

12 April 2010

Company Announcements Office Australian Stock Exchange 20 Bridge Street SYDNEY NSW 2000

#### **EPC 1827 – EXPLORATION TARGET ASSESSMENT**

PEV has engaged The Minserve Group Pty Ltd, mining consultants who have now completed further assessment of EPC 1827. The full report is included in this announcement and has identified that EPC 1827 has the potential to host approximately 40-130 million tonnes of low volatile PCI coal at depths from 100 to greater than 300 metres.

The granted EPC is located adjacent to the Curragh and Jellinbah operating mines and Stanwell's MDL 162 PCI coal measured resource.

The Company is currently planning an exploration drilling program to better define the potential of this strategic coal exploration project.

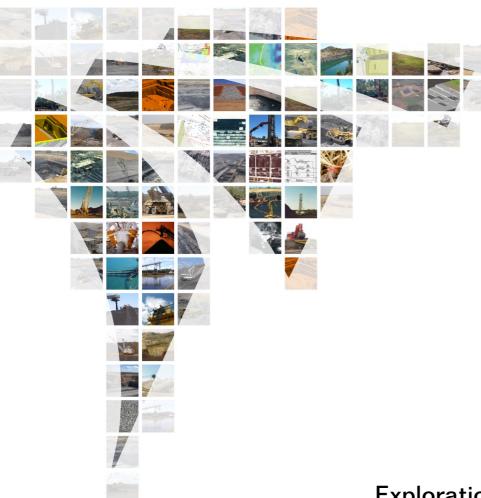
Yours faithfully

Paul Byrne

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## **EPC 1827**

## **Exploration Target Assessment**

April 2010

prepared for

Pacific Enviromin Ltd









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EPC 1827 **Project Name** 

Minserve Project No. PEV001m

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#### **DOCUMENT CONTROL**

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#### 1 INTRODUCTION

This report has been prepared at the request of Christopher Dredge, for Pacific Environment Limited. The aim of this report is to provide a JORC-compliant statement with regard to the coal prospectivity of EPC1827.

The area to be reviewed comprises EPC1827, which comprises seven sub-blocks and is located in the Central Bowen Basin between Curragh Mine and Jellinbah Mine (Figure 1).

#### 2 GEOLOGY

#### 2.1 REGIONAL GEOLOGY

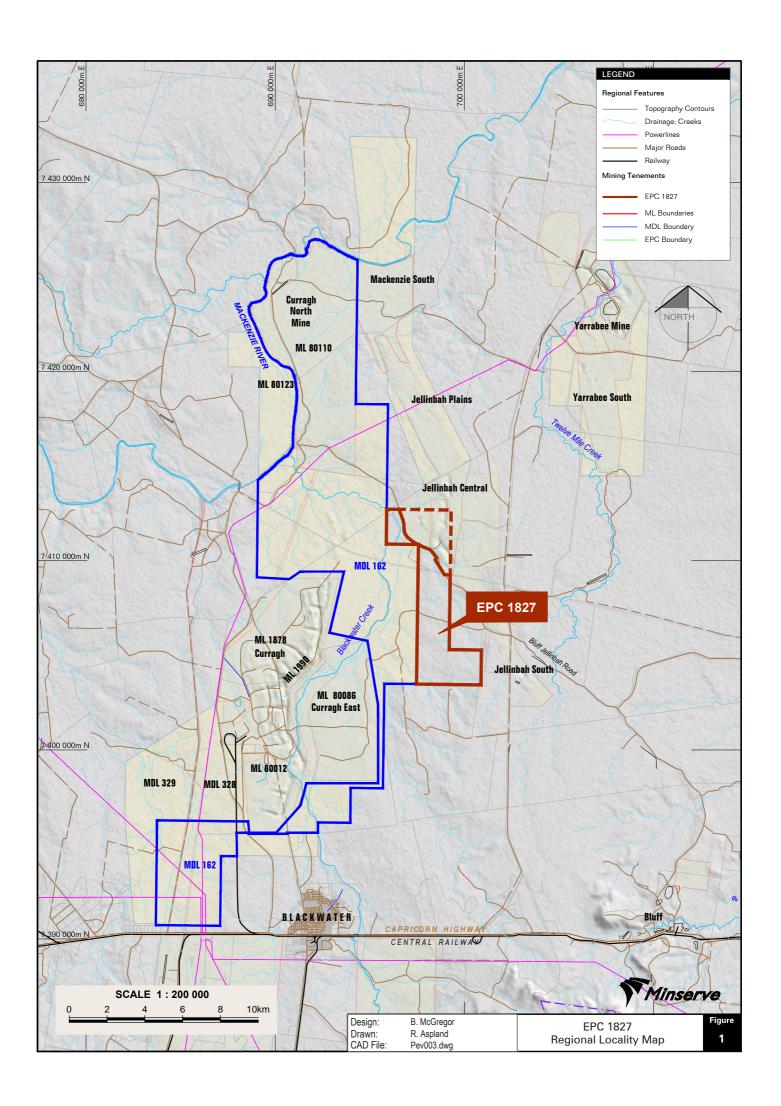
Three Permo-Triassic units occur within the EPCA. These are, in descending stratigraphic order, the Triassic Rewan Group, and the Rangal Coal Measures (RCM) and Burngrove Formation of the Late Permian, Blackwater Group. The RCM provide some high quality hard coking coal, but dominantly supply semi-hard to semi-soft coking coal and high quality PCI coal for export, as well as high quality thermal coal for export, and lower quality thermal coal for domestic power generation. The Burngrove Formation contains a number of thick, high inherent ash, heavily tuff banded coal seams, that currently have no commercial potential because of their very low yields at high ashes.

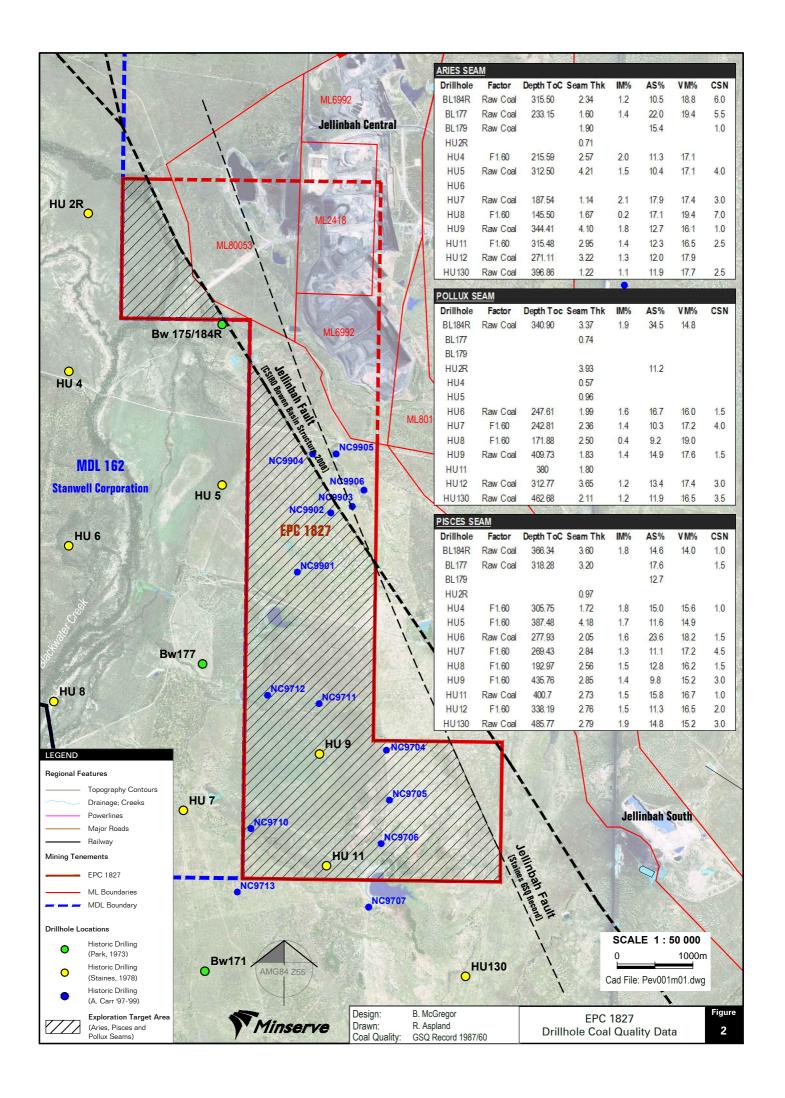
#### 2.2 DEPOSIT GEOLOGY

The deposit is divided into two by the NW trending Jellinbah Fault (Figure 2). To the west of the fault (downdip of Curragh), the upper seams of the Rangal Coal Measures (RCM) occur, below sediments of the Rewan Group at depths ranging from approximately 200m in HU1/2R and HU7 to more than 300m in BW175/184R, HU5, HU9 and HU11 (Table 1). Depth to the Aries seam, the uppermost potentially economic seam in the RCM, in the SE corner of the deposit is likely to exceed 400m. To the east of the fault, which has a throw of approximately 400m, non-commercial, high ash seams of the Burngrove Formation have been thrust over the Rewan Group sediments. The only seam of apparently clean coal to the east of the fault was intersected in NC9906 (Figure 2), close to the eastern boundary of the EPC. It is highly likely that the 2m thick seam intersected at 31m depth in NC9906 was the Pisces seam, the basal seam of the RCM, which occurs at 387m in HU5, some 2km W of NC9906.



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#### 3 EXPLORATION

#### 3.1 HISTORIC DRILLING

Eight deep stratigraphic holes were drilled in or adjacent to the EPC by the Geological Survey of Qld (GSQ) in the 1970s as part of the Department's regional stratigraphic drilling program. These holes intersected seams of the RCM at depths ranging from approximately 200m to in excess of 400m (Figure 2).

Fourteen shallow holes (NC9704-NC9707, NC9710-NC9713, and NC9901-NC9906, Figure 2) were drilled in or adjacent to the EPC between 1997 and 1999 to depths ranging from 27m to 72m, in an unsuccessful attempt to find shallow RCM in up-thrown fault blocks. The eight holes drilled in the south, and NC9901, intersected sediments of the Rewan Group below unconsolidated Tertiary cover. The remaining five holes intersected mainly tuffaceous, banded seams of the Burngrove Formation.

#### 3.2 HISTORIC COAL QUALITY DATA

Data obtained from historical drilling programmes are summarised in **Appendix 1**. This data comprises raw coal analyses and analyses of coal material <1.60 relative density (F1.60).

#### 4 EXPLORATION TARGET ASSESSMENT

#### 4.1 BASIS OF STATEMENT

As a result of the limited amount of drilling information it is not possible to define a Mineral Resource within EPC 1827. The collated historical drilling data has been used to calculate an Exploration Target assessment which is expressed as ranges for both quantity and quality. It must be made clear that the potential quantity and grade stated in this report is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource, and that it is uncertain if further exploration will result in the determination of a Mineral Resource.

This report details a new Exploration Target estimate which has been generated using a compilation of historic drilling records (structure and quality).

#### 4.1.1 Drillhole Data

Figure 2 shows the location of the drillholes within and surrounding EPC1827 for the Aries, Pollux and Pisces seams. Note that only 2 drillholes, HU9 and HU11, intersect seams in the Rangal Coal Measures



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within EPC 1827. However, local holes outside of EPC1827 have been used to derive the Exploration Target assessment as they are considered relevant due to their proximity and location.

#### 4.1.2 Area Estimated

The NE sub block within EPC1827 is almost totally overlain by three mining leases (MLs) that are part of the Jellinbah Mine; and two adjacent sub blocks are also heavily impacted by the MLs. The Exploration Target assessment is exclusive of any part of the MLs overlying EPC 1827. The Exploration Target area estimated was also limited to west of the Jellinbah Thrust Fault. Coal quantity and quality was then estimated for the resultant area. The area estimated is highlighted for the seams in Figure 2.

#### 4.1.3 Methodology

Public access government drilling data was digitised and imported to 3D modelling package (Vulcan). It was then converted to a series of structure and quality grids for the three seams. Seam surfaces were modelled by triangulation with a trend applied. Coal qualities were modelled using inverse distance (power 1). This approach was taken purely as a method to enable an estimate of the potential quantity and quality of the Exploration Target. Quantities and qualities were estimated using reserving tools in Vulcan. The output was tabulated in a MS Excel workbook.

#### 4.1.4 Explanation of Ranges

Minimum and maximum cases were generated using adjustment factors to provide a ranged estimate which accounts for the inherent uncertainty of the estimate due to limited data. The maximum case was based on estimation directly from the available drillhole information. The minimum case was a downward adjustment to allow for expected faulting and possible seam thinning and/or degradation within the deposit.

Table 1 - Estimate Adjustment Factors

Minimum Case Adjustme	nt Factors
Faulting	-30%
Thinning	-20%
Seam Degradation	-15%

#### 4.1.1 Rounding

Conservative rounding was applied to the tabulated data to reflect the limited data and limited confidence in the estimates.



Table 2 - Exploration Target Potential Quantity Ranges

		<100m		00-200m	20	0-300m		>300m thickness	
	Mt	thickness (m)	Mt	thickness (m)	Mt	thickness (m)	Mt	(m)	Grand Total
Aries	-	-	5 - 20	2.3 - 3.4	10 - 30	1.6 - 2.9	1	-	15 - 50
Pollux	_	-	2 - 5	2.3 - 3.2	10 - 40	2.1 - 3.2	0 - 1	2.2 - 2.3	12 - 46
Pisces	-	-	-	-	10 - 30	2.8 - 3.4	1 - 5	2.9 - 3.0	11 - 35
<b>Sub Total</b>			7 - 25		30 - 100		1 - 6		40-130 <sup>*</sup> Mt

\*totals may not sum due to rounding

Table 3 - Exploration Target Potential Raw Coal Quality Ranges

	R	D	Ash % (adb)		Volatile Matter % (adb)		Total S	Sulfur %	C.:	S.N.	Specific Energy (MJ/kg)		
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
Aries	1.4	1.8	14	50	15	20	0.4	1.0	0.5	5	20	32	
Pollux	1.4	1.8	16	50	15	20	0.4	1.0	0.5	4	20	32	
Pisces	1.4	1.8	16	50	15	20	0.4	1.0	0.5	4	20	30	

Table 4 - Exploration Target Potential F1.60 Coal Quality Ranges

	Ash %	Volatile Matter % (adb)		Total S	Sulfur %	C.:	S.N.	•	Energy /kg)	Yield %		
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Aries	13	20	15	20	0.4	1	0.5	5	20	32	20	90
Pollux	9	20	15	20	0.4	1	0.5	4	20	32	20	90
Pisces	11	20	15	20	0.4	1	0.5	4	20	32	20	90



#### 5 CONCLUSION

EPC 1827 has the potential to host approximately 40-130Mt of low volatile PCI coal in the Aries, Pollux and Pisces seams of the RCM at depths ranging from 100m to greater than 300m. The potential resources are restricted to the sub blocks on the western side of the Jellinbah Fault.

#### 6 COMPETENT PERSON STATEMENT OF COMPLIANCE

This report has been prepared in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves "The JORC Code" (2004) and subsequent Australian Securities Exchange Companies Updates: 03/08, 11/07, 03/07, and 05/04.

Brett McGregor is a coal geologist with six years coal exploration, coal production, coal resource modelling and coal resource estimation experience which is relevant to the style of mineralisation and type of deposit under consideration. Brett is a member of The Australasian Institute of Mining and Metallurgy (#227627). Brett McGregor consents to the inclusion in the report of the matters based on his information in the form and context that it appears.

#### 7 FURTHER EXPLORATION

A plan showing locations of a proposed exploration coring programme is included in **Appendix 2**. These 17 holes are spaced approximately 1000m apart, which is, according to the Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves (2003), sufficient to define an Indicated Resource. That said, there can be no guarantee that the proposed programme of exploration will result in the definition of a Mineral Resource.

#### 8 REFERENCES

- Park, W.J., 1973: Coal Resources, South Central Bowen Basin, Blackwater Coalfield, Caledonia Area.

  <u>Geological Survey of Queensland, Record</u> 1973/15
- Staines, H.R.E., 1987: Coal exploration, South Central Bowen Basin, Jellinbah Caledonia Area, Geology and Coal Resources. <u>Geological Survey of Queensland, Record</u> 1987/60
- Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves "The JORC Code" (2004)



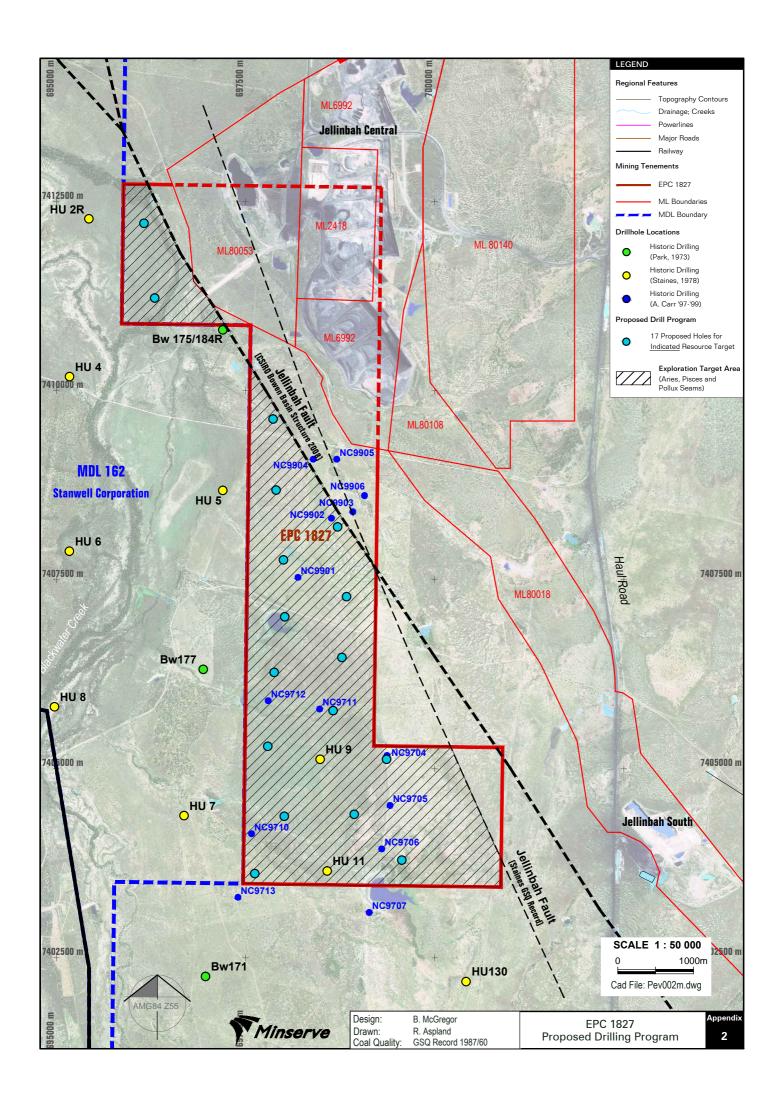
# Appendix 1 Historic Drillhole Data Summary

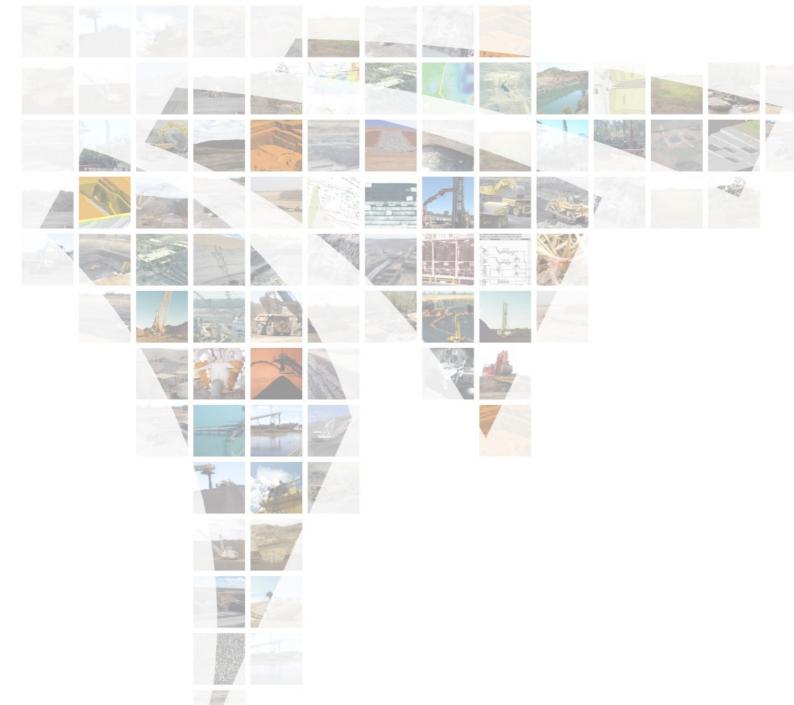


						ARIES	SEAM						
Drillhole	East AMG	North AMG	Collar	Coal Type	Depth to Coal	Seam Thk	IM%	AS%	VM%	CSN	F1.60 Yield	Total Sulfur %	Specific Energy (MJ/kg)
BL184R	697199	7410804	136	Raw Coal	315.50	2.34	1.2	10.5	18.8	6.0	-	-	-
BL177	696940	7406315	142	Raw Coal	233.15	1.60	1.4	22.0	19.4	5.5	-	-	-
BL179	696971	7402254	172	Raw Coal	-	1.90	-	15.4	-	1.0	-	-	-
HU2R	695429	7412274	129	-	-	0.71	-	-	-	-	-	-	-
HU4	695174	7410186	133	F1.60	215.59	2.57	2.0	11.3	17.1	-	71.3	0.56	31.16
HU5	697199	7408681	135	Raw Coal	312.50	4.21	1.5	10.4	17.1	4.0	100	0.39	31.29
HU6	695172	7407878	137	-	-	-	-	-	-	-	-	-	-
HU7	696687	7404380	145	Raw Coal	187.54	1.14	2.1	17.9	17.4	3.0	100	0.51	27.7
HU8	694974	7405819	142	F1.60	145.50	1.67	0.2	17.1	19.4	7.0	61.9	0.48	28.99
HU9	698485	7405125	156	Raw Coal	344.41	4.10	1.8	12.7	16.1	1.0	100	0.42	30.56
HU11	698579	7403647	156	F1.60	315.48	2.95	1.4	12.3	16.5	2.5	86	0.48	31.04
HU12	698659	7401155	173	Raw Coal	271.11	3.22	1.3	12.0	17.9	-	100	0.54	30.52
HU130	700547	7402298	183	Raw Coal	396.86	1.22	1.1	11.9	17.7	2.5	100	0.46	30.75
- ···· ·							X SEAM				=4 CO \!!	<b>-</b>	0 10 5 10011
Drillhole	East AMG				Depth to Coal			AS%		CSN	F1.60 Yield	ı otal Sulfur %	Specific Energy (MJ/kg)
BL184R	697199	7410804	136	Raw Coal	340.90	3.37	1.9	34.5	14.8	-	-	-	-
BL177	696940	7406315	142	-	-	0.74	-	-	-	-	-	-	-
BL179	696971	7402254	172	-	-	-	-	-	-	-	-	-	-
HU2R	695429	7412274	129	-	-	3.93	-	11.2	-	-	-	-	-
HU4	695174	7410186	133	-	-	0.57	-	-	-	-	-	-	-
HU5	697199	7408681	135		-	0.96	-	-	-	-	-	-	-
HU6	695172	7407878	137	Raw Coal	247.61	1.99	1.6	16.7	16.0		100	0.47	29.05
HU7	696687	7404380	145	F1.60	242.81	2.36	1.4	10.3	17.2		96.2	0.39	31.75
HU8	694974	7405819	142	F1.60	171.88	2.50	0.4	9.2	19.0		89.3	0.42	-99
HU9	698485	7405125	156	Raw Coal	409.73	1.83	1.4	14.9	17.6		100	0.48	29.57
HU11	698579	7403647	156	-	380	1.80	-	-	-	-	-	-	-
HU12	698659	7401155	173	Raw Coal	312.77	3.65	1.2	13.4	17.4		100	0.38	30.33
HU130	700547	7402298	183	Raw Coal	462.68	2.11	1.2	11.9	16.5	3.5	100	0.43	31.24
						PISCES	S SEAM						
Drillhole	East AMG	North AMG	Collar	Coal Type	Depth to Coal			AS%	VM%	CSN	F1.60 Yield	Total Sulfur %	Specific Energy (MJ/kg)
BL184R	697199	7410804	136	Raw Coal	366.34	3.60	1.8	14.6	14.0	1.0	-	-	-
BL177	696940	7406315	142	Raw Coal	318.28	3.20	-	17.6	-	1.5	-	-	-
BL179	696971	7402254	172	-	-	-	-	12.7	-	-	-	-	-
HU2R	695429	7412274	129	-	-	0.97	-	-	-	-	-	-	-
HU4	695174	7410186	133	F1.60	305.75	1.72	1.8	15.0	15.6	1.0	-	-	-
HU5	697199	7408681	135	F1.60	387.48	4.18	1.7	11.6	14.9	-	81.8	0.36	31.17
HU6	695172	7407878	137	Raw Coal	277.93	2.05	1.6	23.6	18.2	1.5	100	0.38	25.33
HU7	696687	7404380	145	F1.60	269.43	2.84	1.3	11.1	17.2	4.5	92.1	0.38	31.37
HU8	694974	7405819	142	F1.60	192.97	2.56	1.5	12.8	16.2	1.5	100	0.35	28.27
HU9	698485	7405125	156	F1.60	435.76	2.85	1.4	9.8	15.2		94.9	0.44	-99
HU11	698579	7403647	156	Raw Coal	400.7	2.73	1.5	15.8	16.7		100	0.38	28.94
HU12	698659	7401155	173	F1.60	338.19	2.76	1.5	11.3	16.5		84.6	0.35	31.32
HU130	700547	7402298	183	Raw Coal	485.77	2.79	1.9	14.8	15.2		100	0.39	30.06
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# Appendix 2 Proposed Exploration Programme







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