EXPANDED BFS CONFIRMS LOW CAPEX AND LOW RISK DEVELOPMENT PATHWAY TO A$850 MILLION NPV

INVESTMENT HIGHLIGHTS

- *Expanded Bankable Feasibility Study ("BFS") incorporates the second coal seam (WK No.11) at Poplar Grove Mine resulting in a 56% increase in mine production to 2.8 Mtpa from additional upfront capex of only US$5 million, delivering a compelling 80% increase in NPV_8 to US$310 million*

- *Expanded BFS highlights at Poplar Grove Mine:*

  - *Average Annual Production (steady state): **2.8 Mtpa** (up 56%)*

  - *"All-in" Opex (FOB Barge): **US$29.24 per ton** (down 3.5%)*

  - *Average Annual EBITDA (steady state): **US$67 million** (up 72%)*

  - *Total Initial Capex: **US$44.7 million** (up 11%)*

  - *NPV_8: **US$310 million (A$403 million)** (up 80%)*

  - *IRR: **42%***

  - *Mine Life: **25 years***

- *Combined development of the permitted 2.8 Mtpa Poplar Grove Mine, followed by the permitted 3.8 Mtpa Cypress Mine, elevates Paringa to a strategic **6.6 Mtpa Illinois Basin producer***

- *Expanded BFS highlights for the combined development of the Poplar Grove Mine, followed by the Cypress Mine:*

  - *Combined Average Annual Production (steady state): **6.6 Mtpa***

  - *Combined Average Annual EBITDA (steady state): **US$163 million***

  - *Combined NPV_8: **US$655 million (A$850 million)***

  - *Mine Life: **25 years***

- *Paringa's staged mine developments will be supported with long term sales contracts, having already secured a fixed price, five year, US$205 million cornerstone coal sales agreement with a major regional utility*

- *Paringa will now finalize negotiations with financiers for a competitive financing package to fund the development of the Poplar Grove Mine starting mid-2017 with first coal due mid-2018*

- *Paringa is now ready to begin construction at Poplar Grove, starting with exercising options to acquire the mine site land property, building electrical infrastructure and beginning mine excavation activities*

Low Capex

Located in one of the best serviced and infrastructure rich coal regions in the US, Poplar Grove's low capex of US$44.7 million is in line with the capital intensity of other recent mine developments in the Illinois Basin:
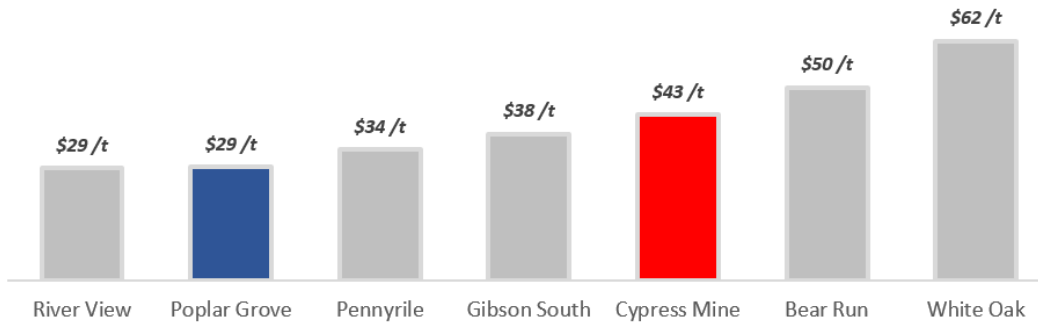

Figure 1: Capital Intensity of New Mine Developments in the Illinois Basin

Low Risk

Paringa has significantly "de-risked" the development of the Poplar Grove and Cypress mines:

- ✓ **Fully permitted to start construction**
- ✓ **Low cost coal seam access**
- ✓ **Simple "room-and-pillar" operations**
- ✓ **Simple coal processing techniques**
- ✓ **Low cost barge transportation**

- ✓ **US$205 million sales contract**
- ✓ **Improving US energy regulatory outlook**
- ✓ **Established local mining industry**
- ✓ **First world business jurisdiction**
- ✓ **Experienced US Team**

High Returns

Strong potential to generate high returns from the low capital, low risk Poplar Grove and Cypress Mines:
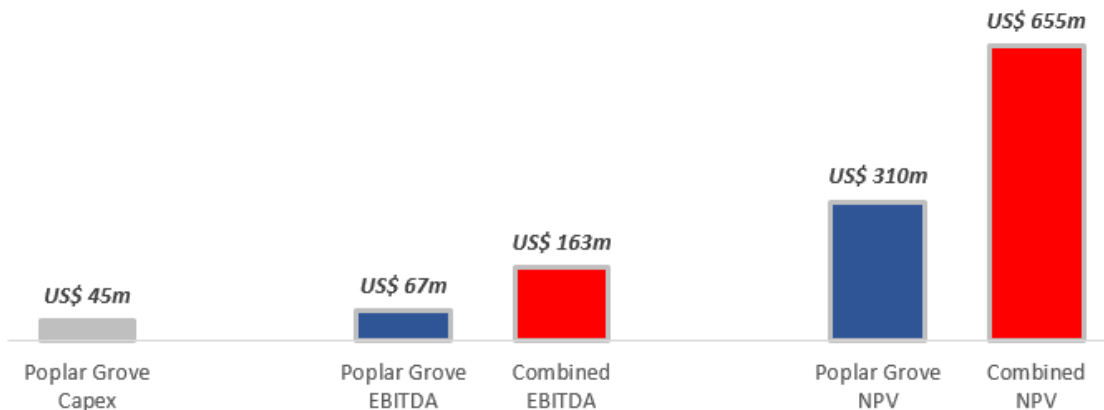

Figure 2: Key Metrics of Developing Poplar Grove and Cypress Mines
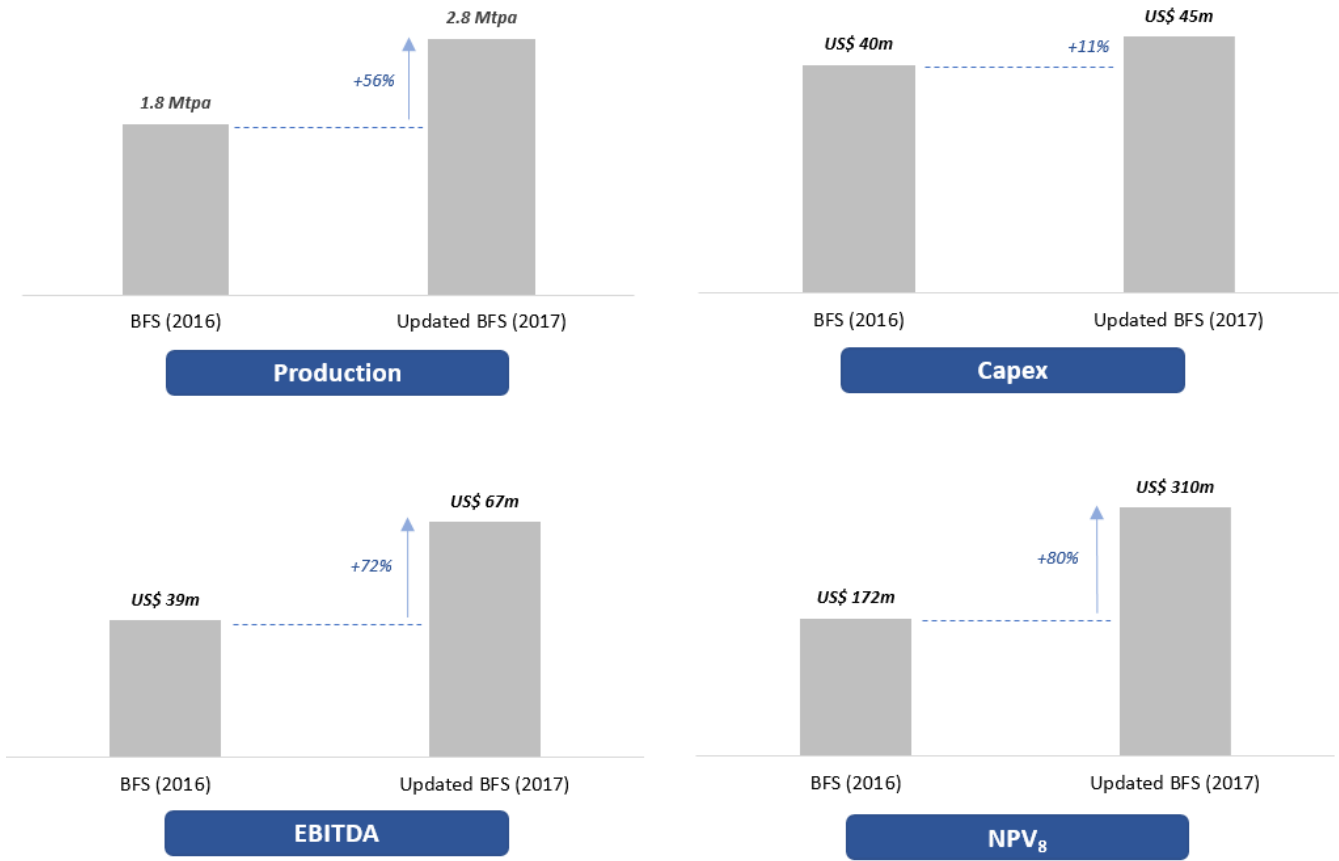
Enhanced Poplar Grove Key Metrics:

Figure 3: Enhanced Poplar Grove Key Metrics

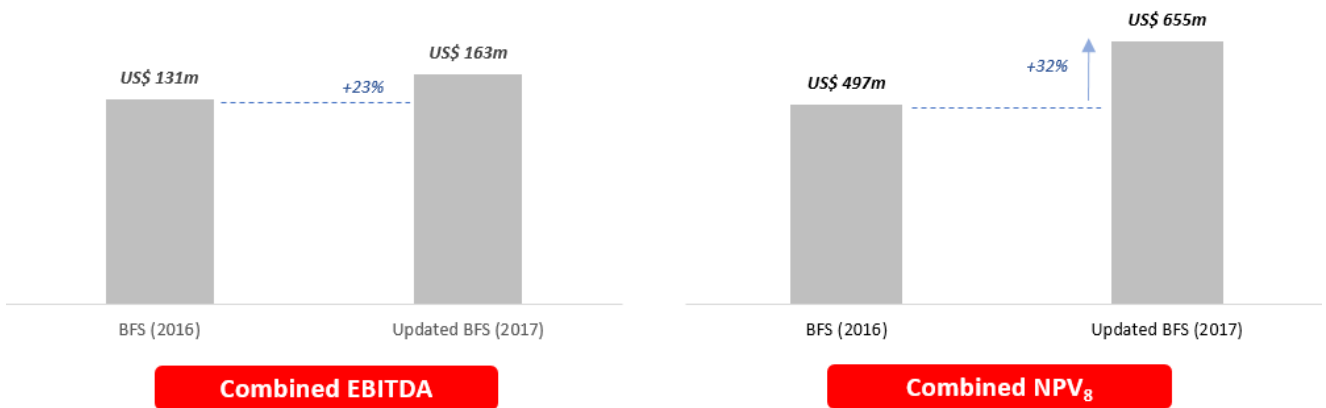# Enhanced Combined Poplar Grove & Cypress Key Metrics:

Figure 4: Enhanced Combined Poplar Grove & Cypress Key Metrics
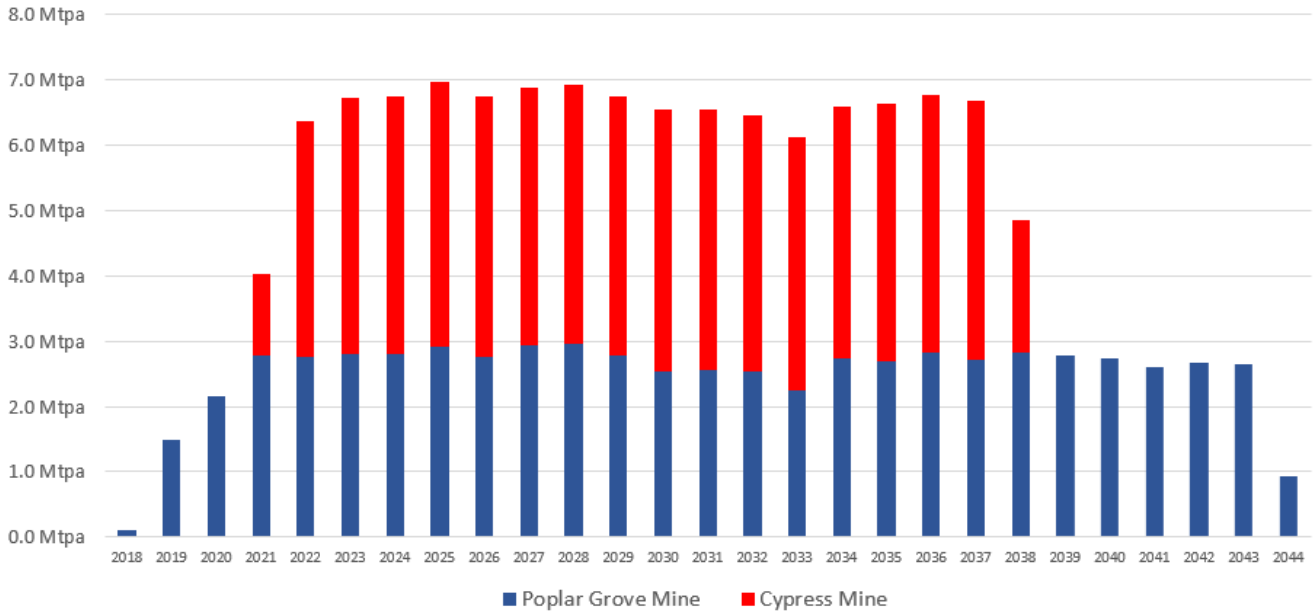
Expanded Production Profile

Figure 5: Production Profile of Developing the Poplar Grove and Cypress Mines (2018 to 2044)

Development Timetable

Buck Creek	2017				2018				2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Poplar Grove																				
Technical Studies	✓																			
Permitting	✓																			
Financing		■																		
Construction		■	■	■	■															
First Coal (WK No.9)					■															
Production (WK No.9)						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
WK No.11 Incline										■	■									
Production (WK No.11)												■	■	■	■	■	■	■	■	■
Cypress																				
Construction									■	■	■	■	■	■	■	■				
Commercial Production																	■	■	■	■

Table 1: Development Timeline of the Poplar Grove and Cypress Mines (2017 to 2021)

Paringa's CEO, Mr. Todd Hannigan, said: *"The successful completion of the enhanced BFS for Popular Grove has exceeded all expectations and validates our decision to develop this high return mine first and then follow with the development of the Cypress mine. I believe it represents a compelling investment opportunity that will reward Paringa shareholders with strong, consistent cashflow over the expected 25-year mine life.*

"We aim to replicate the success of our local peers – we will be mining the same coal seams as they do, using the same mining methods, mining equipment and coal processing. We will deliver our high-quality coal into the nearby river market and we have already successfully de-risked our market entry by securing a 5-year, fixed priced, offtake contract with the largest utility in our market. In addition, we have excellent physical and intellectual infrastructure all around us, including; world class roads, rail, airports; low cost and reliable electricity; a wide range of highly skilled and competitive local suppliers, mining equipment manufacturers and miners.

"This is what makes this investment opportunity so compelling – it is a rare combination of a technically simple, low risk and low cost project, located in a first world business friendly jurisdiction, that will deliver strong, consistent cashflow and generate high returns on capital.

"We believe the outlook for our regional market remains strong, and as highlighted by the CEOs of key Illinois Basin producers, there has been a severe lack of investment in new mine developments in the basin, resulting in a potential future supply shortfall to meet improving demand. You can expect us to take advantage of favorable market conditions to lock in new forward sales contracts and accelerate our development strategy to become a strategic 6.6 Mtpa Illinois Basin producer."

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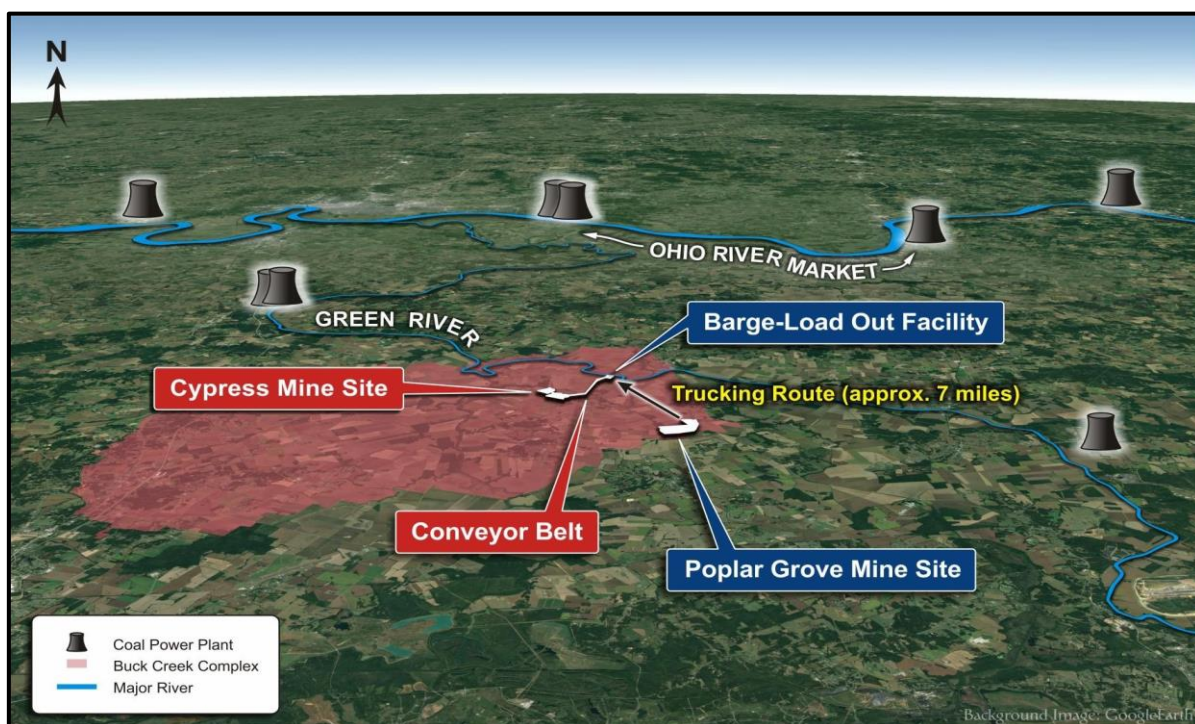nainsworth@paringaresources.com

Figure 6: Buck Creek Complex's Poplar Grove and Cypress Mines and local Ohio River Market

Summary of Expanded BFS Results

Expanded BFS results for the Poplar Grove and Cypress Mines are as follows:

Table 2: Poplar Grove and Cypress Mines Fundamentals *(to a maximum accuracy variation +/- 10%)*		
	Poplar Grove Mine	**Cypress Mine**
Average ROM Coal Production Steady State	3.6 Mtpa	5.1 Mtpa
Total ROM Coal Produced Life-of-Mine ("**LOM**")	89.0 million tons	86.3 million tons
Product Heating Content	11,200 Btu/lb	11,200 Btu/lb
Average Product Yield	76%	77%
Mine Life	25 years	18 years
Average Saleable Coal Production Steady State	2.8 Mtpa	3.8 Mtpa
Total Saleable Coal Produced (LOM)	67.7 million tons	66.2 million tons
Coal Processing Plant Capacity	400 tons per hour	700 tons per hour
Coal Processing Method	Dense Media 2-Stage	Dense Media 2-Stage
Underground Mining Method	Room-and-Pillar	Room-and-Pillar
Construction Start Date	Mid-2017	Q1 2019
First Coal Production Date	Mid-2018	Q1 2021
Ramp-up Period to Full Production	12 months	19 months
Average Annual Operating Costs (steady state)	US$29.24 per ton	US$27.37 per ton
Average Annual EBITDA (steady state)	US$67.1 million	US$99.6 million

Notes: Steady state production period for Poplar Grove is 2020 to 2042 and for Cypress is 2023 to 2037.

Sensitivity Analysis - Poplar Grove Mine

The Poplar Grove Mine is expected to generate high levels of cash flow that will deliver value to Paringa shareholders. As the domestic US coal market recovers, there is excellent potential for the Poplar Grove Mine's strong financial returns to materially improve with higher market pricing. Sensitivity to the average annual earnings before interest, tax, depreciation and amortization ("**EBITDA**") and New Present Value ("**NPV**") of the Poplar Grove Mine from a change in sales prices is shown below:

Table 3: Poplar Grove Sensitivity to EBITDA and NPV from change of Sales Prices ($0.77 AUD/USD)				
	0%	**+5%**	**+10%**	**+15%**
Average Annual EBITDA (US$)	US$67 million	US$74 million	US$81 million	US$87 million
Average Annual EBITDA (A$)	A$87 million	A$96 million	A$105 million	A$113 million
NPV_8 (US$)	US$310 million	US$353 million	US$396 million	US$439 million
NPV_8 (A$)	A$402 million	A$458 million	A$515 million	A$571 million

Sensitivity Analysis - Combined Poplar Grove and Cypress Mines

Sensitivity to the average annual EBITDA and NPV of the combined Poplar Grove and Cypress Mines from a change in sales prices is shown below:

Table 4: Combined Mines Sensitivity to EBITDA and NPV from change of Sales Prices ($0.77 AUD/USD)				
	0%	+5%	+10%	+15%
Average Annual EBITDA (US$)	US$163 million	US$180 million	US$196 million	US$212 million
Average Annual EBITDA (A$)	A$212 million	A$233 million	A$254 million	A$275 million
NPV_8 (US$)	US$655 million	US$743 million	US$830 million	US$918 million
NPV_8 (A$)	A$850 million	A$965 million	A$1.08 billion	A$1.19 billion

Introduction

Paringa Resources Limited ("**Paringa**" or **"Company**") (**ASX:PNL | OTCQX:PNGZF**) is pleased to announce the results of the expanded Bankable Feasibility Study ("**BFS**") for the Buck Creek coal mining complex ("**Buck Creek Complex**"), incorporating the expansion of the Poplar Grove Mine to include the Western Kentucky No.9 coal seam ("**WK No.11 seam**"). The Expanded BFS confirms the Buck Creek Complex's technical and economic viability, and demonstrates a Net Present Value ("**NPV**") of US$655 million (A$850 million) with initial project capex of only US$44.7 million. The BFS was prepared to a maximum accuracy variation of +/- 10%.

The expanded BFS has been prepared in accordance with the JORC Code 2012 Edition ("**JORC Code**") and National Instrument NI 43-101 'Standards of Disclosure for Mineral Projects' ("**NI 43-101**"). Paringa has previously released the results of a BFS for the Poplar Grove Mine's Western Kentucky No.9 coal seam ("**WK No.9 seam**") and the Cypress Mine to the Australian Securities Exchange ("**ASX**") on 21 November 2016 and 2 December 2015 respectively.

The expanded BFS was managed by Marshall Miller & Associates, Inc. ("**MM&A**"), with utilisation of local industry consultants who have expertise in coal mine development in the Illinois Basin region. MM&A, previously owned by Cardno Limited, has managed all of Paringa's technical studies and has over 40 years of expertise in mine engineering, mine reserve evaluation, feasibility studies, and due diligence services for mining and resource projects, particularly in the US coal industry.

Coal mining in the Illinois Basin, and in particular the western Kentucky region, has occurred for more than one hundred years. Open cut mining operations, predominantly conducted by Peabody, has been overtaken by underground continuous mining operations mostly by Alliance Resource Partners, LP ("**Alliance**"). Provided below in Figure 7 is a map of western Kentucky, demonstrating the extent of coal mining in the region.

The mineral ownership of Paringa's Poplar Grove and Cypress Mines is unique for the region with Paringa leasing the coal rights from each individual farmer or surface property owner where the mineral rights have not been severed from the surface property. In other parts of the US, mineral rights to coal are generally owned by the federal government or large third party land companies, many of which severed the mineral (coal) from the surface property over one hundred years ago.

Operating coal companies then lease large tracts of coal from the federal government or third party land companies by single lease agreements. This is very different from Paringa's complex land position which consists of hundreds of smaller individual coal leases from local farmers and residents. The Buck Creek

area was not developed by major mining companies due to the amount of work and expense required to identify and lease these many small parcels.

Since 2008, the previous vendor group and Paringa have secured a total of 304 individual leases, comprising of a total of over 510 individual property tracts and covering an area totaling almost 40,000 acres.
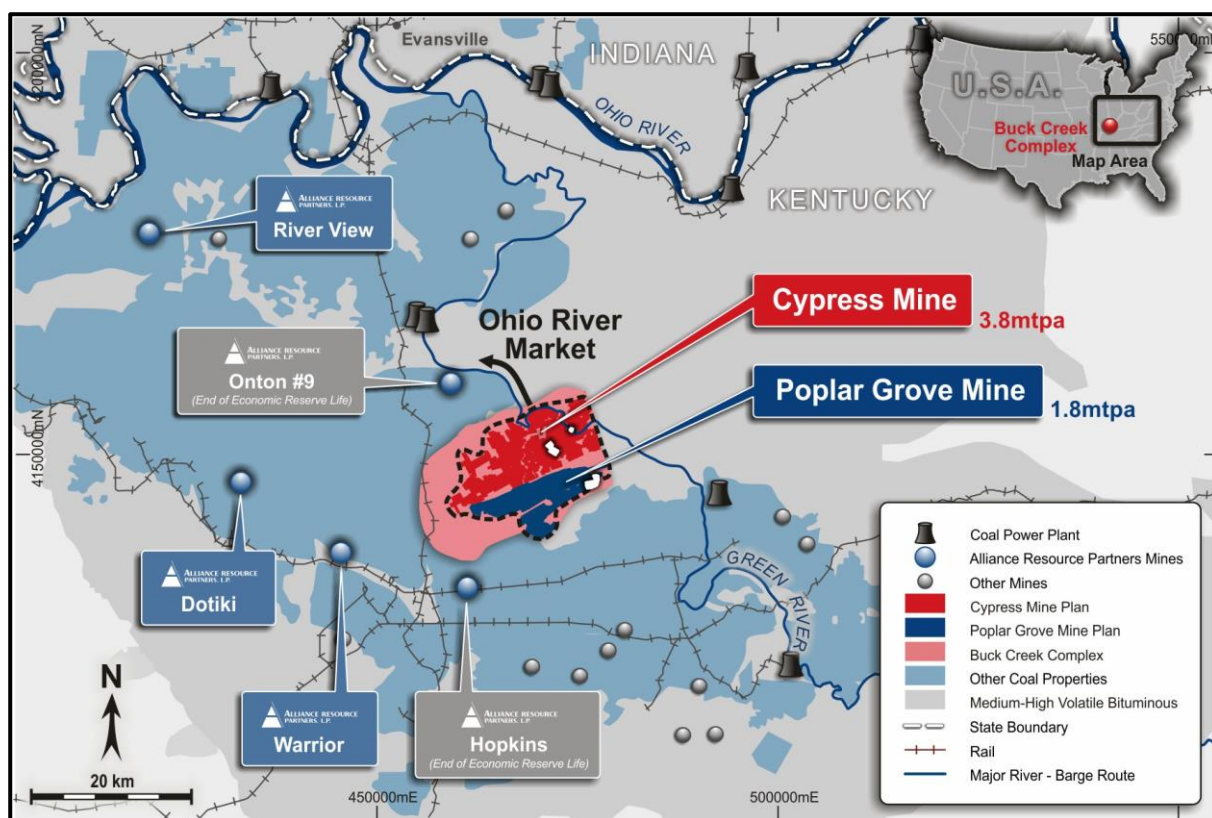

Figure 7: Map of Buck Creek Complex and Local Mining Operations in Western Kentucky (Illinois Basin)

Cornerstone US$205 million Sales Contract

In October 2015, Paringa signed a coal sales agreement with LG&E and KU to deliver coal from the Cypress Mine. In February 2016, the Company decided to develop the low capex Poplar Grove Mine first following exceptional results from the Scoping Study. As a result, the amended cornerstone coal sales agreement with LG&E and KU now reflects delivery of coal from the Poplar Grove Mine.

Table 5: Summary of Key Terms	
Contracted Production	**Fixed Contract Price** (FOB Barge; 11,200 btu/lb)
0 - 750,000 tons	**US$40.50 per ton**
750,001 – 1,750,000	**US$41.50**
1,750,001 – 2,750,000	**US$43.00**
2,750,001 – 3,750,000	**US$44.25**
3,750,001 – 4,750,000	**US$45.75**
Total Sales Contract Value	**US$205 million**

Under the amended coal sales agreement, Paringa is contracted to deliver a total of 4.75 million tons of its 11,200 btu/lb product over a 5-year period, starting in 2018. The amended contracted fixed coal sales prices for Paringa's 11,200 btu/lb coal specification begins at US$40.50 per ton for the first 750,000 tons of coal delivered to LG&E and KU, escalating to US$45.75 per ton for the final 1,000,000 tons sold.

The Poplar Grove and Cypress Mines' access to the Green and Ohio River systems provides a significant transportation advantage over other Illinois Basin coal producers. The LG&E and KU coal sales agreement calls for fixed sales prices based on a FOB basis delivered at the Buck Creek barge load-out facility on the Green River.

LG&E and KU are subsidiaries of the PPL Corporation (NYSE: PPL) family of companies and are regulated utilities that serve a total of 1.2 million customers. LG&E and KU own three power plants within Paringa's initial target Ohio River Market (Trimble County, Ghent and Mill Creek) that are almost exclusively supplied by the Illinois Basin. PPL Corporation has a Moody's/S&P investment grade credit rating and a market capitalization of US$25.6 billion.

Figure 8: LG&E and KU's Trimble County Power Plant on the Ohio River

Paringa's Initial Target Market – Ohio River Market

The Buck Creek Complex is in an enviable position in having low cost barge access to the Green and Ohio rivers, providing a significant transportation cost advantage over other Illinois Basin and US coal producers. Paringa's initial target market is 17 of the large base-load coal fired power plants located on the Ohio River. These plants consume approximately 50 million tons of coal per year, primarily from the Illinois Basin, and have all installed environmental controls.

Secondary Target Market – South East Market

Paringa has also identified a secondary target market, the South East Market, which has traditionally been supplied by the Central Appalachian region. The increase in scrubber installations in the US has provided an opportunity for low cost Illinois Basin coal to increasingly penetrate a large proportion of the Eastern US power market. In 2015, approximately 20 coal fired power plants relied on Illinois Basin coal for 76% of their supply (26 million tons), predominately from mines based in Western Kentucky and Illinois.

Figure 9: Coal Power Plants along the Ohio River Market and the South East Market Accepting Illinois Basin Coal

Coal Sales Marketing Strategy

Paringa's initial focus was to enter into a cornerstone sales contract (or mine opening contract) with an investment grade, highly respected utility that would be considered a "bankable document" and facilitate the execution of a debt facility for the construction of the Poplar Grove Mine. As the Company moves through the construction phase and nears first coal from Poplar Grove, Paringa will begin participating in the bi-annual coal solicitation process to sell additional coal to utilities initially located in the Ohio River Market. As the Company expands production at Poplar Grove and Cypress mines, Paringa will also aggressively target coal sales to the secondary South East market.

Conservative Sales Price Assumptions

Paringa's Expanded BFS reflects the LG&E / KU contract tonnage and prices for the Poplar Grove and Cypress Mines' Blended Product (11,200 Btu/lb) and Hanou Energy Consulting, LLC's Illinois Basin coal price forecast (FOB Barge Ohio River, 11,800 Btu/lb) which has been adjusted for Paringa's 11,200 Btu/lb product heating content.

Sales Prices Used for Committed Tons (4.75 million tons sold to LG&E)

Table 6: Selected Average Sales Forecasts (US$ per ton, FOB Barge)					
Project Coal Specification	2018	2019	2020	2021	2022
LG&E Contract	US$40.50	US$41.50	US$43.00	US$44.25	US$45.75

Selected Sales Prices Used for Uncommitted Tons (Hanou Consulting Forecast – Energy Adjusted)

Table 7: Selected Average Sales Forecasts (US$ per ton, FOB Barge)						
2018	2019	2020	2025	2030	2035	2040
US$43.88	US$44.33	US$44.79	US$47.12	US$49.57	US$52.15	US$54.86

Low Capex Development

The total initial capital estimate for the 2.8 million tons per annum ("**Mtpa**") Poplar Grove Mine includes all major capital items including site development, electrical substation and infrastructure, "box-cut" mine development to access the coal seam, surface facilities, coal preparation plant, materials handling and the Green River barge load-out facility.

Compared to the previous total initial capital estimate of US$39.9 million, the updated total initial capital for Poplar Grove has increased by US$4.8 million to US$44.7 million. The increase accounts for additional capacity required from the materials handling system and the Coal Handling and Preparation Plant ("**CHPP**") to achieve the 56% increase in annual production to 2.8 Mtpa (result of accessing the WK No. 11 seam).

Table 8: Poplar Grove and Cypress Initial Capital Costs		
Capital Item	**Poplar Grove**	**Cypress Mine**
Project Management	US$5.6	US$8.8
Mine Development	US$16.1	US$51.7
Sub-total Mine Development	**US$21.7**	**US$60.5**
Coal Preparation Plant	US$12.2	US$19.6
Materials Handling	US$8.6	US$20.3
Barge Load-Out Facility and Road Upgrade	US$2.2	US$1.5
Sub-total CHPP & Load-Out	**US$23.0**	**US$41.3**
Total Initial Capital Cost	**US$44.7 million**	**US$101.8 million**

This initial project capital cost, to an accuracy of +/- 10%, excludes any contingencies, working capital and financing costs. Adding in a 10% contingency increases the Total Initial Capital required to construct Poplar Grove to approximately US$49.2 million.

The Poplar Grove Mine is located in one of the best-serviced and infrastructure advantaged coal regions in the US. Construction services, construction personnel, contractors and parts can be supplied by firms who are already operating in the region. Sustaining capital for the Poplar Grove Mine, mine site infrastructure, CHPP, cost of the incline to the WK No.11 seam and additional air shafts has been estimated at US$1.99 per ton.

Capital costs for the Poplar Grove and Cypress Mines have been benchmarked against similar mines in the region operating in similar conditions, utilizing identical mining and / or processing techniques and equipment. In addition, the capital intensity (inclusive of leased equipment) of the Poplar Grove and Cypress Mines are similar to other new coal developments in the Illinois Basin by public listed companies that have started construction since 2007 (refer to Table 9).

Table 9: Capital Intensity of Recent Illinois Basin Developments				
Mine	**Owner**	**Construction Start Year**	**Nameplate Production**	**Capex Intensity**
River View (CM)	Alliance	2007	8.4 Mtpa	US$29 /t
Bear Run (DL)	Peabody	2009	5.2 Mtpa	US$50 /t
White Oak #1 (LW)	Alliance/Private	2011	6.6 Mtpa	US$62 /t
Gibson South (CM)	Alliance	2011	5.2 Mtpa	US$38 /t
Pennyrile (CM)	Rhino	2013	2.0 Mtpa	US$34 /t
Average				**US$43 /t**
Poplar Grove (CM)	Paringa		2.8 Mtpa	US$29 /t
Cypress Mine (CM)	Paringa		3.9 Mtpa	US$43 /t

Capital Intensity = Total Capital divided by Nameplate Production; Capex includes all mining equipment to full production
Note: (CM) – Continuous Miner; (LW) – Longwall; (DL) – Surface Dragline
Source: Company Filings

Low Operating Costs

The Poplar Grove and Cypress Mine's low operating costs result from the following inherent advantages:

1. In-seam yield of the Poplar Grove Mine's WK No.9 seam is 93%, and the Project's mine plan being a relatively flat lying (i.e. 2° to 3° dip), consistent, and laterally continuous coal seam resulting in high productivity;

2. Due to the high heating content (i.e. 11,800 to 12,100 btu/lb) and low moisture of the both the WK No.9 and WK No.11 seams, Paringa has developed a preparation plant flow sheet for the Poplar Grove and Cypress Mines that allows for a portion of the minus ½" Rune-of-Mine ("**ROM**") coal (approximately 20% to 30% of ROM) to bypass the preparation process and to be blended back in with the processed coal to produce a higher yield, lower operating cost and lower heating content (11,200 btu/lb) product which still meets customer specifications;

3. Located within a mature coal mining district with access to highly skilled union-free labour and proximal to local mining services and equipment providers; and

4. Competitive power and utilities costs.

A comparison of the operating cash costs of Poplar Grove and Cypress Mines (FOB Barge Green River) to the estimated "mine gate" operating cash costs of other Illinois Basin operations estimate of the 2016 year, is shown below:
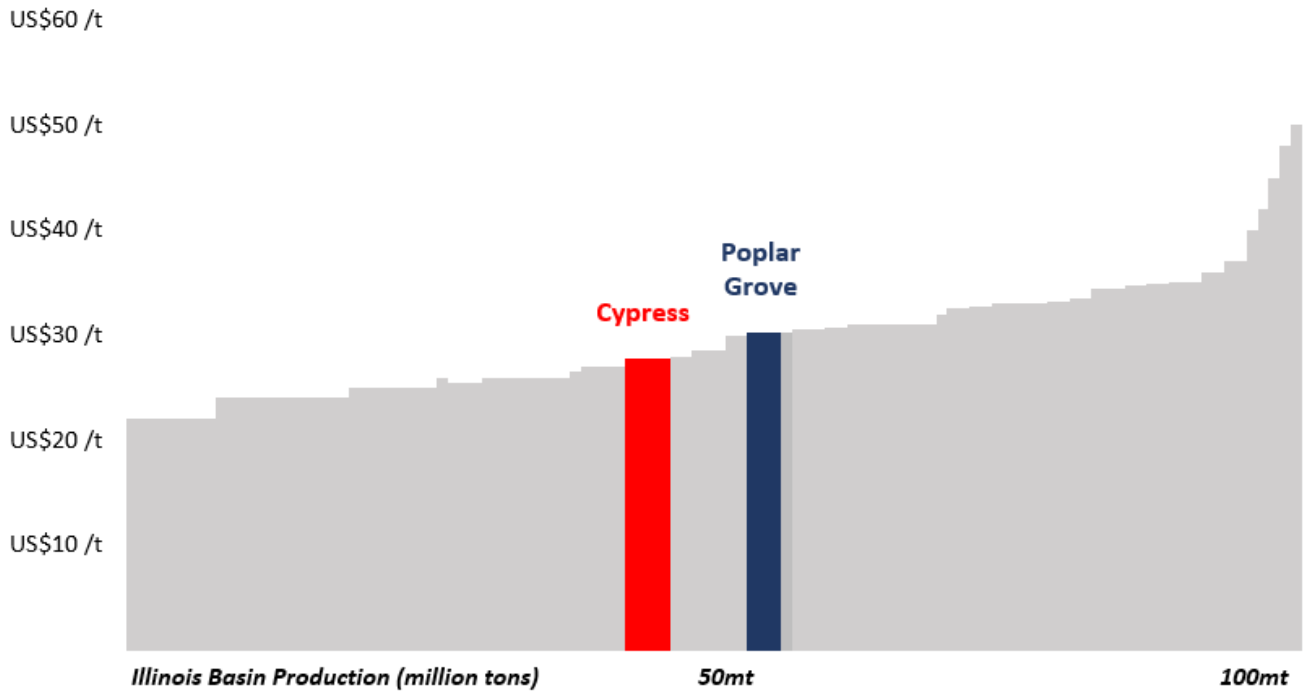
Figure 10: Comparison of Illinois Basin Coal "Mine Gate" Cash Costs vs Poplar Grove and Cypress Mine Green River Cash Costs (FOB Barge)
(Source: third-party Illinois Basin data and Company cost estimates for Poplar Grove and Cypress Mines.)

Breakdown of Poplar Grove and Cypress Mines Opex Profile

The Poplar Grove and Cypress Mines' operating cash costs ("**Opex**") estimates have been built from the "ground-up" using current pricing provided by vendors and contractors. A breakdown of the Opex estimates for both mines is provided below:

Table 10: Poplar Grove and Cypress Mine Operating Costs (US$ per ton)		
Average Annual Operating Costs (Steady State)	**Poplar Grove**	**Cypress**
Labor and Benefits	$7.18	$6.92
Operating & Maintenance	$8.55	$8.89
Power & Utilities	$0.95	$0.87
General & Administration	$0.71	$0.52
Leased Equipment	$1.46	$1.64
Sub-total Direct Mining Costs	**$18.85**	**$18.84**
CHPP & Barge Load-Out Facility	$3.08	$2.92
Transportation Costs (truck to Green River barge load-out)	$1.65	-
Taxes & Insurance (includes Severance taxes)	$3.65	$3.63
Royalties to Landowners	$2.01	$1.97
Average Annual Operating Costs	**US$29.24 per ton**	**US$27.37 per ton**

Low Risk Mine Developments

Paringa's plan is to develop low capital and operating cost mines located near low cost river transportation in the Illinois coal basin, with both mines fully permitted to begin construction.

Once Poplar Grove is constructed, Paringa will make low risk, low cost mine developments to grow its coal production to +6.6 Mtpa and beyond. The Company will underpin this additional growth with long-term sales contracts to ensure that additional capacity investments are low risk and generate high levels of free cash flow.

As announced to the ASX on 2 March 2017, following receipt of the final federal Surface Mining Control and Reclamation Act ("**SMCRA**") permit, the Company is now fully permitted to begin construction of the low capex Poplar Grove Mine. The permitted Poplar Grove Mine compliments the previously permitted 3.8 Mtpa Cypress Mine which has completed all technical studies (i.e. BFS level).

The Company's development plan can be summarized as follows:

o   *Begin Construction at Poplar Grove Mine by mid-2017*

   Paringa will start initially with the simple, low-cost construction of the 2.8 Mtpa Poplar Grove Mine during 2017, with total initial capital estimated at US$44.7 million. The construction period of the Poplar Grove Mine is approximately 12 months.

o   *Access Poplar Grove's WK No.9 Seam by mid-2018*

   Paringa aims to deliver first coal production from the WK No.9 seam during the second quarter of 2018. Poplar Grove's WK No.9 seam will be mined throughout the entirety of the project's 25 year mine life.

o   *Access the Poplar Grove Mine's WK No.11 Seam in 2020*

   By 2020, Paringa will be accessing the WK No.11 seam from the "northern limb" of Poplar Grove's mine plan (refer to Figure 17), through an incline excavated using continuous mining equipment. Capital for construction of the WK No.11 incline and vertical shafts is approximately US$15.8 million which will be funded out of Poplar Grove operating cashflow. During the 2033 year, Paringa will also access the WK No.11 from the "southern limb" of Poplar Grove's mine plan.

o   *Begin Production at Cypress Mine by 2021*

   The Cypress Mine is fully permitted with all technical studies completed (i.e. BFS level). Depending on market conditions, Paringa will begin construction of the Cypress Mine in early-2019, finishing approximately late-2020 with first coal production expect early-2021.

Simple Mine Construction and Operations

The simplicity of the Poplar Grove mine construction, coal mining operations and coal processing techniques provide relatively low execution and operational risks compared to other new mine developments, for example:

- ○ *Simple, quick access to the WK No.9 seam*

Access to the WK No.9 seam at Poplar Grove will be via a low cost box-cut excavation followed by 3 decline drifts excavated using continuous mining equipment.

- ○ *Well understood mining techniques and equipment*

Paringa will be adopting the same mining method, using the same mining equipment, mining the same coal seams as other Illinois Basin producers.
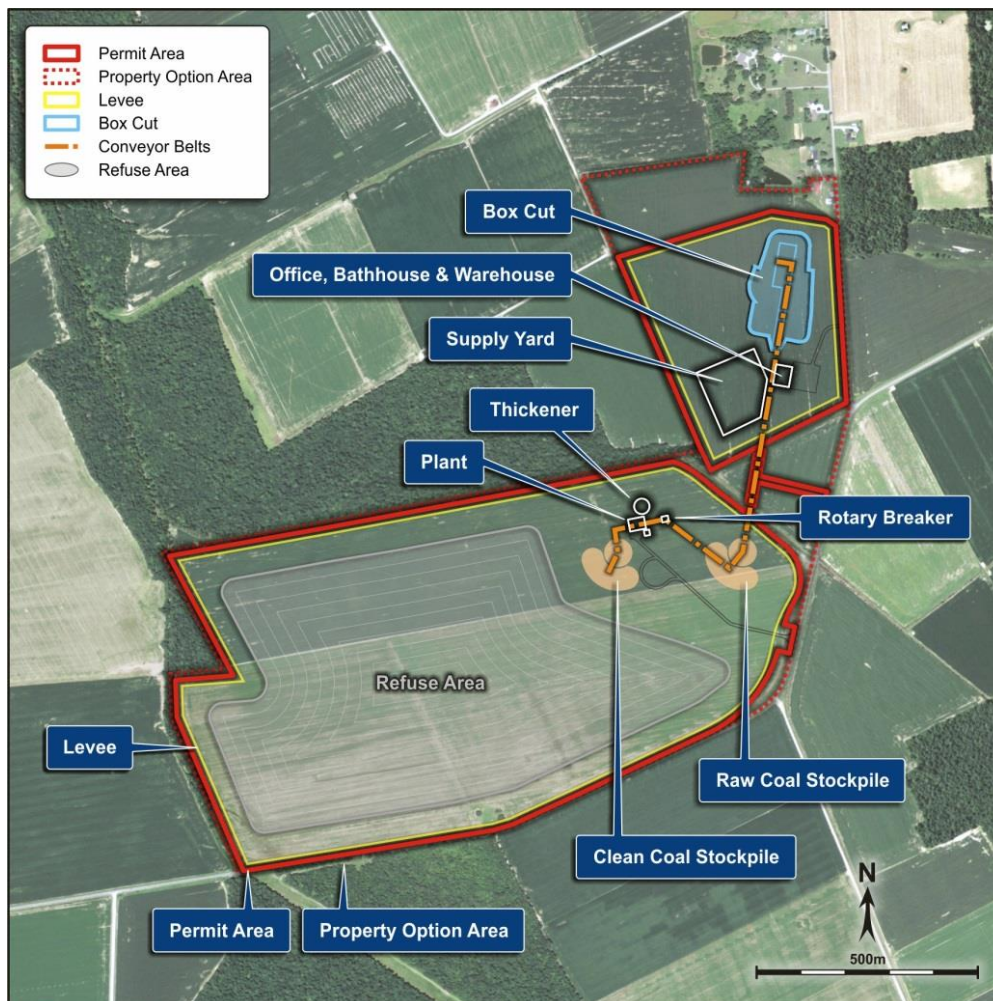

Figure 11: Poplar Grove Mine Site Layout and Refuse Area

- ○ *Simple coal processing methods*

Due to the similar high qualities of the WK No.9 and WK No.11 coal seams, Paringa will process both seams at the Poplar Grove CHPP using a 2-stage dense media circuit.

- ○ *Low cost access to Ohio River Market*

After coal processing, clean coal is sampled and delivered to open storage then loaded into trucks for transportation to the permitted Buck Creek barge load-out facility located on the Green River.

Coal Seam Access – Box-Cut Development

Due to the relatively shallow depth of the WK No.9 coal seam from the surface at the eastern edge of the proposed Poplar Grove mining area, access to the WK No.9 seam will be provided by a combination of box cut and drifts (declines) for ventilation and transport of personnel, materials and ROM coal.
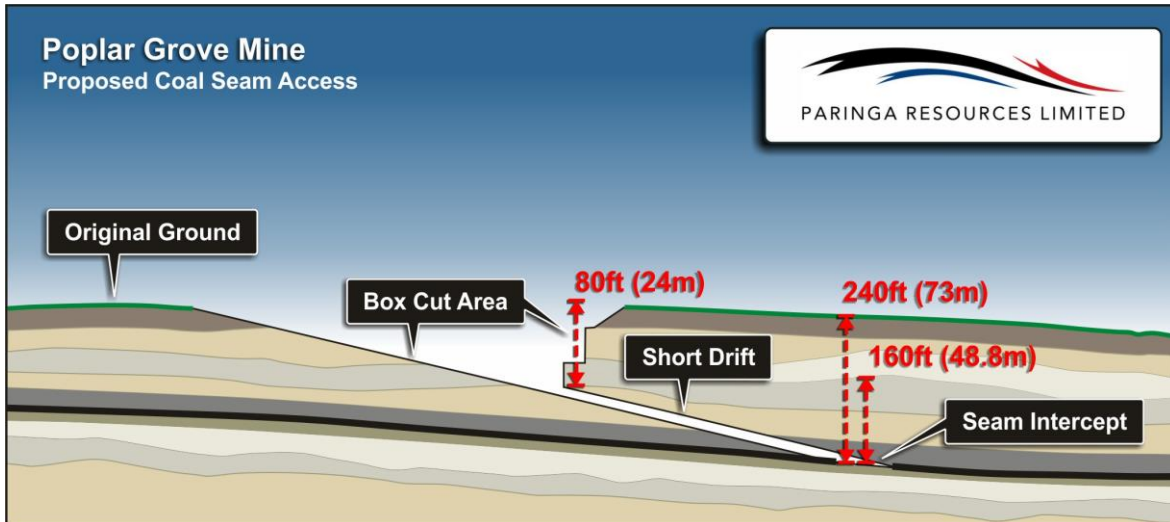

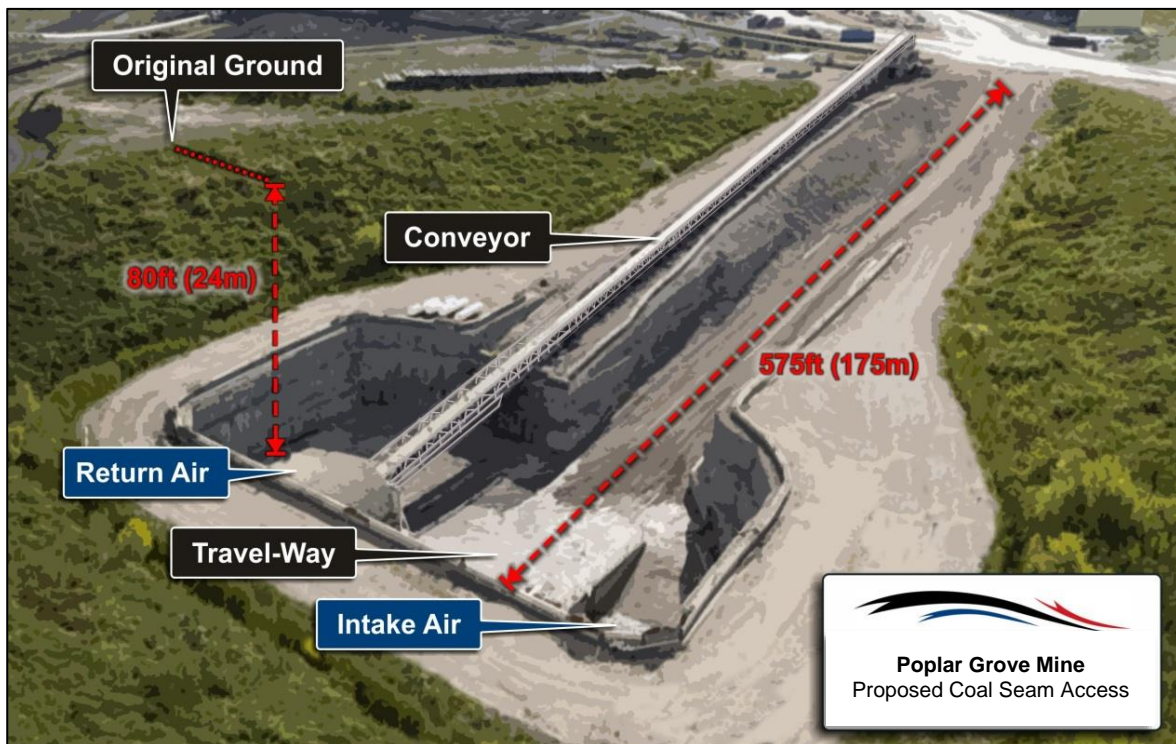*Figure 12: Proposed Coal Seam Access at Poplar Grove Mine*

Figure 13: Top View of Box Cut and Drift Portals at the Poplar Grove Mine

The box cut will consist of a rectangular excavation from the original surface approximately 80 feet (24 meters) in depth, with the remaining 160 feet (49 meters) of depth traversed by three decline drifts developed through the overburden rock above the WK No. 9 seam to a total depth of approximately 240 feet (73 meters).

The proposed floor of the box cut will be approximately 300 feet (91 meters) wide and 100 feet (30 meters) long to provide adequate room for pumping, ventilation, and materials handling equipment. This combined box cut/drift method of coal seam access is commonly used in the Illinois Basin to significantly reduce construction expense where coal seams are relatively shallow.
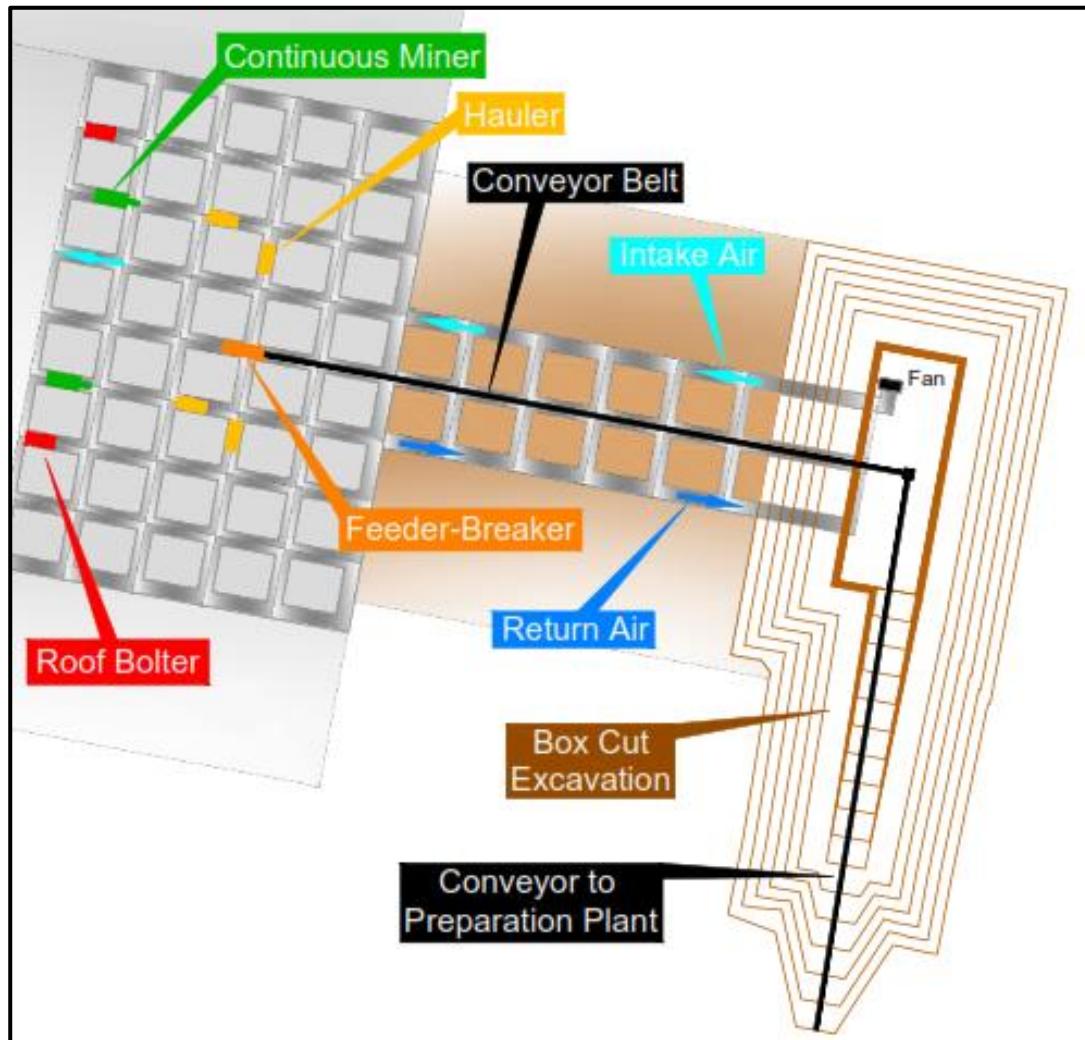

Figure 14: Top View of Proposed Box Cut and Three Drift Portals at the Poplar Grove Mine

Three decline drifts will be constructed from the bottom of the box cut for an exhaust air portal, a combination of conveyor gallery and travelway, and a blowing fan/intake air portal.

Drifts will be driven using continuous mining equipment at a decline of 8 degrees, and each drift will be approximately 1,150 feet (350 meters) in length. The roof in the declines will be supported with a combination of rock bolting systems and steel arches to provide life-of-mine support

The box cut design will include a drive-able ramp from the surface facility area to the bottom of the box cut for vehicle access. This ramp will be constructed to include the conveyor from the portal area to the raw coal stockpile.

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Simple Underground Mining Operations

Like the majority of the West Kentucky coal mines, the planned mining method will be room-and-pillar. The selection of underground room-and-pillar mining is validated by examining the method of mining widely used by adjacent operations, which are some of the highest productivity room-and-pillar mines in the world.

In addition, room-and-pillar mining with continuous miners has received all of the necessary approvals from regulatory agencies at nearby operations and is supported by well-established equipment models with a large supply of repair and replacement parts. No prototype equipment has been selected for use in the Poplar Grove Mine.

The surface facilities will be located on the eastern end of the Poplar Grove Mine area adjacent to the box cut. Centrally located shafts will facilitate future mine ventilation requirements. From the box cut area, the main entries are driven northwest from the portals.

After progressing a distance of approximately 3,300 feet, mains development will also be driven to the south and subsequently to the west, as the mine area is essentially bisected by a well-defined structural fault. Mains are designed to provide a sufficient number of intake and return airways in addition to travelways and conveyor entries. Main entries have been designed to expedite the preparation of panel development locations for successive panels.

Mining Method

Mining operations at Poplar Grove will consist of three "super section units" ("**Units**") with each operating two continuous miners to undertake initial driving of mains and coal mining of panels in the WK No.9.

Each supersection unit is equipped with two continuous miners and two roof-bolting machines for enhanced productivity. In addition, each supersection will be equipped with a minimum of four battery haulers which transport mined coal from to a belt feeder/breaker, which provides surge capacity to reduce haulage dump times. The supersections utilize scoops for clean-up of spillage, and supply cars for distribution of supplies and materials, rockdusting, and other utility purposes.

Intake air will be directed through central entries and used to provide fresh air for the continuous miners. After ventilating the working faces, the return air will be routed through the exterior entries to exit the mine at the return portal or air shaft.

Poplar Grove Mine Plan

At steady state production, the continuous miner advance rate projected for each Unit is a nominal 560 feet per unit-shift, comparable to the performance of other producers in the Illinois Basin and the development rates projected for the Cypress Mine BFS. At full capacity, each Unit will produce, on average, just over 900,000 tons of product coal per year.

Paringa has undertaken extensive mine engineering work to optimize the extraction of both the WK No.9 and WK No.11 with the goal of minimizing initial capital and maximizing returns to shareholders. An overview of the mining timeline of both WK No.9 and WK No.11 seams using the three (3) Units is illustrated below:
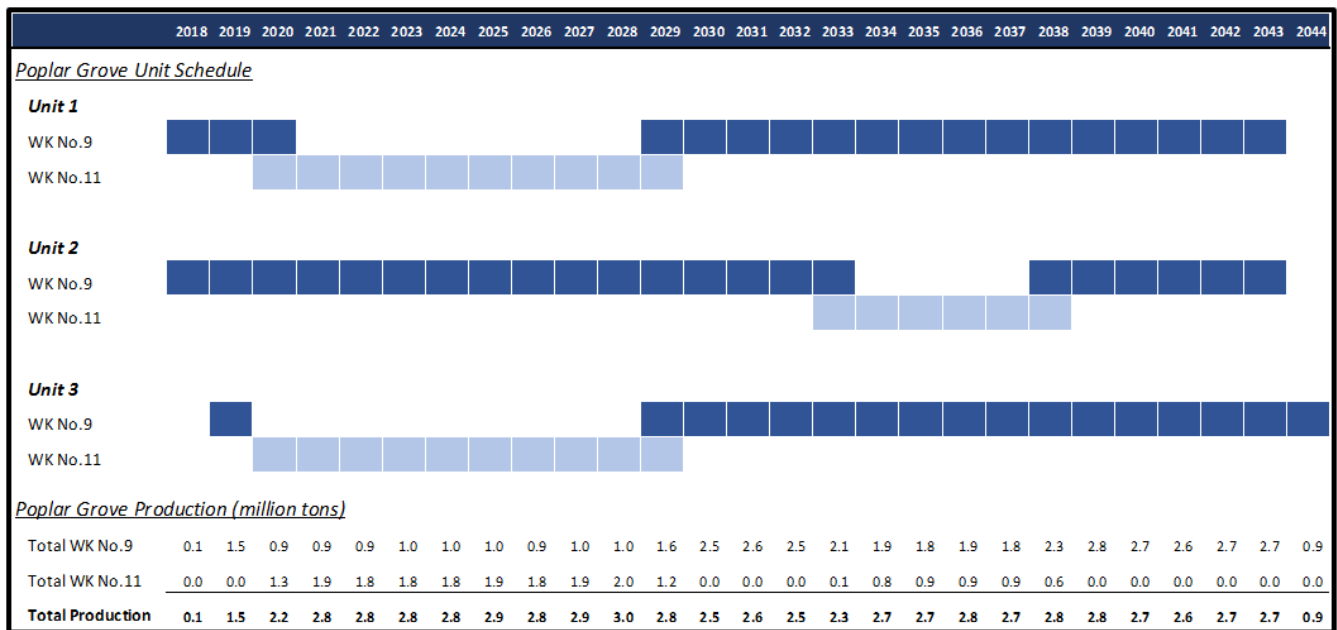
Figure 15 — Poplar Grove Unit Schedule and Production

Poplar Grove Unit Schedule

Unit 1: WK No.9, WK No.11
Unit 2: WK No.9, WK No.11
Unit 3: WK No.9, WK No.11

Poplar Grove Production (million tons)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Total WK No.9	0.1	1.5	0.9	0.9	0.9	1.0	1.0	1.0	0.9	1.0	1.0	1.6	2.5	2.6	2.5	2.1	1.9	1.8	1.9	1.8	2.3	2.8	2.7	2.6	2.7	2.7	0.9
Total WK No.11	0.0	0.0	1.3	1.9	1.8	1.8	1.8	1.9	1.8	1.9	2.0	1.2	0.0	0.0	0.0	0.1	0.8	0.9	0.9	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Production	0.1	1.5	2.2	2.8	2.8	2.8	2.8	2.9	2.8	2.9	3.0	2.8	2.5	2.6	2.5	2.3	2.7	2.7	2.8	2.7	2.8	2.8	2.7	2.6	2.7	2.7	0.9

Figure 15: Development Timeline and Production Split of WK No.9 and WK No.11 Coal Seams

The Poplar Grove mine plan includes a total production of 89.0 million ROM tons or 67.7 million clean (i.e. marketable) tons. The Poplar Grove Mine is projected to produce 3.6 million ROM tons per year, and 2.8 million clean tons per year at full production over a 25 year mine life.
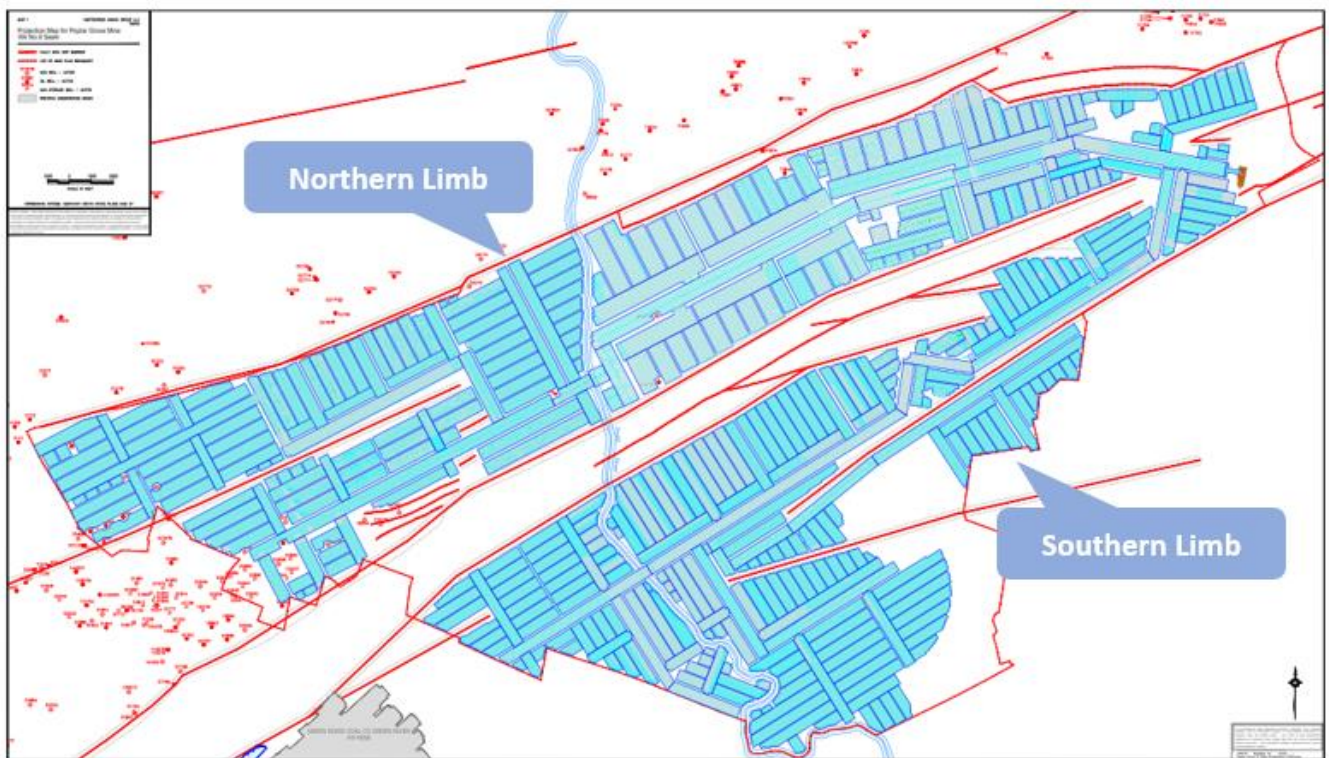
Figure 16: Mine Plan for the WK No.9 Poplar Grove Mine
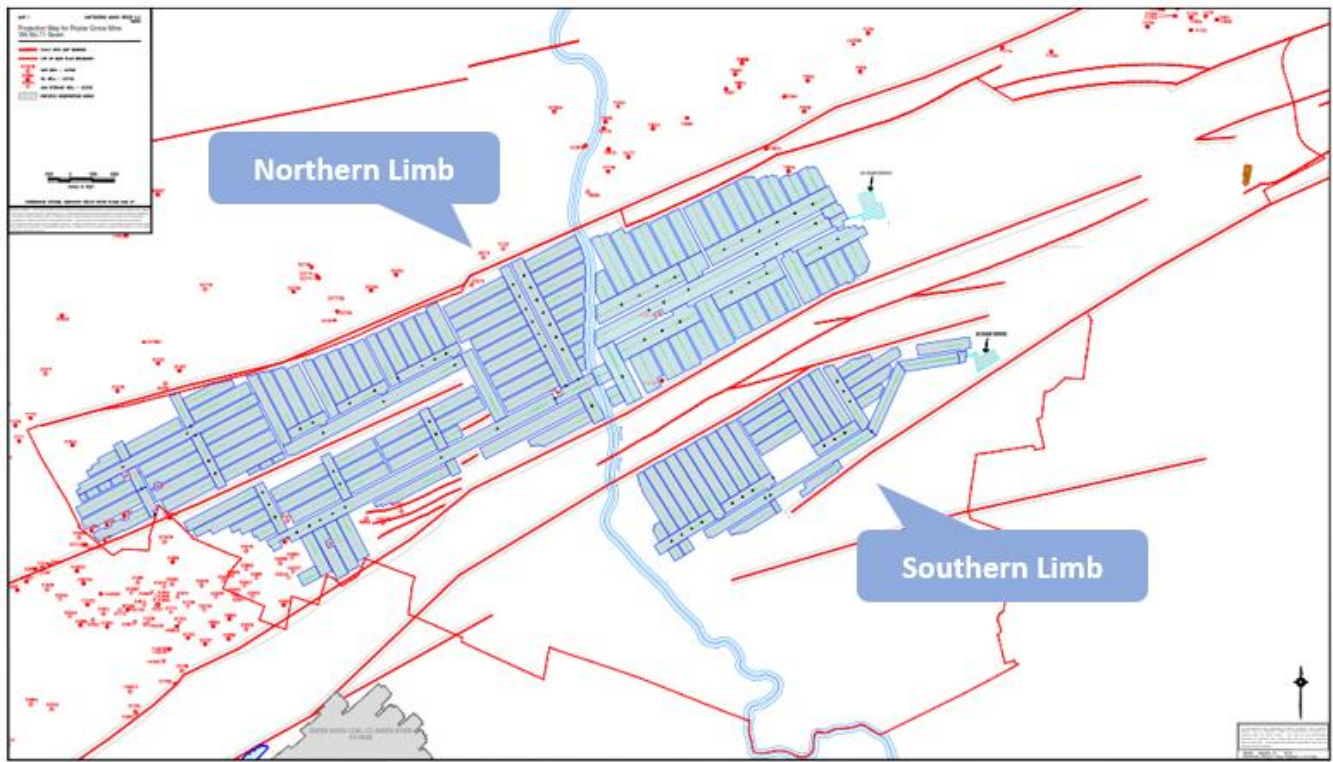
Figure 17: Mine Plan for the WK No.11 Poplar Grove Mine

Poplar Grove Mining Conditions

The WK No. 9 Seam is a well-known and highly productive seam in the Western Kentucky portion of the Illinois Basin, and, in conjunction with the WK No. 11 Seam, represents the overwhelming majority of production produced in the West Kentucky region.

In the area of the Buck Creek Complex, the rock strata above the WK No. 9 Seam generally consists of the Turner Mine Shale ("**TMS**"), a thin, black shale immediately above the coal which is overlain by the Canton Shale and Vermillionville Sandstone. Immediately below the WKY No. 9 Seam is claystone followed by shale and sandy shale.

Coal seam thickness of the WK No.11 seam averages 4.2 feet with clean coal quality characteristics similar to the Poplar Grove Mine's WK No.9 seam. Mining conditions for the WK No.11 coal seam appear to be excellent with the immediate roof consisting of a thin black shale horizon overlain by limestone. The roof conditions in the WK No. 11 seam result in lower operating cost compared to the WK No. 9 because the density of roof support materials is less.

Both the WK No. 9 and No. 11 seams are relatively flat with a dip towards the northwest. The dip of the coal, because it is shallow, will not have an adverse impact on mine productivity.

Like almost all coal seams in the United States, the seams studied at Buck Creek do liberate methane gas. Based on historical mining in the area and desorption testing conducted for the Project, the amount of gas encountered during mining will not require degasification drilling nor will it adversely impact safety or productivity.

Mines in the WK No. 9 and No. 11 seams are generally dry, and drilling at the Project indicates that the potential for water in the mine is low. Good mining practice, however, dictates that underground mines

should construct sumps and provide the infrastructure necessary to pump water encountered during mining. Capex and Opex estimates for the Poplar Grove and Cypress Mines include costs for doing so.
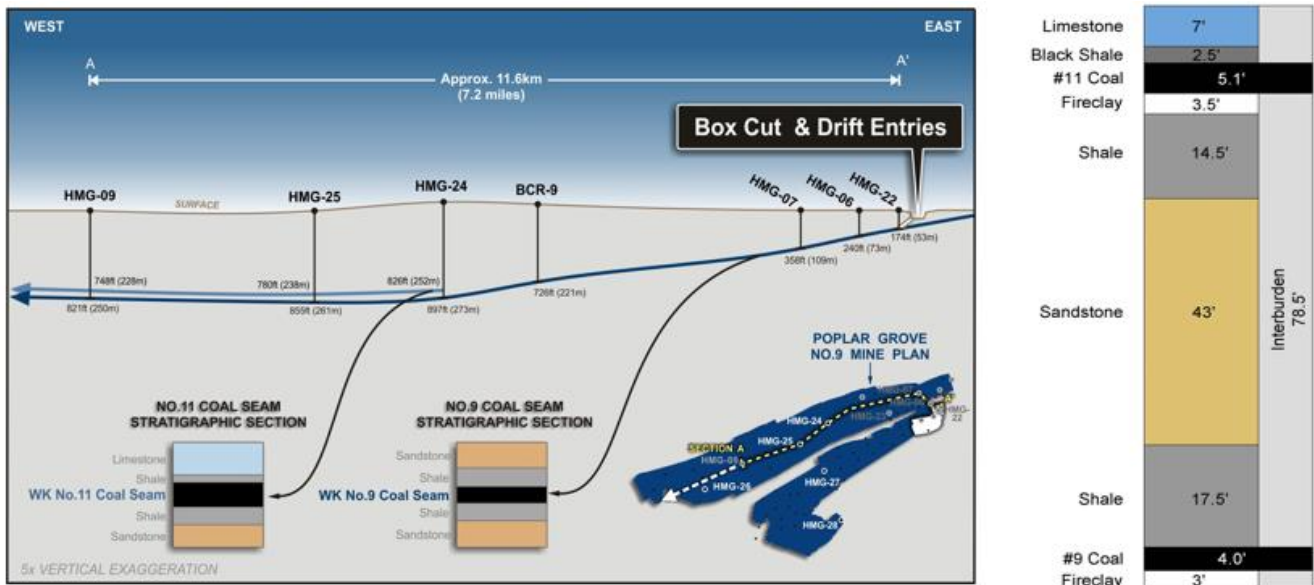

Figure 18: Indicative Stratigraphic Column of WK No.11 and WK No.9 Coal Seam at Poplar Grove (HMG-27)

Mining Equipment

The equipment must be sized to fit the coal seam height or additional extraneous material must be taken from the roof or floor to accommodate larger equipment. In general, larger equipment will have higher horsepower and greater productive capacity. The Poplar Grove mine plan is based on successful performance at nearby mines and incorporates a cutting height of 4.5 feet.

Figure 19: Typical Underground Super-Section Mining Equipment

The equipment list for Poplar Grove Mine's typical supersection production unit is shown below:

Table 11: Supersection Mining Equipment List	
Equipment	**Quantity**
Continuous Miner	2
Battery Coal Haulers (Shuttle Cars or Battery Haulers)	4
Roof Bolter	2
Feeder / Breaker	1
Scoops	2
Electrical Power Center	1

For details in relation to coal seam access, mining operations and mining equipment and mining conditions for the Cypress Mine, please refer to the announcement released to the ASX on 2 December 2015.

Coal Processing, Materials Handling and Project Infrastructure

Run of mine production from the Poplar Grove Mine will require processing in order to meet market specifications. Paringa, along with contractors and vendors who are experienced in coal processing in the Illinois Basin, has developed a preparation plant flow sheet for the Cypress Mine that allows for a portion of the minus ½" ROM coal to bypass the preparation process and to be blended back with the processed coal to produce a higher yield, lower heat product. The amount of bypassed coal can be varied to produce a range of product qualities. Since run of mine and product qualities are the same this process design will also be utilized at the Poplar Grove Mine.

The BFS assumes that 100% of the coal product from Poplar Grove Mine will be a blend of processed and bypassed coal to meet a target specification of 11,200 to 11,300 Btu/lb. This target coal quality is expected to result in an overall yield of 76.1% as shown below:

Table 12: Poplar Grove Product Quality – Heating Content (Btu/lb)			
Product	**% of ROM**	**Yield**	**Btu/lb**
By-Pass Coal	25%	100%	9,841
Processed Coal	75%	68%	11,695
Product Blend	**100%**	**76%**	**11,302**

Following the processing and blend of both the WK No.9 and WK No.11 coal seams, the Poplar Grove washed qualities are as follows:

Table 13: Poplar Grove Product Quality – Ash, Sulfur, Moisture (%)			
Product	**Ash (%)**	**Sulfur (%)**	**Moisture (%)**
Product Blend	**11.76%**	**3.02%**	**10.6%**

The above Poplar Grove washed qualities of heating content, ash, sulfur and moisture fall within the restriction limits of the US$205 million sales contract with LG&E-KU.

Table 14: Summary of Poplar Grove Preparation Plant Design	
Equipment	
Scheduled (Raw tons per Year)	3,600,000
Planned Annual Processing Days	250 to 350
Scheduled Operating Hours per Day	24
Utilization	90%
Design Capacity (Raw tons per hour)	400
Required Capacity (Raw tons per hour @ average 25% plant bypass)	372

Any out-of-seam dilution will be removed from the product by coal processing. Precise monitoring and control of the specific gravity of separation during operation of the coal preparation plant will provide a consistent and predictable product in conformance with specifications of coal sales agreements.

The coal preparation plant design throughput capacity will be a nominal 400 tons per hour. Following the initial ramp-up period, the mine will produce an estimated average of 3.6 million ROM tons per year. At full production, the plant will be scheduled for operation with 250 to 350 processing days planned each year, which will vary depending on ROM production and percent direct ship.

The design capacity allows for adjustment to operating and maintenance schedules to efficiently meet annual processing requirements.
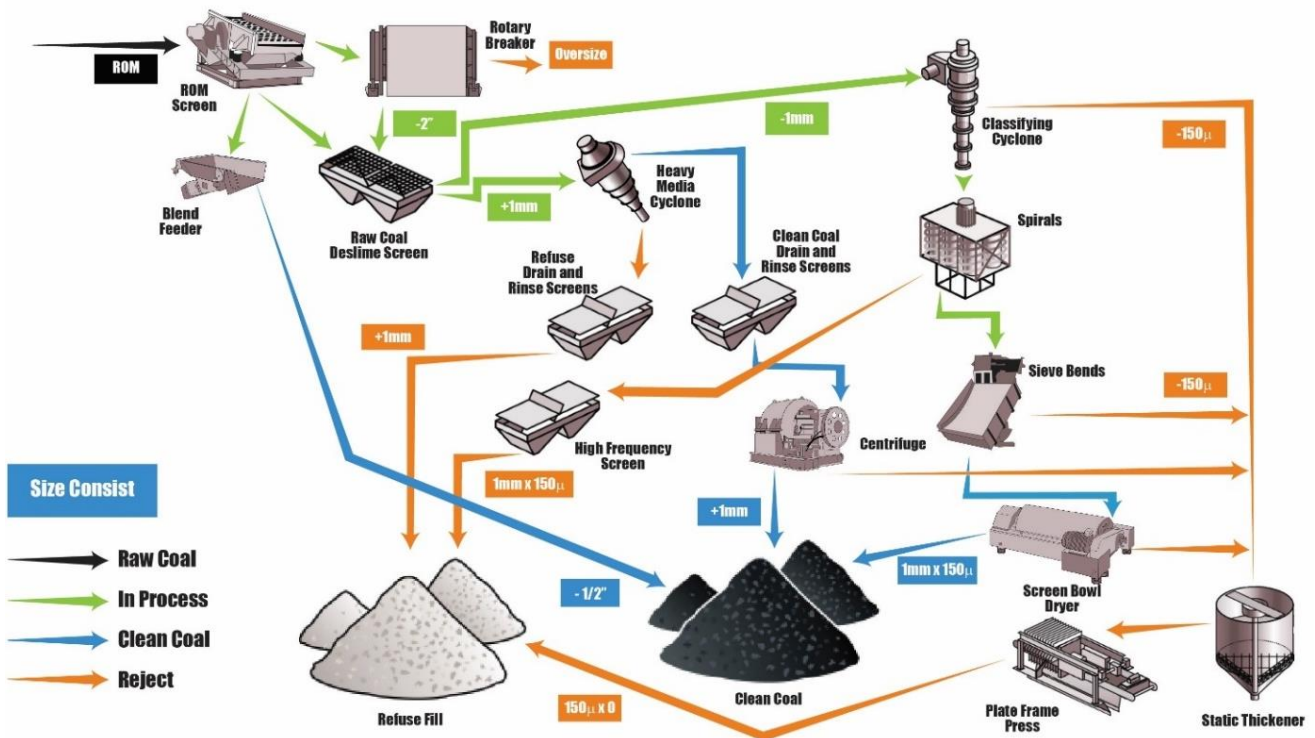
Figure 20: Coal Processing and Materials Handling Flowsheet at Poplar Grove Mine

Refuse Disposal

In the plant, fine refuse will be separated from process water using plate and frame presses, a technology utilized in the Illinois Basin by other operating companies. Once separated, the dewatered fine refuse will be combined with coarse refuse and will exit the plant on a refuse collecting conveyor belt. The combined refuse will be placed in permitted refuse-disposal facilities; the location of the refuse disposal area is immediately adjacent to the CHPP. Process water, once separated from the fine refuse will be recycled and reused in the CHPP.

The production volume at Poplar Grove results in generation of 21.2 million tons of refuse, or approximately 16.9 million cubic yards. The designed refuse storage area at Poplar Grove has a capacity of 26.7 million cubic yards.

Poplar Grove Project Infrastructure

Supplies and materials will be transferred from the box cut or supply yard area via rubber-tired supply cars to the operating areas of the mine. Other equipment and facilities to support the mine operations include the mine fan, office, bathhouse, warehouse, shop, bulk supplies storage (fuel, oil and roof bolts), fresh water tank with pumping system, sewage treatment facilities, and bulk rockdust bin.

The main conveyor from the underground mine will transfer run-of-mine material to a second conveyor at the bottom of the box cut. Raw coal from the mine will be reclaimed from the stockpile through a reclaim feeder, across a scalping screen used to separate the tonnage bypassing the preparation plant, and then through a rotary breaker and the plant feed conveyor. After processing, clean coal is sampled, conveyed to a stockpile from which it is loaded into trucks for transport to the Green River barge load-out facility.

Power

Poplar Grove will construct 4.3 miles of high-voltage transmission line from the existing Kenergy 69 kV line to serve the mine and plant. In addition, a main surface substation to supply the mine, plant, and surface facilities, along with internal distribution lines, will be needed.

Water

Fresh water for the mine and plant will be pumped from groundwater wells to a freshwater supply pond adjacent to the surface facilities. In addition to the water needed to run the mine and plant on a daily basis, fresh water will also be stored in a tank near the boxcut for firefighting. Potable water for the bath house and offices will come from a public water supply, located adjacent to the property.

For details in relation to Coal Processing, Materials Handling and Project Infrastructure for the Cypress Mine, please refer to the BFS results announcement released to the ASX on 2 December 2015.

Green River Barge Load-out Facility

The Company holds permits required to construct the barge load-out facility located approximately seven miles northwest of the Poplar Grove Mine's plant site. Coal trucked from the Poplar Grove CHPP will be dumped into a stockpile and reclaimed into a chain feeder by a bulldozer. From the feeder, conveyor belts will transport the coal approximately 550 ft. into a 1,500 ton capacity barge. In order to accommodate changes in river level, the loading conveyor will be supported by a work barge and allowed to rise and fall as the river level changes.
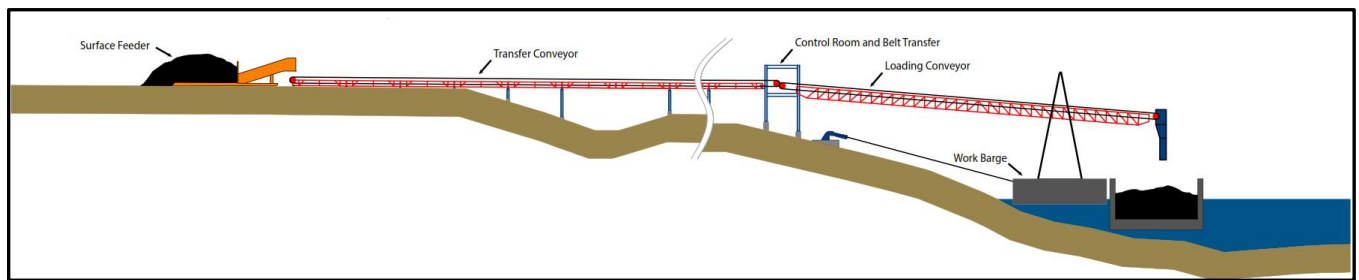
Figure 21: Design of Paringa's Barge Load-out Facility at the Green River

Barge Waterways

The primary market access point for the Poplar Grove Mine's saleable product is via barge on the Green River. The Green River is part of the Mississippi River System, a 12,350-mile (19,871 km) network of navigable waterways serving much of the Eastern and Midwestern US. On the Mississippi, coal is the largest commodity, by volume, and accounts for over 20 percent of all coal consumed in the US.

Figure 22: View of 4-Barge Tow along the Green River

The Poplar Grove Mine's permitted barge load-out facility is located at mile marker 62 on the Green River, as measured from the confluence with the Ohio River. The Green River meets the Ohio River at mile marker 784, which is approximately 169 miles (271 km) from the Mississippi River and 145 miles (233 km) from the Tennessee and Cumberland Rivers. The width of the Green River enables four barges (two-barges wide and two-barges long) to be moved by a single towboat.

For details in relation to access to local coal markets for the Cypress Mine, please refer to the BFS results announcement released to the ASX on 2 December 2015.

Permitting Process Completed at Poplar Grove

Receipt of the final federal SMCRA permit compliments the previously received Kentucky Wastewater Permit under the Kentucky Pollutant Discharge Elimination System ("**KPDES**"). In addition, Paringa has satisfied all obligations with the US Army Corps of Engineers ("**USACOE**") required under section 404 of the Clean Water Act.

1. *SMCRA Permit*

The SMCRA permit is the primary mining permit issued by the Kentucky Division of Mine Permits, which, along with the Division of Abandoned Mine Lands and the Division of Mine Reclamation and Enforcement (all part of the Department of Natural Resources of the Energy and Environment Cabinet of the State of Kentucky), administers the surface and underground coal mining regulatory program in Kentucky, USA.

The Division of Mine Permits evaluates applications, including mining and reclamation plans, and issues permits to ensure that all coal mining operations in Kentucky meet the minimum performance standards for environmental and public protection and reclamation, as required by the Federal Surface Mining Control and Reclamation Act (SMCRA) of 1977.

Paringa has received all SMCRA permits required for construction and operation of the Poplar Grove and Cypress Mines, and the Buck Creek Barge Load-Out Facility.

2. *Kentucky Wastewater Discharge Permit*

All discharges to waters within the state require a Kentucky Wastewater Discharge permit through the Kentucky Pollutant Discharge Elimination System (KPDES).

Paringa has received KPDES permits for the Poplar Grove and Cypress Mines, and the Buck Creek Barge Load-Out Facility.

3. *USACOE Obligations*

Required under Section 404 of the Clean Water Act (CWA), the US Army Corps of Engineers ("**USACOE**") established a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects.

Paringa has satisfied all obligations under Section 404 of the CWA for construction of the Poplar Grove and Cypress Mines and the Buck Creek Barge Load-Out Facility.

Rights to Surface Property for Mine Site and Barge Load-Out Facility

The Buck Creek Complex is located in the western section of Kentucky approximately 30 miles south of Henderson, Kentucky (population 28,757) and between the towns of Calhoun (population 763) to the east and Hanson (population 742) to the west. The property is located within a 45-minute drive of Evansville, Indiana (metro population of 358,676) and within a two-hour drive of Louisville, Kentucky (metro population of 569,135) and Nashville, Tennessee (metro population of 1,589,934). Given the importance of coal mining to the region, community attitudes towards new underground coal mine developments are positive.

Paringa has secured 100% of the rights to acquire the surface property necessary to construct the Poplar Grove and Cypress Mines. The surface rights secured for Poplar Grove represent a total of 318 acres controlled by local landowners. The secured mine site property for Poplar Grove complements the previously secured and permitted Barge Load-Out Facility.

Established Union-Free Mining Industry

With mining operations dating back to the early 1800's, western Kentucky's coal mining industry is one of the oldest and most extensively developed coal regions in the US. At full production, staffing for the

Poplar Grove Mine is expected to total 212 employees that are union free, highly skilled and sourced predominately from nearby population centres.

Major mining equipment manufacturers have rebuild and component service exchange centres located near the proposed mine site. A major network of mining service providers including slope, shaft, and preparation plant construction companies are located in the immediate area.
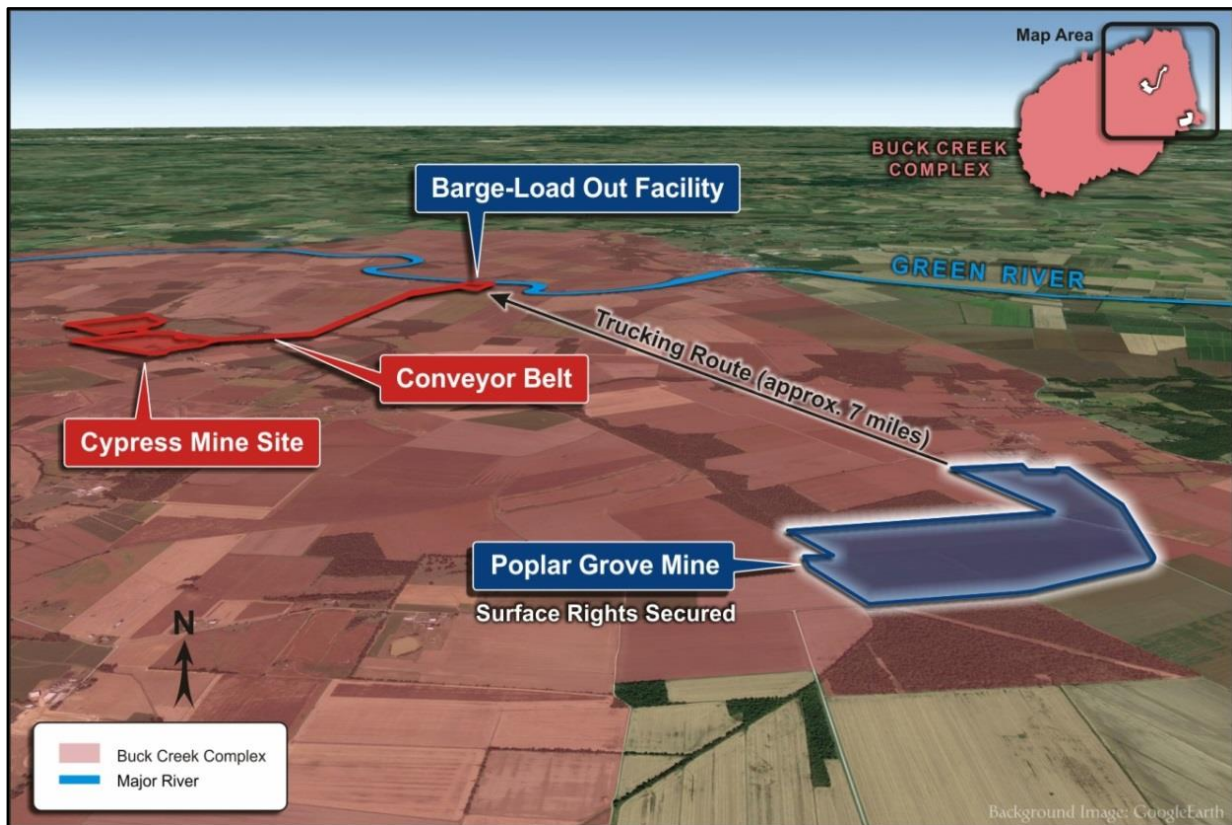

Figure 23: Location of the Poplar Grove and Cypress Mine Permits and Barge Load-Out Facility

Positive Impact on Local Communities

Development of the Poplar Grove and Cypress Mines will provide many positive benefits to the local and state communities, which has a long history in thermal coal mining, including:

- Increased local employment opportunities for mine, coal preparation and barge load-out construction and operations;

- Paringa is expected to directly employ approximately +450 new staff from the local, highly skilled coal mining workforce, and indirectly creating an additional +2,200 jobs in secondary industries necessitated by the mining operations;

- Payments totaling +US$240 million (for the first 10 years of production) in the form of royalties to the local landowners, who predominately own the rights to the coal, and payments in the form of Kentucky Severance Taxes, which is designed to feed back to the local counties directly impacted by the Poplar Grove and Cypress Mines;

- Increased sales to local support businesses such as mine equipment and supply firms, engineering firms and construction firms; and

- New business opportunities for community and retail support businesses.

Growing Resource Base

As announced to the ASX on 20 February 2017, the updated CRE increased 30% from 251 million tons to 328 million as a result of including coal from the WK No.11 seam identified at Poplar Grove and Cypress Mines. Since this announcement key mineral leases were acquired, increasing the CRE to 332.2 million tons. An overview of the total CRE for both the WK No.11 and WK No.9 coal seam at Poplar Grove and Cypress Mines are provided below in Table 15:

Table 15: Poplar Grove and Cypress Mines Coal Resource Estimate (WK No.9 and No.11 seam)				
CRE Tonnage (tons)				
Measured	Indicated	Total Measured & Indicated	Inferred	Total
103.6 million	228.6 million	332.2 million	0.7 million	332.9 million

The updated CRE also incorporated drilling results from new and historical drill holes at the Poplar Grove Mine and Cypress Mine. In addition, a total of 193 drill holes were used in the WK No. 9 seam calculation, including 80 Kentucky Geological Survey core holes, 29 Buck Creek Resources LLC core holes, 10 Buck Creek Resources LLC rotary holes, 34 Hartshorne Mining LLC core holes, 15 Hartshorne Mining LLC rotary holes, and 25 gas wells. A total of 191 drill holes were used in the WK No. 11 seam calculation, including 79 Kentucky Geological Survey core holes, 30 Buck Creek Resources LLC core holes, 10 Buck Creek Resources LLC rotary holes, 6 Hartshorne Mining LLC core holes, 42 Hartshorne Mining LLC rotary holes, and 24 gas wells.

In total, there are over 1,200 coal seam intercepts at the Poplar Grove and Cypress Mines, providing a significant level of understanding of the WK No.9 and WK No.11 coal seams within the property.

High Quality Coal

The Poplar Grove and Cypress Mines have highly attractive coal quality properties compared to existing operating mines in the Illinois Basin. On a 100% washed basis, together with a 4% addition to equilibrium moisture, the WK No.11 and WK No.9 coal seams have a high heat content of 12,160 Btu/lb and 11,851 Btu/lb respectively, which compares favourably with the larger producing mines in the Illinois Basin.

Since thermal coal mines are ultimately selling energy, this factor makes the Poplar Grove and Cypress Mines very attractive new sources of energy from the Illinois Basin. An overview of the Raw Proximate Analysis and Average Washed Core Product Qualities for the WK No.11 coal seam at Table 16:

Table 16: Coal Seam Coal Quality Specifications – WK No.11									
Raw Proximate Analysis (As Received)						Average Washed Core Product Qualities (Float 1.60 SG with Moisture = Equilibrium Moisture +4%)			
EQ Moisture	Ash	Volatile Matter	Fixed Carbon	Chlorine	HGI	Calorific Value (Btu/lb)	Ash	Sulfur	Yield @ 1.60 Float)
4.9%	15.7%	38.6%	40.1%	0.12%	58	12,160	8.5%	3.4%	84.2%

An overview of the Raw Proximate Analysis and Average Washed Core Product Qualities for the WK No.9 coal seam at Table 17:

Table 17: Coal Seam Coal Quality Specifications – WK No.9									
Raw Proximate Analysis (As Received)						Average Washed Core Product Qualities (Float 1.60 SG with Moisture = Equilibrium Moisture +4%)			
EQ Moisture	Ash	Volatile Matter	Fixed Carbon	Chlorine	HGI	Calorific Value (Btu/lb)	Ash	Sulfur	Yield @ 1.60 Float)
6.3%	11.7%	37. 5%	44.3%	0.15%	60	11,851	8.7%	2.8%	93.3%

Ore Reserve Estimate

The Ore Reserve Estimate underpinning the production target has been reported in accordance with the JORC Code and CIMDS (as adopted May 10, 2014) and has been prepared under the direction of Mr Justin Douthat, a Competent Person who is a Registered Member of the Society of Mining, Metallurgy and Exploration and Mr Kirt Suehs, a Competent Person who is a Member of The American Institute of Professional Geologists. The Ore Reserve Estimate has been generated from the BFS mine plan which is based entirely on the Measured and Indicated Coal Resource of 332.2 million tons.

The Poplar Grove and Cypress Mines' Marketable Ore Reserve Estimate of 103.8 million tons of thermal coal has been defined from Recoverable Ore Reserve Estimate of 135.7 million tons. The Marketable Ore Reserve is classified as a Proven and Probable Ore Reserve Estimate, of which 33.2 million tons (or 32%) is considered proven and 70.6 million tons (or 68%) is considered probable (after the application of all mining factors).

An overview of the total Ore Reserve Estimate for both the WK No.11 and WK No.9 coal seam at Poplar Grove and Cypress Mines is provided below in Table 18:

Table 18: Poplar Grove and Cypress Mines Ore Reserve Estimate						
Recoverable Coal Reserve (Mt)			Product Yield	Marketable Coal Reserve (Mt)		
Proven	Probable	Total	%	Proven	Probable	Total
43.5	92.3	135.7	76.48%	33.2	70.6	103.8

Proven and probable coal reserves were derived from the defined coal resource considering relevant mining, processing, infrastructure, economic (including estimates of capital, revenue, and cost), marketing, legal, environmental, socio-economic, and regulatory factors. They are presented on an as-received, recoverable basis.

The mine plan used in the BFS to underpin the production target ("**Production Target**") of 175.3 million tons of total ROM coal produced over the LOM (which equates to 133.9 million tons of total clean coal produced over the LOM) is based on: (i) Proven ROM Recoverable Coal Reserves of 43.5Mt (21.2%); (ii) Probable ROM Recoverable Coal Reserves of 92.24Mt (52.6%); (iii) Measured Recoverable Coal Resources of 11.9Mt (6.8%); and (iv) Indicated Recoverable Coal Resources of 27.7Mt (15.8%).

Of the total marketable production of 133.9 million tons at Poplar Grove and Cypress, approximately 103.8 million tons of the mine plan can be mined on mineral property currently controlled by Hartshorne. Additional mineral leases must be acquired in order to execute the life of mine plan to achieve the projected financial performance of the Poplar Grove Mine. Paringa has an excellent track record of negotiating with mineral property owners, and expects to achieve formal agreements with all necessary landowners in the coming months.

Study Consultants

The Expanded BFS was managed by MM&A with utilisation of local industry consultants, with expertise in coal mine development in the Illinois Basin region, to analyse the various components of the BFS, including (but not limited to) the design of box cut access, design of the mine, design of processing facilities, and the preparation of coal marketing studies.

MM&A has over 39 years of expertise in mining engineering, mine reserve evaluation, feasibility studies, and due diligence services for mining and resource projects across the globe.

Table 19: Buck Creek BFS Consultants	
Consultant	**Activity**
Marshall Miller & Associates, Inc.	Geology, Mineral Resource and Reserve Estimation, and Mine Planning, Site Planning, and BFS Management
Strategic Energy Resolutions, Inc.	Market Assessment and Preliminary Marketing Plan
Hanou Energy Consulting, LLC	Market Price Forecasts
Appalachian Mining & Engineering, Inc.	Ground Control Design
General Mine Contracting, Inc.	Preparation Plant Design and Cost Estimation
William E. Groves Construction, Inc.	Electrical System Preliminary Design and Cost Estimation
Associated Engineers, Inc.	Permitting Information, Site Design, Geologic Consulting
Jennmar, Inc.	Roof Control Design and Cost Estimation
Pollard and Sons Excavating	Site Development Cost Estimation
Buchanan Pump	Water System Design and Cost Estimation
Green River Barge Service	River Dock Operating Plan and Cost Estimation
Garrett Mine Service (GMS)	Supply & Materials Pricing
United Central Supply	Supply & Material Pricing
Miller Contracting	Fan and Surface Facility Design and Cost Estimation
Alpha Engineering	Ventilation System Design
Magnum Drilling Services, Inc.	Exploration Core Drilling Services
Hawkey & Kline Coring & Drilling, Inc.	Exploration Core Drilling Services
3D Dycus Diamond Drilling, LLC	Exploration Core Drilling Services
Standard Laboratories, Inc.	Analytical Laboratory Testing Services
SGS North America, Inc.	Analytical Laboratory Testing Services
Precision Testing Laboratory, Inc.	Analytical Laboratory Testing Services

For details in relation to study consultants for the Cypress Mine, please refer to the BFS results announcement released to the ASX on 2 December 2015.

SUMMARY OF RESOURCE ESTIMATE AND REPORTING CRITERIA

Geology and Geological Interpretation

The Coal Resource Estimate (**CRE**) is located in Hopkins and McLean County, Kentucky, within the Carbondale Formation. The WK No.9 and WK No, 11 Seams associated with the Project have been identified as exhibiting potential underground mineable resource tonnage.

The primary coal-bearing formations on the Project are situated in the Western Kentucky Coal Field of the Illinois Basin (or Eastern Interior Basin) of the USA and are of middle Pennsylvanian-age. These strata include conglomerate, sandstone, siltstone, shale, limestone, and coal that were deposited primarily in coastal deltaic settings. Coal rank in this area is high volatile bituminous C, with higher rank coals sometimes found along major structural fault systems. Coal in the West Kentucky Coal Field is generally medium to high sulfur, exhibiting average sulfur contents of more than 3.0 percent and averaging more than 5.0 pounds of SO_2 per million Btu.

The strata on the Project generally exhibit a regional northeast-southwest strike, and a regional northwestward dip towards the center of the Illinois Basin, with offsets along the fault zone. As the strata bend around the nose of the basin, strike rotates from northeast to north to northwest, along with an associated change in dip direction. Depth of cover increases gradually to the northwest towards the center of the basin. Depth of cover to the WK No. 9 seam ranges from approximately 240 feet (76 metres)-) in the east in the vicinity of the Green River to in excess of 1,100 feet (335 metres) near the town of Slaughters in the west. The WK No.9 Seam across the Project is generally continuous and non-complex but may vary in thickness. The WK No. 11 seam occurs on average approximately 70 feet (21.3 metres) above the WK No. 11 seam and is not continuous, occurring in pods throughout the west and central portions of the property until becoming absent to the east. Due to the eventual absence of the seam in the eastern portion of the property the WK No. 11 seam is slightly more complex than the WK No. 9 seam. The mineable seam thickness for the WK No. 9 seam ranges from 3.0 feet (0.91 metres) to 5.0 feet (1.5 metres) with fairly consistent coal thickness exhibiting minimal splitting and non-coal partings. The mineable seam thickness for the WK No. 11 seam ranges from 3.0 feet (0.91 metres) to 5.5 feet (1.67 metres) and frequently includes shale partings. Furthermore, as common in Western Kentucky, the seams are affected by tectonic deformation within the resource area.

The interval overlying the WK No.9 generally consists of black shale ("**Turner Mine Shale**" or "**TMS**") that ranges in thickness from 0 to 7.0 feet (2.13 metres) with an average of about 1.5 feet (0.46 metres). The black shale is overlain by gray shale ("**Canton Shale**") ranging in thickness from 0 to 55 feet (16.76 metres). Overlying the gray shale is sandstone ("**Vermillionville Sandstone**") ranging in thickness from 0 to 75 feet (22.86 metres). The interval overlying the WK No. 11 seam consists of a thin black to gray shale or claystone which is generally overlain by a limestone that can range from 2.0 feet to 10 feet in thickness.

The Project is east of the Henderson Sandstone Channel (as defined by the KGS through mapping of both boreholes and oil/gas well geophysical logs that penetrate a thin or absent coal area of the WK No.9 Seam). The Hopkins and McLean County, Kentucky property is south of the northern extent of the Rough Creek Fault System ("**RCFS**") on the down-side of the graben structure. The RCFS is a normal fault with displacement on the order of 200 feet (61 metres). The Project occurs within the RCFS and consists of a series of horst and graben faults trending in an east-west direction with maximum displacements of up to 450 feet (137 metres). The RCFS has been mapped by the KGS and is shown on 1:24,000 scale USGS 7.5-minute quadrangle maps. Fault locations have been reviewed by MM&A. These locations have been accepted as being true and accurate depictions of the fault locations and displacements. Exploration drill holes completed thus far on the Project have not identified any additional faults or structural features.

The region has been extensively mined within the WK No.9 Seam but no mining of the WK No.9 Seam has occurred within the Project. The WK No. 11 seam has been mined to the west of the Project area but not as extensively as the WK No. 9 seam.

Drilling and Sampling Techniques

A total of 193 bore holes were used in the WK No. 9 seam calculation, including 80 Kentucky Geological Survey core holes, 29 Buck Creek Resources LLC core holes, 10 Buck Creek Resources LLC rotary holes, 34 Hartshorne Mining LLC core holes, 15 Hartshorne Mining LLC rotary holes, and 25 gas wells. A total of 191 bore holes were used in the WK No. 11 seam calculation, including 79 Kentucky Geological Survey core holes, 30 Buck Creek Resources LLC core holes, 10 Buck Creek Resources LLC rotary holes, 6 Hartshorne Mining LLC core holes, 42 Hartshorne Mining LLC rotary holes, and 24 gas wells

Prior to 1950, oil and gas drilling was the primary source of seam thickness and elevation data for the WK No.9 seam. In 1950, the Kentucky Geological Survey ("**KGS**") began acquiring core data from drill holes in and adjacent to the property. In 2009 Buck Creek Resources LLC ("**BCR**") began a drilling program that continued through 2011. The program consisted of diamond core drilling for seam delineation and acquisition of coal samples and air rotary holes for seam delineation. Between 2013 and 2017 Paringa successfully completed 7 drilling campaigns. Like the BCR holes these programs consisted of diamond core drilling for seam delineation and acquisition of coal samples as well as air rotary holes for seam delineation. In addition, all of the 2013 core holes and the first two (2) 2014 core holes underwent geotechnical testing of the roof, seam, and floor.

BCR core drilling consisted of one continuous core, DH-11, with 3-inch diameter core samples produced from the entire rock column. The remainder of the core holes were spot core drilled utilizing a 5.125-inch diameter rotary bit followed by a 3-inch diamond core of the roof, seam, and floor. The air rotary drilling consisted of 5.125-inch diameter bore holes.

Hartshorne core drilling included three (3) continuous cores, HMG-14-01 and HMG-14-02, with 2.75-inch diameter core samples produced from the entire rock column and HMG-16-22 with 3.0-inch diameter core samples produced from the entire rock column. The remainder of the core holes were spot drilled utilizing a 5.125-inch diameter rotary bit followed by a 3-inch diamond core of the roof, seam, and floor. The air rotary drilling consisted of 5.125-inch diameter bore holes.

Core recoveries were monitored and were generally good at greater than 95%. Coal core samples used for quality analysis contained greater than 95% recovery. Where available, core recovery thickness was reconciled with the thickness interpreted from geophysical logs.

Drill holes were geologically logged by the driller and those producing core were also logged by a geologist. All holes drilled during the 2009 through 2011 program and the 2013 through 2017 program were geophysically logged using a downhole density and gamma tool. A sonic log was performed on 14 of the BCR's drill holes and 27 of the Hartshorne holes. In the case of core drill holes, lithological logs were correlated with the geophysical logs and seam thickness and elevation adjusted where appropriate.

Classification criteria

The CRE has been reported in-situ and classified as measured, indicated, and inferred based on the guidelines recommended in the JORC Code (2012 Edition). As is customary in the USA, the categories for measured, indicated, and inferred resources are based on the distances from valid points of measurement as prescribed in United States SEC Industry Guide 7 and USGS Circular 891. This is considered appropriate for the preparation of the CRE in accordance with the JORC Code (2012 Edition).

Sample analysis method

Sample analysis on the BCR recovered cores was carried out by Standard Laboratories, Inc. and performed to American Society for Testing and Materials (ASTM) standards. Hartshorne utilized SGS North America, Inc. and Precision Testing Laboratory, Inc. for quality testing, both to ASTM standards. All analyses were performed on an as-received, air dry and washed basis unless otherwise stated. Geophysical tools are calibrated by the logging company (MM&A) and where possible, validated using a calibration hole. All coal intersection data used to generate the geologic model has been cross referenced with the lithological and geophysical logs by MM&A.

Coal quality was adjusted to reflect an addition of 4% moisture to the equilibrium moisture. Coal quality results were verified with laboratory analysis sheets by MM&A geologist before inclusion into the geologic model and use in the resource estimate.

Resource Estimation Methodology

The preparation of the CRE was undertaken by MM&A (formerly Cardno) based in Bluefield, Virginia, USA. MM&A has over 40 years of expertise in mining engineering, mine reserve evaluation, feasibility studies and due diligence services for mining and resource projects across the globe Effective January 1, 2017, Cardno's mining group (formerly Marshall Miller & Associates) is no longer affiliated with the Cardno organization. Marshall Miller & Associates, Inc. (*MM&A*) has been reestablished under private ownership.

As a leading consulting firm in the coal and coalbed methane industries working in the United States and internationally, MM&A's energy-related client base consists of over 250 companies. MM&A provides advisory and technical services on project feasibility, acquisition due diligence, mineral reserve and resource reporting, operations assessment, safety and risk management, and process improvement, among others.

MM&A prepared the CRE in accordance with the JORC Code (2012 Edition). The resource estimation criteria were developed using current conditions found in surrounding operations and industry accepted standards to assure that the basic geologic characteristics of the coal resources are in reasonable conformity with those currently being mined and marketed in the region. The tonnage estimates provided herein report in-situ coal resources as measured, indicated, and inferred. As is customary in the USA, the categories for measured, indicated, and inferred resources are based on the distances from valid points of measurement as prescribed in United States SEC Industry Guide 7 and USGS Circular 891. This is considered appropriate for the preparation of the CRE in accordance with the JORC Code (2012 Edition).

Fault impacted areas have been excluded from the CRE in an area bounded by 200 feet (60 metres) barriers along either side of a fault and in areas determined as intensely impacted by faulting;

After the geological data was correlated within MM&A's proprietary database and verified, the data required for mapping was extracted and composited with additional data from spreadsheets containing coordinates and similar Z values. These Z value files were imported into either Surfer 12 or Carlson® Mining 2012 computer software packages for modelling. The software programs were used to generate geologic models including coal seam thickness, elevation, and others as well to delineate acreage and thickness for estimation of coal resources. The modelling output for the CRE was imported into a Microsoft® Excel workbook for final processing and tabulation of coal tonnage. The CRE is reported on an as received basis.

Cut-off grades

Average thickness of the WK No.9 Seam is 3.8 feet (1.16 metres) across the property which compares favorably to many of the operations in the immediate vicinity. The cut-off seam thickness utilized was 3.0 feet (0.91 metres). Average thickness of the WK No.11 Seam is 4.16. feet (1.16 metres).

Mining and metallurgical methods and parameters

The Company has completed a BFS on the WK No. 9 and WK No. 11 Project which was prepared by MM&A, with input from local experts. The Study was prepared in accordance with JORC Code (2012 Edition) and the requirements for a Preliminary Economic Assessment report in accordance with NI 43-101.

The Study confirmed the potential of the Project to be developed as a high margin, low cost mine in the growing Illinois Basin. The Study utilized the Buck Creek Complex's CRE of 250.7 million tons of WK No. 9 seam coal to demonstrate that the fundamentals from the initial development of Poplar Grove Mine, a portion of the Buck Creek Complex, are extremely encouraging. The Project is located in a well serviced and infrastructure advantaged coal region in the US, offering the potential for a low operating and capital cost environment.

Core quality and washability testing was completed on the thirty-one Hartshorne drill core holes conducted within controlled leases of the Project targeting the WK No.9 seam. The coal samples were shipped to SGS North America Inc. in Henderson, Kentucky and Precision Testing Labs Inc. in Davis, West Virginia for analysis. Core recovery was greater than 95 percent for all of the samples sent for analysis. Coal seam quality data from the -thirty-one recently completed core samples and the historical 24 samples were utilized in determining the average core coal quality.

Core quality and washability testing was completed on the six Hartshorne drill core holes conducted within controlled leases of the Project targeting the WK No.11 seam. The coal samples were shipped to SGS North America Inc. in Henderson, Kentucky for analysis. Core recovery was greater than 95 percent for all of the samples sent for analysis. Coal seam quality data from the six recently completed core samples were utilized in determining the average core coal quality.

This average quality value was tabulated in Microsoft Excel. Qualities for each core hole include an addition of 4 percent moisture to the equilibrium moisture, which is intended to represent the true moisture of a saleable product (to approximate the As Received (AR) basis).

Table 20: Poplar Grove and Cypress Mines WK9 – Coal Quality Specifications								
Raw Proximate Analysis (As Received)						Average Washed Core Product Qualities (Equilibrium Moisture +4%)		
EQ Moisture	Ash	Volatile Matter	Fixed Carbon	Chlorine	HGI	Calorific Value (Btu/lb)	Ash	Yield @ 1.60 Float
6.3%	11.7%	37.5%	44.3%	0.15%	60	11,851	8.7	93.3%

Table 21: Poplar Grove and Cypress Mines WK11 – Coal Quality Specifications								
Raw Proximate Analysis (As Received)						Average Washed Core Product Qualities (Equilibrium Moisture +4%)		
EQ Moisture	Ash	Volatile Matter	Fixed Carbon	Chlorine	HGI	Calorific Value (Btu/lb)	Ash	Yield @ 1.60 Float
4.9%	15.72%	38.6%	40.1%	0.12%	58	12,160	8.5%	84.2%

SUMMARY OF ORE RESERVE ESTIMATE AND REPORTING CRITERIA AND MODYFING FACTORS

Material assumptions

The BFS, Coal Reserves, Production Targets, and forecast financial information derived from the BFS, Coal Reserve, Production Target contained in this announcement for the Poplar Grove Mine, are based on the material assumptions contained within this announcement which are summarized below:

Table 22: Assumptions	
Mine	**Poplar Grove**
Maximum Accuracy Variation	+/- 10%
Minimum LOM	25 years
Mining Method	Underground / room-and-pillar
Modelled Seam Thickness	3.7 feet
Average Mining Height	4.5 feet
Total Work Days per Year	250
Productivity Rate (feet advance per unit shift at steady state production)	560 feet
Annual ROM Coal Production (tons)	3.6 Mtpa
Capacity CHPP	400 raw tons per hour
Yield CHPP	76.1%
Processing Method	Dense Media 2-stage
Annual Clean Coal Production (tons)	2.8 Mtpa
Average Direct Mining Costs (Steady State)	US$18.85 per ton
Average CHPP and Barge Load-out costs (Steady State)	US$3.08 per ton
Average Other (Steady State)	US$7.31 per ton
Total Average Operating Costs (Steady State)	US$29.24 per ton
Total Initial Capital Costs	US$44.7 million
Mine Royalty (4% of Gross Sales Value less taxes and fees)	4.0%
Leased Equipment - Operating Lease	Included in Average Direct Mining Costs
Leased Equipment - Interest Rate	8%
Leased Equipment - Term	5 to 7 years
Leased Equipment - Original Cost	US$33.9 million
Leased Equipment - Residual Value	20%
Kentucky State Severance Taxes	4.5%
Coal Specification	11,200 Btu/lb
Corporate Tax Rate	25%
Discount Rate (8%, Real)	8%

For details in relation to assumptions used for the Cypress Mine, please refer to the BFS results announcement released to the ASX on 2 December 2015. Paringa confirms that: a) it is not aware of any new information or data that materially affects the information included in the original ASX announcement; b) all material assumptions and technical parameters underpinning the Coal Reserve, Production Target, and related forecast financial information derived from the Production Target included in the original ASX announcement continue to apply and have not materially changed; and c) the form and context in which the relevant Competent Persons' findings are presented in this presentation have not been materially modified from the original ASX announcement.

Coal Reserve classification criteria

Proven and probable Coal Reserves were calculated on the measured and indicated portion of the Coal Resources for the Project. The coal reserve was calculated using Carlson Mining software by applying a detailed mine design and LOM mine production scheduling to the resource model, also created in Carlson Mining. A minimum underground mining height of 54 inches (based on typical mining practices and/or equipment capabilities) was used to determine out-of-seam dilution (*OSD*) and project raw production tons. Production data outputs from LOM sequencing were exported into Microsoft® Excel spreadsheets and summarized on an annual basis for processing within the economic model. Coal reserves are estimated based on a mining recovery that ranges from 29 to 56 percent, and an effective plant yield of 76.1 percent. The Coal Reserves estimate has been classified as proven and probable based on guidelines specified in the JORC Code. The Coal Resources in this report are reported inclusive of Coal Reserves.

Mining method and assumptions

Paringa anticipates commencing construction at the proposed Poplar Grove Mine in the second quarter of 2017, with initial production planned for the second quarter of 2018. Access to the coal seam will be via box cut and decline slope, with ventilation provided through the portals and subsequently supplemented by vertical shafts. Production from the proposed Poplar Grove Mine will come exclusively from continuous miner units using room-and-pillar methods. Production sections will be configured as super-sections, each equipped with two continuous miners, four haulage units, two roof-bolting machines and one feeder/ breaker for enhanced productivity. Production sections will be equipped with four battery-powered haulers to move material from the continuous miner to the mine's conveyors. Haulage units will discharge onto a belt feeder/breaker, which provides a limited amount of surge capacity to reduce hauler dump time. Feeders also provide more uniform transfer of raw coal onto the section conveyor. Two dual-head roof bolting machines will install immediate roof support in mined entries. Battery scoops will be used for cleanup of spillage, distribution of supplies and materials and other utility purposes on the production sections.

At full production, staffing for the operation is expected to total 212 employees, and each section will produce approximately 2,400 tons of run-of-mine (*ROM*) coal per shift; ROM production for Poplar Grove will total approximately 3.6 million tons per year. Clean coal recovery is calculated at approximately 76.1 percent, (which includes average direct shipment/preparation plant bypass of approximately 20 to 30 percent of the ROM production) yielding an average of approximately 1,826 tons of clean coal from each unit-shift of production. Annual production will total approximately 2.8 million clean, marketable tons at full production.

Processing method and assumptions

In order to optimize product yields and to conform with market needs and specifications, the Poplar Grove preparation plant will be designed and equipped to incorporate direct ship ROM coal blended with fully-washed product. Based on customer coal quality needs, 100 percent of the marketable coal will be a blend of raw and processed coal that will have a heating content of 11,200 Btu/lb. The plant is designed as a 400-raw-ton-per-hour facility. Approximately 40% to 70% (depending on the proportion of WK #11 seam in the plant feed) of the minus half-inch ROM coal will bypass the plant and be blended back with the washed product to meet the 11,200 Btu/lb customer specification. The balance of the minus two-inch ROM coal will be separated into coarse and fine material at a one-millimeter size separation as it crosses one double-deck raw coal de-slime screens. The coarser material (plus one-millimeter size fraction) will be processed in a heavy media cyclone; the finer coal (minus one millimeter) will be processed by classifying cyclones and spirals. The minus 150-micron material is lost as effluent. Coarse and fine refuse will be combined and subsequently exit the plant on a 36-inch refuse collecting conveyor at an anticipated rate of 123 tons per hour with a surface-moisture of 9.4 percent. Course refuse will be

dewatered utilizing drain & rinse and high frequency screens. Fine refuse will be dewatered using plate and frame presses.

The combined refuse will be placed in the permitted refuse-disposal facilities, adjacent to the preparation plant, as dry material with no impoundment. The total surface property available to Hartshorne contains adequate refuse capacity for the life of the Project. All property to be used for refuse disposal are flat to slightly rolling and will not require any valley fills.

The capital cost of the coal preparation plant, refuse disposal site, and materials-handling system is expected to total $20.8 million. That total excludes permitting, site preparation, power substation and distribution, which are included in mine and site development capital estimates. The capital costs projected for the river dock is estimated at $2.2 million. The LOM average plant cash cost is estimated to be $2.51 per clean ton sold for the assumed product mix.

The proposed Poplar Grove preparation plant will use standard equipment and processes for gravity separation of coal and reject; it will also use mechanical dewatering processes. Similar equipment to that proposed is currently in use at other ILB preparation plants. The proposed method for disposal of refuse material is consistent with those of neighboring operations.

Coal quality parameters applied – Poplar Grove

The WK No. 9 seam on the Project contains an average in-seam raw ash content of 11.71 percent, raw sulfur content of 3.97 percent and raw thermal (heat) content of 12,048 British thermal units per pound (*Btu/lb.*) at the average as-received moisture content of 6.37 percent. The WK No. 11 seam contains an average in-seam raw ash content of 15.72 percent, sulfur content of 4.96 percent, and heat content of 11,444 Btu/lb. Based on the preparation plant information, the out-of-seam dilution, and the processing method described in the section above, the average product coal quality for the combined WK No. 9 and WK No. 11 seam operation is projected to contain an ash content of 11.8 percent, sulfur content of 3.02percent, heat content of 11,272 Btu/lb and 5.4 lbs. SO2. The effective plant yield is 76.1 percent.

Coal Reserve estimation methodology

Grid files prepared from the geological database were used in the estimation of coal resources, including both seam thickness and elevation models encompassing the WK No. 9 and WK No. 11 seams. Coal seam thickness and base-of-coal-seam structure grid files were used to define the top and bottom of the coal horizon. The grid models were developed using Carlson Mining software, which was also used to develop LOM projections and production timing sequence plans. A minimum underground mining height of 54 inches, based on typical mining practices and/or equipment capabilities, was used to determine OSD and project raw production tons. A project schedule and estimated capital and operating costs (+/- 10 percent in accuracy) have been developed. Annual production will total approximately 2.8 million clean, marketable tons at full production.

Other material modifying factors

Economic

A detailed financial model and discounted cash flow analysis wasprepared in order to demonstrate the economic viability of the Coal Reserves. On a stand-alone basis, the NPV of the projected cash flows from the initial Poplar Grove Mine is US$310m (A$402m) at an 8% (real) discount rate, with an IRR of 42%.

As previously announced, the Company is in ongoing discussions with a number of potential equity and debt financiers to fund the construction of the proposed Poplar Grove Mine. The Company will make announcements to the market as appropriate should this occur.

Marketing

In October 2015, Paringa signed a coal sales agreement with LG&E and KU to deliver coal from the Cypress Mine. In February 2016, the Company decided to develop the low capex Poplar Grove Mine first following exceptional results from the Scoping Study.

As a result, the amended cornerstone coal sales agreement with LG&E and KU now reflects delivery of coal from the Poplar Grove Mine. The amended contract is on substantially the same terms as the original contract. Most importantly, coal volumes and coal specifications remain unchanged. Fixed sale prices have changed slightly to reflect recent sales data, and the project development milestones and delivery schedule have been updated for the Poplar Grove Mine.

Under the amended coal sales agreement, Paringa is contracted to deliver a total of 4.75 million tons of 11,200 btu/lb product over a 5-year period, starting in 2018. The amended contracted fixed coal sales prices for Paringa's 11,200 btu/lb coal spec begins at US$40.50 per ton for the first 750,000 tons of coal delivered to LG&E and KU, escalating to US$45.75 per ton for the final 1,000,000 tons sold.

In addition, Paringa has identified 14 other "Tier 1" coal marketing targets operated by 9 different utilities that have traditionally received fuel similar to the Project's coal. The latest available data indicates Paringa's target market received over 55 million tons of coal in 2014. Whilst Paringa's target market is largely insulated from the impact of volatile natural gas prices and is relatively stable in terms of coal demand, over the past 10 year coal supply into the market has become increasingly concentrated into one to two major US coal producers. Based on discussions with Paringa's target market, new independent sources of supply are highly valued.

Infrastructure

The Project is a well-defined coal resource, which is located in an area with a long history of coal mining. The primary market access point for the Project's saleable product is via barge on the Green River. The Green River is part of the Mississippi River System, a 12,350-mile (19,871 km) network of navigable waterways serving much of the Eastern and Midwestern US. The Project is located in a region serviced by two separate electric utility providers, Kentucky Utilities and Big Rivers Electric Corporation, both of which are capable of supplying the 69-kv service required. Fresh water for the Project's mine and plant will be pumped from the barge load-out facility on the Green River along the corridor provided for the overland conveyor.

Environmental, Permitting, Legal and Socioeconomic Position

Paringa has two distinct areas for the proposed Poplar Grove Mine. The larger of the areas is the proposed location of the mine site and preparation facilities which is held under three purchase options. The smaller site is the barge load-out site on the Green River and is held under lease with full rights to develop the surface. The barge load-out site is fully permitted and the mine site permitting is underway (the permit approval process is not expected to impose delays in the construction of the Project).

Paringa controls approximately 39,797 gross acres (~15,528 ha) of coal leases in Kentucky, United States, which comprise the Buck Creek Mining Complex. Kentucky state law allows the owner (or controller) of a partial interest to develop and enjoy the coal rights in a manner consistent with 100% control, therefore leases with partial interests (i.e. less than 100%) can be mined. The coal leases grant Paringa the coal and coal rights with respect to the leased premises, together with the right to mine coal by the underground mining method only and the right to remove the coal seam gas and coal mine gas by any method from under the leased premises. All of the coal leases are with private owners and the agreements are fundamentally identical with a term of 20 years for the date of execution. The coal leases require the payment of an annual minimum royalty and an earned royalty which are industry standard in the region. The annual minimum royalty is an annual per acre charge during the term of the coal leases.

Once mining operations commence, the annual minimum royalty is reduced by the amount of earned royalty due on mined coal. All annual minimum royalty payments are recoupable against any earned royalty due under the coal leases on a lease-by-lease basis.

Forward Looking Statements

This announcement may include forward-looking statements. These forward-looking statements are based on Paringa's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Paringa, which could cause actual results to differ materially from such statements. Paringa makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of that announcement.

Competent Persons Statement

The information in this announcement that relates to Exploration Results and Coal Resources is based on, and fairly represents, information compiled or reviewed by Mr. Kirt W. Suehs, a Competent Person who is a Member of The American Institute of Professional Geologists. Mr. Suehs is employed by MM&A. Mr. Suehs has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' and to qualify as a Qualified Person as defined in the 2011 Edition of the National Instrument 43-101 and Canadian Institute of Mining's Definition Standards on Mineral Reserves and Mineral Resources. Mr. Suehs consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Coal Reserves, Production Targets, Mining, Coal Preparation, Infrastructure and Cost Estimation is based on, and fairly represents, information compiled or reviewed by Messrs. Justin S. Douthat and Gerard J. Enigk, both of whom are Competent Persons and are Registered Members of the Society for Mining, Metallurgy & Exploration. Messrs. Douthat and Enigk are employed by MM&A. Messrs. Douthat, and Enigk have sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' and to qualify as Qualified Persons as defined in the 2011 Edition of the National Instrument 43-101 and Canadian Institute of Mining's Definition Standards on Mineral Reserves and Mineral Resources. Messrs. Douthat and Enigk consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

JORC Table 1 Checklist of Assessment and Reporting Criteria

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	> *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* > *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* > *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	> Prior to 1950, Oil and gas drilling was the primary source of seam thickness and elevation data for the West Kentucky No. 9 (*WK No. 9*) or Springfield seam; no core samples were retrieved. > In 1950 the Kentucky Geological Survey (*KGS*) began acquiring drilling data in and adjacent to the property; no core samples from this drilling have been physically examined by Hartshorne. > In 2009 Buck Creek Resources (*BCRs*) began a drilling program that continued through 2011. The program consisted of continuous core drilling and air rotary spot core drilling designed for seam delineation and acquisition of coal samples for analyses. > The last 10 drill holes in this program were air rotary holes and no coal core samples were collected. > Roof and floor samples from five of the WK No. 9 BCRs core samples were retained for acid-base analyses. > The Hartshorne Mining Group, LLC (*HMG*) conducted drilling programs beginning in 2013 and continued into 2017 to retrieve coal core samples for quality analyses and seam thickness determination. The programs consisted of 49 drill holes from which 31 WK No. 9 coal core samples were retrieved and analysed and six WK11 samples were retrieved and analysed. > Unless otherwise specified, drilling data that references sampling, core recoveries, quality, geophysical logging and other specific analyses refers to the coal specific drill holes associated with BCRs and HMG programs.

Criteria	JORC Code explanation	Commentary
Drilling techniques	> *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).*	> One continuous core, DH-11, was taken during the BCRs drilling programs and 3-inch diameter core samples were produced. HMG drilling programs included two continuous core drill holes producing 2.75 inch diameter core samples and one continuous core drill hole producing 3-inch diameter core samples. > The BCRs air rotary spot core drilling consisted of 5.125-inch diameter holes followed by 3-inch diameter conventional core samples of the roof, seam, and floor. HMG air rotary spot core drilling consisted of 5.125-inch diameter holes and 3.0- inch diameter core samples of roof, seam and floor. > The BCRs air rotary drilling consisted of 6.625-inch diameter bore holes. HMG air rotary drilling consisted of 5.125-inch diameter bore holes. > Drill type and size of historical core holes, rotary holes, and oil and gas wells is not known.
Drill sample recovery	> Method of recording and assessing core and chip sample recoveries and results assessed. > Measures taken to maximise sample recovery and ensure representative nature of the samples. > Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	> Core recoveries were monitored and were generally good at greater than 95%. > Coal core samples used for quality analysis contained greater than 95% recovery. > Where available, core recovery thickness was reconciled with the thickness interpreted from geophysical logs. > A portion of the KGS drill holes used in the resource study contained quality results. The results were provided in an Excel format that did not identify the basis of the analysis, the laboratory that performed the results or the core recovery, therefore the reported data was not used.
Logging	> Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. > Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. > The total length and percentage of the relevant intersections logged.	> Drill holes were geologically logged by the driller and those producing core were also logged by a geologist. > All holes drilled during the BCRs 2009 through 2011 were geophysically logged using a downhole density and gamma tool. All but one of the drill holes in the HMG 2013 through 2017 programs were geophysically logged using a downhole density and gamma tool. A sonic log was performed on 14 of the BCR's drill holes and on 27 of the HMG drill holes. > In the case of core drill holes, lithological logs were correlated with the geophysical logs and seam thickness and elevation adjusted where appropriate.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	> If core, whether cut or sawn and whether quarter, half or all core taken. > If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. > For all sample types, the nature, quality and appropriateness of the sample preparation technique. > Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. > Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. > Whether sample sizes are appropriate to the grain size of the material being sampled.	> WK No. 9 samples from drill holes HMG-14-1, 3 and 6 were divided for beneficiation specific sampling None of the WK No. 11 seam samples were divided.
Quality of assay data and laboratory tests	> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. > For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. > Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	> Sample analysis was carried out by Standard Laboratories, Inc., SGS North America Inc., and PRECISION Testing Laboratory and performed to American Society for Testing and Materials (*ASTM*) standards. > Analyses were performed on a raw as-received, air dry and washed basis unless otherwise stated. > Geophysical tools are calibrated by the logging company (MM&A) and where possible, validated using a calibration hole. > Quality summary results presented in *Table 15: Poplar Grove and Cypress Mines – Coal Quality Specifications* compare favourably to those prepared and documented in the United States Geological Survey's (*USGS*) report titled "*Paper 1625-D, Chapter C Geologic Overview by J. R. Hatch and R. H. Affolter entitled "Resource Assessment of the Springfield, Herrin, Danville and Baker Coals in the Illinois Basin*" dated August 2002 (*Paper 1625-D*) and "*USGS Fact Sheet FS-072-02 August 2002*"
Verification of sampling and assaying	> The verification of significant intersections by either independent or alternative company personnel. > The use of twinned holes. > Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. > Discuss any adjustment to assay data.	> All coal intersection data used to generate the geologic model has been cross referenced with the lithological and geophysical logs by MM&A. > Coal quality was adjusted to reflect an addition of 4% moisture to the equilibrium moisture. > Coal quality results were verified with laboratory analysis sheets by MM&A geologist before inclusion into the geologic model and use in the resource estimate.

Criteria	JORC Code explanation	Commentary
Location of data points	> Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. > Specification of the grid system used. > Quality and adequacy of topographic control.	> Coordinates for the drill hole locations are in the Kentucky South, State Plane system, North American Datum 1927. Surveyed locations were available for the drill holes from BCRs 2009 through 2011 drilling program and the HMG 2013 through 2016 drilling programs. Coordinates for the 2017 drill holes were obtained from a hand-held GPS. Coordinates for the oil and gas wells and those drill holes obtained from the KGS were provided by the KGS and the method of determination is unknown. > Topography is based on the USGS's topographic 7.5 minute quadrangle maps.
Data spacing and distribution	> Data spacing for reporting of Exploration Results. > Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. > Whether sample compositing has been applied.	> Various sources of data where utilized, as such, spacing of the drill holes used to model WK No. 9 and WK No. 11seam resource varied across the property. The abundant oil and gas well data in the area were not generally used for resource thickness mapping, but provided added evidence of the continuity of the seam throughout the area. The oil and gas wells' thicknesses were rounded to even feet and therefore were not used in modelling the seam thickness. As prescribed by the USGS, the following distances from points of observation were used to define the corresponding Resource category arcs: - Inferred Resources – greater than 3,960 feet but less than 15,840 feet (3 miles). - Indicated Resources – 3,960 feet. - Measured Resources – 1,320 feet. > Correlation of the WK No. 9 and 11 seams is relatively simple. Thickness and quality continuity of the WK No. 9 seam is exceptional and well documented as described in Paper 1625-D and the KGS Map and Chart 197, Series XII, 2010 titled "*Remaining Resources of the Springfield Coal*" by Gerald A. Weisenfluh (*USGS Map 2010*). The WK11 seam becomes less continuous and absent to the east but has distinguishable marker beds to identify it's stratigraphic location. > Inferred, Indicated, and Measured resource classifications from the USGS Circular 891 have been implemented in this updated resource report to reflect the spacing and extent of the supporting data used for the resource estimate. The use of the USGS standards are appropriate and customary for this resource jurisdiction and deposition type.

Criteria	JORC Code explanation	Commentary
Orientation of data in relation to geological structure	> Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. > If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	> Drill holes have been vertically drilled. No downhole deviation logs have been collected and it is therefore not known if the drill holes have deviated away from vertical. Based on an average depth of 800 feet, any deviation is expected to be insignificant and immaterial to the geologic characterization of the property. > Horst and graben faults that exist on the property are part of the Rough Creek fault system and have been accurately identified through USGS and KGS mapping. > The dip of the coal seam ranges from 2.0 to 3.0 degrees except for areas directly adjacent to the faulting, where the dip can potentially increase.
Sample security	The measures taken to ensure sample security.	> Sample handling procedures were developed for the project and are understood to have been employed by BCRs and HMG during exploration
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	> MM&A has reviewed all available geological information for the property in developing the geologic model. The data is suitable and has been used for generating an updated Resource estimate compliant with the 2012 edition of the JORC Code.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	> Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. > The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	> The Buck Creek Complex coal resources are located within the Carbondale Formation of the Illinois Basin between the towns of Hanson and Calhoun in Hopkins and McLean Counties, Kentucky. The geologic model and Resource estimates prepared by MM&A was for the region identified as the coal controlled properties. > Coal rights are leased from numerous private owners through the payment of an annual minimum royalty and an earned royalty. The annual minimum royalty is an annual per acre charge that escalates from US $10 per acre to US $25 per acre during the term of the coal leases. Once mining operations commence, the annual minimum royalty is reduced by the amount of earned royalty due on mined coal. All annual minimum royalty payments are recoupable against any earned royalty due under the coal leases on a lease-by-lease basis. The earned royalty is the greater of $1.25 per ton or 4% of the average gross sales price F.O.B. mine. > Under the original Buck Creek acquisition agreement, a final vendor payment of US$12,000,000 is to be made by 28 March 2018 to complete the acquisition.

Criteria	JORC Code explanation	Commentary
		> There are no known legal or environmental encumbrances that would impede coal property acquisition.
Exploration done by other parties	> Acknowledgment and appraisal of exploration by other parties.	> The oil and gas exploration was carried out by several drilling entities. The largest collection of drill holes designed specifically for coal identification was carried out by the KGS in the 1950's. BCR conducted three different drilling programs between 2009 and 2011. HMG conducted seven drilling programs between 2013 and 2017.
Geology	> Deposit type, geological setting and style of mineralisation.	> The Buck Creek Complex is located in the West Kentucky Coal Fields, which is part of the Illinois Basin. The thickest and most continuous coal seams, including the WK No. 9 and 11 seams, are found in the Carbondale Formation. The Carbondale Formation consists largely of shale, sandstone, siltstone, limestone and to a lesser extent fireclays and coal. > Coal seams dip on average 2.0 to 3.0 degrees toward the center of the basin which lies toward the northwest portion of the property.
Drill hole Information	> A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length. > If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	> Detailed lists of the BCRs, KGS and HMG drill holes used to define the resource have been included numerous previous market announcements including: - Maiden Coal Resources at Buck Creek Project – Released 4/11/2013 - Excellent Results from Buck Creek Drilling Program – Released 12/5/2013 - Excellent Coal Quality Results – Released 11/2/2014 - Substantial 54% Increase in Coal Resources – Released 2/24/2015 - Excellent Results from Drilling at Buck Creek No.2 Mine – Released 5/21/2015 - September 2016 Quarterly Report – Released 10/28/2016 - Substantial 77 Million Tons Increase (30%) In Coal Resource to 328 Million Tons – Released 2/16/2017 > Drill holes are provided with a collar elevation and a Kentucky South NAD 27 easting and northing coordinate. Collar elevations for the 2017 drilling have been picked from USGS topographic maps or, if near the Poplar Grove facilities site, determined from LIDAR data.

Criteria	JORC Code explanation	Commentary
Data aggregation methods	> In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. > Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. > The assumptions used for any reporting of metal equivalent values should be clearly stated.	> Coal quality summary results have been documented in this report and can be found in the *Table 15: Poplar Grove and Cypress Mines – Coal Quality Specifications*. Coal quality was not used as a limiting parameter. The coal Resource estimate was limited to a minimum seam thickness of 3.0 feet. > Average coal quality values are reported using the arithmetic method and summarized in Microsoft® Excel.
Relationship between mineralisation widths and intercept lengths	> These relationships are particularly important in the reporting of Exploration Results. > If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. > If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	> Coal thickness values from all coal intersections and down hole geophysical logs are considered to be vertical thicknesses. Seam dip of approximately 2.0 to 3.0 degrees has little effect on the vertical thickness of the seam.
Diagrams	> Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	> Diagrams showing the coal seam intercepts were included in the announcements listed in the *Drill Hole Information* section above.
Balanced reporting	> Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	> All of the available exploration data from HMG, BCRs and the KGS have been included in reporting of this Resource.
Other substantive exploration data	> Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	> Informational material available from the KGS and USGS was used to assist in the Resource estimate.
Further work	> The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). > Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	> The WK No. 9 seam extends in all directions beyond the limits of the controlled property. Outcrop and potential seam thinning to the east, along with previous mining around the property, are the most obvious limits to potential resource expansion. The WK No. 11 seam becomes less prominent to absent and outcrops in the eastern portion of the property. > Further work is expected to include additional exploration, geotechnical testing, coal quality analyses, and coal property acquisition.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	> Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. > Data validation procedures used.	> The BCRs, HMG, KGS and specific oil and gas well data has been validated prior to being imported into the geological database used to build the geological model.

Criteria	JORC Code explanation	Commentary
		> Seam picks for all coal-specific drill holes have been compared to lithological logs, sample intervals, and geophysical logs where available.
Site visits	> Comment on any site visits undertaken by the Competent Person and the outcome of those visits. > If no site visits have been undertaken indicate why this is the case.	> An original site visit to the Buck Creek Property occurred on October 29, 2014 by Mr. Gerard Enigk, P.E., who is one of the CPs for this report. Another site visit was made by Justin Douthat and Gerard Enigk of MM&A, on December 13, 2016. As part of the 2014 and 2016 site visits, MM&A met with Hartshorne to discuss the proposed Buck Creek operations. > A site visit by the CP Geologist was considered not to be required at this time as the data provided was sufficient to develop the geological model and Resource estimate. Furthermore, there is currently no mining of the WK No. 9 seam or infrastructure on the property and all controlled resources occur below drainage.
Geological interpretation	> Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. > Nature of the data used and of any assumptions made. > The effect, if any, of alternative interpretations on Mineral Resource estimation. > The use of geology in guiding and controlling Mineral Resource estimation. > The factors affecting continuity both of grade and geology.	> A total of 193 drill holes have been used to define the WK No. 9 seam coal deposit, develop a geologic model and provide the basis for a good understanding of the geology within the project area. A total of 191 drill holes have been used to define the WK No. 11 seam coal deposit, develop a geologic model and provide the basis for a good understanding of the geology within the project area. > From the original 203 drill hole database used to generate the geologic model, 25 drill holes were removed. These drill holes were removed because (1) they fell within the 200 feet barrier surrounding the faults which could potentially affect the seam thickness or, (2) secondary drilling, with more controlled data retrieval, approximate to an existing KGS drill hole revealed a thickness discrepancy The WK No. 9 seam database used for modelling now includes 168 drills holes specific to coal identification from BCRs, HMG and the KGS and an additional 25 oil and gas well holes. The WK No. 11 seam database used for modelling now includes 166 drills holes specific to coal identification from BCRs, HMG and the KGS and an additional 25 oil and gas well holes. > These 25 oil and gas wells contained a geophysical log of better resolution than others in the area from which a seam thickness was obtained. An additional 1,040 oil and gas well holes have been identified within and surrounding the property of interest that have identifiable seam thickness but were used only to map the bottom seam elevation and overburden of the WK No. 9 seam, confirm location and displacement of faults, and verify continuity of the seam. Seam thickness of the oil and gas wells were generally reported on an even-feet basis and may not represent an accurate thickness compared to the BCRs, HMG and KGS data. > Of the reserve property contiguous to Buck Creek, there is one mine actively operating in the WK No. 9 seam and one in the 11 WK No.

Criteria	JORC Code explanation	Commentary
		seam in the area west of the Buck Creek property. There are three mines in the WK No. 9 seam not active in areas to the north, west and south of the Buck Creek property.
		> There are numerous other active, inactive, and historical mines in the vicinity of the Buck Creek property.
		> Faulting is present throughout the area, the extent of which is well documented by the KGS.
		> The geology of the Buck Creek Complex is sufficiently understood through the exploration data, historical public records and publications by the USGS and the KGS for estimation of the coal Resource.
Dimensions	> The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	> The geological model for the Buck Creek Complex covers an area in excess of 74,000 acres, 39,797 of which are currently leased. > The overburden thickness varies from less than 100 feet in the south-eastern portion of the property to more than 1,100 feet in the north-western corner.
Estimation and modelling techniques	> The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. > The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. > The assumptions made regarding recovery of by-products. > Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation). > In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. > Any assumptions behind modelling of selective mining units. > Any assumptions about correlation between variables. > Description of how the geological interpretation was used to control the resource estimates. > Discussion of basis for using or not using grade cutting or capping. > The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	> Coal exploration along with oil and gas drill hole information was used to develop a geologic model, which was used as the basis of the Resource estimation. The seam thickness model used for the WK No.9 Resource estimation contains 193 drill holes and the WK No. 11 contains 191 drill holes of which 168 and 166 respectively are coal specific obtained from the KGS and drilling programs conducted by BCRs and HMG. The other 25 are select oil and gas well holes use to identify areas of indicated coal. > Coal seams were identified from drill holes based on lithological logging by a competent geologist, and cross referenced with downhole geophysical survey logs where available. > Seam correlation across the drill holes was completed by a BCRs and MM&A geologists. All correlations were verified by MM&A. > Coal seams from cored drill holes were sampled and sent to a laboratory for testing. > Geological data was imported into Surfer™ 12 and Carlson Mining® (formerly SurvCADD®) geological modelling software in the form of Microsoft® Excel files incorporating, drill hole collars, seam and thickness picks, bottom seam elevations and raw and washed coal quality. These data files were validated prior to importing into the software. > Once imported, a geologic model was created > The geological model was verified and reviewed. > Resources were estimated by defining seam thickness at each point of observation and by defining resource confidence arcs around the points of observation. > Points of observation for Measured and Indicated confidence arcs were defined for all drill holes that intersected the seam.

Criteria	JORC Code explanation	Commentary
		> As prescribed by the USGS the following distances from points of observation were used to define the corresponding Resource category arcs: - Inferred Resources – greater than 3,960 feet but less than 15,840 feet (3 miles). - Indicated Resources – 3,960 feet - Measured Resources – 1,320 feet. > The use of the USGS standards are appropriate and customary for this resource jurisdiction and deposition type. > Resources were then estimated from the geological model using the resource categorization polygons for the WK No. 9 and WK No. 11 seams to limit the estimate to within the area defined by each polygon.
Moisture	> Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	> Resource tonnage has been estimated and reported on a raw as received moisture basis. > Equilibrium moisture for the WK No. 9 seam is reported to range between 4.6% and 8.1% and the WK No. 11 seam ranges between 3.7% and 6.1%. > Resource tons estimated on a raw as received moisture basis will be less than Resource tons reported on an equilibrium moisture + 4.0 percent moisture basis. Therefore, reporting Resource tons on a raw as received moisture basis is a more conservative approach.
Cut-off Parameters	> The basis of the adopted cut-off grade(s) or quality parameters applied.	> Resource tonnage was estimated within the approximately 39,797 acres of controlled coal. > Resource tons were terminated at a minimum seam thickness of 3.0 feet. > A 200-foot mine exclusion zone was applied to each side and terminus of the identified faults. > No coal quality cut-off parameters were applied.
Mining factors or assumptions	> Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	> No mining factors (i.e., dilution, coal loss, recoverable resources at selective mining block size) have been applied.
Metallurgical factors or assumptions	> The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	> The WK No. 9 and 11 seams are a thermal product; therefore, no metallurgical assumptions have been applied in estimating the Resource.

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	> Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	> No environmental assumptions have been built into the geological model or the Resource estimate. > MM&A is not aware of any significant environmental risk or encumbrances to mine development associated with the Buck Creek Complex. The land is currently primarily used for farming.
Bulk density	> Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. > The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. > Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	> Laboratory derived seam densities measured in pounds per cubic foot were established for each of the BCRs coal samples and HMG's 2015 and 2016 coal samples analysed and used to estimate the Resource tons. Seam density was not determined for the coal samples from the HMG drilling programs of 2013 and 2014. > Coal Resources were estimated and reported on a raw as received moisture basis. > Resource tons estimated on a raw as received moisture basis will be less than Resource tons reported on an equilibrium moisture + 4.0 percent moisture basis. Therefore, reporting Resource tons on a raw as received moisture basis is a more conservative approach.
Classification	> The basis for the classification of the Mineral Resources into varying confidence categories. > Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). > Whether the result appropriately reflects the Competent > Person's view of the deposit.	> The Resource has been classified based on suitable distances from points of observations prescribed in the USGS Circular 891 and the United States Security and Exchange Commission's Industry Guide 7. The use of the USGS and SEC standards are appropriate and customary for this resource jurisdiction and deposition type. > Points of observation that included seam thickness have been extracted from cored drill holes, air rotary drill holes and a select few oil and gas wells.
Audits or reviews	> The results of any audits or reviews of Mineral Resource estimates.	> The geological model and Resource estimation have been conducted by Mr. Kirt W. Suehs, Project Geologist with MM&A. > MM&A constructed the geological model after validation of the raw data and data processed previously by personnel from BCRs and the latest data provided by HMG of the 2013 through 2017 drilling programs. > The geological model was reviewed by checking the data in the geologic model against the actual data. > The geological model was verified by a series of cross sections and contour plans. > Engineering and Mining – MM&A peer reviewed the resource estimation and found it to be satisfactory with no fatal flaws.

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	> Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. > The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. > These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	> The geological model used for the Resource estimation has been constructed by MM&A and all data has been validated. > Resource estimation has been completed using standard coal estimation methods which are deemed appropriate for this deposit. > Resources have been categorized based on valid points of measurements and distances from points of observation as prescribed in the USGS Circular 891 and the United States Security and Exchange Commission's Industry Guide 7. The use of the USGS standards are appropriate and customary for this resource jurisdiction and deposition type. > The categories reflect the underlying confidence in the resources over the Buck Creek Complex.

Section 4 Estimation and Reporting of Ore Reserves
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	> Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	> The original coal resource estimate for the Property was prepared by Cardno and presented in the TR titled "Resource Estimate for the Buck Creek Property as of August 14, 2013 – Located in McLean and Hopkins Counties, Kentucky" dated November 2013. > The coal resource estimate was subsequently updated in conjunction with this Bankable Feasibility Study (BFS) in order to incorporate additional exploration and coal quality data, along with changes in mineral property control since the 2013 TR. > The relative accuracy of, and confidence in, the coal resource tonnage estimates are judged to be in conformance with current industry best-practices; they are of sufficient reliability to support the mine plans and coal reserve estimates.
	> Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	> Coal resources are reported inclusive of the coal reserves.
Site visits	> Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	> A site visit, including Cardno's representative Mr. George Oberlick, P.E., was made to the Buck Creek Property on December 17 and 18, 2013. Mr. Oberlick served as an advisor in development of the Cypress Mine PFS. As part of the 2013 site visit, Cardno met with Hartshorne personnel to discuss Hartshorne's planned future operations. Cardno also visited the locations for the proposed surface facilities, river dock and underground mine. > A subsequent site visit to the Buck Creek Complex property occurred on October 29, 2014 by Mr. Gerard Enigk, P.E., who is one of the CPs for this report. As part of the 2014 site visit, Cardno met with Hartshorne to discuss the proposed Buck Creek Complex operations. The following observations were made:

Criteria	JORC Code explanation	Commentary
		- Site access is well established and not likely to be impacted by adverse weather conditions - Public utilities (electrical power, potable water) are available at the site - Relatively flat-lying topography will help minimize earthwork-related construction and expense
Study status	> The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	> The Study is classified as a BFS, and was undertaken by a team of industry professionals as listed below:

Marshall Miller & Associates, Inc. (MM&A)	Geology, Mineral Resource and Reserve Estimation, and Mine Planning, Site Planning, and BFS Management
Strategic Energy Resolutions, Inc.	Market Assessment and Preliminary Marketing Plan
SNL Financial LC	Market Price Forecasts
Energy Venture Analysis, Inc.	Market Price Forecasts
Hanou Energy Consulting, LLC	Market Price Forecasts
Appalachian Mining & Engineering, Inc.	Ground Control Design
General Mine Contracting, Inc.	Preliminary Preparation Plant Design and Cost Estimation
William E. Groves Construction, Inc.	Electrical System Preliminary Design and Cost Estimation
Associated Engineers, Inc.	Permitting Information, Site Design, Geologic Consulting
Jennmar, Inc.	Roof Control Design and Cost Estimation
Pollard and Sons Excavating	Site Construction Cost Estimation
Buchanan Pump	Water System Design and Cost Estimation
Green River Barge Service	River Dock Operating Plan and Cost Estimation
Garrett Mine Service (GMS)	Supply & Materials Pricing
United Central Supply	Supply & Material Pricing
Miller Contracting	Fan and Surface Facility Design and Cost Estimation
Alpha Engineering	Ventilation System Design
Magnum Drilling Services, Inc.	Exploration Core Drilling Services
Hawkey & Kline Coring & Drilling, Inc.	Exploration Core Drilling Services
3D Dycus Diamond Drilling, LLC	Exploration Core Drilling Services
Standard Laboratories, Inc.	Analytical Laboratory Testing Services
SGS North America, Inc.	Analytical Laboratory Testing Services
Precision Testing Laboratory, Inc.	Analytical Laboratory Testing Services

Criteria	JORC Code explanation	Commentary
	> The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	> Coal reserves are based on an independent evaluation of the coal geology and a BFS of the coal reserve deposits contained within the controlled property. > A BFS economic analysis was completed, including discounted cash flow (DCF). Sensitivities to annual

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		> production, sales price, operating costs and capital costs were analyzed. > Coal reserves are presented on a recoverable basis and were derived from the controlled coal resources considering relevant modifying factors.
Cut-off parameters	> The basis of the adopted cut-off grade(s) or quality parameters applied.	> No coal quality cut-off parameters were applied.
Mining factors or assumptions	> The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	> Grid files prepared from the geological database were used in the estimation of coal resources, including both seam thickness and elevation models encompassing the WK No. 9 and WK No. 11 seams. > The grid models were developed using Carlson Mining software, which was also used to develop mine plan projections and production timing sequence plans.
	> The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	> The selection of the underground room-and-pillar mining method (with no second mining) is dictated by the size and configuration of the proposed mine boundary and the stipulation in the mineral leases that mining will not result in surface subsidence. > Access to the coal seam will be via box cut, with ventilation provided by a main fan within the box cut access as well as vertical shafts. > Standard mining equipment, as deployed in neighboring mines, will be used at Poplar Grove.
	> The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	> Geotechnical parameters and coal quality characteristics are based on laboratory results from samples taken from the coal seam, overlying strata, and underlying strata. These samples were taken from core obtained during exploration drilling. > A detailed geotechnical study was completed by AME in December 2013 titled "Ground Control Design for the Buck Creek Reserve West Kentucky No. 9 Seam".
	> The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	> Pillar design is based on geotechnical characteristics defined during exploration drilling and laboratory testing of the coal seam, overlying strata, and underlying strata.
	> The mining dilution factors used.	> Dilution is based on the minimum mining height required (54 inches) for the equipment selected for the operation, resulting in an average dilution of approximately 8 inches for the WK No. 9 seam reserve and 5 inches for the WK No. 11 seam reserve.
	> The mining recovery factors used.	> Resource recovery used in the BFS is based on pillar design which incorporates geotechnical parameters defined by laboratory samples, mining depth at specific locations, and on practices at adjacent mines. Poplar Grove mining recovery ranges from 30% to 56% for the WK No. 9 seam and 29% to 57% for the WK No. 11 seam.
	> Any minimum mining widths used.	> Productivity and ground control design are based on mining widths of 19 feet. This width is consistent with the geotechnical design and practices at adjacent mines and is compatible with continuous mining room-and-pillar production equipment.
	> The manner in which Inferred Mineral Resources are utilized in mining studies and the sensitivity of the outcome to their inclusion.	> No Inferred Mineral Resources are included in the reserves or BFS financial model.

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	> The infrastructure requirements of the selected mining methods.	> Provisions for supporting infrastructure are included in the capital expense estimates and include the following: - Offices and warehouse buildings - Bath house facilities - Power substation and connection to local utility - Coal Handling and Preparation Plant - Slope declines for seam access - Truck transport to barge-loading dock - Barge loading dock on the Green River
Metallurgical factors or assumptions	> The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	> Processing will include crushing, heavy media separation, spiral separation, and mechanical dewatering. The plant will have the capability for a percentage of the run-of-mine feed to bypass the plant in order to produce a different quality product.
	> Whether the metallurgical process is well-tested technology or novel in nature.	> Processes are typical of those used in the coal industry, and are in use at adjacent coal processing plants.
	> The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	> Processes have been simulated by numerous float/sink tests on coal cores from exploration drilling using a specific gravity of 1.6. Based on 55 WK No. 9 seam samples and 7 WK No. 11 seam samples, an average float recovery of 93% for the No. 9 seam and 84% for the No. 11 seam is achieved.
	> Any assumptions or allowances made for deleterious elements.	> No significant effects on product quality are anticipated from dilution material; Float product quality was used to model final product quality.
	> The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole	> No bulk sample or pilot scale work has been completed.
	> For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet specifications?	> Average heat value, ash, and sulfur of the test results for the WK No. 9 and WK No. 11 seams at Poplar Grove indicate suitability for local thermal markets.
Environmental	> The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	> Cardno was retained by Hartshorne to perform an Environmental Audit for the Buck Creek Complex. > This Audit did not reveal the presence of any Recognized Environmental Conditions associated with the subject property or operations proposed at the subject property. > The designed refuse disposal areas are all on surface property controlled under existing option agreements and are located adjacent to the preparation plant. > The total refuse volume required for the life of the Poplar Grove Mine is estimated at 16.97 million cubic yards (MCY). The total available storage capacity is sufficient for the LOM refuse disposal needs of the Poplar Grove Mine (approximately 26.7 MCY).
Infrastructure	- The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	> The Poplar Grove Mine is located in McLean County, Kentucky; the required project infrastructure is readily available. > Paved roads provide access to the Poplar Grove Mine and planned facilities. > High-voltage power is available and sufficient to operate the mine, plant and associated facilities. > Potable water for offices and bathhouse facilities is available from a nearby community.

Criteria	JORC Code explanation	Commentary
		> Water needed for processing coal and underground use can be readily supplied from wells on site.
		> The Green River dock site will be the primary avenue for shipment of coal to customers.
		> Western Kentucky is an established coal mining region, and workers are readily available from nearby existing communities.
		> Social infrastructure such as schools, hospitals, and commercial establishments are available in the surrounding communities.
Costs	> The derivation of, or assumptions made, regarding projected capital costs in the study. > The methodology used to estimate operating costs.	> Capital and operating cost estimates were prepared by Hartshorne and MM&A. > The mine will be operated by Hartshorne. > Capital costs are based on vendor quotations. > Mobile equipment is assumed to be leased, with costs provided by equipment manufacturers. > Operating costs are estimated based on Hartshorne and MM&A information from adjacent operations, and on the productivity and mine plan components of the BFS. > Estimated Poplar Grove operating costs for steady-state operating years is shown below:

Average Annual Operating Costs (steady-state)	US$ per ton
Labour Costs	7.19
Operating & Maintenance	8.42
Power & Utilities	0.95
Outside Services	.13
General & Administration	.71
Leased Equipment	1.46
Subtotal Direct Mining Costs	18.85
CHPP, Trucking, & Barge Load-Out Facility	4.72
Taxes & Insurance	1.30
Royalties	2.01
Severance Tax	2.31
Average Annual Operating Costs	29.24

Criteria	JORC Code explanation	Commentary
	> Allowances made for the content of deleterious elements.	> No allowances have been made for deleterious elements; no impact to quality from deleterious elements is anticipated.
	> The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	> Sales price assumptions for the Poplar Grove product are based on a market study by Hanou Energy Consulting, LLC, titled "Illinois Basin Coal Price & Demand Forecast 2014 – 2034", in conjunction with sales agreements between Hartshorne and LGE for 2018 through 2022. > The coal price used to generate the expected revenue for a fully-washed coal product ranges from $47.26 to $68.92 per ton during the mine's life. > All of the Poplar Grove Mine product is projected to be sold as a blended product. > The blended product is predicted to have a quality of 11,272 Btu/lb. and 5.4 lbs. SO_2 which meets the specifications of the target customers. > The lower-quality blended product will be subject to a price deduction for having a heating content less than 11,800 resulting in sales prices for the blended coal ranging from $42.16 to $65.64 during the mine's life.

Criteria	JORC Code explanation	Commentary
	> Derivation of transportation charges.	> Transportation costs are based on barge rates for delivery to power plants along the Green River and Ohio River.
	> The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	> Processing costs are based on experience at adjacent operations. Sales price is based on average delivered quality.
	> The allowances made for royalties payable, both Government and private.	> The combination of royalties from all mineral leases is 4.06 percent of gross sales price less federal excise tax, severance tax, and OSM reclamation tax.
Revenue factors	> The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	> Average projected product coal quality is consistent with both the site-specific laboratory data available for the Property and adjacent mining operations currently producing in the WK No. 9 and WK No. 11 seams. > Average coal sales prices as defined above. > All prices are based on 2017 constant United States dollars. > Processing costs based on producing a single blended product as described above. > Materials handling and coal trucking costs, as well as dock costs, are included in the DCF model. >
	> The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	> Coal sales prices as defined above.
Market assessment	> The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	> Coal price forecasts, transportation, and market assessment were based on the Hanou Energy Consulting, LLC report titled "Illinois Basin Coal Price & Demand Forecast 2014-2034", which forecasts the market and pricing for Illinois Basin coals, and Strategic Energy Resolution's report titled "Buck Creek Project Market Assessment and Preliminary Marketing Plan," which provides information on the United States coal industry, the Illinois Basin (ILB), and the Ohio River utility market. > Information on historical ILB pricing was also obtained from IHS Energy. > Actual sales agreements between Hartshorne and LGE for Poplar Grove product.
	> A customer and competitor analysis along with the identification of likely market windows for the product.	> The Poplar Grove Mine is well-positioned to take advantage of the lowest cost transportation option, which is delivery by barge on the Ohio River system to electrical utility customers. > In addition, the project is located in close proximity to several power plants which purchase fuel by truck. > The Ohio River utility market provides a stable customer base for the marketing and sales of Poplar Grove coal, largely on account of the targeted plants already being retrofitted with pollution controls and the fact that they provide base-load generation.
	> Price and volume forecasts and the basis for these forecasts.	> Annual Poplar Grove production will total approximately 2.8 million marketable tons at full production. > The estimated average revenue ranges from $42.16 per ton to $65.64 per ton.
Economic	> The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	> Excluding debt, the NPV of the Poplar Grove projected cash flows beginning in the year 2017 is $310 million at an 8-percent (real) discount rate. > The Poplar Grove internal rate-of-return is 42.0 percent.

Criteria	JORC Code explanation	Commentary
		> Capital is projected to be committed beginning in 2017
		> All costs and prices are based on 2017 constant United States dollars.
		Initial Capital Costs – Poplar Grove
		- Mine Site Development and Infrastructure = $21.7 million
		- Coal Handling & Preparation Plant & Barge Load-Out Facility = $23.0 million
		- Total Initial Capital Cost = $44.7 million
		Production (tons) - Poplar Grove
		- Average run-of-mine (ROM) Coal Production Steady State = 3.6 Mtpa
		- Total ROM Coal Produced Life-of-Mine = 89.0 million tons
		- Effective CHPP Yield = 76.1%
		- Life of Mine = 25.0 years
		- Average Clean Coal Production Steady State = 2.8 Mtpa
		- Total Saleable Coal Produced LOM* = 67.7 million tons
		- Start of Construction = Q2 2017
		- Start of Production Ramp-Up = Q3 2018
		- * Of the total marketable production of 67.7 million tons, only 37.6 million tons of the mine plan can be executed on mineral property currently controlled by Hartshorne. Additional mineral leases must be acquired in order to execute the life of mine plan achieve the projected financial performance of the Poplar Grove mine.
		Cash flow
		- Average Sales Price Received (per ton) = 2018 is $42.16/ton and 2042 is $65.64/ton
		- Poplar Grove Average Cash Operating Costs = $29.24 per ton
		- Poplar Grove Average Annual Operating Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) (steady state) = $67 million
		- Poplar Grove NPV = $310 million
		- Poplar Grove Internal rate of return (IRR) = 42.0%
		Combined Complex Valuation
		- Combined production includes the 2.8 Mtpa Poplar Grove Mine starting construction by mid-2017, followed by the construction of the 3.8 Mtpa Cypress Mine starting early-2019, for total production capacity of 6.6 Mtpa
		- Initial capital cost = $44.7 million
		- Average Annual Complex EBITDA = $163 million
		- Buck Creek Complex NPV = $655 million
		- Buck Creek Complex IRR = 41.9%
	> NPV ranges and sensitivity to variations in the significant assumptions and inputs.	> The sensitivity study for Poplar Grove shows the NPV at the 8-percent (real) discount rate when Base Case annual production tonnages, sales prices, operating costs and capital costs are increased and decreased in increments of 5 percent within a +/-10-percent range.

Criteria	JORC Code explanation	Commentary	

		Minus 10%	NPV ($000)
		Production (tons)	$243,268
		Sales Value	$220,909
		Controllable Costs	$332,940
		Capital Expenditures	$319,352
		Minus 5%	
		Production (tons)	$276,789
		Sales Value	$266,206
		Controllable Costs	$321,330
		Capital Expenditures	$314,536
		Base Case	
		Production (tons)	$309,720
		Sales Value	$309,720
		Controllable Costs	$309,720
		Capital Expenditures	$309,720
		Plus 5%	
		Production (tons)	$342,650
		Sales Value	$353,233
		Controllable Costs	$298,109
		Capital Expenditures	$304,903
		Plus 10%	
		Production (tons)	$375,580
		Sales Value	$396,746
		Controllable Costs	$286,499
		Capital Expenditures	$300,087

Criteria	JORC Code explanation	Commentary
Social	> The status of agreements with key stakeholders and matters leading to social license to operate.	> Stakeholder support has been strong during the property acquisition and permitting processes. Almost all mineral leases are held with resident land owners or families of resident land owners providing an enormous opportunity for economic gain in a relatively small community.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: > Any identified material naturally occurring risks.	> No material naturally occurring risks have been identified.
	> The status of material legal agreements and marketing arrangements.	> Mining and water quality permits have been submitted as discussed below. > Hartshorne has received strong support from potential utility customers, and will continue negotiations with these potential customers. One forward sales agreement has been executed, whereby the utility has, prior to the start of construction, committed to buy coal from Hartshorne at a set price.
	> The status of government agreements and approvals critical to the viability of the project, such as mineral tenement status and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third part on which extraction of the reserve is contingent.	> Hartshorne has received SMCRA mining permits covering the surface and underground disturbance footprints for the proposed Poplar Grove Mine. The SMCRA underground permit (Permit No. 875-5010) and SMCRA surface permit (Permit No. 875-8002) were approved 03/03/2017 and 02/21/2017, respectively. > The U.S. Army Corps of Engineers and Kentucky Division of Water have approved the associated 404/402 permits required for dock/mine construction.
Classification	> The basis for the classification of the Ore Reserves into varying confidence categories. Whether the result appropriately reflects the Competent Person's view of the deposit. The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	> Measured and indicated resources have been converted to proven and probable reserves, respectively. > None of the probable coal reserves have been derived from measured resources. > The results of this BFS define an estimated initial ROM recoverable ore (coal) reserve estimate of

Criteria	JORC Code explanation	Commentary
		49.40 million tons for Poplar Grove and 135.73 million tons for the combined Cypress and Poplar Grove mines.
		> The results of this BFS define an estimated 37.60 million tons of proven and probable marketable coal reserves for the Poplar Grove Mine, of which 16.00 million tons (or 43 percent) is considered proven and 21.60 million tons (or 57 percent) is considered probable (after the application of all mining factors).
		> The results of this BFS define an estimated 103.80 million tons of proven and probable marketable coal reserves for the Buck Creek Complex, of which 33.25 million tons (or 32 percent) is considered proven and 70.56 million tons (or 68 percent) is considered probable (after the application of all mining factors).
Audits or reviews	> The results of any audits or reviews of Ore Reserve estimates.	> Coal reserve estimate has been prepared by MM&A and reviewed internally.
		> No external audits have been completed to date.
Discussion of relative accuracy/ confidence	> Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	> The BFS is based on a mine plan, project schedule and estimated capital and operating costs with an accuracy of +/-10 percent.
		> The accuracy of and confidence in the tonnage estimates provided herein are judged to be in conformance with current industry best practices.
		> Based on the sensitivity analysis conducted, the Poplar Grove Mine's NPV is most sensitive to changes in sales value. Because of this, detailed sales and marketing analysis were undertaken to verify the data used in the study.
	> The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	> All modifying factors have been applied to design the proposed Poplar Grove Mine on a global scale as current local data reflects the global assumptions.
	> Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	> An independent third-party expert should be retained in order to conduct an updated formal market study for the Poplar Grove Mine.
		> Ongoing efforts should be made to prepare and submit remaining permit applications necessary for construction and operation of the Poplar Grove Mine to the appropriate federal and state agencies.
	> It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	> There has been no production to date, so no comparison to production or reconciliation data can be made.