

**Savannah North Scoping Study  
Looking into the future**

**3 February 2016**

ASX: PAN

# Disclaimer

## Cautionary Statements

This presentation includes information extracted from Panoramic Resources Limited ASX announcement dated 27 January 2016 entitled “Savannah North Scoping Study - Positive results demonstrates robust, long life, Ni-Cu-Co Project”. The Scoping Study is based on low-level technical and economic assessments, and is insufficient to support the estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised.

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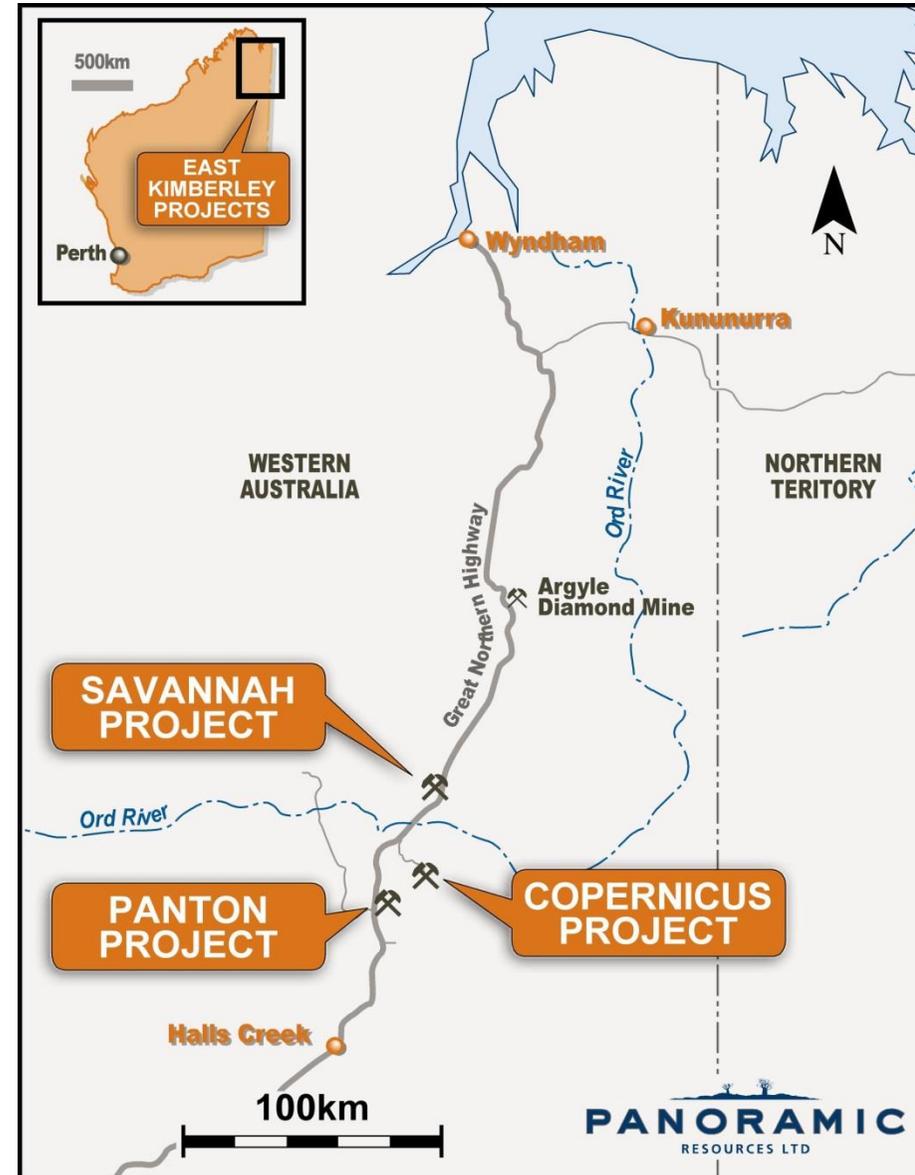


A light gray silhouette of a savannah landscape. It features two acacia trees of different sizes on a low horizon line. The larger tree is on the right, and the smaller one is on the left. The background is plain white.

# Savannah North Scoping Study Summary

# Scoping Study demonstrates robust, long life, Ni-Cu-Co project

- Large Resource
- Significant Mining Inventory
- Low pre-production and ramp up capital
- Approximately 8 years mine life
- Robust project economics
- Competitive cash costs
- Leverage off existing infrastructure
- Short lead time to first production
- Opportunities to enhance project value
- Considerable exploration upside



*Savannah North is located ~600m north of the existing Savannah underground mine*

# Key project statistics

Operating Metric	Result
Mineral Resources	6.88Mt @ 1.59%Ni, 0.77% Cu, 0.11% Co containing: <b>109,600t Ni 52,900t Cu 7,800t Co</b>
Mining Inventory	6.07Mt @ 1.26% Ni, 0.64% Cu, 0.09% Co containing: <b>76,500t Ni 38,600t Cu 5,300t Co</b>
Mine Life	7.75 years
LOM production (metal in concentrate)	<b>66,200t Ni 36,700t Cu 5,000t Co</b>
Annual production (metal in concentrate)	<b>9,500t Ni 5,300t Cu 700t Co</b>

- Resource to Mining Inventory\* conversion of 70%
- Indicated Resources comprise 66% of Mining Inventory\*
- Initial mine life approaching 8 years
- Significant annual metal production

The Mineral Resources underpinning the above production target have been prepared by a competent person or persons in accordance with the requirements of the JORC Code – refer to the Company’s ASX announcement of 1 October 2015.

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\* On a contained nickel basis

# Financials at various US\$ nickel prices and US\$:A\$ = 0.70

Financial Metric	Units	US\$5.00/lb	US\$6.00/lb	US\$7.00/lb	US\$8.00/lb
Revenue	A\$M	892	<b>1,032</b>	1,179	1,319
Initial Capital <i>(Pre-production and ramp-up)</i>	A\$M	42	<b>42</b>	42	42
LOM Capital <i>(inclusive of initial capital)</i>	A\$M	137	<b>137</b>	137	137
Operating costs plus royalties	A\$M	700	<b>708</b>	715	722
Pre-tax cashflow	A\$M	54	<b>187</b>	327	460
Pre-tax NPV (11% discount rate)	A\$M	6	<b>80</b>	158	232
IRR	%	14	<b>47</b>	82	118
C1 cash cost (Ni in concentrate basis)	A\$/lb Ni	3.14	<b>3.14</b>	3.14	3.14
	US\$/lb	2.20	<b>2.20</b>	2.20	2.20
Payable Ni cash costs	A\$/lb Ni	5.19	<b>5.26</b>	5.29	5.36
	US\$/lb	3.63	<b>3.68</b>	3.70	3.75

- Modest pre-production capital costs
- Competitive cash operating costs
- Project would deliver attractive returns on investment at forecast long run US\$ Ni prices and US\$:A\$ exchange rates



# Geology & Resources

# Geology - Ni-Cu-Co rich massive sulphide mineralisation

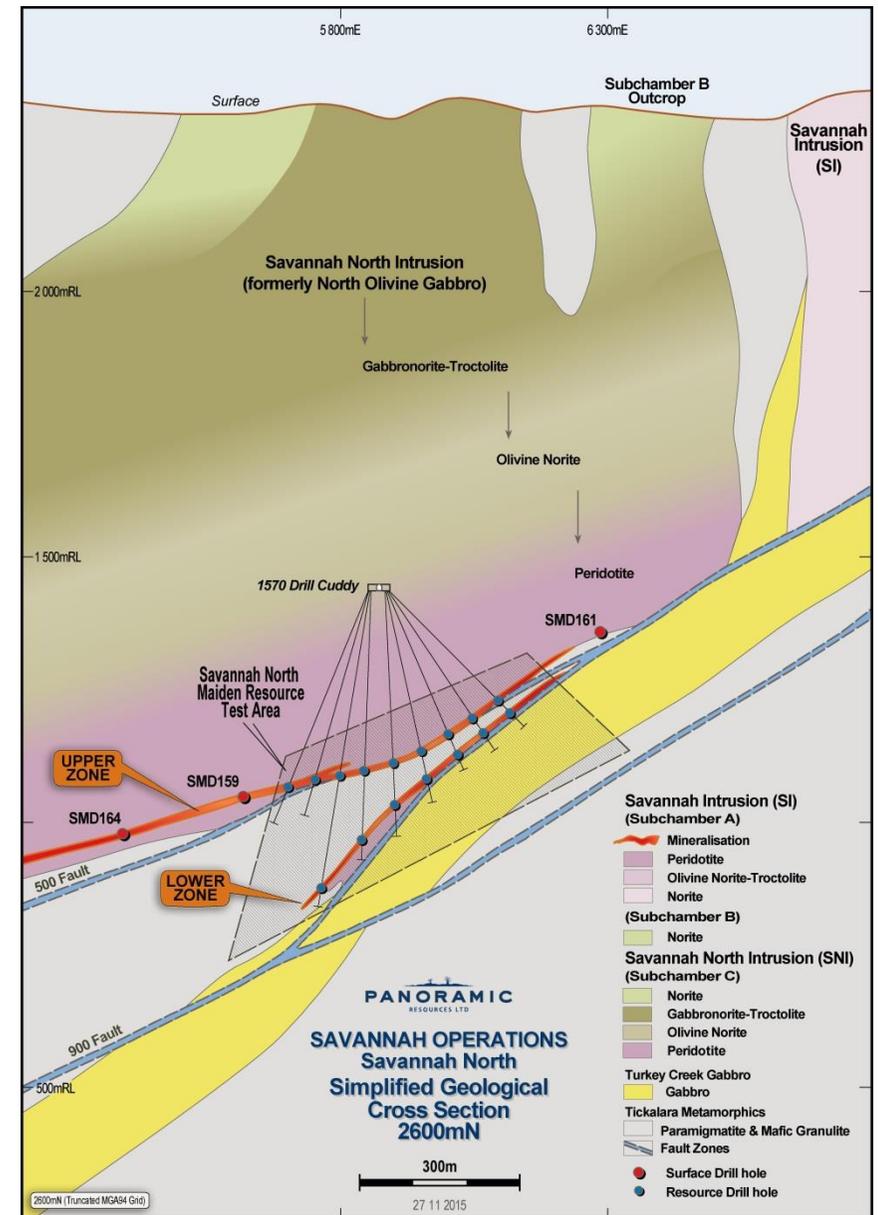
## Two discrete zones of mineralisation:

### ■ Upper Zone

- Mineralisation developed on/or about the basal contact
- Typically 5-8m thick (up to 15-20m)
- Open up-dip to east and along strike to west
- Mineralisation potentially extends at least a further 1km west of hole SMD164 based on very large, highly conductive on-hole EM response

### ■ Lower Zone

- Consistent zone of higher grade, off-contact massive sulphide mineralisation
  - Up to 15m thick
  - Open to the northwest
- Drilling and EM surveys conducted to-date, suggest the potential strike length of the Savannah North system is approximately 2km



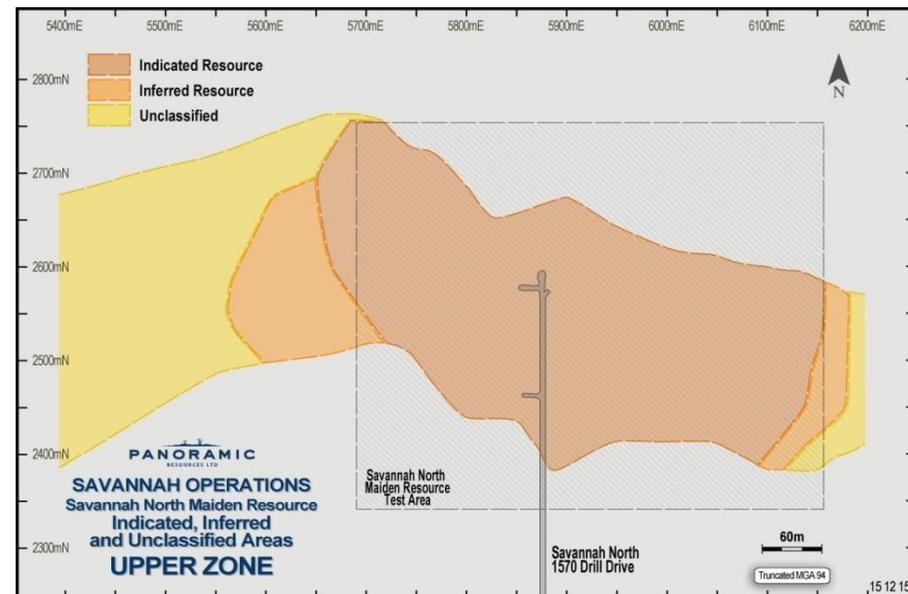
Savannah North Geological Cross Section 2600mN

# Resource

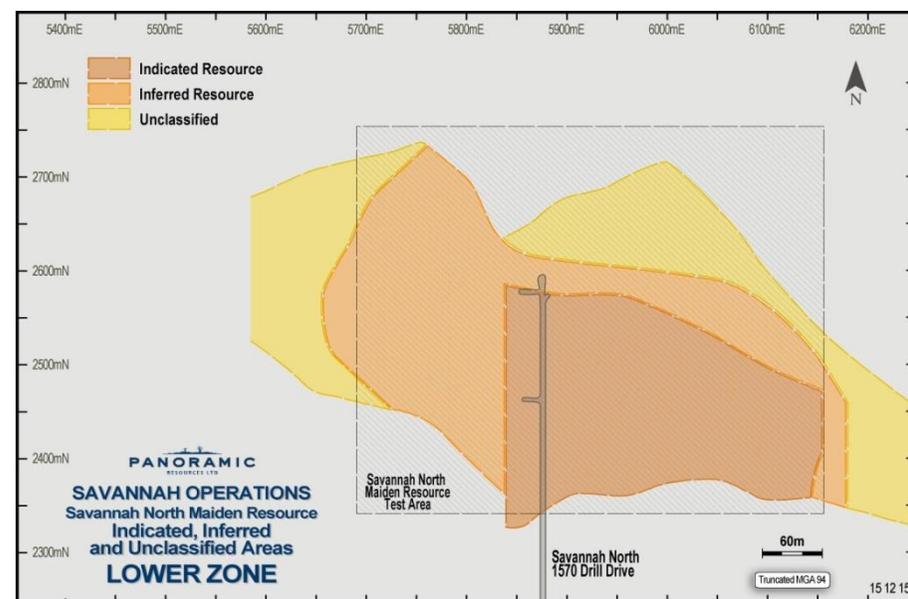
- Major Resource upgrade\* delivered in October 2015
- Upgraded Resource used for Scoping Study

Model	Tonnage (Mt)	Ni %	Cu %	Co %	Ni t
Indicated	4.78	1.51	0.72	0.11	72,300
Inferred	2.10	1.77	0.88	0.12	37,300
<b>Total</b>	<b>6.88</b>	<b>1.59</b>	<b>0.77</b>	<b>0.11</b>	<b>109,600</b>

- Metal contained
  - 109,600t Ni
  - 52,900t Cu
  - 7,800t Co
- Only ~30% of the potential 2km strike length has been tested by Resource definition drilling



Savannah North Upper Zone Resource Classification



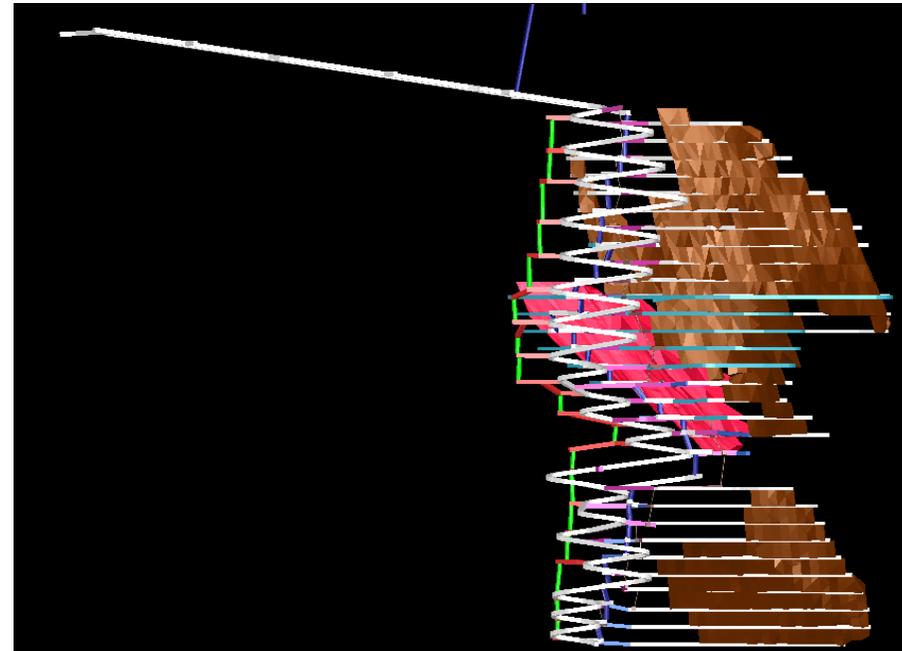
Savannah North Lower Zone Resource Classification



# Mining & Processing

# Mining

<b>Mining Method</b>	Long hole open stoping
<b>Sub-level interval</b>	20m
<b>Minimum stope angle</b>	50 degrees
<b>Minimum mining width</b>	2m
<b>Stope dilution</b>	10%
<b>Stope mining recovery</b>	95%
<b>Access</b>	Single decline
<b>Mining Inventory</b>	6.07Mt
<b>Mining rate</b>	Average 0.8-1.0Mtpa



Proposed development of Savannah North

<b>Mining Method</b>	<b>Inventory (Mt)</b>	<b>Ni %</b>	<b>Cu %</b>	<b>Co %</b>	<b>Contained Nickel (t)</b>	<b>Contained Copper (t)</b>	<b>Contained Cobalt (t)</b>
<b>Stoping</b>	5.34	1.25	0.64	0.09	66,900	34,000	4,600
<b>Development</b>	0.72	1.33	0.64	0.09	9,600	4,600	700
<b>Total</b>	<b>6.07</b>	<b>1.26</b>	<b>0.64</b>	<b>0.09</b>	<b>76,500</b>	<b>38,600</b>	<b>5,300</b>

# Metallurgy and Processing

<b>Mineralogy</b>	Similar properties to currently processed Savannah ore
<b>Metallurgical Performance</b>	<ul style="list-style-type: none"> <li>■ Testing to-date shows similar grade-recovery properties as for Savannah ore</li> <li>■ Further test work planned</li> </ul>
<b>Processing plant</b>	Utilising existing Savannah plant nominal capacity of 1Mtpa
<b>LOM Production (in concentrate)</b>	<b>66,200t Ni</b> <b>36,700t Cu</b> <b>5,000t Co</b>
<b>Recoveries over LOM</b>	86.6% Ni 94.9% Cu 94.2% Co
<b>Annual Production (in concentrate)</b>	~9,500t Ni ~5,300t Cu ~700t Co



KUD1562 intersection between 672.2 – 676.9m  
4.70m @ 2.28% Ni, 1.06% Cu, 0.15% Co

# Leverage off existing infrastructure

- **Mining leases** - granted
- **Proximity** - Savannah North only ~600m from existing Savannah underground development
- **Regulatory approvals** - covered under existing Savannah project
- **Capital costs** - significantly lower compared to greenfields developments due to established infrastructure including, mine access, process plant, tailings dam, accommodation village, etc.
- **Short lead time to production**



Savannah mill and associated infrastructure



# Estimated Costs & Project Economics

# Estimated capital and operating costs

- Relatively low pre-production and ramp up capital of ~A\$42M due to:
  - Substantial existing capital investment at Savannah
  - Short lead time to production
- Globally competitive cash costs due to a combination of:
  - Low cost open stope mining
  - Conventional processing methods
  - By product credits
- Cost estimates based on historical data from ten years of operations at Savannah

## Capital Cost Summary

Item	Initial Capital (A\$M)	Sustaining Capital (A\$M)	Life of Mine Capital Total (A\$M)
Initial access development	10.9	-	10.9
Ventilation upgrades	10.2	-	10.2
Mining capital development	13.9	64.5	78.4
PP&E and other	6.3	29.1	35.4
Tails dam expansion	0.5	2.0	2.5
<b>Total</b>	<b>41.8</b>	<b>95.6</b>	<b>137.4</b>

## Operating Cost Summary

Item	Amount
Mining	A\$45-65/t ore
Processing, Admin & Concentrate haulage	A\$55/t ore
<b>Total</b>	<b>A\$100-120/t ore</b>
<b>C1 cash cost</b>	<b>A\$3.14/lb</b>
<b>Payable Ni cash cost</b>	<b>A\$5.26/lb</b>

# Project economics

- Robust Project Economics for Base Case (US\$6.00/lb and US\$:A\$ = 0.70)
  - Revenue - \$1.032 billion
  - Pre-tax cashflow - \$187M
  - Pre-tax NPV (11%) - \$80M
  - IRR - 47%
  - C1 Cash Costs - A\$3.14/lb
  - Payable Ni Cash Costs - A\$5.26/lb (US\$3.68/lb)
- Revenue Assumptions based on:
  - Existing Concentrate Sales Agreement to March 2020
  - Terms after March 2020 assumed to be in line with the existing Agreement



# Leveraged to the Ni price and currency

- Strongly leveraged to movements in the nickel price and US\$:A\$
  - US\$1.00/lb increase in Ni price adds ~A\$80M to pre-tax NPV
  - A\$0.05 cent decrease in the US\$:A\$ exchange rate adds ~A\$45M to pre-tax NPV

Pre-Tax NPV <sub>11%</sub>		Nickel Price US\$/lb			
		5.00	6.00	7.00	8.00
US\$:A\$ FX Rate	0.60	84	170	261	347
	0.65	42	122	205	285
	0.70	6	<b>80</b>	158	232
	0.75	-25	44	116	186
	0.80	-52	12	80	145

Flat commodity prices of US\$6.00/lb Ni, US\$2.50/lb Cu, \$10.00/lb Co and an US\$:A\$ exchange rate of A\$1 = US\$0.70 were used in the Scoping Study. Panoramic notes that the commodity prices used in the Scoping Study are lower than recent broker long-term forecasts.

# Opportunities and Risks

## Opportunities

- **Resource growth:** less than 30% of the potential 2km strike length has been tested by drilling to-date
- **Mining Inventory:** convert further Resources into Mining Inventory by optimising the mine plan
- **Mine plan:** lower unit costs, increase production rates and/or improve mined grades by optimising mining methods, stope shapes and cut-off grades
- **Mine scheduling:** bring forward zones of high grade mineralisation and defer development
- **Production rates:** increase production rates through refinement of mining methods, further additions to the Mining Inventory, and shaft versus decline haulage
- **Processing:** optimisation of plant throughput and recoveries
- **Alternative products:** separate nickel and copper concentrates, co-processing with Panton PGE material, matte production via mini-smelting technology, etc
- **Power:** lower cost alternative fuel source (ie. gas)

## Risks

- **Pre-production capital:** amount and timing
- **Unit costs and mining assumptions:** based on Savannah mining performance, and may not be reflective of the costs of mining at Savannah North;
- **Geotechnical and ventilation modelling:** detailed modelling to be completed
- **Inferred Resource:** high-grade material from the Lower Zone has limited drilling, resulting in a lower-confidence Inferred Resource classification
- **Offtake agreement:** current Savannah Concentrate Sales Agreement expires in early 2020, and future renewals and applicable terms will be subject to negotiation
- **Macro-economic:** commodity price and US\$:A\$ exchange rate risks.



# Next Steps

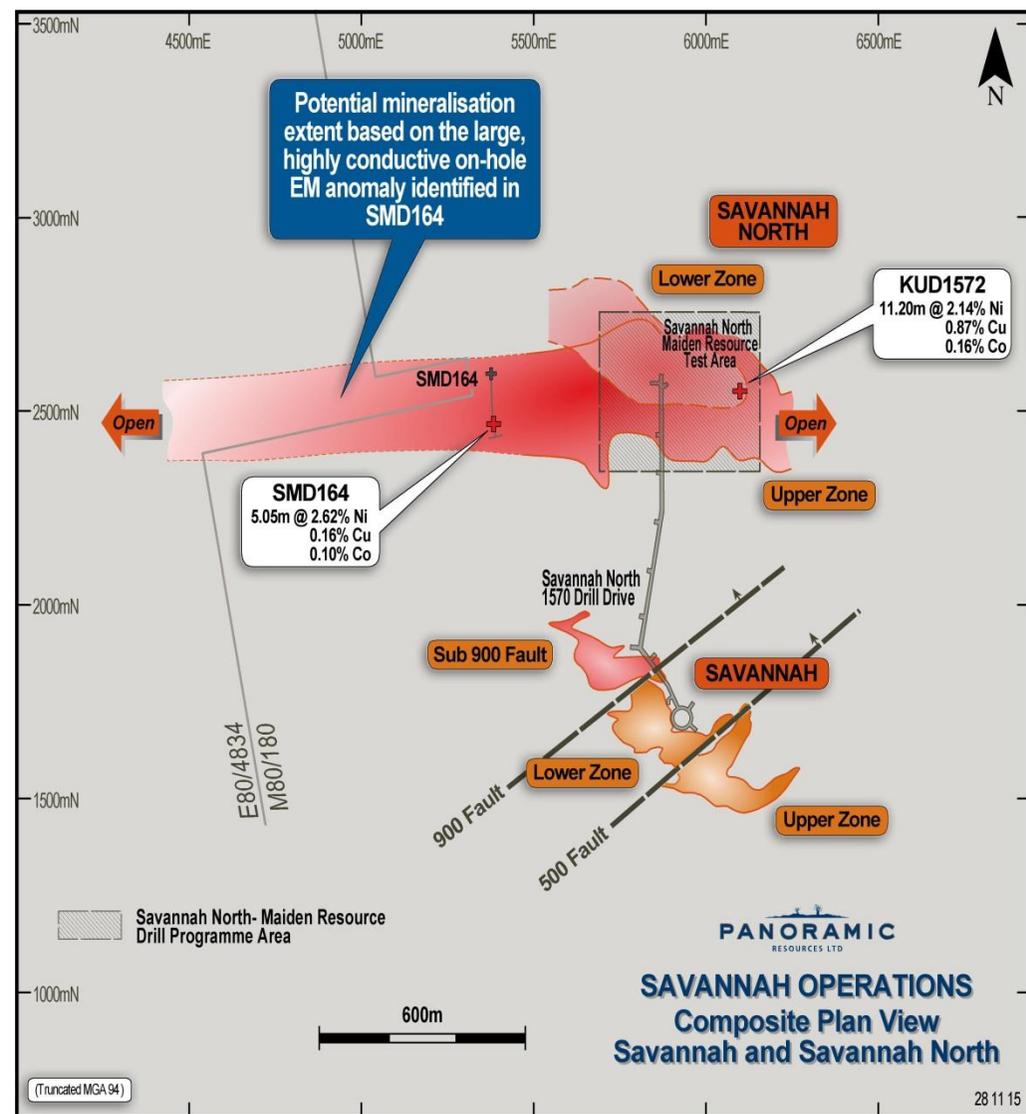
# Next steps

## Complete Feasibility Study

- Underground drilling to upgrade Inferred Resources to Indicated status (up-dip east and Lower Zone infill high-grade)
- Geotechnical and ventilation studies
- Metallurgical studies
- Mine design and schedule optimisation
- Tailings expansion studies
- Capital and operating cost optimisation

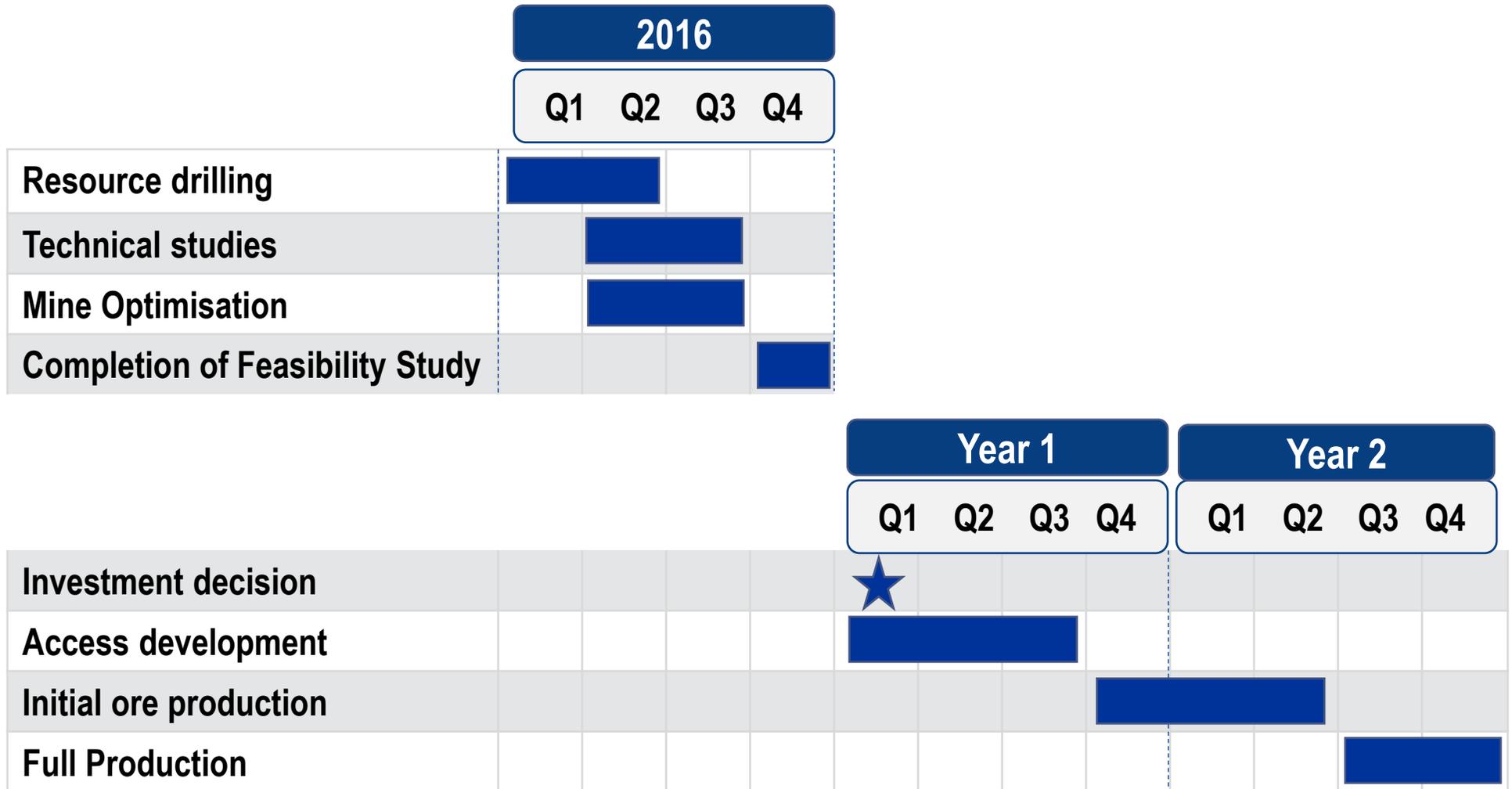
## Multiple exploration targets

- 2km of strike length to be tested
- Surface drilling to test east and west extensions prioritised
- Underground drilling planned also
- Regional targets - Dave Hill, Wilsons



Plan View showing Savannah North resource drill program

# Indicative project timeline



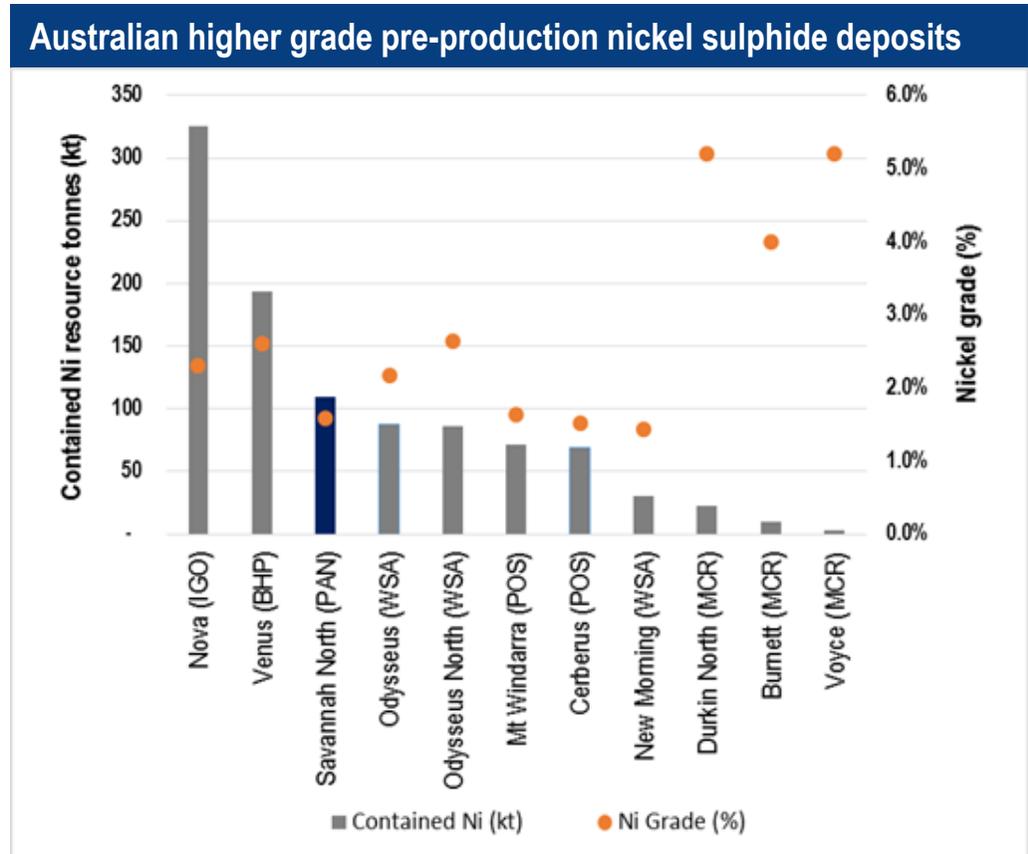


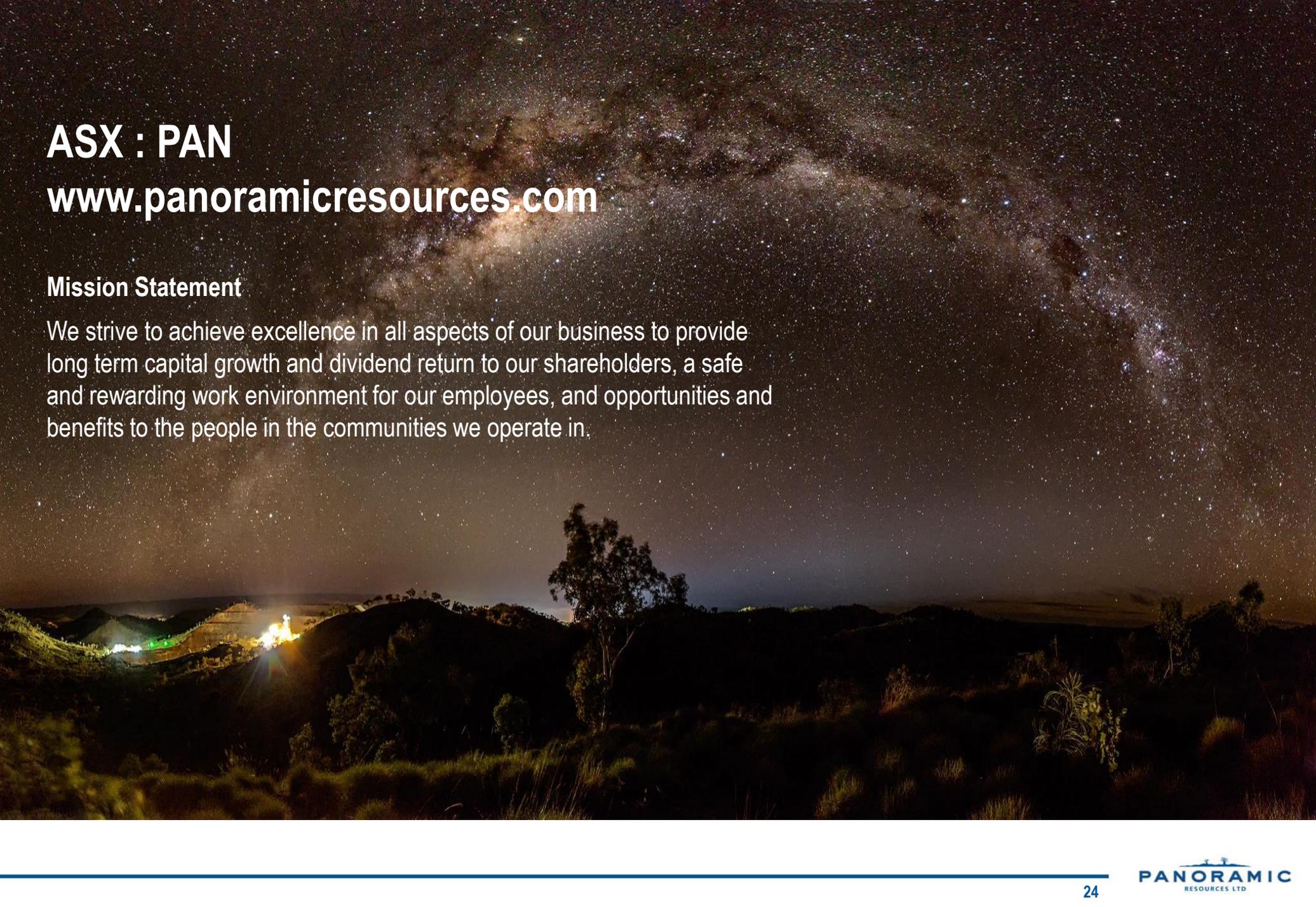
# Key Points

# Key points

## Savannah + Savannah North = A large mineralised system

- Savannah North is a significant Australian nickel sulphide discovery
- Scoping Study delivered within two years of discovery hole
- Clear path to production leveraging off existing Savannah infrastructure
- Significant leverage to nickel price
- Provides a long term future for Savannah subject to US\$ Ni price recovery
- Excellent potential for further exploration success and mine life extension
- Ability to monetise exploration successes in a quick timeframe at a low capital cost





**ASX : PAN**

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### **Mission Statement**

We strive to achieve excellence in all aspects of our business to provide long term capital growth and dividend return to our shareholders, a safe and rewarding work environment for our employees, and opportunities and benefits to the people in the communities we operate in.



# Appendices

## Savannah Resources

*Note: further 2012 Edition JORC compliance tables are referenced in the PAN ASX announcement dated 30 September 2015*

# SAVANNAH - RESOURCES INCLUDING SAVANNAH NORTH UPGRADE\*

Resource	Metal	Resource Date	JORC	Measured		Indicated		Inferred		Total		Metal Tonnes
				Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	
<b>Savannah</b>												
Above 900	Nickel	Jun-15	2012	2,346,000	1.46	927,000	1.67			3,273,000	1.52	49,700
	Copper				0.81		1.26				0.94	30,700
	Cobalt					0.08		0.08			0.08	2,700
Below 900	Nickel		2012			780,000	1.64	125,000	1.72	905,000	1.65	14,900
	Copper				0.76		0.75				0.76	6,900
	Cobalt				0.10		0.09				0.10	900
Savannah North	Nickel		2012			<b>4,780,000</b>	<b>1.51</b>	<b>2,103,000</b>	<b>1.77</b>	<b>6,883,000</b>	<b>1.59</b>	<b>109,600</b>
	Copper						<b>0.72</b>		<b>0.88</b>		<b>0.77</b>	<b>52,900</b>
	Cobalt						<b>0.11</b>		<b>0.12</b>		<b>0.11</b>	<b>7,800</b>
<b>Copernicus</b>												
Open Pit	Nickel	Jun-15	2004	184,000	1.20					184,000	1.20	2,200
	Copper				0.74						0.74	1,400
	Cobalt				0.05						0.05	100
Underground	Nickel	Jul-10	2004			508,000	1.30	25,000	0.98	532,000	1.29	6,800
	Copper						0.91		0.69		0.90	4,800
	Cobalt						0.05		0.02		0.05	300
<b>Total</b>	Nickel											<b>183,200</b>
	Copper											<b>96,700</b>
	Cobalt											<b>11,800</b>

\* See ASX Announcement "Major Resource Upgrade for Savannah North" dated 1 October 2015