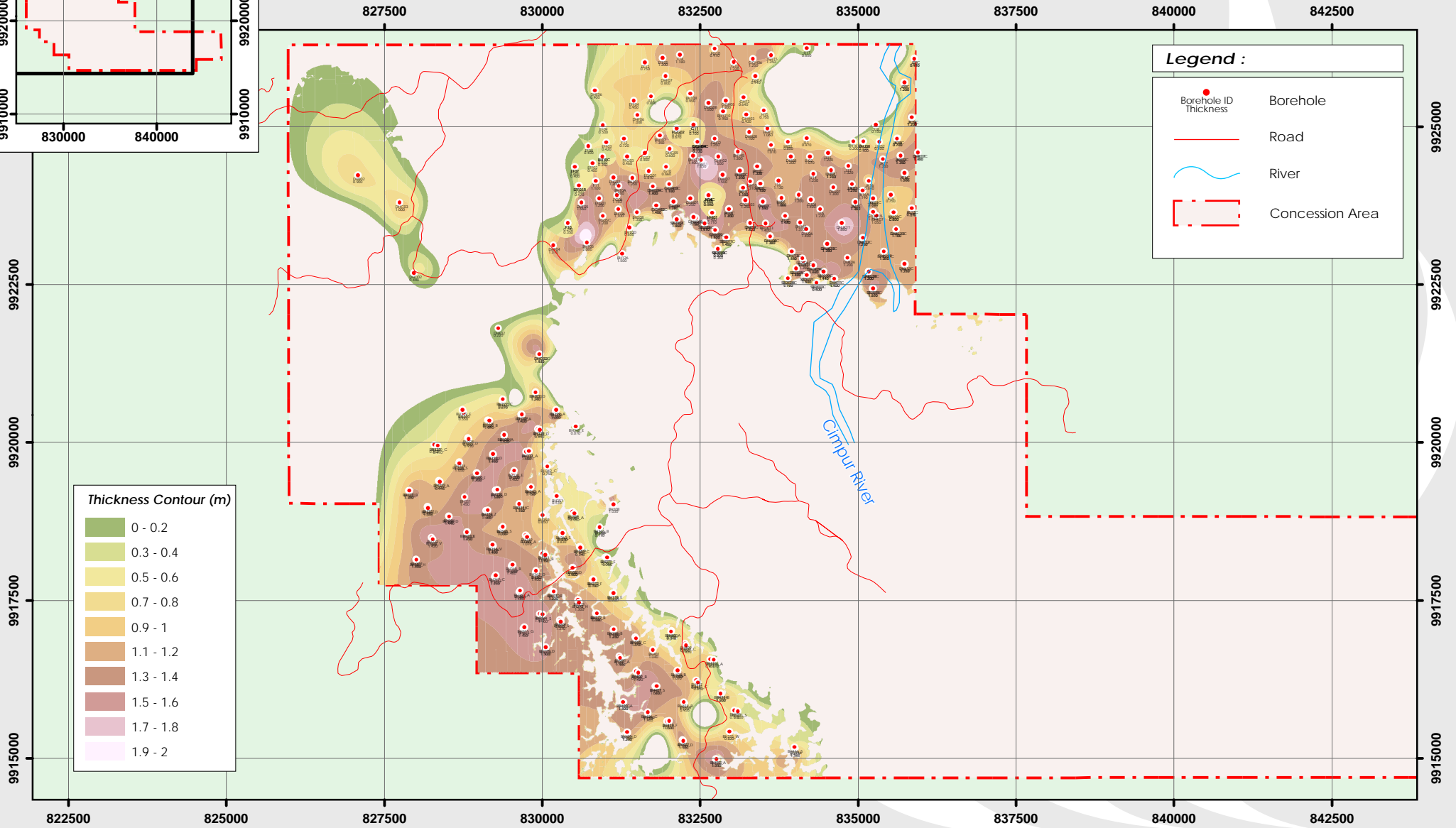
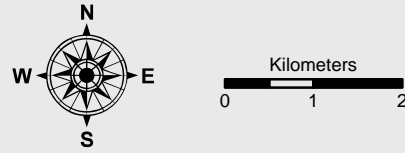
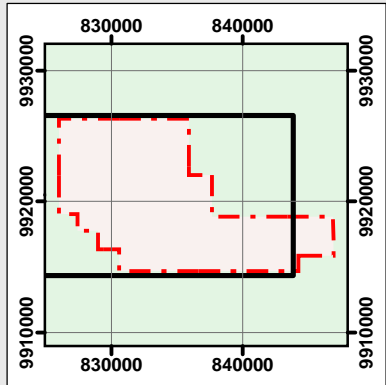
- Borehole ID Thickness
- Road
- ~ River
- Concession Area

**Thickness Contour (m)**

	0 - 0.2
	0.3 - 0.4
	0.5 - 0.6
	0.7 - 0.8
	0.9 - 1
	1.1 - 1.2
	1.3 - 1.4
	1.5 - 1.6
	1.7 - 1.8
	1.9 - 2
	2.1 - 2.2
	2.3 - 2.4
	2.5 - 2.6
	2.7 - 2.8

THICKNESS CONTOUR SEAM M4 - SAMANTAKA BATUBARA

Appendix  
1  
3



**Legend :**

- Borehole ID Thickness
- Road
- ~ River
- Concession Area

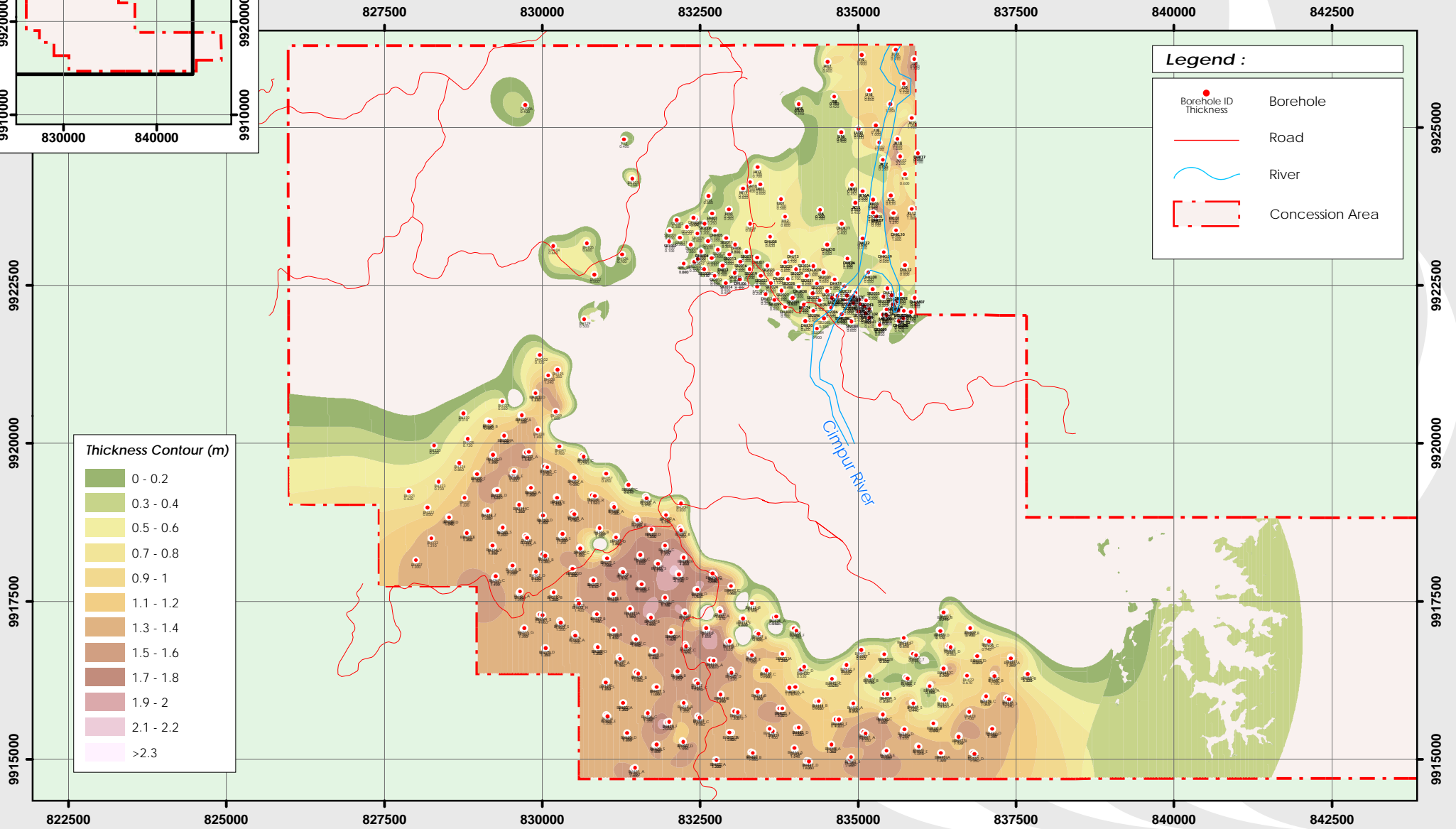
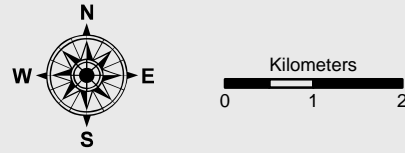
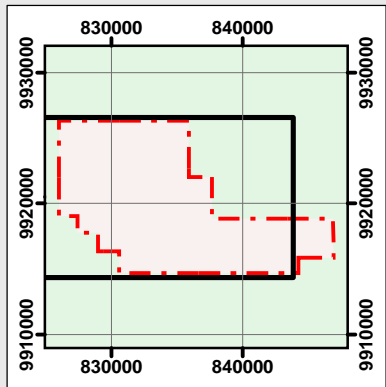
**Thickness Contour (m)**

	0 - 0.2
	0.3 - 0.4
	0.5 - 0.6
	0.7 - 0.8
	0.9 - 1
	1.1 - 1.2
	1.3 - 1.4
	1.5 - 1.6
	1.7 - 1.8
	1.9 - 2



THICKNESS CONTOUR SEAM M6 - SAMANTAKA BATUBARA

Appendix  
I  
4

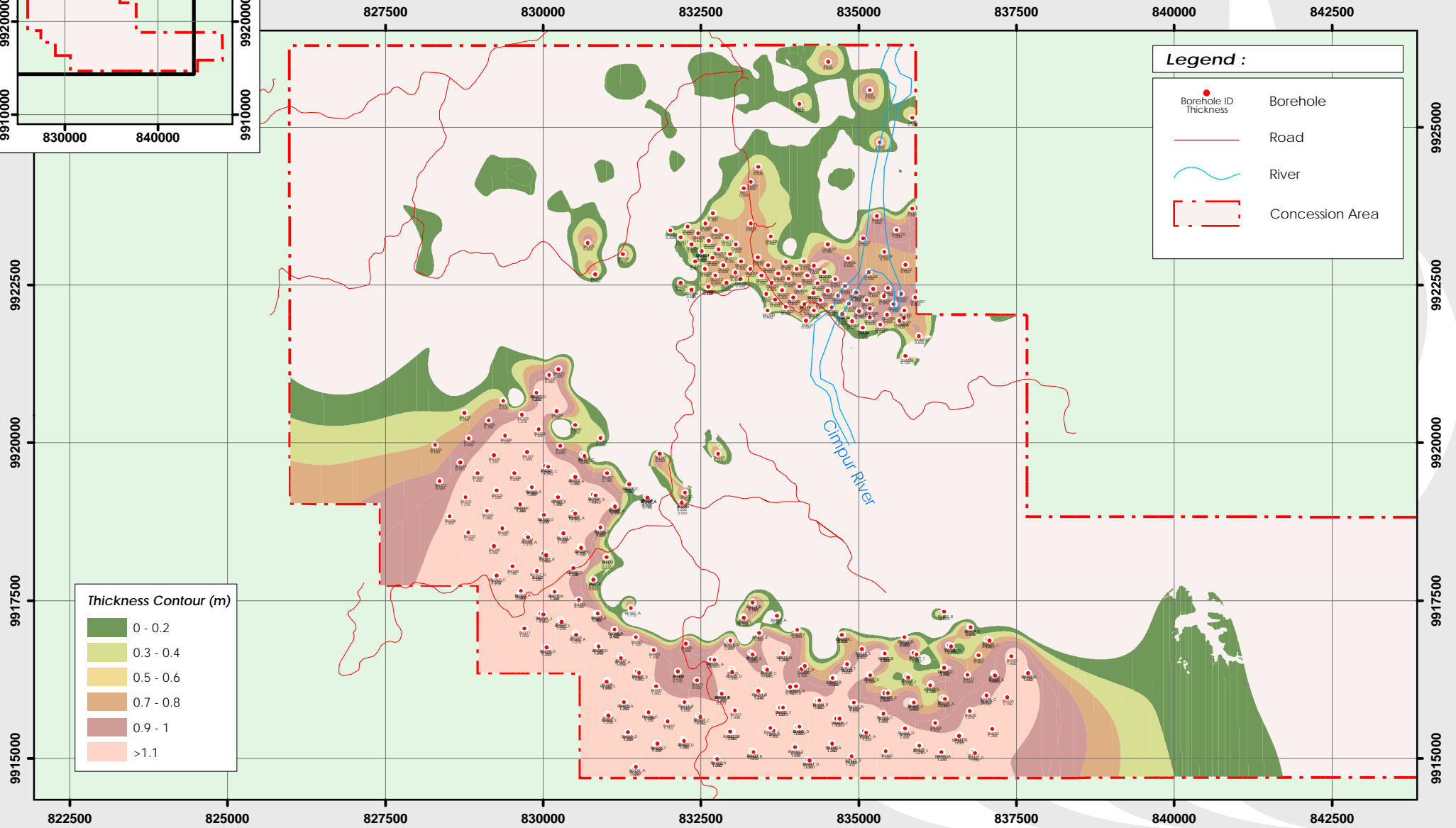
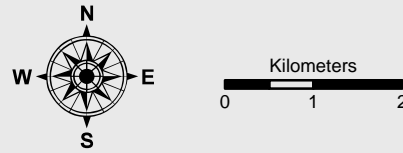
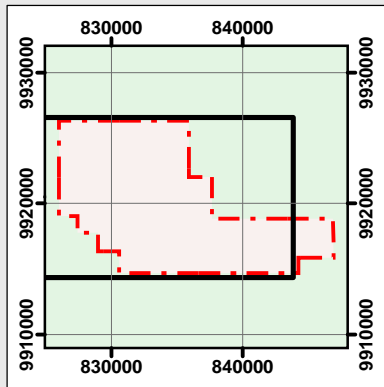


**Legend :**

- Borehole ID
- Thickness
- Road
- River
- Concession Area

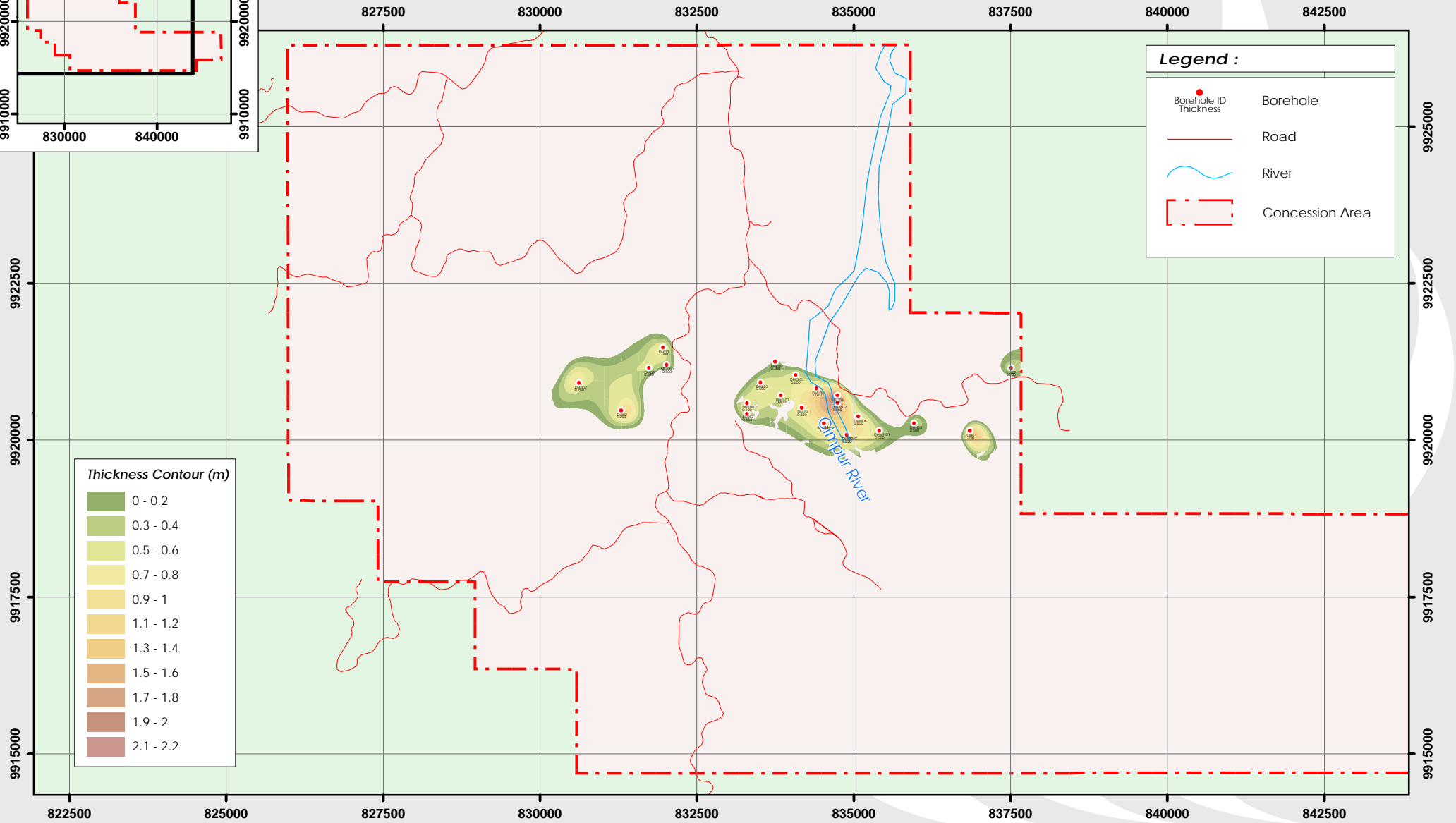
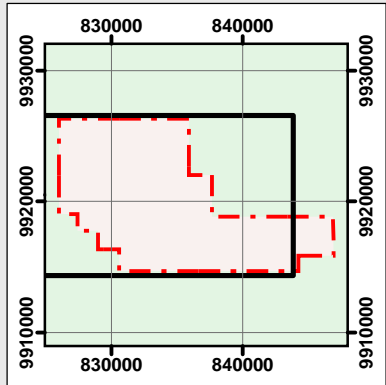
**Thickness Contour (m)**

- 0 - 0.2
- 0.3 - 0.4
- 0.5 - 0.6
- 0.7 - 0.8
- 0.9 - 1
- 1.1 - 1.2
- 1.3 - 1.4
- 1.5 - 1.6
- 1.7 - 1.8
- 1.9 - 2
- 2.1 - 2.2
- >2.3



THICKNESS CONTOUR SEAM M9 -  
SAMANTAKA BATUBARA

Appendix  
1  
6



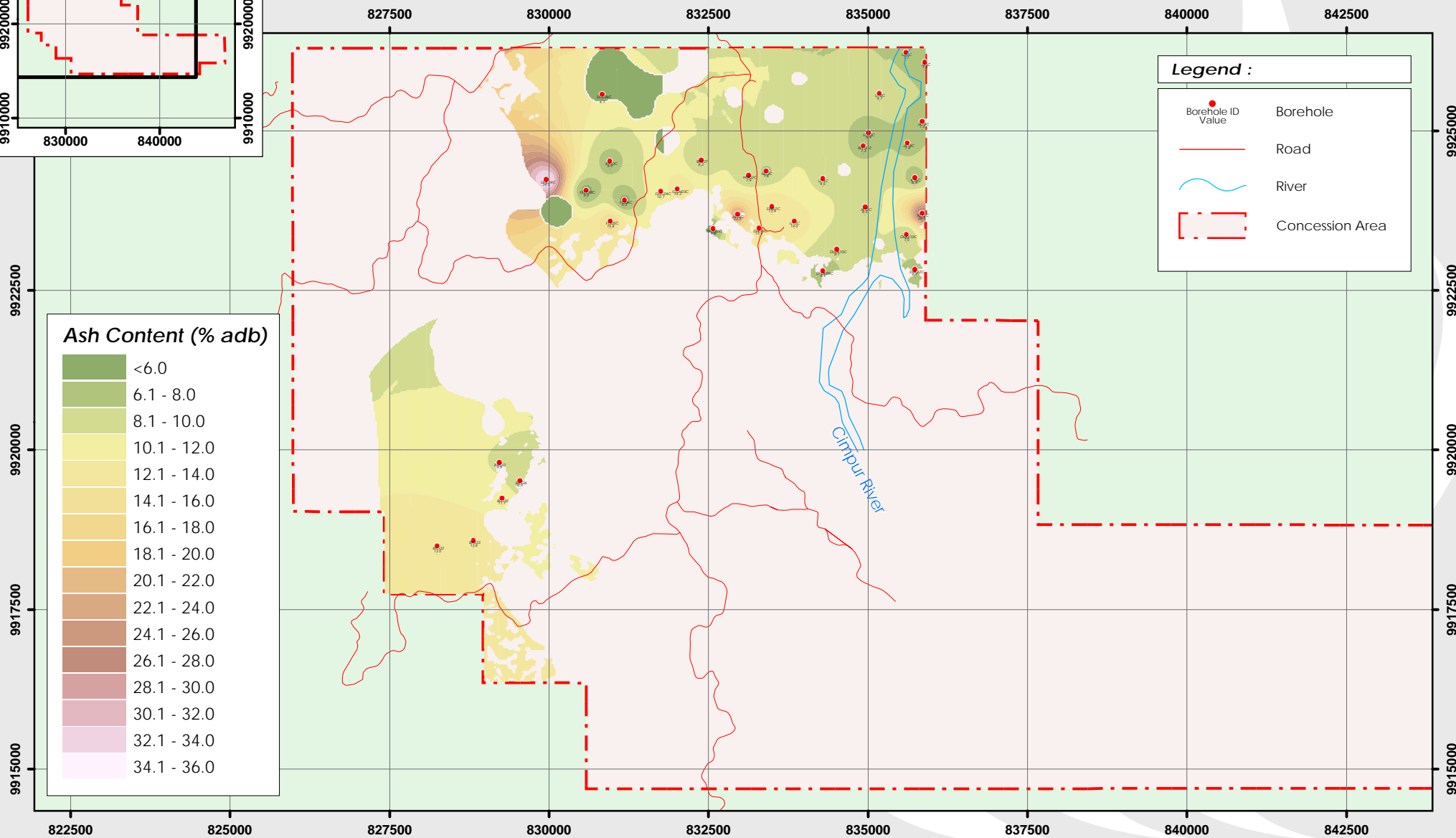
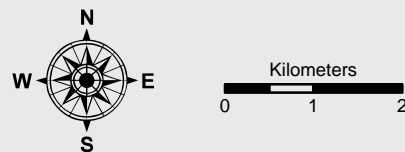
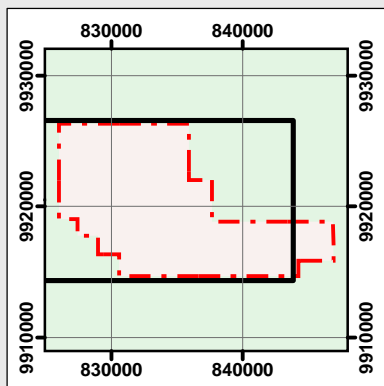
**Thickness Contour (m)**

0 - 0.2
0.3 - 0.4
0.5 - 0.6
0.7 - 0.8
0.9 - 1
1.1 - 1.2
1.3 - 1.4
1.5 - 1.6
1.7 - 1.8
1.9 - 2
2.1 - 2.2

**Legend :**

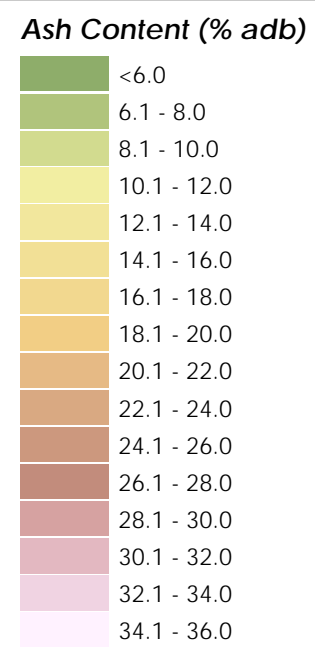
Borehole ID Thickness	Borehole
	Road
	River
	Concession Area

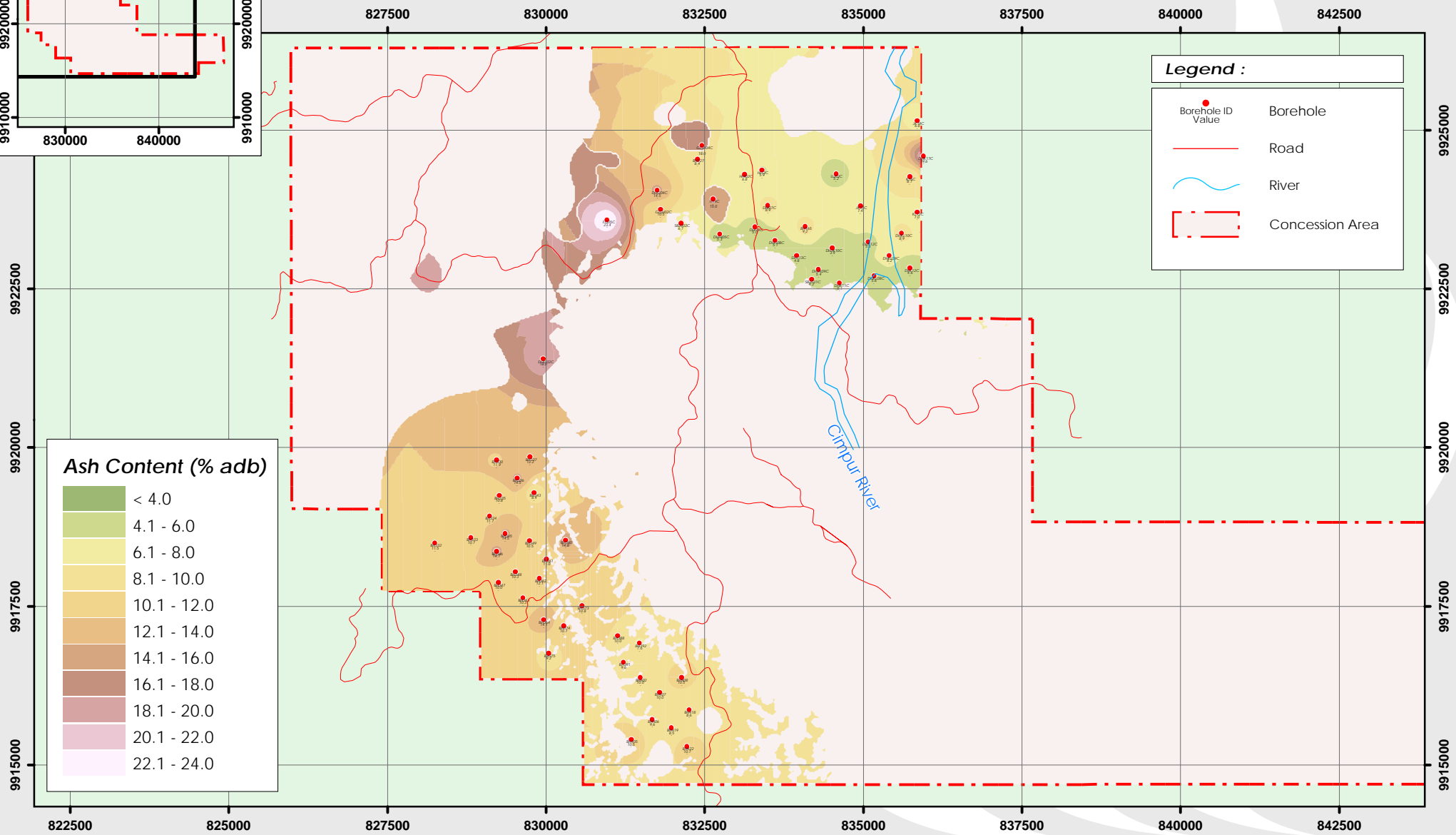
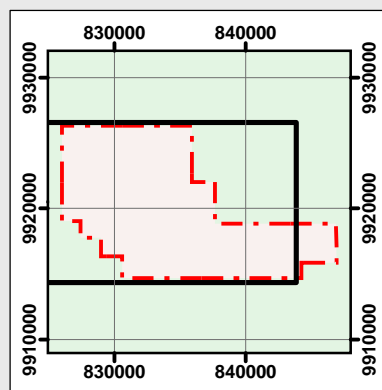
## **Appendix J Quality Contours**



**Legend :**

- Borehole ID Value
- Road
- River
- Concession Area



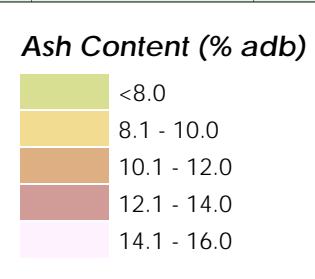
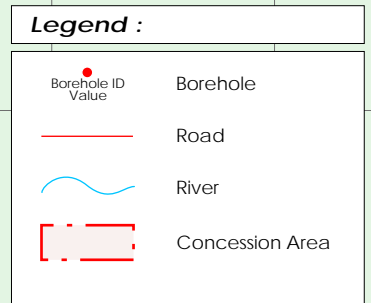
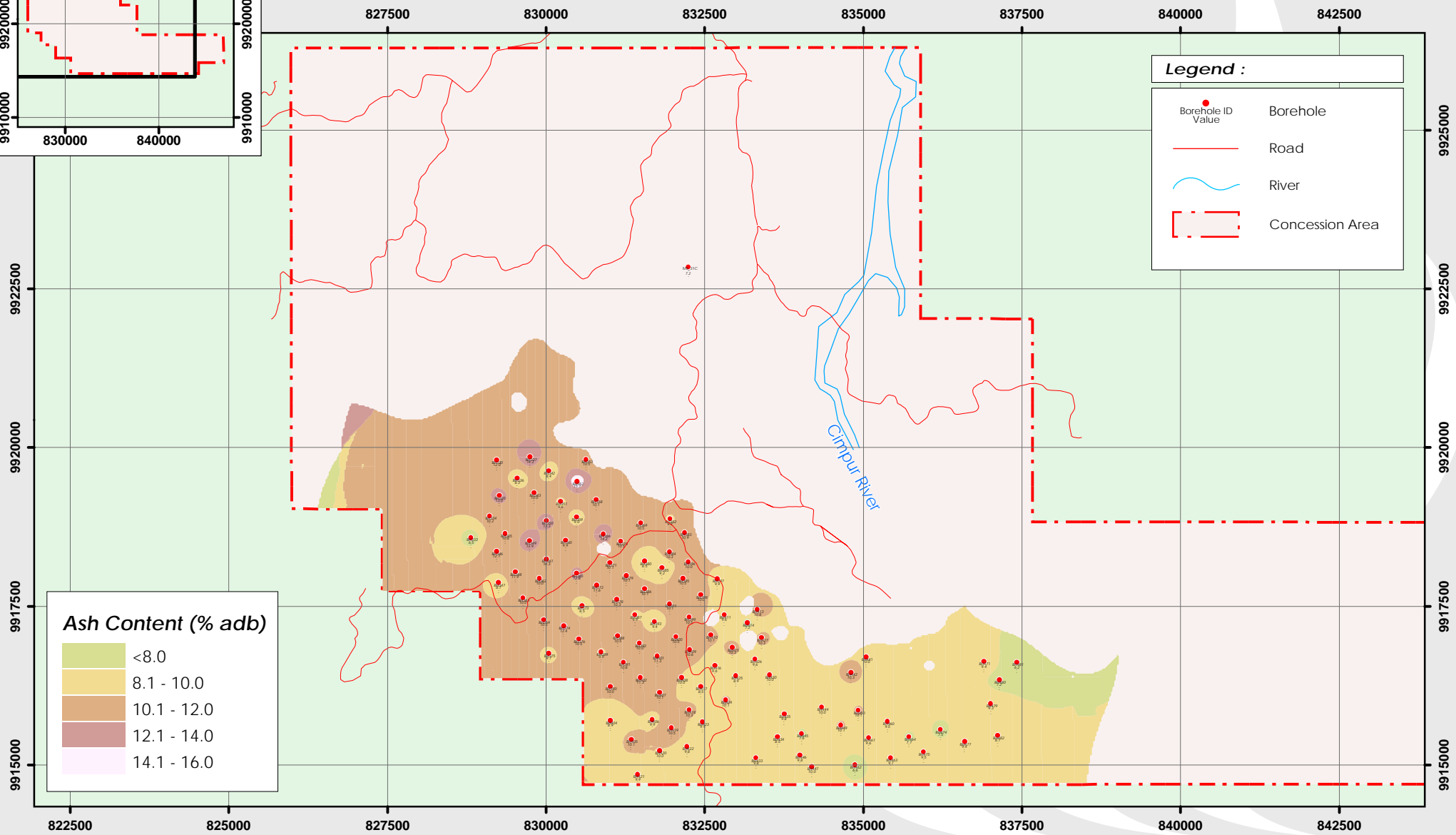
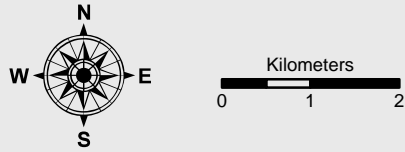
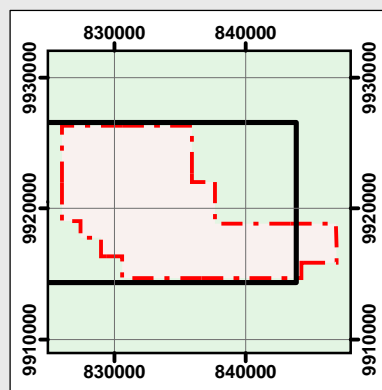


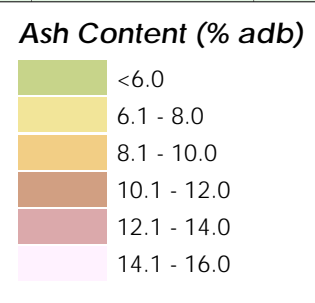
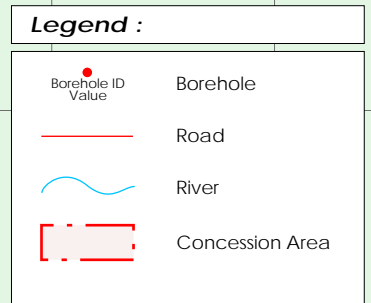
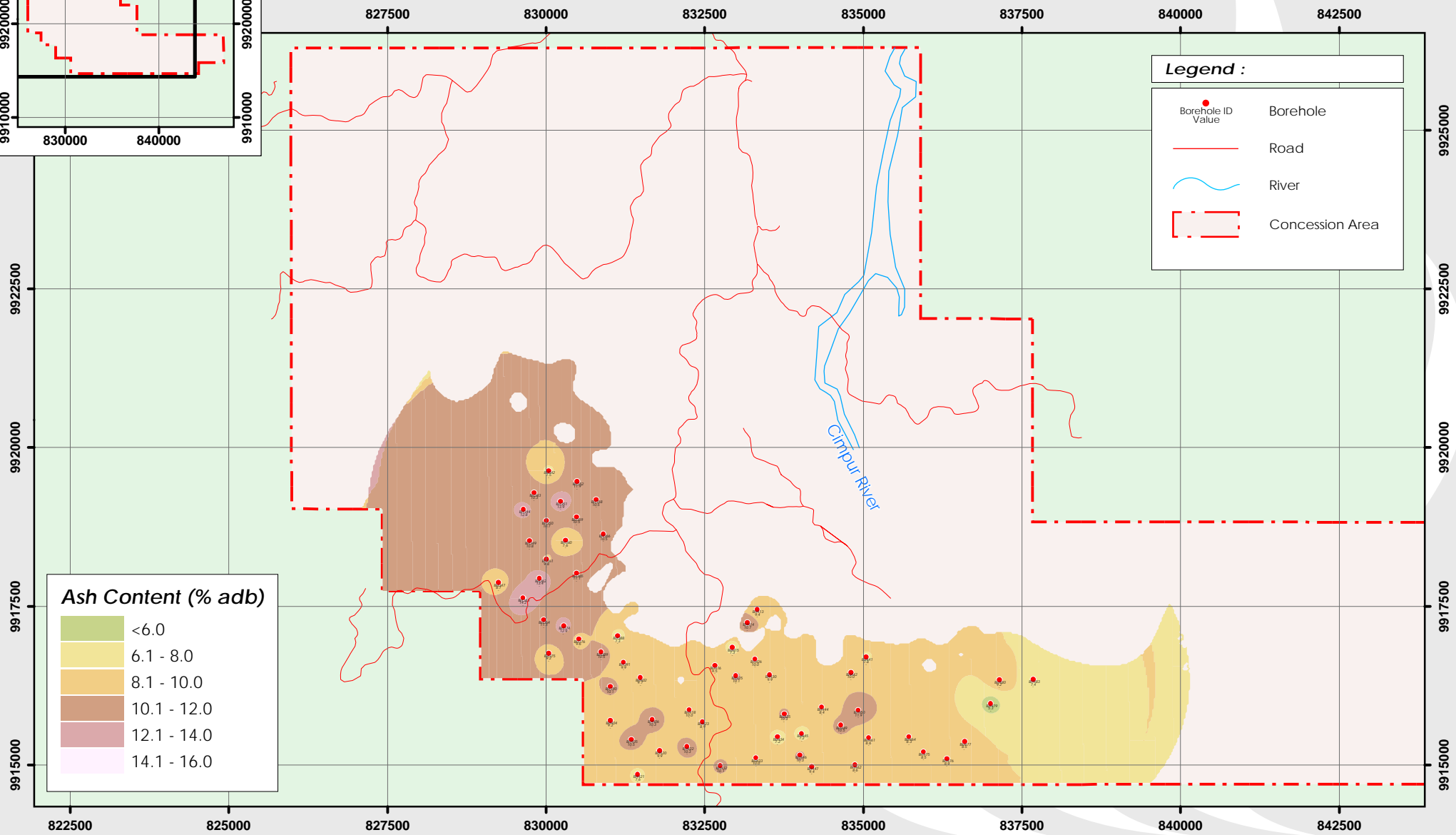
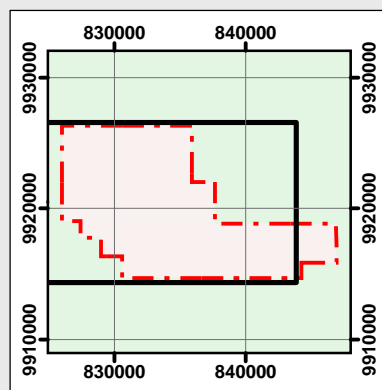
**Legend :**

- Borehole ID Value
- Road
- ~ River
- Concession Area

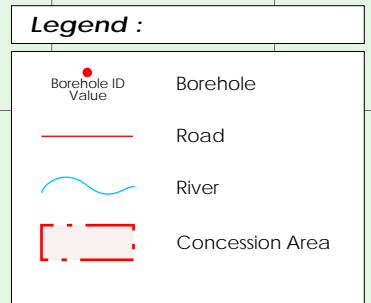
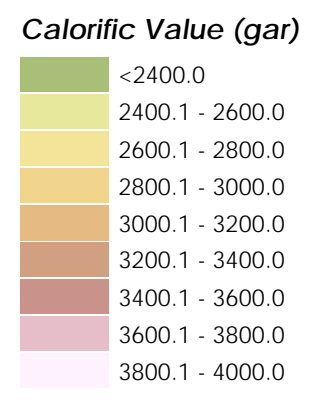
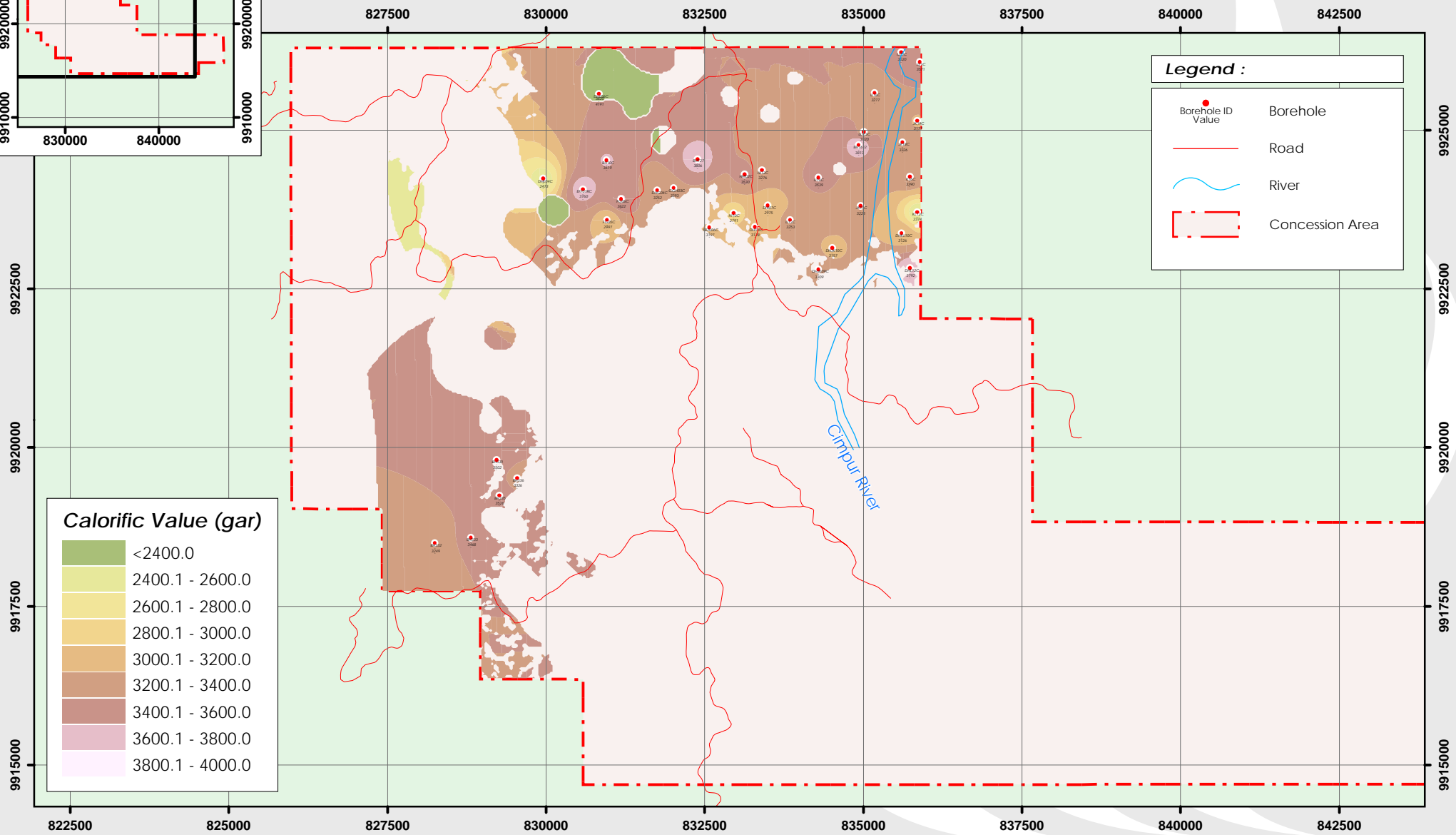
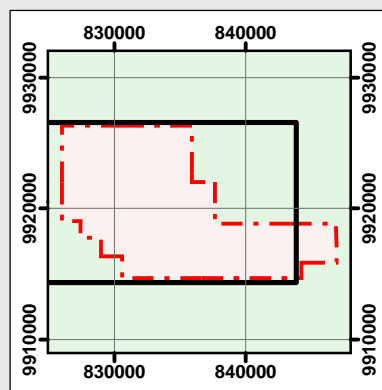
**Ash Content (% adb)**

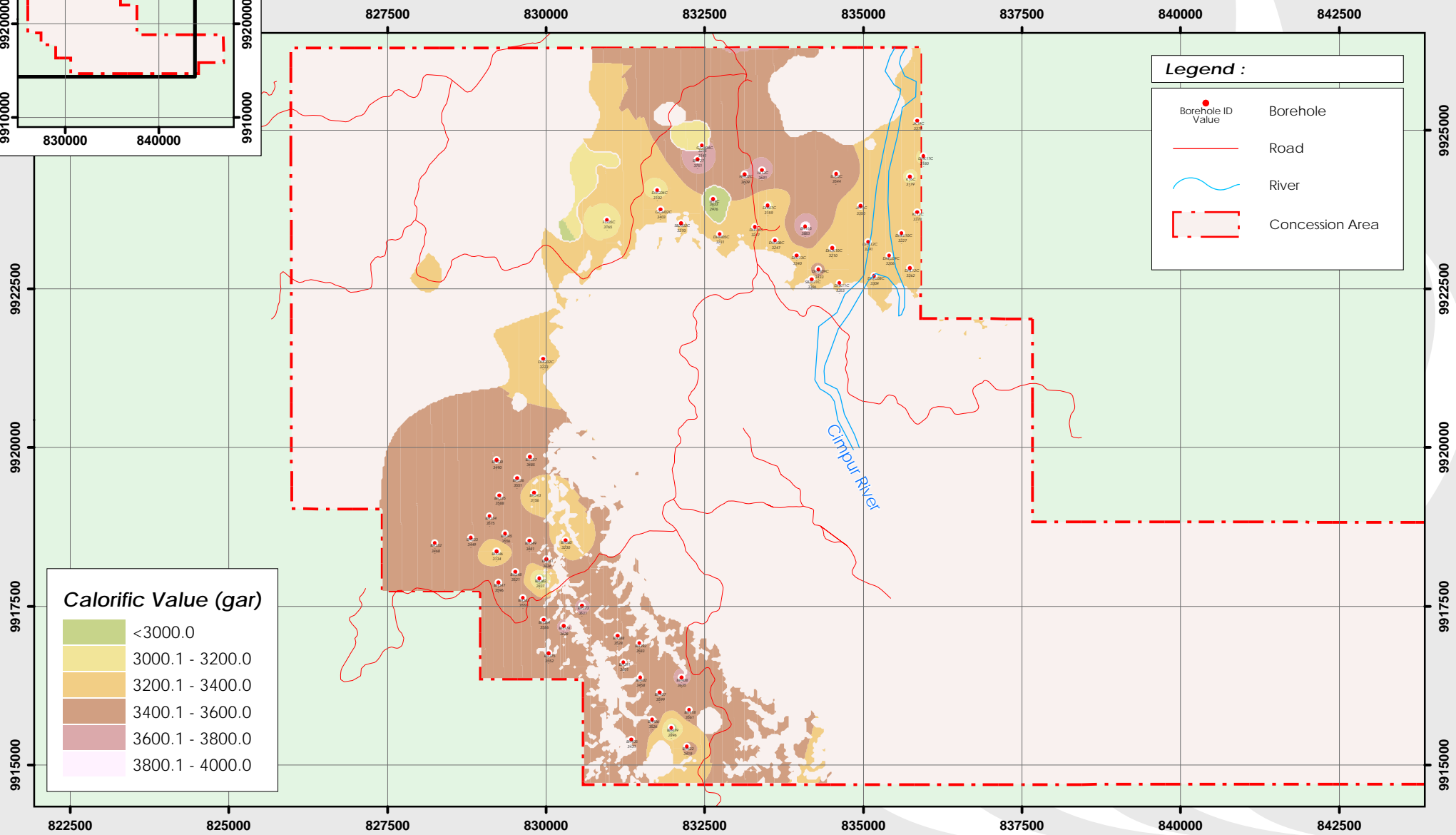
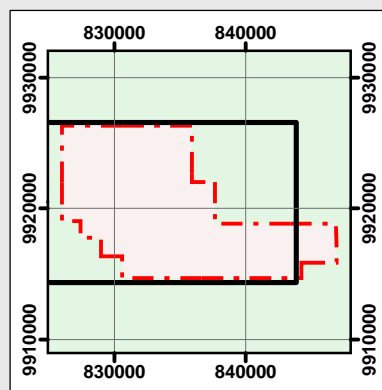
< 4.0
4.1 - 6.0
6.1 - 8.0
8.1 - 10.0
10.1 - 12.0
12.1 - 14.0
14.1 - 16.0
16.1 - 18.0
18.1 - 20.0
20.1 - 22.0
22.1 - 24.0









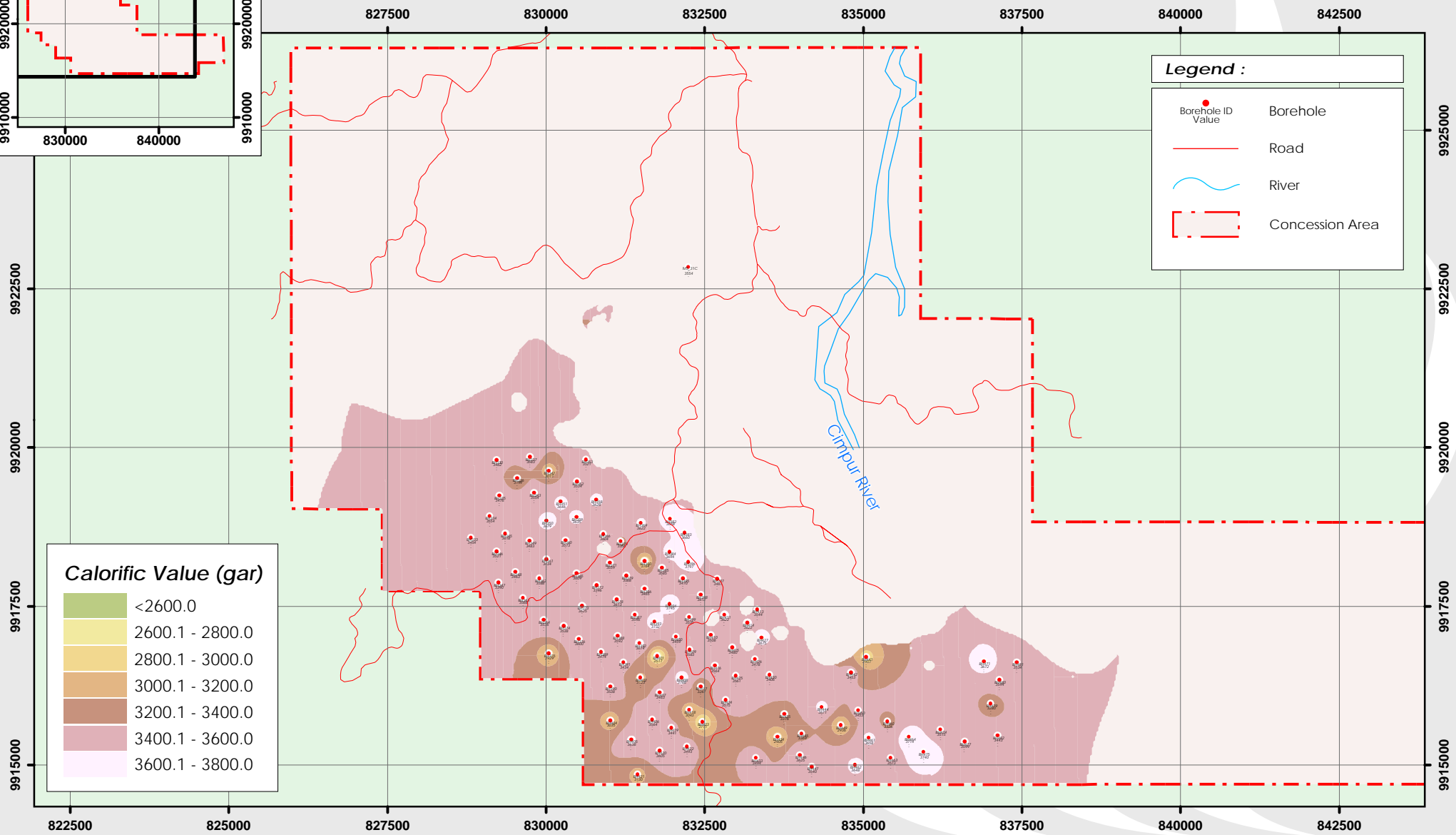
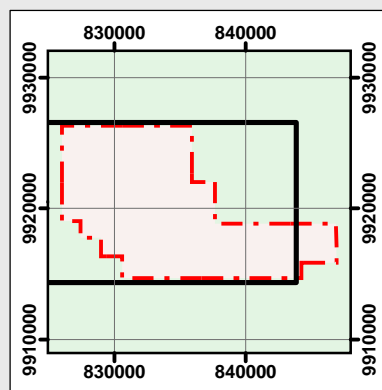


**Legend :**

- Borehole ID Value
- Road
- River
- Concession Area

**Calorific Value (gar)**

	<3000.0
	3000.1 - 3200.0
	3200.1 - 3400.0
	3400.1 - 3600.0
	3600.1 - 3800.0
	3800.1 - 4000.0

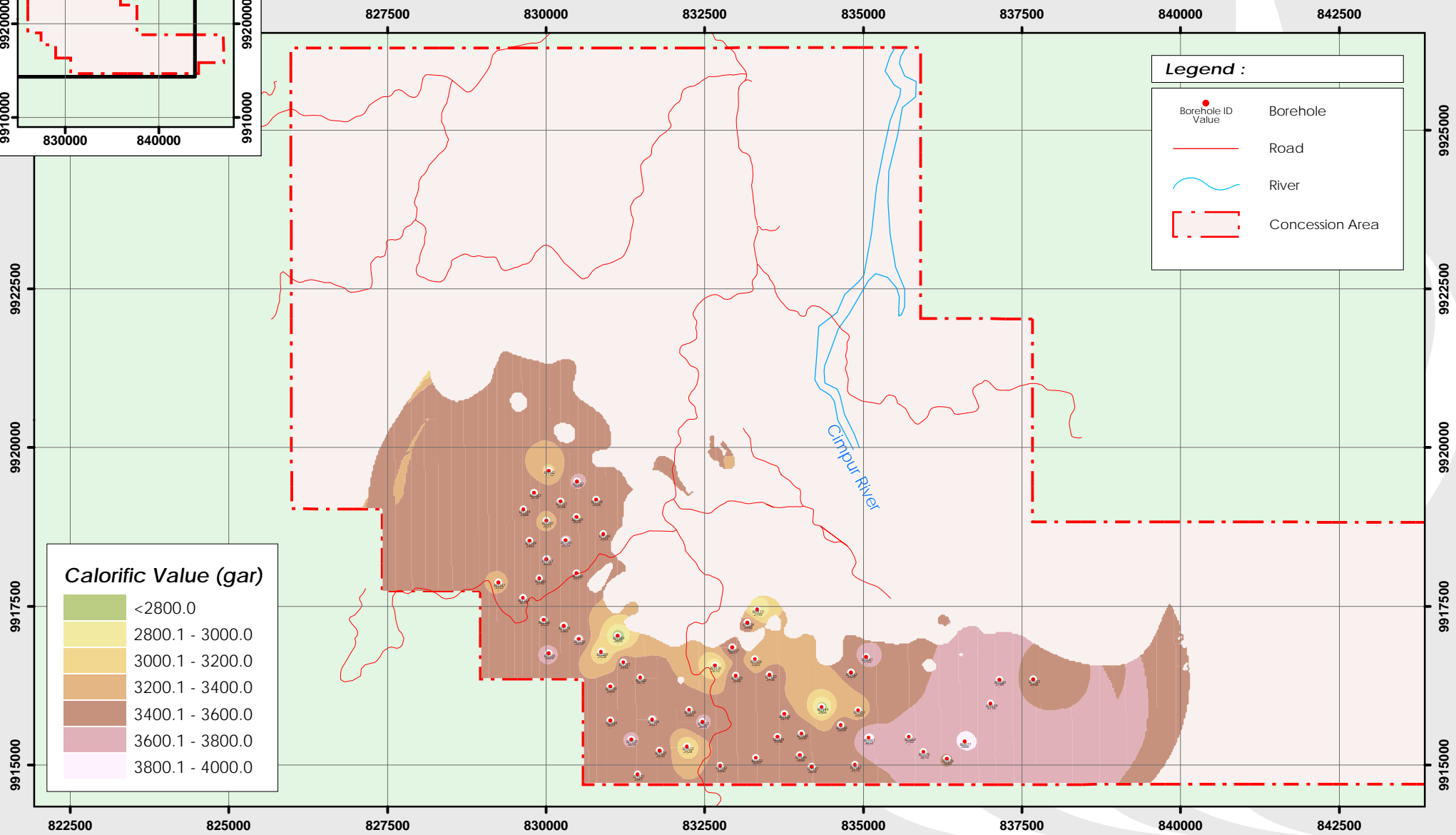
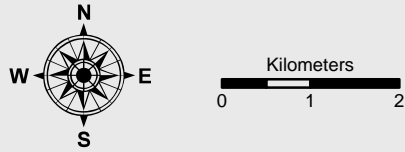
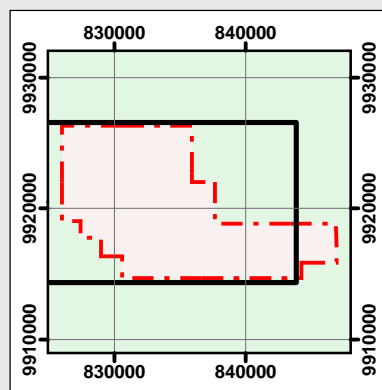


**Legend :**

- Borehole ID Value
- Road
- River
- Concession Area

**Calorific Value (gar)**

	<2600.0
	2600.1 - 2800.0
	2800.1 - 3000.0
	3000.1 - 3200.0
	3200.1 - 3400.0
	3400.1 - 3600.0
	3600.1 - 3800.0



**Legend :**

- Borehole ID Value
- Road
- ~ River
- Concession Area

**Calorific Value (gar)**

	<2800.0
	2800.1 - 3000.0
	3000.1 - 3200.0
	3200.1 - 3400.0
	3400.1 - 3600.0
	3600.1 - 3800.0
	3800.1 - 4000.0

**Appendix K Quality Statistics**

*Provided in enclosed DVD*

**Appendix L Laboratory Certificates**

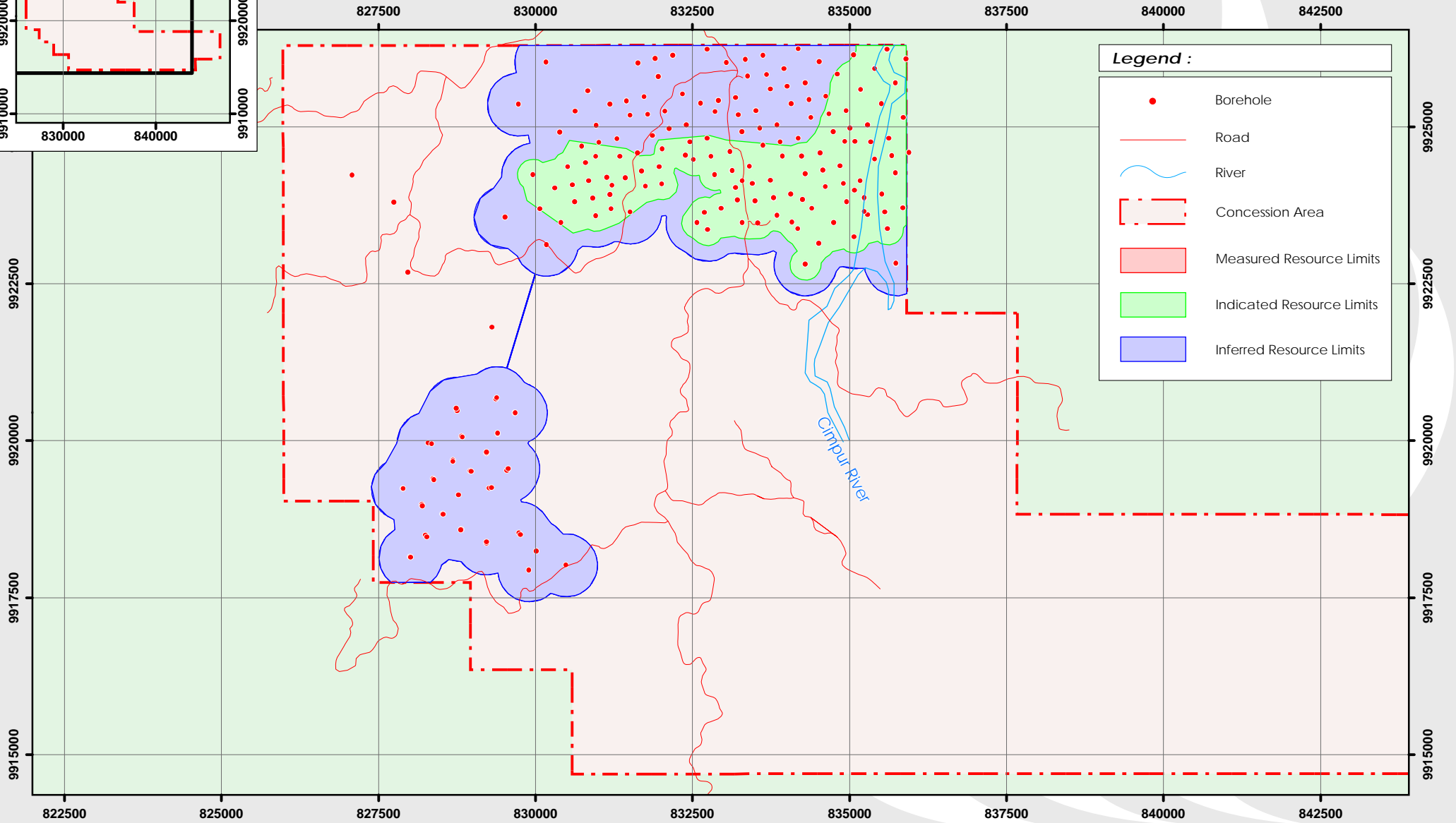
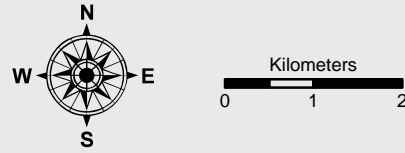
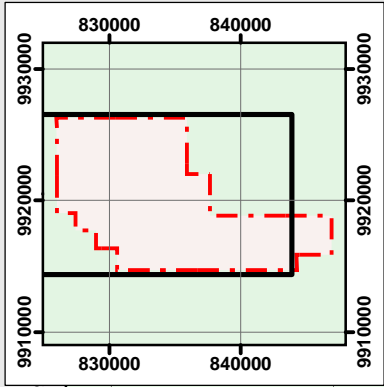
*Provided in enclosed DVD*

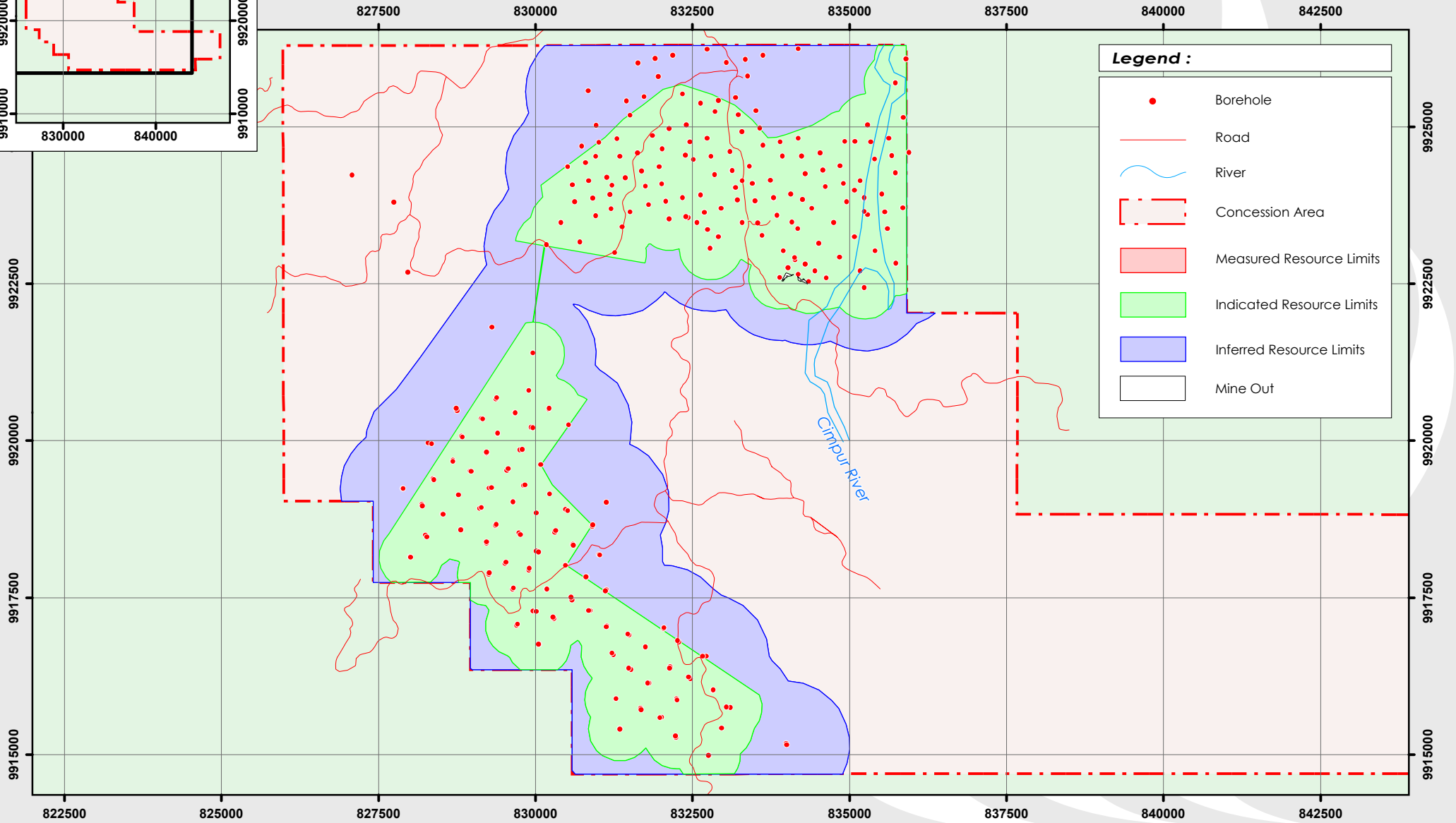
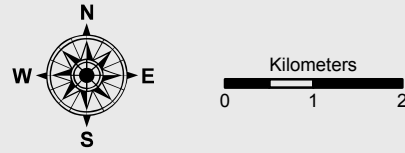
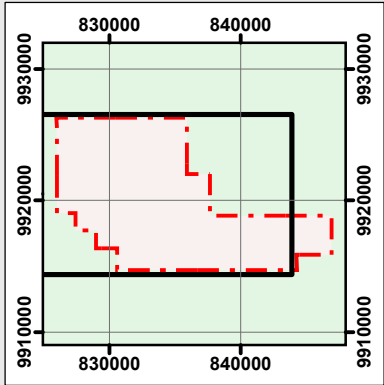
**Appendix M Geological Database and Geological Model**

*Provided in enclosed DVD*

## **Appendix N Coal Resources Limits**

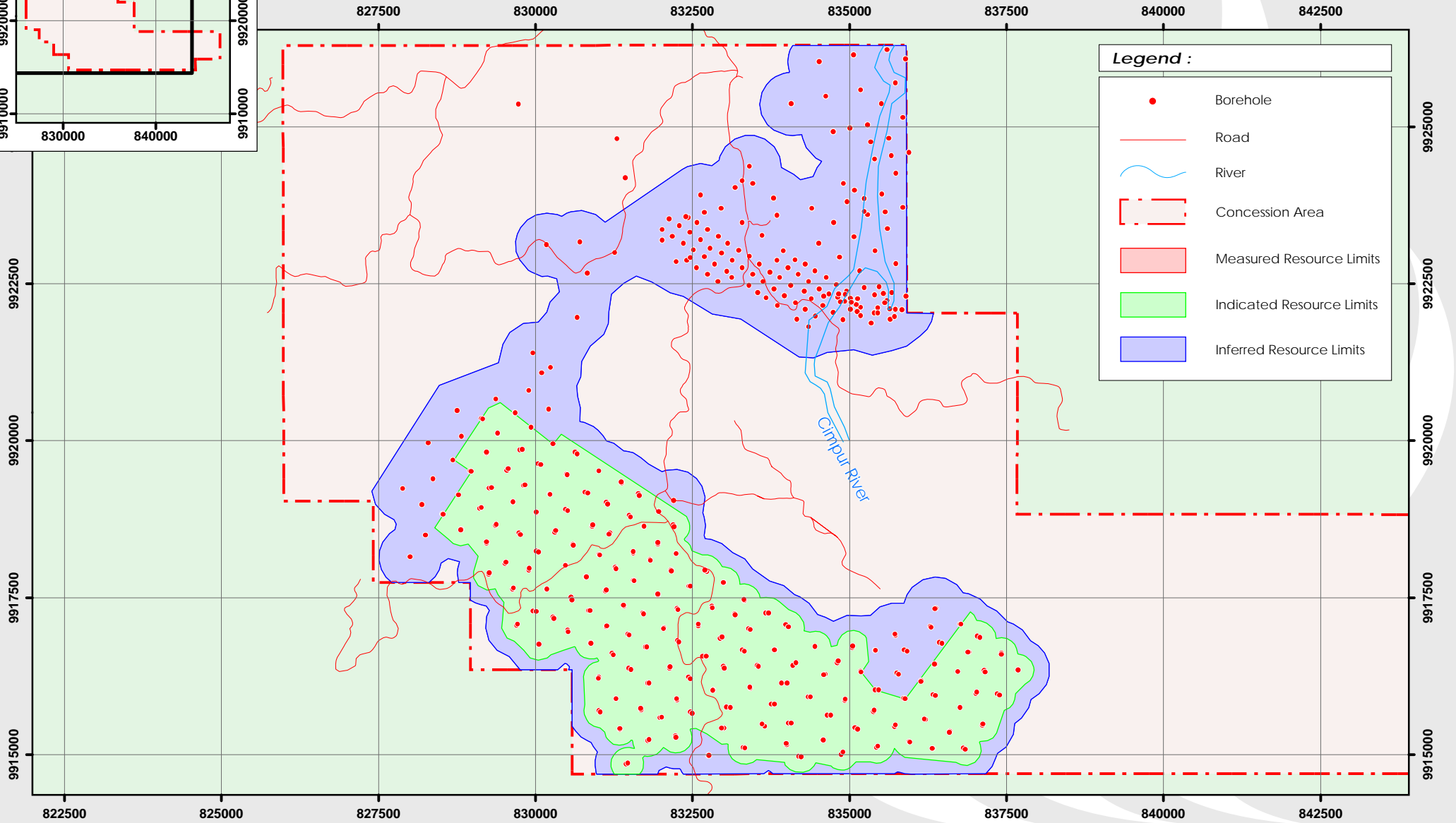
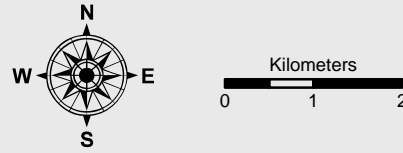
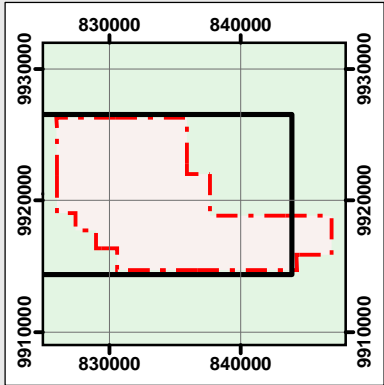






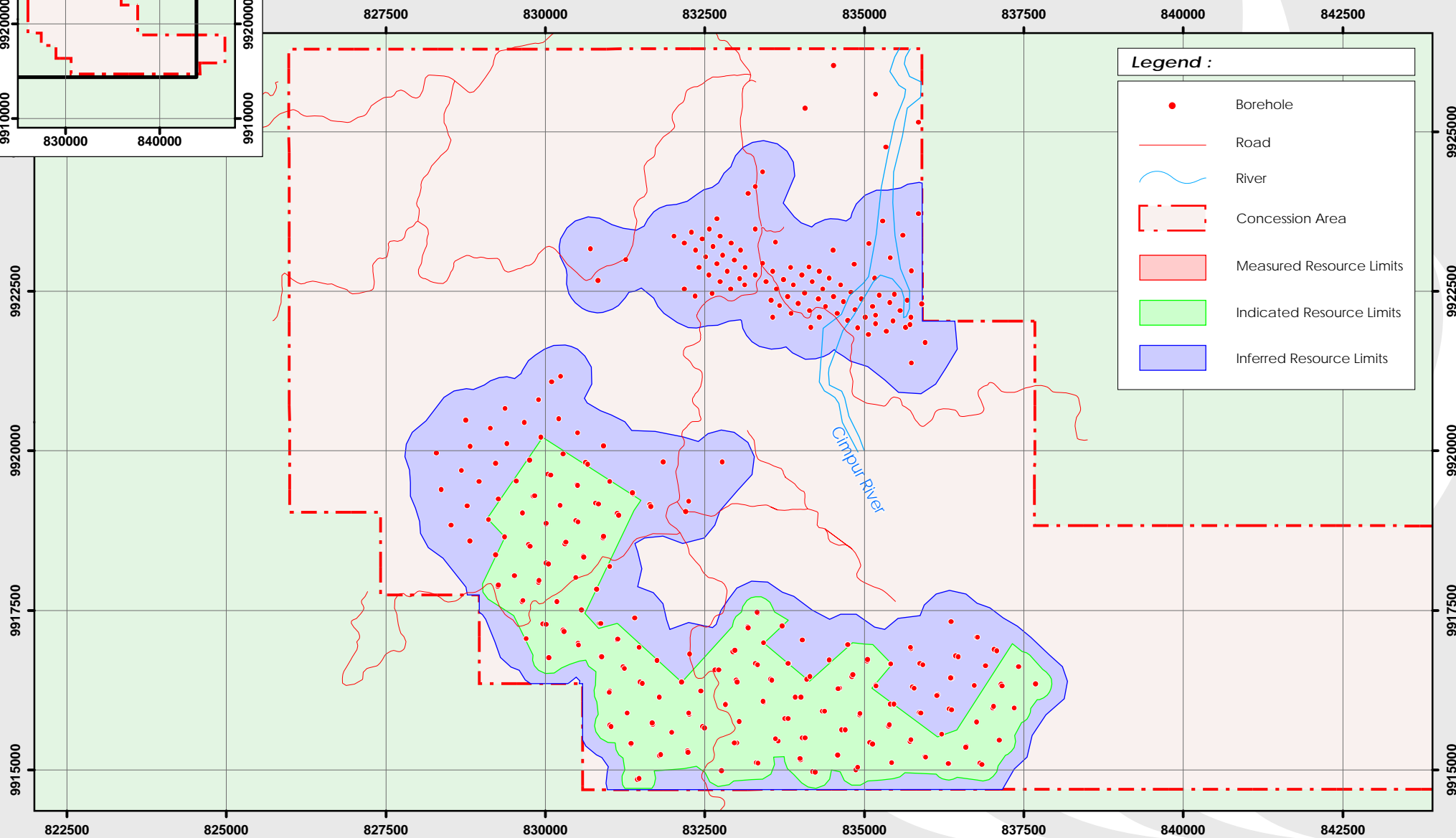
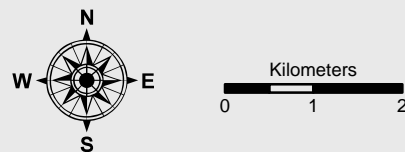
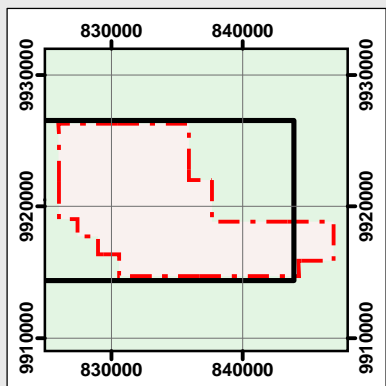
**Legend :**

- Borehole
- Road
- River
- - - Concession Area
- Measured Resource Limits
- Indicated Resource Limits
- Inferred Resource Limits
- Mine Out



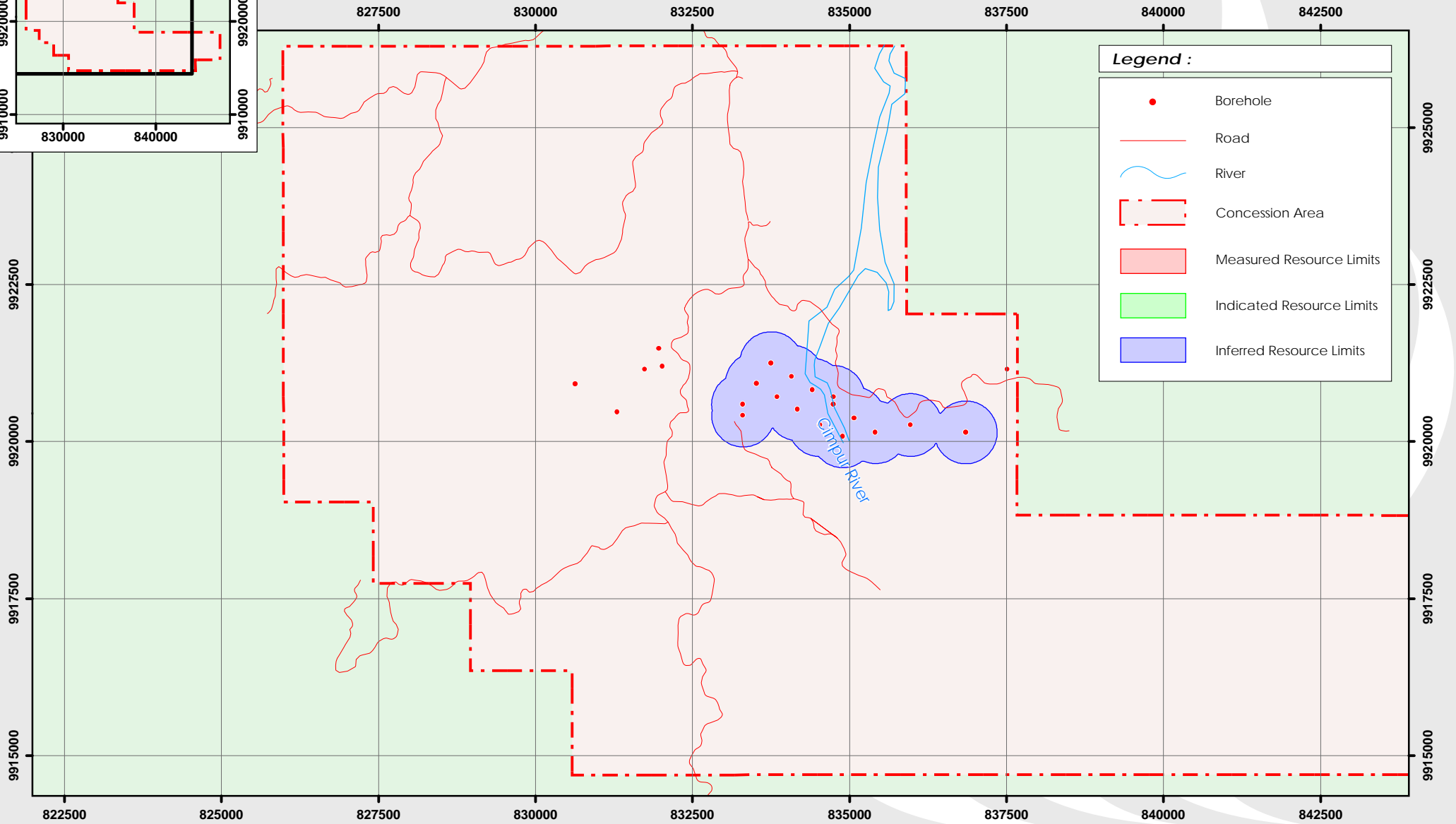
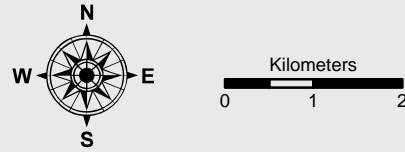
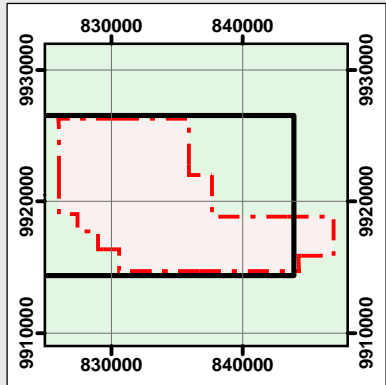
**Legend :**

- Borehole
- Road
- River
- Concession Area
- Measured Resource Limits
- Indicated Resource Limits
- Inferred Resource Limits



**Legend :**

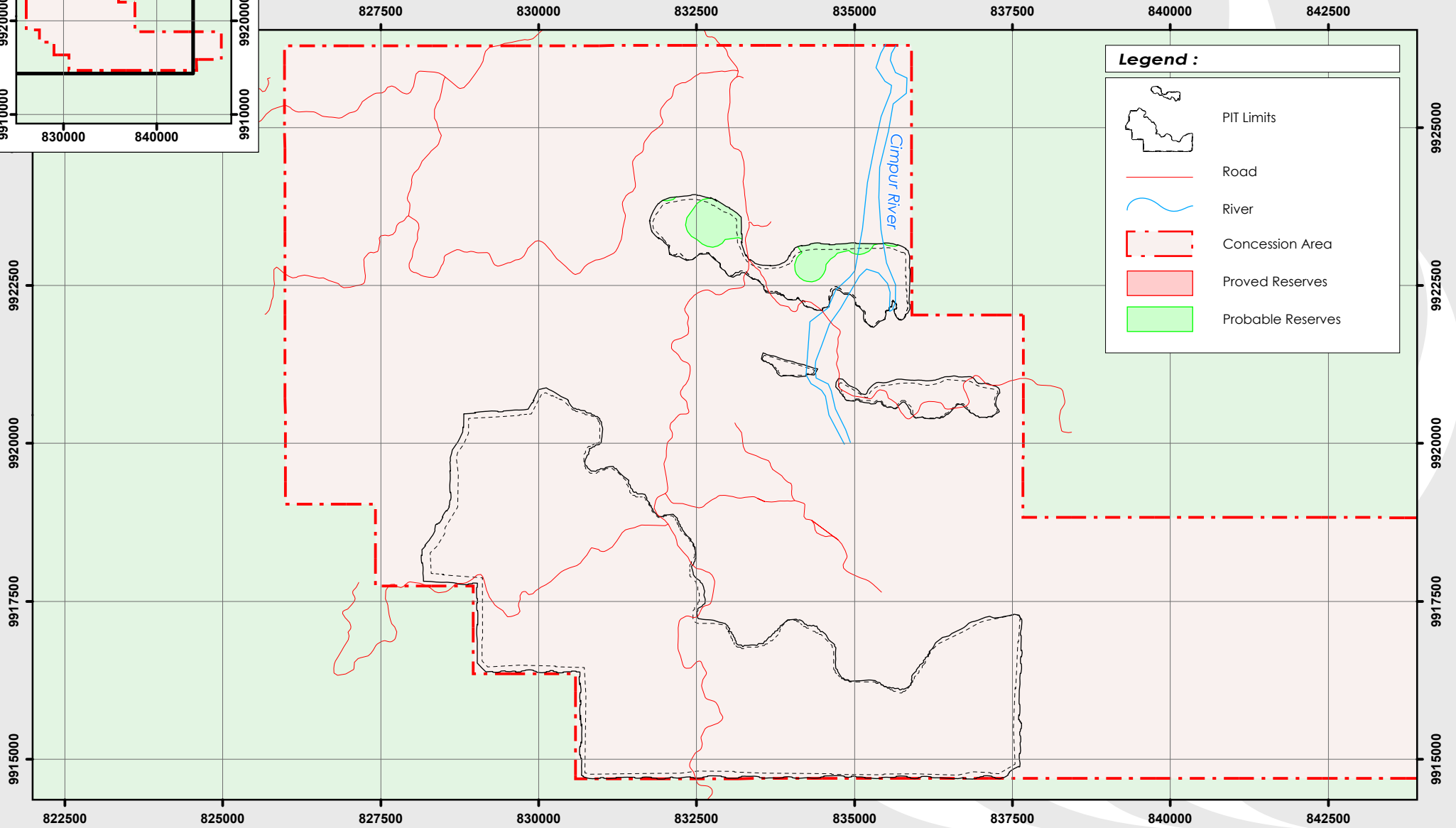
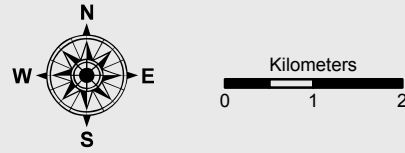
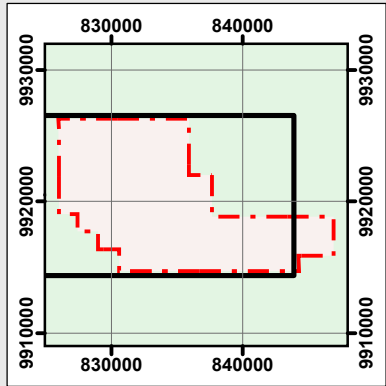
- Borehole
- Road
- River
- Concession Area
- Measured Resource Limits
- Indicated Resource Limits
- Inferred Resource Limits



**Legend :**

- Borehole
- Road
- River
- Concession Area
- Measured Resource Limits
- Indicated Resource Limits
- Inferred Resource Limits

## **Appendix O Coal Reserves Limits**



**Legend :**

- PIT Limits
- Road
- River
- Concession Area
- Proved Reserves
- Probable Reserves

## **Appendix P Financial Model**



**FINANCIAL MODEL - PRE-FEASIBILITY STUDY ( ACCURACY +/- 25%)**

**PT Samantaka Batubara (PTSB) - IQPR 2017**

Discount Rate	%	11.7%
Net Present Value	\$M	\$119.8
Expected Margin Riau 1	%	25%
Coal Price Tenayan	\$/t	54.7
Coal Price SDU	\$/t	52.0
Coal Price SMS	\$/t	48.0
IUP Royalties	%	3.0%

**Financial Model**

Description	Unit	Years																																
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24	Y25	Y26	Y27	Y28	Y29	Y30	Y31	Y32	Y33
<b>Production Plan</b>																																		
OB Removal	Mbcm	8.96	13.99	6.71	29.98	26.54	21.55	21.55	21.55	19.74	17.92	25.20	25.20	25.20	25.20	25.20	21.43	21.43	21.43	21.43	21.43	18.28	18.28	18.28	18.28	18.28	16.64	16.64	16.64	16.64	16.64	19.84	19.84	19.84
Coal Sales	Mt	1.22	1.22	0.91	4.22	4.22	4.22	4.22	4.22	3.86	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	
(+) Gross Revenue	\$M	60.28	60.28	45.40	127.00	127.00	118.25	118.25	118.25	100.62	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	
(-) Royalties	\$M	(2.0)	(2.0)	(1.4)	(3.7)	(3.7)	(3.5)	(3.5)	(3.5)	(3.0)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	
Nett Revenue	\$M	58.26	58.26	43.96	123.27	123.27	114.78	114.78	114.78	97.67	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	79.86	
(-) Operating cost	\$M	(39.26)	(48.57)	(29.26)	(89.99)	(82.79)	(72.66)	(72.66)	(72.66)	(66.00)	(57.42)	(73.79)	(73.79)	(73.79)	(73.79)	(74.23)	(65.07)	(65.07)	(65.07)	(65.07)	(63.46)	(56.86)	(56.86)	(56.86)	(56.86)	(56.77)	(52.46)	(52.46)	(52.46)	(52.46)	(52.44)	(59.82)	(59.82)	(59.82)
EBITDA	\$M	19.00	9.69	14.69	33.28	40.48	42.12	42.12	42.12	31.66	22.44	6.07	6.07	6.07	6.07	5.63	14.79	14.79	14.79	14.79	16.40	23.00	23.00	23.00	23.00	23.09	27.40	27.40	27.40	27.40	27.42	20.04	20.04	20.04
(-) Depreciation	\$M	(0.16)	(0.36)	(0.46)	(0.64)	(1.67)	(1.91)	(1.94)	(1.96)	(1.98)	(2.08)	(1.13)	(1.19)	(1.21)	(1.23)	(1.24)	(1.26)	(1.31)	(1.33)	(1.52)	(1.54)	(1.55)	(2.16)	(2.18)	(2.21)	(2.25)	(2.27)	(2.40)	(2.46)	(2.50)	(2.55)	(2.67)	(4.20)	(4.73)
EBIT	\$M	18.84	9.33	14.23	32.64	38.81	40.21	40.19	40.17	29.68	20.36	4.94	4.88	4.86	4.84	4.39	13.53	13.48	13.46	13.27	14.86	21.44	20.83	20.81	20.79	20.84	25.13	25.00	24.94	24.90	24.87	17.38	15.84	15.31
(-) Tax	25%	(4.71)	(2.33)	(3.56)	(8.16)	(9.70)	(10.05)	(10.05)	(10.04)	(7.42)	(5.09)	(1.23)	(1.22)	(1.21)	(1.21)	(1.10)	(3.38)	(3.37)	(3.37)	(3.32)	(3.72)	(5.36)	(5.21)	(5.20)	(5.20)	(5.21)	(6.28)	(6.25)	(6.23)	(6.22)	(6.22)	(4.34)	(3.96)	(3.83)
Profit after tax	\$M	14.13	7.00	10.67	24.48	29.11	30.16	30.14	30.12	22.26	15.27	3.70	3.66	3.64	3.63	3.29	10.15	10.11	10.10	9.95	11.15	16.08	15.63	15.61	15.59	15.63	18.85	18.75	18.70	18.67	18.66	13.03	11.88	11.48
(+) Add back depreciation	\$M	0.16	0.36	0.46	0.64	1.67	1.91	1.94	1.96	1.98	2.08	1.13	1.19	1.21	1.23	1.24	1.26	1.31	1.33	1.52	1.54	1.55	2.16	2.18	2.21	2.25	2.27	2.40	2.46	2.50	2.55	2.67	4.20	4.73
(-) CAPEX	\$M	(1.61)	(1.80)	(2.66)	(25.21)	(1.55)	(1.79)	(0.57)	(0.57)	(2.50)	(0.96)	(1.28)	(0.48)	(0.30)	(0.19)	(0.36)	(0.94)	(0.19)	(2.93)	(0.22)	(0.22)	(7.31)	(0.22)	(0.22)	(0.36)	(0.19)	(0.94)	(0.36)	(0.19)	(0.18)	(0.36)	(3.07)	(0.18)	(0.36)
Cashflow	\$M	12.68	5.56	8.47	(0.09)	29.23	30.28	31.50	31.51	21.75	16.39	3.56	4.38	4.55	4.67	4.17	10.47	11.23	8.49	11.25	12.46	10.33	17.57	17.57	17.44	17.69	20.18	20.79	20.98	20.99	20.85	12.63	15.90	15.86
Cumm. Cashflow	\$M	12.68	18.24	26.71	26.63	55.86	86.13	117.64	149.14	170.89	187.28	190.84	195.21	199.77	204.44	208.61	219.08	230.31	238.80	250.05	262.52	272.84	290.41	307.98	325.43	343.12	363.30	384.09	405.07	426.06	446.91	459.54	475.43	491.29