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## THICK INTERSECTIONS OF HIGH-QUALITY COKING COAL POINT TO SUBSTANTIAL RESOURCE UPGRADE AT NOWA RUDA PROJECT, POLAND

Drilling and testwork supports quality, scale and commercial viability of Nowa Ruda

#### **Highlights:**

- First three deep drill holes, CHL-1, CHL-2 and CHL-3, completed into the Lech deposit; massive coal intersections returned in CHL-2 and CHL-3 with thickness in the 415-series seam locally greater than 5m.
- Coal parameter testwork shows that the coal is very low in sulphur, and has low spontaneous combustion.
- Lech deposit comprises mostly hard coking coals plus low volatile coal, which are essential additives to coke plants and also have additional specialized uses as smokeless fuels.
- Metallurgical coal analysis for the 300 series seams shows Free Swell Index (FSI) numbers in the range of 7.0-7.5 and Roga Index (RI) numbers from 68-77. The results for both of these parameters are comparable to international benchmarks for high quality hard coking coals.
- Coal washability testwork using various heavy media was highly successful in reducing the ash content. Washed samples have ash contents ranging from 1.8%-6.9% and calculated coal yields using a '1.55 float' heavy media were in the 88%-99% range.
- Coal data is entirely consistent with historical results from the Walbrzych coking plant, located ~40km north of Nowa Ruda, which acquired significant Nowa Ruda coal prior to its closure in 1996.
- Drilling is underway at CHW-3 and CHL-4, the last holes of the current Nowa Ruda programme, with all drilling expected to be completed by the end of March 2015.
- Results from completed drill program to be included in a revised Mineral Resource update for Nowa Ruda, with expectations they will deliver a substantial increment to the maiden 2014 JORC resource.

Balamara Resources (ASX: BMB) ("Balamara" or the "Company") is pleased to advise that deep diamond drilling into the main Lech deposit at its Nowa Ruda Coking Coal Project in south-west Poland together with coal parameter testwork has provided further strong evidence of the quality, scale and commercial viability of the Project.



The Nowa Ruda Coking Coal Project is located in the traditional coking coal region of the Lower Silesian Coal Basin and consists of a single exploration concession encompassing two adjacent substantial deposits, Waclaw and Lech (also referred to locally as Piast).

Drilling of the first three diamond holes, CHL-1, CHL-2 and CHL-3 has now been completed at the Lech deposit with coal parameter testwork largely completed for the first two holes.

Coal parameter testwork on coal from the CHW-1 and CHW-2 drill holes (see Figure 1 for drillhole locations) at the Waclaw deposit indicated that the coal was very low in sulphur, with low spontaneous combustion and low amounts of methane and carbon dioxide. Coal washability testwork using various heavy media techniques was also highly successful in reducing the ash content.

In the latest drilling results, Lech hole CHL-2 has intersected four seams and/or seam composites all with substantial thicknesses ranging from 2.71m to 5.80m at depths ranging from 891.3m to 999.8m (see Figure 2 – schematic section).

As with hole CHL-1, the coal washability testwork for CHL-2 was highly successful in reducing the ash content. Coal parameter testwork indicates that the coals are a combination of high quality coking coals and high ranking, low volatile thermal coals that are an essential ingredient for coke plants.

The third Lech hole (CHL-3) has now been completed and has also intersected a number of very significant coal seams with thicknesses similar or greater to those obtained in CHL-2. This includes 7.60m of coal in the composite 415 coal seam in a location where the individual 415/1, 415/2 and 415/3 seams effectively join up to make one massive seam (see Figure 3 – schematic section). The 7.60m of coal is contained within an interval of 8.57m.

Samples from CHL-3 are in the laboratory and results are awaited for the coal parameter testwork to establish if this coal also shows the same high quality hard coking coal characteristics as the previous Nowa Ruda holes completed to date.

The success of hole CHL-3 on top of CHL-2 delivers a considerable zone of interest at the Lech deposit with multiple seams at different levels that each extend over a strike length of approximately 1.5km.

The final Lech hole nearing completion at CHL-4 will provide further evidence of the quantity of coal in this zone of interest. This is almost certainly the area Balamara would target first for mining given the thick, consistent coal seams in this area and the high quality product.

These holes represent further good results in the current programme to deliver substantial intersections of high quality coking coal and this represents a major advance for the Project, exceeding the thicknesses contained in the current JORC resource model.



Once the drilling programme has been completed Balamara will mandate HDR Salva to provide an updated JORC resource for Nowa Ruda and it is expected that these results will deliver a substantial increment to the maiden JORC resource delivered in 2014.

Figure 1 – Drill hole locations: Nowa Ruda Coking Coal Project





The key parameters of the coal testwork results received so far suggest that Nowa Ruda coal will be in high demand by coking plants in Poland and across Europe.

This is consistent with historical sales data on coal quality from the Walbrzych coking plant, which primarily used coking coal from Nowa Ruda prior to its closure in 1996 (see ASX Announcement – 5 May, 2014 "Additional Information to Nowa Ruda JORC – Coal Quality").

These various intersections of thick seams of high quality coking coal and associated materials provide significant impetus to Nowa Ruda and further support the commercial viability of the Project.

Figure 2: Schematic cross-section indicating coal seams and intervals for hole CHL-2

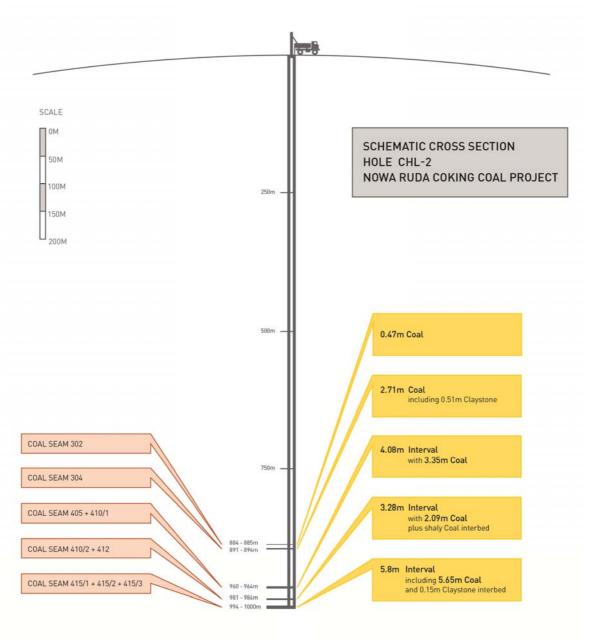
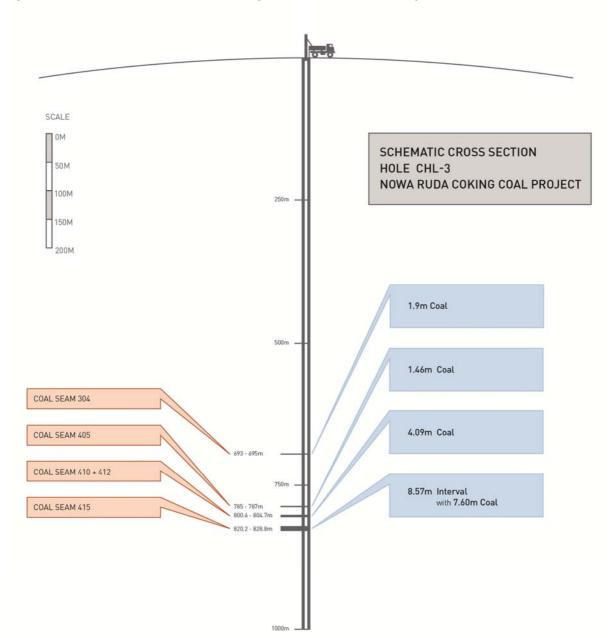




Figure 3: Schematic cross-section indicating coal seams and intervals for hole CHL-3



The drilling is part of an extensive 14 month programme, including three holes at the Waclaw deposit and four holes at the Lech deposit, for a total of seven holes and ~6800m of diamond drilling. Drilling is still underway at CHW-3 at the 785m level and CHL-4 is expected to be completed in the coming days. Both holes are planned to go to approximately 1000m in depth and the drilling component of the programme is expected to be completed by around the end of March with coal parameter testwork completed approximately 4-6 weeks after that (see Figure 1 for borehole locations).

Drilling is being undertaken by a combination of non-core and coring methods and is described in detail in the JORC (2012) Table 1 that is included as an Appendix to this



announcement. Borehole summary logs including full information on drillhole locations and hole paths are also provided at the end of the announcement.

All coal parameter testwork sampling was undertaken at the internationally accredited Glowny Instytut Gornnictwa ("GIG"), located in Katowice, Poland. It is also known as the Central Mining Institute and is the major facility for undertaking coal parameter testwork.

All cores for sampling were transported to GIG and sample selection and testwork design was undertaken jointly by GIG personnel and the Nowa Ruda Project site geologists. Full details are provided in JORC (2012) Table 2.

A comprehensive series of tests were undertaken on the raw coal and include ash, moisture, sulphur and volatile contents. Coal washability analysis was then conducted using a range of heavy media. The products of the coal washability tests were obtained as a series of 'floats' and 'sinks' and were tested for specific coking coal characteristics. Additional geotechnical testing was carried out on the immediate host rocks which constitute the roof and floor of the individual coal seams.

The results of the raw coal parameters and the Polish coal categories are given in Table 1 below:

Table 1: Raw Coal Quality Data for Nowa Ruda boreholes CHW-1 and CHW-2.

Drill Hole ID	Sample No	Coal Seam	Depth		Thickness	Moisture	Ash	Sulphur	Polish system Coal Class
			From	То	m	%	%	%	
CHL-1	CH15	301	733.2	734.0	0.82	1.02	54.5	0.90	37.1
	CH16	302	757.6	758.1	0.43	0.84	22.2	1.24	35.2
	CH17	304	761.6	762.6	1.02	0.84	18.4	0.71	35.2
	CH18	405+410/1	889.7	890.6	0.86	0.64	59.3	0.18	37.1
	CH19	410/2+412	915.2	915.8	0.57	0.62	12.8	0.32	37.2
	CH20	415/1	924.2	924.8	0.64	0.70	10.3	0.63	37.2
	CH21	415/2	937.7	938.6	0.88	0.63	45.2	0.33	38
	CH22	415/3	944.8	946.1	1.24	0.73	27.7	0.46	37.2
CHL-2	CH25	304	891.2	892.3	1.03		55.7		37.1
	CH26	304	892.8	893.9	1.09		14.2		35.2
	CH27	405+410/1	960.6	961.7	1.10		17.7		37.1
	CH28	405+410/1	962.4	964.6	2.25		18.2		37.1
	CH29	410/2+412	980.8	981.8	0.98		48.9		37.1
	CH30	410/2+412	983.4	984.1	0.70		12.1		37.2
	CH31	415/1+415/2+415/3	994.0	998.7	4.70		24.1		37.2
	CH32	415/1+415/2+415/3	998.8	999.8	0.95		8.37		38



#### **Technical Specifications**

Results are reported on an air dried basis for coal seams above 0.6m in thickness, which is considered the cut-off for underground coal mining in Poland. Coal seams are generally characterized by very low sulphur contents which are mostly substantially less than 1%.

Raw ash contents are locally high in 300-series seams but coal washability testwork indicates the raw material can be upgraded to a very acceptable product by washing. Starting ash contents for the 400-series are lower but can be similarly upgraded by washing and historically Nowa Ruda coal was washed to reduce ash content to sub-5%. Ash content below 10% is considered acceptable per international coal quality limits.

Coal washability test work was performed using heavy media of 1.3, 1.4, 1.55 and 1.75. The selection of the specific heavy media was based on historical operational experience at the Walbrzych coking plant, where the combination of the four heavy media was shown to yield the best results.

Coal parameter testwork was conducted on the washed products and coal yields for the various heavy media were calculated from the individual washability tests.

The ash contents for CHL-1 were reduced to between 1.79% and 6.85% after washing, which is an outstanding result and indicates that Nowa Ruda coking coals at Lech can present with a relatively high ash content for the raw product but washing is very effective and can produce a high quality, low ash end-product. These low ash contents post-washing correlate very closely with the yield % at 1.55, indicating that there is a clear differential in densities between the coal types and both the ash and the coals can readily be 'floated' with only a very minor amount of the heavier coal going into the ash fraction.

Final after-floating ash values for CHL-2 have not been received but yields for 1.55 have been calculated and they are very high, ranging from 97%-99% and indicating ash contents in the order of just 1%-3%.

This is entirely consistent with the historical results at the Nowa Ruda Project that were released to the ASX on 5 May, 2014 and again demonstrates that washing can very efficiently upgrade Nowa Ruda raw coal to an end-product of very high quality.

Metallurgical coal analyses have been completed for both CHL-1 but finalization of results are still required for CHL-2. For CHL-1 very strong agglomerating characteristics were obtained for the 300-series coal seams. Free Swell Index ("FSI") numbers range between 7.0 and 7.5 and Roga Indices (RI) mostly between 69 and 77. **Both of these indices are characteristic of high quality coking coals**. Based on a range of parameters these coals have been variously classified by GIG as 35.2 and 37.1 under the Polish coal classification system.

The CHL-1 400-series seams had moderate to low agglomeration characteristics combined with lower volatile contents, indicating they are coals of different character to the 300-



series. This is also reflected in the Polish classifications which were different to the 300-series and predominantly 37.2 and 38.

Both 37.2 and 38 are essential ingredients in the manufacturing of coke as they provide the low volatile, high ranking coals that are required to blend with the hard coking coals in order to get an optimum mix in the blast furnace. Both 37.2 and 38 coals are also highly valuable niche coals due to the lower volatile contents and they have additional uses in smokeless fuel production.

The results indicate that an overall pattern is taking shape for the Nowa Ruda Project:

- The coal deposits at Nowa Ruda consist of 300-series seams and 400-series seams and both series are essentially a 'package' containing several closely spaced individual seams;
- The 300 series ranges in total stratigraphic thickness from 10-20m and the 400-series generally ranges from 50-70m stratigraphic thickness. The two series are separated approximately 80-100m of barren sandstones;
- At Waclaw both the 300-series and the 400-series predominantly consist of hard coking coals;
- At Lech the 300-series predominantly consist of hard coking coals while the 400series contains some hard coking coal but has substantial amounts of the highly desirable low volatile, high ranking coal that is required as an essential additive to coking plants;
- Lech is emerging as the most likely potential starting area for first mining this one location has all the essential coking coal types required for optimum blends as well as substantial coal seam thicknesses.

The maiden resource estimate for the Nowa Ruda Coking Coal Project was produced by independent consultants Wardell Armstrong International ("WAI") and was released to the ASX on 28 April 2014 ("Maiden JORC Resource and Exploration Target"). This initial resource estimate was based entirely on historical data including limited drilling information.

As a result, the resource areas were generally restricted to zones immediately adjacent to the historical mining where there was reliable historical data with points of observations suitable for JORC (2012). Consequently the resource estimation did not extend very far down-dip into the unmined coal seams and as a direct result the vast majority of material classified under the Polish system as a Foreign Estimate could only be classified as "Coal Inventory" under JORC (2012).

At the completion of the current programme a resource upgrade will be undertaken by Balamara's technical consultant partner, HDR Salva. A substantial upgrade is anticipated for both Waclaw and Lech, but especially for Lech.

The initial holes at Waclaw and in particular hole CHW-1 were targeted at the western edges of the deposit in order to determine the extent of the strike. Hole CHW-3 is targeting



more the central part of the deposit where the resource models suggest that coal seam thicknesses are likely to be greater than those obtained so far.

At Lech, hole CHL-1 similarly targeted the edge of the deposit but CHL-2, CHL-3 and CHL-4 targeted more the central parts of the deposit. As noted, holes CHL-2 and CHL-3 have both produced outstanding results with a substantial thickness of high quality coking coals.

The Company expects that the new drilling results will underpin a substantial resource upgrade for Nowa Ruda, for two key reasons:

- Core recoveries have been very high, consistently around 95% or better, and coal
  intersections obtained within the curent programme will almost certainly qualify as
  points of observation under JORC 2012. This will locate new points of observation in
  zones where none previously existed due to the paucity of historical drilling data;
  and
- Results for CHL-2 and CHL-3 have been genuinely outstanding with the thicknesses exceeding both those in the existing Coal Inventory (JORC 2012) and in the official Polish estimates.

Balamara is continuing to focus on its core objective of becoming the next significant European coal producer through the development of its three tier one Polish coal Projects over the next few years. The Mariola Thermal Coal Project is likely to be the first mine into production by the end of 2016 followed by the Nowa Ruda Coking Coal Project and finally the world-scale Sawin North Thermal Coal Project.

The results reported today provide further strong support and validation for the Company's overall development strategy and focus.

-ENDS-

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#### **Competent Persons Statement:**

Information in this announcement that relates to Exploration Results and Coal Resources is based on information compiled by Mr Kevin Alexander who is a full time employee of Balamara Resources Limited and who is a Member of the Australasian Institute of Mining and Metallurgy.

Mr. Alexander has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity in which he is undertaking to qualify as a Competent Person under the 2012 edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Alexander contents to the inclusion of the data in the form and context in which it appears.

#### **NOWA RUDA COKING COAL PROJECT**

#### **BOREHOLE NO. CHL-1**

#### **BOREHOLE SUMMARY**

LOCALITY						Nowa Ruc	da					
District	Nowa Ruc	la				•	Area			Kłodzko		
Co-ordinates (PL 2000)	X - 56 08	216,44										
	Y - 63 93						Map No.			-		
Elevation			9 m a.s.l.				Aerial Photo	No.		-		
Inclination	Verti	cal (deviat	ion in file)				Asimuth			-		
CONTRACTOR												
Company		Algeo	Sp. z o.o.				Operator					
Machine	URI	3A3 / WI	RTH B3A				Pump/Comp	ressor		NB-50		
DRILLING												
Method	Openhole		Openhole		Op	enhole	Openhole		Coring		Cor	
Core Barrel Type											PQ-	
Bit Type	Cogged b	it	Cogged bit			gged bit	PDC bit		Core bit			eline
B/H Diameter (mm)	444		311		216	6	149		132		122	,6
Core Diameter (mm)												
Depth (m)	6		39		24		507,5		607		960	,4
CASING						REAMING				GROUTII		
Diameter (mm)	339,72	244,47	177,80	139,	70	Diameter (mm)	149	126	5,6	Grout Typ		
Depth (m)	6	39	245	535		Bit Type (mm)	PDC Bit	Cor	e bit	Grouting below	Metho	od: plugs as
Left in hole (m)	6	39	245	535		From (m)	507,5	607	,	Plug		
Capped						To (m)	535	890	,6	From (m)	)	To (m)
Reason for capping						Reason				0,0		100,0
Notes:										100,0		420,0
Cementing reports available in	the drilling docum	entation								420,0		680,0
	_									680,0		960,4
Dates drilled		0.04.2014.				Completed: 0	2.11.2014.		Grour	nted: 08.11.2	2014.	
	Geophysic Linterval -		14						Desci	riptive:		
Purpose of borehole	To verify h											
Geophysical logs run	715,0 – 95								Soom	s present:	30	1 – 415/3
Geophysical logs full	715,0 - 95		,						Scalli	s present.	30	1 - 415/5
	715,0 - 95		;									
	715,0 – 95											
	715,0 - 95											
	0,0-959,	0 VERT										
	715,0 - 95	59,0 FDSB										
Piezometer inserted	-						-					
Hydrogeological tests	-						-					
Geotechnical tests												
Terminal depth (m)	960.4		1	Core sto	rage:							
Logged by	Janusz Tr	entowski		_ 3.0 010	. <u> </u>		Geophysical					
99	53352 11						reconciliation					
Water levels (m)	Intersecte	d:						Res	t:			
/												

#### **NOWA RUDA COKING COAL PROJECT**

#### **BOREHOLE NO. CHL-2**

#### **BOREHOLE SUMMARY**

LOCALITY					Nowa Rud	la			
District	Nowa Ruda					Area		Kłodzko	
Co-ordinates (PL 2000)	X - 56 06 936	.72							
,	Y - 63 93 054	.51				Map No.		-	
Elevation		518,43 m a.s.l.				Aerial Photo No	).	-	
Inclination	Vertical (	deviation in file)				Asimuth		-	
CONTRACTOR		,							
Company		Algeo Sp. z o.o.				Operator			
Machine		3 / WIRTH B3A				Pump/Compres	sor	NB-50	
DRILLING									
Method	Openhole	Openhol	е	Op	enhole	Openhole	Openh	ole	Coring
Core Barrel Type									PQ-3
Bit Type	Cogged bit	Cogged	bit	Co	gged bit	PDC bit	PDC b	it	Wireline
B/H Diameter (mm)	444	311		216		149	143	-	122,6
Core Diameter (mm)									,-
Depth (m)	8	152,5		400	)	600	621		1001,5
CASING					REAMING		1	GROUT	
	000.70	044.47	477.00		Diameter			Grout Tv	
Diameter (mm)	339,72	244,47	177,80		(mm)			,	
Double (co.)	0	450.5	400		Bit Type			Grouting	Method: plugs as
Depth (m)	8	152,5	400		(mm)			below	
Left in hole (m)	8	152,5	400		From (m)			Plug	
Capped					To (m)			From (m	) To (m)
Reason for capping					Reason			0,0	100,0
Notes:					•			100,0	400,0
Cementing reports available in	the drilling documenta	tion						400,0	680,0
• .	•							680,0	1001,5
Dates drilled	Started: 21.08	.2014.			Completed: 2	6.12.2014.	Gro	ounted: 03.01	.2015.
	Geophysical:							scriptive:	
	I interval – 27.	12.2014.						•	
Purpose of borehole	To verify histo	rical data					-		
Geophysical logs run	850,0 - 998,0						Sea	ms present:	302 – 415/1 +
	850,0 - 998,0								415/2 + 415/3
	850,0 - 998,0								
	850,0 - 998,0								
	850,0 - 998,0								
	0,0 - 998,0 VE								
B:	850,0 – 998,0	FDSB							
Piezometer inserted	-								
Hydrogeological tests	-								
Geotechnical tests									
Terminal depth (m)	1001.5		Core sto	rage.					
Logged by	Janusz Trento	wski	2010 310	ago.		Geophysical		1	
	Juliusz Hellio					reconciliation by	v:		
Water levels (m)	Intersected:					. 500.10	Rest:		
	microcolou.		1				001.		

#### **NOWA RUDA COKING COAL PROJECT**

#### **BOREHOLE NO. CHL-3**

#### **BOREHOLE SUMMARY**

LOCALITY				Nowa Rud	la					
District	Nowa Ruda			u u	Area			Kłodzko		
Co-ordinates (PL 2000)	X - 56 07 74	16,48								
	Y - 63 93 30				Map No.			-		
Elevation		469,57 m a	.s.l.		Aerial Ph	oto No.		-		
Inclination	Vertica	I (deviation in	file)		Asimuth			-		
CONTRACTOR										
Company	ŚTW	/ Dalbis Sp. z			Operator					
Machine		YDX 3	000		Pump/Co	mpressor		NB-125/E	3W-30	00
DRILLING				,						
Method	Openhole		Openhole	Openhole		Openhole			ring	
Core Barrel Type									2-3	
Bit Type	Cogged bit		Cogged bit	Cogged bi	t	Cogged b	it		reline	)
B/H Diameter (mm)	406		311	216		152			2,6	
Core Diameter (mm)	- 10		105	100		201		85		
Depth (m)	10		165	402		631			5,75	
CASING	-		-	REAMING Diameter	1			GROUTII Grout Typ		
Diameter (mm)	339,72	244,47	168,30	(mm)				,,		
Depth (m)	10	165	402	Bit Type (mm)				below	Meth	od: plugs as
Left in hole (m)	10	165	402	From (m)				Plug		
Capped				To (m)				From (m)		To (m)
Reason for capping				Reason				0,0		220,0
Notes:								220,0		540,0
Cementing reports available in								540,0		835,75
Dates drilled	Started: 06.1			Completed: 0	8.02.2015.			ted: 12.02.2	2015.	
	Geophysical						Descr	iptive:		
5 (1 1 1		0./11.02.2015.								
Purpose of borehole	To verify his 630,0 – 833,						0		1 00	)2 – 415/3
Geophysical logs run	630,0 - 833, 630,0 - 833, 630,0 - 833, 630,0 - 833, 0,0 - 833,0 630,0 - 833, 630,0 - 833,	0 DILS 0 DNNS 0 DLL3 0 4ACS VERT 0 FDSB					Seams	s present:	30	12 – 415/3
Piezometer inserted	-									
Hydrogeological tests	-									
Geotechnical tests										
Terminal depth (m)	835,75		Core stora	age:						
Logged by	Janusz Tren	towski			Geophysi reconcilia	ation by:				
Water levels (m)	Intersected:					Rest:				

# JORC Code, 2012 Edition – Table 1 – Nowa Ruda Coal Project – CHL-1, CHL-2 and CHL-3 Coal Parameter Testwork

#### **Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold</li> </ul>	<ul> <li>All coal sampling and also geotechnical testing of the immediate host rocks to the coal formations was undertaken at Glowny Instytut Gornnictwa (GIG), Central Mining institute in Katowice, Poland.</li> <li>The site geologist identifies coal seams to be sampled and also prospective locations for geotechnical sampling and the core is transferred approximately 240 km from site to the GIG laboratories. Before sampling the site geologist together with GIG representatives consult the geological logs and review the specific locations recommended for sampling which is then undertaken by experienced GIG personnel.</li> <li>Testing took place on all coal seams greater than 0.6 m in thickness, and included partings up to 5cm in thickness. Sampling was extensive and a 200g charge was used to conduct standard tests including, but not limited to:</li> </ul>
	that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	<ul> <li>Ash Content;</li> <li>Calorific Value;</li> <li>Moisture;</li> <li>Coal Type;</li> <li>Sulphur Content;</li> <li>Coking parameters;</li> <li>Volatile matter content</li> <li>Density</li> </ul>
		Coal washability testwork was undertaken using a range of heavy media. The products washability tests were used to determine specific coking coal parameters including:
		Swelling Index
		Roga Index
		Geissler plasticity
		• Vacuum degassing tests were conducted on all seams greater than 0.3m in thickness to test for methane and CO2 content. Approximately 100g of

Criteria	JORC Code explanation	Commentary
		material was taken within 24 hours of coring and placed in a purpose designed metal gas sampling vessel which was then transferred to the Barbara Experimental Mine in Katowice which is a division of GIG.
		<ul> <li>A range of geotechnical tests were also conducted on floor and roof of the host rocks to the coal seams. These tests included but were not limited to:         <ul> <li>Uniaxial Compressive Strength</li> <li>Tensile Strength</li> <li>True relative density and volumetric density</li> <li>Rock Quality Designation</li> <li>Effective porosity</li> <li>Gravity drainage capacity</li> <li>Permeability</li> </ul> </li> </ul>
Drilling techniques	<ul> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul> <li>Two initial drillholes CHW-1 and CHW-2 have been completed at Waclaw as part of a planned seven hole programme comprising three holes at Waclaw and four holes at Lech.</li> <li>In Poland before any drilling can commence a borehole plan must be produced for each borehole. The plan is approved by the local mining authority with input from local government authorities. Regular inspections are conducted by officials from the local mine authority.</li> </ul>
		Drilling at CHL-1 and CHL-2 was conducted by Algeo Sp. Z o o, a specialized private drill contracting company based at z siedziba 36-207 Grabownica Starzenska 609 in southeastern Poland. Drilling at CHL-3 was conducted by STW Dalbis Sp. z o.o a separate private drilling contractor based at ul. Hutnicza 5 – 9, 42 – 600 Tarnowskie Góry near Katowice.
		<ul> <li>CHL-1 was completed to a total depth of 960.4 metres using a combination of a URB 3A3 and Wirth B-3A (German manufactured) drill rig with an NB-50 pump. Drilling was conducted by roller cone bits at gradually decreasing diameters down to 507.5m. The major diameters were 311mm from 6-39m, 216mm from 39-245, 149mm from 245-507.7, 132mm from 507.5-607 and 122.6mm from 607-960.4. Diamond core drilling commencing at 507.5m and</li> </ul>

Criteria	JORC Code explanation	Commentary
		was undertaken by PQ (3) methods. Cementation generally took place at each major reduction in diameter and permanent casing of varying diameters remained in the hole to a depth of 535m.
		<ul> <li>CHL-2 was completed to a total depth of 1001.5 metres using a combination of a URB 3A3 and Wirth B-3A (German manufactured) drill rig with an NB-50 pump. Drilling was conducted by roller cone bits at gradually decreasing diameters down to 585m. The major diameters were 311mm from 8-152.5m, 216mm from 152.5-400, 149mm from 400-600, 143mm from 600-621 and 122.6mm from 621-1001.5. Diamond core drilling commencing at 621m and was undertaken by PQ (3) methods. Cementation generally took place at each major reduction in diameter and permanent casing of varying diameters remained in the hole to a depth of 400m.</li> <li>CHL-3 was completed to a total depth of 835.75 metres using a YDX-3000 drill rig with an NB-125/BW-300 pump. Drilling was conducted by roller cone bits at gradually decreasing diameters down to 631m. The major diameters were 311mm from 10-165m, 216mm from 165-402m, 152mm from 402-631 and 122.6mm from 631-835.5. Diamond core drilling commencing at 631m and was undertaken by PQ (3) methods. Cementation generally took place at each major reduction in diameter and permanent casing of varying diameters remained in the hole to a depth of 402m.</li> </ul>
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	The collection of core samples generally followed the standard Polish procedures.
	<ul> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>The 3m core tube was fitted with special plastic tubing inside the triple tube and the core run was removed by two drilling supervisors. The tubing was fitted with plastic stoppers at each end and the core is then transferred by trailer to a dedicated logging facility approximately 1-2 km for the drill sites.</li> </ul>
		<ul> <li>Core recovery was determined by measuring the lengths of recovered core and calculating as a % of the interval based on drilling depths. The recovered core was also compared to the coal interval thickness and depths determined from the geophysical logs. Core recoveries in the coal seams and the interburden were generally of the order of 95%.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>All core sampling takes place at the GIG laboratory in Katowice and sample material and the remaining core is stored there after sampling.</li> <li>Core from intervals that were not sampled remains at the project site near Ludwikowice.</li> <li>Open hole drilling was undertaken from surface to usually just above the unconformable contact between the Permian strata and the underlying Carboniferous strata that host the coal measures.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnical logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>CHL-1, CHL-2 and CHL-3 were drilled by open hole methods to 507.5m, 621m and 631m respectively. Drill chips were collected at 1m intervals and stored in large plastic bags. Sub-samples weighing approximately 0.5 kg were taken and stored in wooden boxes containing 20 units. The drill chip samples were photographed and a graphic log and geological description of the open hole section of the drillhole was produced by the site geologist</li> <li>Detailed geological logs have been produced of the coal measures based on the drilling depths. The logs are presented as a graphic log with a detailed geological description and all core was geologically logged prior to sampling.</li> <li>Geotechnical is undertaken at site and includes standard measurements such as solid recovery (SRC), fracture analysis per metre of core and rock quality data (RQD). Detailed geotechnical testwork is also conducted on samples from the host rocks that from the floor and roof to the various coal seams. This testwork is conducted at GIG in Katowice</li> <li>All core was photographed as part of the core logging process.</li> <li>Downhole geophysical surveying was undertaken for both CHL-1. CHL-2 and CHL-3 by Geofizyka Krakow SA. These surveys provide a downhole survey of the hole path and also provide information that can confirm the location and thickness of the coal seams.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> </ul>	<ul> <li>Immediately after the coal seams are extracted from the core barrel a spot coal sample secured in a specific air tight container is taken for gas testing.</li> <li>A very comprehensive suite of testwork was conducted including coal parameter testwork, specific testing of coking properties and a comprehensive range of geotechnical testwork has been carried out as per Polish standards. This testwork has been previously described in 'Sampling techniques'.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>All coal sampling and also geotechnical testing of the immediate host rocks to the coal formations was undertaken at Glowny Instytut Gornnictwa (GIG), Central Mining institute in Katowice, Poland.</li> <li>The laboratory undertakes quality control checks with three independent laboratories in Poland. GIG also uses internal quality control to verify results. Quality control checks occur on a quarterly basis.</li> <li>The laboratory facilities were inspected in May 2014 by Wardell Armstrong International (WAI) as part of an independent QAQC conducted by WAI into the drilling, logging, sampling and assaying procedures at the Nowa Ruda project. A QAQC report on this work was produced in September 2014 by Wardell Armstrong International (WAI).</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>The laboratory undertakes its own quality control checks with three independent laboratories in Poland. GIG also uses internal quality control to verify result.</li> <li>Sampling and coal quality test results are held in both hard copy and electronic format at Balamara's office in Katowice. Similarly test results are retained by GIG at its facility in Katowice.</li> <li>No adjustments have been made to assay data.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Boreholes are set out by survey in accordance with the Poland CS2000 Zone 6 grid system. A second borehole survey is conducted at the end of the hole after demobilization of the drill rig. The survey includes the X and Y coordinates and the height above sea level.</li> <li>Topographic maps for the area are available in digital form.</li> <li>Following the completion of each borehole, a down-hole geophysical logging survey is undertaken to provide the inclination and azimuth of the borehole throughout its length.</li> </ul>
Data spacing and distribution  Orientation of	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> <li>Whether the orientation of sampling achieves unbiased sampling of possible</li> </ul>	<ul> <li>These two drillholes completed at Lech are approximately 1.6 km apart. The drilling is part of a larger programme at both Waclaw and Lech that will comprise seven holes – three at Waclaw and four at Lech.</li> <li>An initial JORC (2012) resource estimate for Nowa Ruda was completed by WAI in April 2014 and the current drilling programme is designed to verify and infill the historical drilling.</li> <li>Both boreholes were drilled vertically with no pre-determined orientation or</li> </ul>

Criteria	JORC Code explanation	Commentary
data in relation to geological structure	<ul> <li>structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	drilling angle and downhole surveying has been conducted and the trace of the drill path. Locally dips steepen up against major faults but dips are generally modest at up to 20 degrees and not considered sufficient to have introduced a sampling bias
Sample security	The measures taken to ensure sample security.	Core sampling and storage is undertaken in an indoor facility that is lockable with restricted access and contains good lighting and heating. A chain of custody and associated documentation has been developed for the transfer of core/samples from site to GIG for analysis. Samples are transported by the site geologist to the GIG Laboratory where they are received by GIG personnel. Samples for testwork are selected jointly by the site geologist and GIG personnel.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>An independent QAQC was conducted by WAI into the drilling, logging, sampling and assaying procedures at the Nowa Ruda project. An interim QAQC report with a number of recommendations was produced in July 2014 followed by an update in September 2014. A number of changes to procedures were made based on the WAI recommendations.</li> </ul>

### **Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>The Nowa Ruda exploration lease is owned by Balamara Resources Ltd, through Coal Holding, which is a Polish subsidiary company, 100% owned by Balamara resources Ltd.</li> <li>The exploration lease comprises a single area, divided into the 'Piast Coalfield Wacław Area' and the 'Piast Coalfield Lech Area'.</li> <li>The lease number is 8/2013/p, it covers an area of 20.289km2.</li> <li>The lease was granted on 18th July 2013 and will expire on 18th January 2016.</li> <li>There is designated area of natural beauty (Natura 2000), which overlaps with the northern part of the lease, as follows:</li> <li>Habitat Directive Site (SCI)</li> <li>Name: Ostoja Nietoperzy Gor Sowich</li> <li>Code: PLH020071</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>Area: 21338.43 Ha</li> <li>Natura 2000 is reported to contain 4 protected species of mammals.</li> <li>Natura 2000 may potentially impede future exploration and/or mining.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Surface and underground exploration was carried out by the Polish state geological institutes, as follows:</li> <li>1843 to 1858: Initial exploration and small scale extraction where the coal seams outcropped;</li> <li>1955 to 1956: Two boreholes drilled to 172m and 600m (but these failed to prove the continuity of coal seams from workings. Five channel samples taken from underground workings at Wacław drift for analyses at Nowa Ruda Hard Coal Mine Laboratory;</li> <li>1964 to 1965: The drilling of five boreholes, B.1, B.2, B.3, B.4 and B.5 to coal seams 301 and 304;</li> <li>1971 to 1975: Underground exploration at Ludmiła Shaft and an exploration drift through the Permian to the Carboniferous;</li> <li>1972 to 1977: The drilling of four boreholes, B.W-1, B.W-2, B.W-3 and B.W-4, at spacing's of 1,000 to 1,100m, to about 1,200m deep and approximately 1200 from underground workings. These were tested for coal quality and CO2 content; and</li> <li>1985: Drilling of two boreholes, GN24 and GN25. Lech</li> <li>Surface exploration was carried out by the Polish state geological institutes, as follows:</li> <li>1968 to 1974: The drilling of four boreholes, B.I, B.II, B.III and B. IV, along a traverse approximately 1,500m long in a northwest to southeast direction.</li> <li>From 1961 to 1964, there were 1,243 underground boreholes drilled at Wacław and Lech.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>Many of the surface boreholes were lithologically and geophysically logged. However, the borehole records for Lech were not available and there were no original geophysical logs available.</li> <li>The Nowa Ruda coking coal deposit is a Carboniferous coal bearing sedimentary sequences. The deposit is suited in the Lower Silesian Coal Basin, in southwest Poland. The coal seams are inter-bedded within sequences of siltstones, shale, mudstones and conglomerates. The coal seams are susceptible to thinning and are disturbed by intense faulting, which included both normal and reverse (thrust) faults. These faults divide the coal field into a series of structural cells and influence and may have displacements of at least 1,000. The faults, sandstone horizons and coal seams are prone to elevated accumulations of gas, mainly CO2, that have caused fatal outburst in the past. The coal seams dip at about 200 to 350 to the southwest, although may steepen to around 700 adjacent to faults.</li> <li>In accordance with Polish classification, these coal seams have been categorized as a Group II deposits in terms of structural complexity.</li> <li>Due to the depth of the coal seams, they are potentially mineable by underground mining methods.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	• The Nowa Ruda coking coal deposit is a Carboniferous coal bearing sedimentary sequences. The deposit is suited in the Lower Silesian Coal Basin, in southwest Poland. The coal seams are inter-bedded within sequences of siltstones, shales, mudstones and conglomerates. The coal seams are susceptible to thinning and are disturbed by intense faulting, which included both normal and reverse (thrust) faults. These faults divide the coal field into a series of structural cells and influence and may have displacements of at least 1,000. The faults, sandstone horizons and coal seams are prone to elevated accumulations of gas, mainly CO2, that have caused fatal outburst in the past. The coal seams dip at about 200 to 350 to the southwest, although may steepen to around 700 adjacent to faults.

Criteria	JORC Code explanation	Commentary
		<ul> <li>In accordance with Polish classification, these coal seams have been categorized as a Group II deposits in terms of structural complexity.</li> <li>Due to the depth of the coal seams, they are potentially mineable by underground mining methods.</li> </ul>
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul> <li>A summary of the drillhole information is provided on the attached Borehole Summary sheets.</li> <li>A plan view of drill hole collar locations form this programme is provided in Figure 1.</li> </ul>
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>No data aggregation methods were used in the preparation of this announcement.</li> <li>Coal quality has been determined for each seam independently based on the results of the coal parameter testwork.</li> </ul>
Relationship between mineralisation widths and	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralization with respect to the drill hole angle is known, its nature should be reported.</li> </ul>	<ul> <li>The coal seams have been intersected by drillholes that are near vertical and holes have been surveyed to determine the inclination and azimuth of each drillhole.</li> </ul>
intercept lengths	<ul> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul> <li>The coal seams are generally moderately dipping with average dips of approximately 20 degrees and as such down hole lengths are approximately 94% of true widths.</li> </ul>

Criteria	JORC Code explanation	Commentary
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul> <li>A plan view of drill hole collar locations form this programme is provided in Figure 1. Schematic cross sections are given for CHL-2 and CHL-3 in Figures 2 and 3 respectively.</li> </ul>
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul> <li>All of the relevant data and information from this two hole exploration programme has been made available for the announcement.</li> </ul>
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul> <li>No additional, relevant or material exploration data and information was provided for the purposes of reporting these exploration results</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>This announcement relates to results from the first two holes drilled at Lech. These holes are part of a seven hole drill programme at the Nowa Ruda project, consisting of approximately 6800 metres. The programme consists of three holes at Waclaw and four holes at Lech and individual holes range in depth from 930 to a maximum allowable depth of 1000 metres. Drilling is currently underway at two holes with CHW-3 and CHL-3 both all at relatively advanced depths in the range of 730-900m and the drilling component expect to be completed by the end of March 2015 with the coal parameter testwork completed approximately 4-6 weeks after that.</li> <li>Following the completion of this programme there will be an updated JORC (2012) resource calculation incorporating all relevant results for the drilling programme.</li> </ul>