

## NORTH TELFER PROJECT - MINYARI DOME POSITIVE METALLURGICAL TEST WORK RESULTS

### Highlights

- **Initial metallurgical test work shows excellent gold recoveries for both oxide and primary mineralisation from Minyari and WACA deposits.**
- **Conventional gravity and cyanide leach processing for all ore types show average total gold recoveries of:**
  - **Oxide Ore = 95%**
  - **Primary Ore = 88%**
- **Primary mineralisation composites also achieved significant concentration of gold and base metals via flotation processes, with intermediate concentrate gold grades of up to 158 g/t achieved.**
- **Optimisation of metallurgical performance will be achieved with additional test work.**
- **Positive metallurgical test results support the Company's Minyari Dome development strategy.**

Antipa Minerals Ltd ("Antipa") (ASX: AZY) is pleased to announce that it has received positive metallurgical test work results from both the Minyari and WACA gold-copper deposits located within the Company's North Telfer Project, located 40km north of Newcrest's Telfer gold-copper-silver mine.

The initial metallurgical test work was conducted by Bureau Veritas Minerals Pty Ltd, an independent organisation. Total gold recovery of up to 97.1% was achieved via conventional gravity and cyanide leach processing techniques. In addition, 'sighter' flotation test work (see Figure 1) produced intermediate concentrates containing gold and base metals grading up to 158 g/t gold, 8.8% copper and 2.2% cobalt. The test work demonstrated the potential to recover copper and cobalt credits from primary material and warrants further investigation.

Managing Director Roger Mason said, "Overall, the initial metallurgical programme on the various Minyari Dome ores has produced extremely positive and encouraging results. The ore has demonstrated that it is amenable to conventional processing techniques. A process plant using well established and proven equipment is envisaged."

Investigation of the mineralogy of the various ore types from this test work programme is currently in progress, via both thin section petrography and QEMSCAN® analysis.

### Corporate Directory

Stephen Power  
*Executive Chairman*

Roger Mason  
*Managing Director*

Mark Rodda  
*Non-Executive Director*

Peter Buck  
*Non-Executive Director*

Gary Johnson  
*Non-Executive Director*

### Company Projects

Citadel Project covering 1,335km<sup>2</sup> of prospective granted exploration licences in the World-Class under-explored Proterozoic Paterson Province of Western Australia. Rio Tinto may earn up to a 75% Interest in the Citadel Project by funding exploration expenditure of \$60m.

North Telfer Project covering an additional 1,310km<sup>2</sup> of prospective granted exploration licences located approximately 20km north of the Telfer mine, including the high-grade gold-copper Minyari and WACA deposits.

Paterson Project covering an additional 1,631km<sup>2</sup> of prospective granted exploration licences and 80km<sup>2</sup> of exploration licence applications located as close as 3km from the Telfer mine.

Future test work will focus on:

- Developing a better understanding of the gold mineralisation to assist in maximising its recovery;
- Improving the copper concentrate grade at suitable recoveries;
- Evaluation of heap leach amenability;
- Grind optimisation; and
- Assessing methods of recovering the cobalt in a marketable form.



Figure 1: Minyari Deposit metallurgical test work sulphide float

**APPENDIX 1:****Minyari Dome Metallurgical Test Work Detail:**

Seven metallurgical composite samples were composed of Reverse Circulation (RC) drill samples representative of the Minyari and WACA deposit gold-copper mineralisation. The Metallurgical test work which focused on the gold recovery and base metal (copper and cobalt) credits has comprised:

- Diagnostic gold leach test work, via a flowsheet involving conventional gravity concentration and cyanidation techniques;
- Flotation on a gravity tails stream to assess precious and base metal recoveries and concentrate quality; and
- Mineralogical and metallurgical data investigation via thin section petrography and the QEMSCAN® micro-analysis system (in progress).

The metallurgical test work was completed at the Bureau Veritas Minerals Pty Ltd laboratories, an independent organisation, in Perth, Western Australia under the management of the Company's Managing Director, Bureau Veritas metallurgists and Strategic Metallurgy Pty Ltd metallurgists.

**Minyari Dome Metallurgical Samples:**

Seven metallurgical composite samples ranging in total weight from 7 to 18 kilograms each were composed of material from 77 individual samples (NB: total weight of all seven composites was 81.6 kilograms). All samples were collected from RC drill material representative of the Minyari and WACA deposit gold-copper oxide and primary mineralisation. Only WACA primary mineralisation was evaluated as no WACA oxide mineralisation sample material was available at the commencement of the test work programme. The composite samples were constructed to have precious and base metal grades comparable to the Minyari and WACA deposit oxide and primary mineralisation. The composite samples are summarised in Table 1 below.

**Table 1: Minyari Dome Metallurgical Composite Head Grades**

Composite ID	Deposit	Gold g/t	Copper %	Cobalt ppm	Silver g/t	Sulphur ppm	Iron %	Arsenic ppm	CN soluble Cu ppm
<b>OX 1</b>	Minyari	1.20	0.27	370	< 0.50	200	5.59	117	210
<b>OX 2</b>	Minyari	2.16	0.42	555	< 0.50	150	5.52	194	757
<b>OX 3</b>	Minyari	2.58	0.41	460	< 0.50	200	4.70	165	261
<b>PR 1</b>	Minyari	1.16	0.11	665	< 0.50	3,850	3.63	991	5
<b>PR 2</b>	Minyari	3.32	0.04	1,520	< 0.50	4,150	2.29	2,610	2
<b>PR 3</b>	Minyari	1.76	0.17	475	< 0.50	5,000	3.25	1,020	3
<b>PR 4</b>	WACA	2.48	0.19	250	< 0.50	3,500	4.20	221	27

Notes: OX = Oxide and PR = Primary/Fresh

**Gold Diagnostic Leach Test Work**

A total of seven gravity concentration and diagnostic leach tests were conducted (one for each composite). All tests were conducted in Perth tap water at a primary grind size of P<sub>80</sub> 75µm. The flowsheet utilises conventional gravity concentration and cyanidation techniques. The samples were each passed through a Knelson concentrator (single pass) to determine the gravity recoverable gold, whilst all tailings from the process were leached under direct

cyanidation conditions to determine the portion of cyanide amenable gold. The results of the gold diagnostic leach test work are summarised in Table 2 below.

**Table 2: Gold Diagnostic Leach Test Work Results Summary**

	Unit	OX 1	OX 2	OX 3	PR 1	PR 2	PR 3	PR 4
Grind Time P80 75µm	mins	8.1	9.9	8.4	8.9	11.2	17.6	20.2
Assayed Head	g/t	1.20	2.16	2.85	1.21	3.39	1.83	2.40
Cyanide Consumption	kg/t	1.19	1.90	1.96	0.52	0.89	0.63	0.63
<b>Diagnostic Leach Results</b>								
Gravity Gold	%	9.6	8.9	24.2	26.9	35.4	54.1	34.1
Cyanide Amenable Gold	%	87.0	83.0	72.9	59.3	52.7	36.5	51.1
<b>Total Gold Recovery</b>	<b>%</b>	<b>96.6</b>	<b>91.9</b>	<b>97.1</b>	<b>86.2</b>	<b>88.1</b>	<b>90.6</b>	<b>85.2</b>

Notes: OX = Oxide and PR = Primary/Fresh

In summary, the overall gravity recoverable gold for the oxide samples was low to moderate ranging from 9% to 24%; however, the overall gold recovery (gravity + cyanide) for the oxide samples is high, ranging from 92% to 97% with an average of 95.2%. The primary samples demonstrate a moderate to high degree of gravity recoverable gold, ranging from 27% to 54%; however, the overall recoverable gold (gravity + cyanide) whilst still considered good were lower than that produced by the oxide samples. The Minyari primary samples overall gold recovery (gravity + cyanide) ranging from 86.2% to 90.5% with an average of 88.3%, with the WACA primary sample returning 85.2%. This variation in gold recovery is likely to reflect the presence of sulphide in the primary samples, as evidenced by the sulphur assays (refer to Table 1).

Some cyanide soluble copper was detected in the oxide composites and resulted in a cyanide consumption averaging 1.68 kg/t. With such high gold recovery rates from the oxide material, it is anticipated that reducing the cyanide dose (planned during optimisation test work), will demonstrate lower cyanide consumptions for equivalent gold recovery rates. Encouragingly, the cyanide consumption for primary samples was considered reasonable, averaging 0.67 kg/t and ranging from 0.52 to 0.89 kg/t.

#### Flotation Test Work:

A total of seven flotation tests were conducted (one for each composite). The flotation test work was conducted on the gravity tails stream and all tests were conducted in Perth tap water at a primary grind size of P<sub>80</sub> 75µm. Testing focused on the production of a sulphide/gold concentrate, with emphasis on assessing the potential for gold and base metal sulphide recovery.

The flowsheet utilises conventional flotation techniques using potassium amyl xanthate (PAX) and copper sulphate to activate and float iron sulphides. A precious metal specific di-alkyl-di-thiophosphinate promoter (3418A) was used to improve selectivity and recovery of gold. Methyl isobutyl carbinol (MIBC) was used as a froth stabiliser for the flotation tests and sodium hydrogen sulphide (NaHS) was used as a sulphidising agent for the oxide samples. The results of the flotation test work are summarised in Table 3 below.



**Table 3: Flotation Test Work Concentrate Results Summary**

Composite ID (Results = Con 1 – 5)	Au g/t	Gold Con Recovery %	Au Gravity Recovery %	Total Au Recovery %	Cu %	Copper Con Recovery %	Co %	Cobalt Con Recovery %	Ag g/t	Silver Con Recovery %	As %	Arsenic Con Recovery %
<b>OX 1</b>	24.9	52.5	12.1	64.6	0.66	6.1	0.85	45.4	0.87	44.7	0.06	9.0
<b>OX 2</b>	18.5	54.9	19.5	74.4	0.97	8.3	0.17	10.5	1.12	30.3	0.04	6.9
<b>OX 3</b>	55.6	51.0	19.7	70.7	1.11	6.8	0.37	24.7	2.86	27.4	0.04	5.6
<b>PR 1</b>	9.9	48.3	31.4	79.6	1.21	87.0	0.41	70.7	2.66	86.9	0.61	77.1
<b>PR 2</b>	28.2	55.2	37.9	93.1	0.42	86.7	0.83	49.4	0.68	67.2	1.46	51.6
<b>PR 3</b>	21.2	49.7	39.6	89.3	3.30	96.9	0.48	79.4	5.79	89.3	0.86	89.2
<b>PR 4</b>	23.9	47.8	30.0	77.7	4.42	87.8	0.24	49.4	5.87	82.7	0.28	85.2

Notes: OX = Oxide and PR = Primary/Fresh

In general, gold recoveries from gravity-flotation flowsheet were inferior to the gold recoveries achieved via the simple gravity-cyanide leach flowsheet (see Table 4 below). For the oxide mineralisation a conventional free milling, gravity-cyanide leaching gold treatment route seems, at this stage, to be the most appropriate.

For the primary mineralisation gold recoveries for the gravity-flotation flowsheet are comparable with the gravity-cyanide leach flowsheet. Therefore, additional test work is warranted to confirm if gold recoveries for the former can be improved and if a saleable copper ± cobalt concentrate can be produced. These potential base metal by-product credits clearly warrant further investigation.

**Table 4: Gold recoveries from gravity-cyanide leach versus gravity-flotation flowsheets**

Composite ID	Deposit	<sup>1</sup> Au Gravity-Cyanide Leach Recovery %	<sup>2</sup> Au Gravity-Flotation Recovery %	1 vs 2 Variance %
<b>OX 1</b>	Minyari	96.6	64.6	+50
<b>OX 2</b>	Minyari	91.9	74.4	+24
<b>OX 3</b>	Minyari	97.1	70.7	+37
<b>PR 1</b>	Minyari	86.2	79.6	+8
<b>PR 2</b>	Minyari	88.1	93.1	-5
<b>PR 3</b>	Minyari	90.3	89.3	+1
<b>PR 4</b>	WACA	85.2	77.7	+10

Notes: OX = Oxide and PR = Primary/Fresh

#### QEMSCAN® Analysis:

A range of samples Minyari Dome mineralisation samples are currently being analysed using Bureau Veritas' QEMSCAN® micro-analysis technology.

**For further information, please visit [www.antipaminerals.com.au](http://www.antipaminerals.com.au) or contact:**

Roger Mason  
Managing Director  
Antipa Minerals Ltd  
+61 (0)8 9481 1103

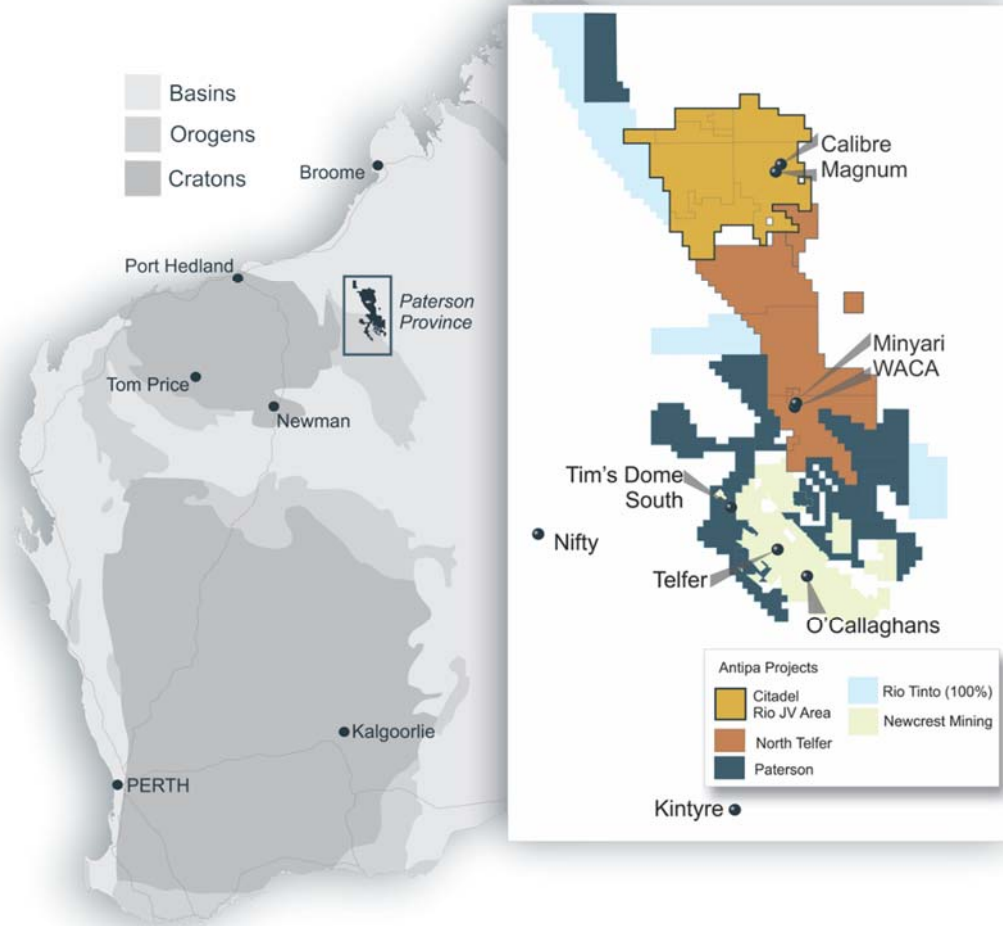
Stephen Power  
Executive Chairman  
Antipa Minerals Ltd  
+61 (0)8 9481 1103

MEDIA Contact: Tony Dawe  
Citadel-MAGNUS  
0405 989 743  
[tdawe@citadelmagnus.com](mailto:tdawe@citadelmagnus.com)

**About Antipa Minerals:**

Antipa Minerals Ltd is an Australian public company which was formed with the objective of identifying under-explored mineral projects in mineral provinces which have the potential to host world class mineral deposits, thereby offering high leverage exploration potential. The Company owns a 1,335km<sup>2</sup> package of prospective granted tenements in the Proterozoic Paterson Province of Western Australia known as the Citadel Project. The Citadel Project is located approximately 75km north of Newcrest’s Telfer gold-copper-silver mine and includes the gold-copper-silver-tungsten Mineral Resources at the Calibre and Magnum deposits and high-grade polymetallic Corker deposit. Under the terms of a farm-in and Joint Venture Agreement with Rio Tinto Exploration Pty Limited (“Rio Tinto”), a wholly owned subsidiary of Rio Tinto Limited, Rio Tinto can fund up to \$60 million of exploration expenditure to earn up to a 75% interest in Antipa’s Citadel Project.

The Company has an additional 1,310km<sup>2</sup> of granted exploration licences, known as the North Telfer Project which hosts the high-grade gold-copper Minyari and WACA deposits and extends its ground holding in the Paterson Province to within 20km of the Telfer Gold-Copper-Silver Mine and 30km of the O’Callaghans tungsten and base metal deposit. The Company has also acquired, from the Mark Creasy controlled company Kitchener Resources Pty Ltd, additional exploration licences in the Paterson Province which are now all granted and cover 1,573km<sup>2</sup> and the Company owns a further 138km<sup>2</sup> of exploration licences (including both granted tenements and applications), which combined are known as the Paterson Project, which comes to within 3km of the Telfer mine and 5km of the O’Callaghans deposit.



**Competent Person's Statement:**

The information in this report that relates to Exploration Results is based on and fairly represents information and supporting documentation compiled by Mr Roger Mason, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Mason is a full-time employee of the Company. Mr Mason is the Managing Director of Antipa Minerals Limited, is a substantial shareholder of the Company and is an option holder of the Company. Mr Mason has sufficient experience relevant to the style of mineralisation 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'. Mr Mason consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

**Forward-Looking Statements:**

This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Antipa Mineral Ltd's planned exploration programme and other statements that are not historical facts. When used in this document, the words such as "could," "plan," "estimate," "expect," "intend," "may," "potential," "should," and similar expressions are forward-looking statements. Although Antipa Minerals Ltd believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.