

## PATERSON PROJECT AND CITADEL JV EXPLORATION RESULTS

NEW MINERALISATION TREND IDENTIFIED

Antipa Minerals Ltd (**ASX: AZY**) (**Antipa** or the **Company**) is pleased to announce final CY2022 exploration results from the Paterson IGO Farm-in Project and Citadel Rio Tinto JV Project in the Paterson Province of Western Australia.

### Highlights

### Paterson (100% AZY, IGO<sup>1</sup> Farm-in)

- Assays returned for the CY2022 exploration programme confirm a highly prospective 8km long gold and base metal trend north of Minyari with multiple gold-copper targets identified for drill testing
- CY2022 exploration was fully funded by IGO and included soil geochemical sampling and a 51 hole, 3,637m air core (AC) drilling programme
- An EIS funding grant totalling A\$210,000 received in April will be applied to testing two targets situated 15km along strike from Rio Tinto's Winu copper-gold-silver development project
- CY2023 exploration programme in final stages of planning, with drilling expected to commence Q3 CY2023

### Citadel (33% AZY, Rio Tinto<sup>2</sup> JV)

- Assays returned for 2,278m of reverse circulation (RC) drilling during Q4 CY2022 further increased the Rimfire North gold-copper mineralisation footprint, with 10km of highly prospective magnetic aureole still to be tested
- CY2023 exploration programme scheduled for 1,000m to 1,400m of RC drilling to evaluate the Rimfire Southwest target and two targets at Junction is due to commence Q3 CY2023
- The A\$2.1 million programme will be operated by Antipa and is fully funded by Rio Tinto

### Antipa's Managing Director, Roger Mason commented

"We are very pleased to report a successful CY2022 field season at our Paterson and Citadel major growth projects.

"At the Paterson Project, multiple gold-copper targets have now been confirmed along a highly prospective 40km long trend, providing numerous new discovery opportunities for the CY2023 exploration programme.

<sup>&</sup>lt;sup>1</sup> All references to 'IGO' in this document are to IGO Newsearch Pty Ltd, a wholly owned subsidiary of IGO Limited.

<sup>&</sup>lt;sup>2</sup> All references to 'Rio Tinto' in this document are to Rio Tinto Exploration Pty Ltd, a wholly owned subsidiary of Rio Tinto Limited.



"While at Citadel, assay results increased the Rimfire North gold-copper mineralisation footprint, where we believe there is significant discovery potential. The Antipa team looks forward to interrogating multiple high-potential opportunities during our operation of this year's drilling programme."

### Paterson Project (100% Antipa, IGO Farm-in up to 70%)

The Paterson Project is a A\$30 million exploration farm-in agreement with IGO covering 1,550km<sup>2</sup> of Antipa's 100%-owned tenements in the Paterson Province of Western Australia. Under the terms of the agreement, IGO is entitled to earn up to 70% joint venture interest in the Paterson Project. Upon joint venture formation, IGO will free-carry Antipa to the completion of a Feasibility Study.

The Paterson Project comes to within 22km of Newcrest's Telfer gold-copper-silver mine and 22 Mtpa mineral processing facility, 8km of Rio Tinto's Winu copper-gold-silver development project and surrounds the Company's Minyari Dome Project on all four sides (Figures 3 and 4).

### CY2022 Paterson Farm-in Project Exploration Programme detail and outcomes

The Paterson Farm-in 2022 activities formed part of an ongoing regional exploration programme with an emphasis on greenfield discovery of Nifty, Winu, Telfer and Havieron analogue targets.

CY2022 exploration programme results provide significant encouragement with numerous high priority exploration targets to be tested in CY2023.

### Air core drilling programme

Regional scale, broad spaced, vertical AC drilling (400m spaced AC holes on 1.5km spaced drill lines) with 51 holes for 3,637m (Tables 1 and 3).

### AL01 zone

- Structurally complex zone of tightly folded ("dome and basin") and faulted metasediments adjacent to the north-west trending Anketell-Samphire Fault (proximal to Winu, Minyari and Havieron) and with multiple cross-cutting first and second order structures. The cover at AL01 is shallow, typically 30 to 40m.
- AC drilling 12 to 20km north of Minyari intersected significant gold (>30 ppb), copper, cobalt zinc, lead ± bismuth, molybdenum and other pathfinder element anomalism and mineralisation along 8km of a northwest trending corridor (Figure 1).
- The best AC drill intersection within this newly defined mineralised AL01 trend was:
  - 16m at 0.15 g/t gold from 44m down hole in 22PTAC0225, including;
    - 4m at 0.38 g/t gold from 48m downhole
- AC hole 22PTAC0225 drilled proximal to an isolated 400m x 200m magnetic high anomaly with a second magnetic anomaly of similar form located 1.8km to the west-northwest.
- Given the broad spacing and vertical nature of the AC holes the AL01 results are considered extremely encouraging and a high priority for follow up drilling during CY2023.

### Surface geochemical sampling programme

Consisted of 2,113 soil samples and 326 rock-chip samples to infill the 2021 soil sample grids. Multiple soil anomalies refined (Figure 1) with several targets considered a priority for drill testing in H2 CY2023.

### AL02 zone

The combined AL02 anomaly footprint covers a total area of 10km by 13km along a northwest trending structural corridor adjacent to the northern boundary of Antipa's 100%-owned Minyari Dome Project.



Infill surface geochemical sampling confirmed the strong Cu-Au-Ni-As-Co-Zn-Pb soil anomaly as a target for follow up drill testing.

### AL04 zone

Anomaly footprint located 30km north-northwest of Minyari covering total area of 9km by 4km. AL04 returned the best and strongly anomalous rock-chip sample result of 47 ppb gold, 2.8 ppm silver, 350 ppm bismuth and 65 ppm molybdenum. Infill surface geochemical sampling further refined the existing Cu-Au-Ni-Ag-Co-As-Zn-Pb anomaly confirming the zone as a target for future drill testing.

### <u>AL03 zone</u>

Located 20km north of Minyari, the infill surface geochemical sampling refined but reduced the size of the Cu-Co-Ni-Zn-(Au) anomaly, eliminating the need for further testing.

### Project-scale high-resolution Airborne Gravity Gradiometry survey

Assisted drill targeting and regional 3D geological modelling, with results and priority targets, reported 18 October 2022.

### Grey prospect area Induced Polarisation (IP) survey

Gradient Array Induced Polarisation (**GAIP**) and Pole Dipole Induced Polarisation (**PDIP**) ground geophysical surveys did not identify any significant IP chargeability anomalies. IP data under review, and the application of ground electromagnetics (**EM**) at Grey is being considered.

### Project scale groundwater hydrogeochemical sampling programme

Sampling of 2021 AC drill holes due for completion Q2 CY2023 with assay results expected Q3 CY2023.

### **Geological modelling**

Integration of all geological, geophysical, geochemical and structural data into development of a 3D geological model is ongoing.

### CY2023 Paterson Farm-in Project Exploration Programme update

Planning for the Paterson Farm-in Project 2023 Exploration Programme is nearing completion with drilling expected to commence Q3 CY2023.

Paterson Farm-in Project EIS funding grant totalling A\$210,000 received in April, to be applied to diamond drill testing two Havieron look-alike magnetic ± partially co-incident gravity targets 10 to 15km along strike from Rio Tinto's Winu copper-gold-silver development project. Drilling scheduled for completion H2 CY2023.

### Citadel JV Project (33% Antipa, Rio Tinto JV)

The Citadel Joint Venture (**JV**) Project comes to within 5km of Rio Tinto's Winu copper-gold-silver development project and 80km from Newcrest's world-class Telfer gold-copper-silver mine and 22 Mtpa processing facility in the Paterson Province of Western Australia.

The approximately 1,200km<sup>2</sup> Citadel JV Project adjoins the Company's Paterson Project and includes Magnum Dome, an area of approximately 30km<sup>2</sup>. Situated within the Magnum Dome are the Calibre and Magnum deposits for combined Mineral Resources of 108 Mt containing 2.45 Moz of gold, 161.5 kt of copper and 1.84 Moz of silver (Figures 3 and 4).

Under the terms of the earn-in and JV Agreement, Rio Tinto had conditional rights to solely fund up to A\$60 million of exploration expenditure to earn up to a 75% interest in the Citadel Project. By March



2021, Rio Tinto had funded in excess of A\$25 million in exploration expenditure, earning a 65% interest in the Project.

In April 2021 Antipa elected to co-contribute to future expenditure in accordance with its remaining 35% joint venture interest. As such, Rio Tinto no longer has a right to earn a 75% interest in the Citadel Joint Venture.

Antipa elected not to contribute to the CY2022 Exploration Programme expenditure for the Citadel JV Project, which totaled A\$4.6 million, inclusive of management fees. As a result, the expenditure was fully funded by Rio Tinto and Antipa's interest in the Citadel Project JV has reduced to 32.6% as at the end of CY2022.

### CY2022 Citadel JV Project Exploration Programme detail and outcomes

The Citadel JV Project CY2022 Exploration Programme was operated by Rio Tinto and comprised drilling, modelling and metallurgical test work.

### **RC drilling programme**

Approximately 2,300 metres of RC drilling focused on the Rimfire area, together with the Transfer target undertaken during H2 CY2022 (Tables 2 and 4).

- Key results for the final Rimfire RC drilling assays results include:
  - 4m at 1.83 g/t gold and 0.15% copper from 214m down hole in RFRN0013, including;
     2m at 3.32 g/t gold and 0.19% copper from 214m downhole.
  - 20m at 0.24 g/t gold, 0.12% copper and 1.58 g/t silver from 212m down hole in RFRN0012.
- The Rimfire intrusion and its associated aureole of multiple magnetic gold-copper-silver mineral systems is approximately 8km in diameter. A sizable proportion of drill holes across the eastern half of the magnetic aureole have returned anomalous to ore grade gold and/or copper intersections. This confirms the extremely high prospectivity of Rimfire and its potential to deliver a major discovery should a suitable mineralisation trap site or sites be located. Almost the entire western half of the magnetic aureole, totaling approximately 10km in length, remains undrilled.
- Further Rimfire drilling envisaged for H2 CY2023.
- RC drilling at the Transfer conceptual target, located approximately 3km east of Rimfire, did not return any significant intersections.

### Geophysical programme

Comprised a GAIP survey which commenced in Q2 CY2022 and completed in Q3 CY2022. No significant IP chargeability anomalies identified.

### **Geological modelling**

Processing and interpretation of IP and drilling data, together with Calibre deposit, Magnum Dome and preliminary Rimfire modelling, to identify further priority target areas is ongoing.

### **Calibre modelling**

2021 Calibre deposit geology and mineralisation models in the process of refinement, targeting a potential update to the existing Mineral Resource estimate.

### Metallurgical test-work

Calibre metallurgical test-work concluded with results expected Q2 CY2023.



### **Development studies**

Preliminary assessment of key potential Calibre deposit development parameters is ongoing.

### CY2023 Citadel JV Project Exploration Programme update

Exploration programme planned activity schedule finalised and to be executed by Antipa as operator.

The programme is scheduled to comprise 1,000m to 1,400m of RC drilling and is set to evaluate:

- The Rimfire Southwest target: An interpreted synformal fold hinge of north-south oriented folded metasediment and amphibolite in the Rimfire area; and
- Two Junction targets: Discrete magnetic high anomalies on a major NNW-trending structure on the margins of a large granite and along strike from a known gold occurrence.

Final processing and interpretation of CY2022 geophysical and drilling data will be undertaken to identify further priority target areas.

Drilling is scheduled to commence during Q3 CY2023.

Antipa has elected to utilise the dilute-down provision in the Citadel Project agreement for CY2023. Assuming the budgeted amount is spent, the Company's joint venture interest will dilute from 32.6% to 31.6% (subject to determination of final expenditure levels).

### **Release authorised by**

### Roger Mason Managing Director

### For further information, please visit <u>www.antipaminerals.com.au</u> or contact:

### **Roger Mason**

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

### Mark Rodda

Executive Director Antipa Minerals Ltd +61 (0)8 9481 1103

### Michael Vaughan

Media Relations Fivemark Partners +61 (0)422 602 720





Figure 1: Plan showing Paterson Project areas covered by 2021 and 2022 regional/project scale air core and soil geochemical sampling programmes. Note general location of EIS targets Tetris and Pacman. NB: Over Airborne magnetic image; TMI-RTP grey-scale NESUN and Regional GDA2020 / MGA Zone 51 co-ordinates, 20km grid.





**Figure 2:** Plan view of the Rimfire area showing drill hole collars, annotated by maximum downhole copper values, and significant drill results. NB: Over 2021 Airborne magnetic image; TMI-RTP pseudo-colour NESUN and Regional GDA2020 / MGA Zone 51 co-ordinates, 2km grid.





Figure 3: Plan showing location of a portion of Antipa's 100% owned Minyari Dome Project, the Antipa-IGO Paterson Farm-in Project, and the Rio Tinto-Antipa Citadel Joint Venture Project including the Calibre and Magnum resources. Also shows a portion of the Antipa-Newcrest Wilki Farm-in Project, and Rio Tinto's Winu gold-copper-silver development project.

NB: Regional GDA2020 / MGA Zone 51 co-ordinates, 20km grid.





Figure 4: Plan showing location of Antipa 100% owned tenements, Rio Tinto-Antipa Citadel Joint Venture Project, including the Calibre and Magnum resources. Also shows Antipa-Newcrest Wilki Farm-in, Antipa-IGO Paterson Farm-in, Newcrest Mining Ltd.'s Telfer Mine and O'Callaghans deposit, Rio Tinto's Winu deposit, Newcrest-Greatland Gold's Havieron deposit and Cyprium's Nifty Mine.

NB: Rio and IGO tenement areas include related third-party Farm-in's/Joint Ventures.

NB: Regional GDA2020 / MGA Zone 51 co-ordinates, 50km grid.

# 

### Table 1: Paterson IGO Farm-in Project - 2022 Air Core Drill Hole Results: Anomalous Gold-Copper-Silver and Mineral System Pathfinder Elements

( $\geq$  1.0m with Au  $\geq$  30ppb, and/or Cu  $\geq$  200ppm and/or Ag  $\geq$  0.5ppm and/or Bi  $\geq$  25ppm and/or As  $\geq$  30ppm

and/or Co  $\geq$  100ppm and/or W  $\geq$  100ppm and/or Zn  $\geq$ 200 ppm and/or Pb  $\geq$ 200 ppm and/or Mo  $\geq$  10ppm)

Hole ID	Target	From (m)	То (m)	Interval (m)	Gold (ppb)	Copper (ppm)	Silver (ppm)	Bismuth (ppm)	Arsenic (ppm)	Cobalt (ppm)	Tungsten (ppm)	Zinc (ppm)	Lead (ppm)	Mo (ppm)
22PTAC0178	AL02	17	21	4	0	23	0.2	0	1	122	0	69	10	0
22PTAC0183	AL02	44	46	2	5	199	0.0	0	1	34	0	75	2	0
22PTAC0186	AL02	87	90	3	0	11	0.5	0	1	6	0	33	7	0
22PTAC0190	AL02	36	40	4	1	83	0.0	0	0	26	0	209	8	0
22PTAC0196	AL02	51	59	8	1	52	0.1	0	1	8	2	460	81	0
22PTAC0196	AL02	63	68	5	0	204	0.0	1	1	9	1	51	9	0
22PTAC0200	AL02	76	79	3	13	47	0.3	1	3	21	1	225	119	3
22PTAC0204	AL01	82	83	1	34	135	0.1	24	2	77	0	126	298	4
22PTAC0205	AL01	39	47	8	5	54	0.0	1	1	23	0	237	104	1
22PTAC0206	AL01	57	65	8	4	20	0.1	0	1	80	0	231	12	0
22PTAC0206	AL01	65	69	4	1	6	0.6	0	0	17	0	82	8	0
22PTAC0208	AL01	90	91	1	3	33	0.3	1	0	17	2	143	234	6
22PTAC0212	AL01	70	74	4	35	28	0.1	11	1	31	0	286	62	0
22PTAC0214	AL01	41	45	4	0	3	0.1	0	1	45	0	204	8	0
22PTAC0214	AL01	77	80	3	1	68	0.2	1	1	20	1	217	106	4
22PTAC0215	AL01	38	50	12	3	57	0.1	1	4	18	0	216	76	1
22PTAC0216	AL01	21	41	20	1	77	0.1	2	3	30	1	209	78	1
22PTAC0216	AL01	85	98	13	1	63	0.1	1	2	17	3	260	71	1
22PTAC0222	AL01	48	72	24	2	70	0.1	1	3	18	0	291	116	1
22PTAC0223	AL01	71	75	4	39	20	0.0	0	0	10	0	64	8	1
22PTAC0224	AL01	62	86	24	1	115	0.1	1	1	39	0	479	151	1
22PTAC0225	AL01	44	60	16	150 (0.15*)	33	0.0	1	1	21	0	74	10	0
	Including	48	52	4	376 (0.38*)									
22PTAC0226	AL01	52	80	28	4	48	0.0	1	1	19	0	261	24	0
22PTAC0226	AL01	110	111	1	1	81	0.1	1	0	18	4	309	38	0

\*Gold ppm or g/t

**Notes:** Table 1 intersections are length-weighted assay intervals reported using the following criteria Intersection Interval = Nominal cut-off grade scenarios:

• No top-cutting has been applied to these individual assay intervals

• Intersections are down hole lengths, true widths not known with certainty, refer to Paterson IGO Farm-in Project JORC Table 1 Section 2



Hole ID	Area	From (m)	To (m)	Interval (m)	Gold (g/t)	Copper (ppm)	Silver (g/t)	Tungsten (ppm)
RFRN0011	Rimfire N.	182	184	2.0	0.01	1,605	0.23	1
RFRN0012	Rimfire N.	136	138	2.0	0.01	11	0.01	1,230
RFRN0012	Rimfire N.	156	158	2.0	0.13	7	0.03	57
RFRN0012	Rimfire N.	212	232	20.0	0.24	1,216	1.58	54
	Including	212	224	12.0	0.26	1,075	2.42	63
	Also Incl.	222	224	2.0	0.21	1,410	5.84	108
RFRN0012	Rimfire N.	250	252	2.0	0.17	503	0.08	49
RFRN0013	Rimfire N.	168	170	2.0	0.04	2,660	0.81	4
RFRN0013	Rimfire N.	214	218	4.0	1.83	1,475	0.36	385
	Including	214	216	2.0	3.32	1,855	0.52	270
RFRN0013	Rimfire N.	268	272	4.0	0.01	1,530	0.15	6
RFRN0014	Rimfire N.	208	210	2.0	0.23	506	0.09	22
RFRN0014	Rimfire N.	210	218	8	0.06	1,053	0.14	288
RFRN0014	Rimfire N.	230	232	2.0	0.13	124	0.04	4
RFRN0014	Rimfire N.	246	248	2.0	0.12	154	0.07	138

Table 2: Citadel Joint Venture Project - 2022 RC Drill Hole Intersections - Gold-Copper-Silver-Tungsten

**Notes:** Table 2 intersections are length-weighted assay intervals reported using the following criteria:

Intersection Interval = Nominal cut-off grade scenarios:

- $\geq 0.10 \text{ ppm} (g/t) \text{ gold; and/or}$
- ≥ 1000 ppm (0.1%) copper; and/or
- $\geq$  1.00 ppm (g/t) silver; and/or
- ≥ 1000 ppm (0.1%) Tungsten
- No top-cutting has been applied to these individual assay intervals
- Intersections are down hole lengths, true widths not known with certainty, refer to Citadel JV Project JORC Table 1 Section 2

#### Table 3: Paterson Farm-in Project – 2022 Air Core Drill Hole Collar Locations

### (MGA Zone 51/GDA 20)

Hole ID	Target	Hole Type	Northing (m)	Easting (m)	RL (m)	Hole Depth (m)	Azimuth (°)	Dip (°)	Assay Status
22PTAC0178	AL02	AC	7,648,433	416,814	265	60	0	-90	Received
22PTAC0179	AL02	AC	7,648,790	417,009	266	41	0	-90	Received
22PTAC0180	AL02	AC	7,646,883	416,005	259	36	0	-90	Received
22PTAC0181	AL02	AC	7,647,243	416,201	260	39	0	-90	Received
22PTAC0182	AL02	AC	7,647,646	416,412	262	42	0	-90	Received
22PTAC0183	AL02	AC	7,648,028	416,595	261	46	0	-90	Received
22PTAC0184	AL02	AC	7,649,157	417,267	263	29	0	-90	Received
22PTAC0185	AL02	AC	7,649,013	418,407	263	61	0	-90	Received
22PTAC0186	AL02	AC	7,649,250	418,638	266	93	0	-90	Received
22PTAC0187	AL02	AC	7,649,577	418,964	266	55	0	-90	Received
22PTAC0188	AL02	AC	7,649,853	419,245	269	36	0	-90	Received
22PTAC0189	AL02	AC	7,650,123	419,515	268	104	0	-90	Received
22PTAC0190	AL02	AC	7,648,171	419,597	274	96	0	-90	Received
22PTAC0191	AL02	AC	7,648,448	419,882	271	69	0	-90	Received
22PTAC0192	AL02	AC	7,648,732	420,169	273	48	0	-90	Received
22PTAC0193	AL02	AC	7,649,020	420,452	269	85	0	-90	Received
22PTAC0194	AL02	AC	7,649,298	420,732	273	67	0	-90	Received
22PTAC0195	AL02	AC	7,649,583	421,018	272	57	0	-90	Received



Hole ID	Target	Hole Type	Northing (m)	Easting (m)	RL (m)	Hole Depth (m)	Azimuth (°)	Dip (°)	Assay Status
22PTAC0196	AL02	AC	7,648,075	422,462	282	69	0	-90	Received
22PTAC0197	AL02	AC	7,648,369	422,763	281	69	0	-90	Received
22PTAC0198	AL02	AC	7,648,643	423,016	285	49	0	-90	Received
22PTAC0199	AL02	AC	7,647,798	422,183	283	60	0	-90	Received
22PTAC0200	AL02	AC	7,647,516	421,898	285	79	0	-90	Received
22PTAC0201	AL01	AC	7,648,913	423,306	286	101	0	-90	Abandoned
22PTAC0202	AL01	AC	7,649,155	423,553	289	62	0	-90	Received
22PTAC0203	AL01	AC	7,649,864	421,306	269	64	0	-90	Received
22PTAC0204	AL01	AC	7,650,108	421,535	268	84	0	-90	Received
22PTAC0205	AL01	AC	7,650,418	419,810	266	67	0	-90	Received
22PTAC0206	AL01	AC	7,650,630	420,042	268	80	0	-90	Received
22PTAC0207	AL01	AC	7,651,277	417,762	259	90	0	-90	Received
22PTAC0208	AL01	AC	7,651,559	418,031	257	91	0	-90	Received
22PTAC0209	AL01	AC	7,649,494	423,886	285	75	0	-90	Received
22PTAC0210	AL01	AC	7,649,722	424,110	283	84	0	-90	Received
22PTAC0211	AL01	AC	7,650,443	421,875	270	90	0	-90	Received
22PTAC0212	AL01	AC	7,650,683	422,117	275	96	0	-90	Received
22PTAC0213	AL01	AC	7,650,998	420,387	265	73	0	-90	Received
22PTAC0214	AL01	AC	7,651,204	420,597	266	81	0	-90	Received
22PTAC0215	AL01	AC	7,651,506	419,864	263	64	0	-90	Received
22PTAC0216	AL01	AC	7,651,743	419,069	263	99	0	-90	Received
22PTAC0217	AL01	AC	7,652,272	418,773	261	105	0	-90	Received
22PTAC0218	AL01	AC	7,653,418	415,045	259	57	0	-90	Abandoned
22PTAC0219	AL01	AC	7,653,239	416,994	256	75	0	-90	Received
22PTAC0220	AL01	AC	7,652,956	416,707	257	98	0	-90	Received
22PTAC0221	AL01	AC	7,652,826	418,248	257	74	0	-90	Received
22PTAC0222	AL01	AC	7,652,660	420,261	264	83	0	-90	Received
22PTAC0223	AL01	AC	7,653,164	420,433	262	78	0	-90	Received
22PTAC0224	AL01	AC	7,653,920	419,196	260	90	0	-90	Received
22PTAC0225	AL01	AC	7,653,502	418,913	260	72	0	-90	Received
22PTAC0226	AL01	AC	7,654,283	417,802	262	111	0	-90	Received
22PTAC0227	AL01	AC	7,653,531	417,283	258	52	0	-90	Received
22PTAC0228	AL01	AC	7,653,806	417,564	257	51	0	-90	Received

Notes: Drill Hole Collar Table:

- Refer to Paterson Farm-in Project JORC Table 1 Section 1 for full drill hole information; including drill technique, sampling, and analytical details.
- Abandoned AC drill holes were terminated in Permian cover sequence and were not sampled.



### Table 4: Citadel Joint Venture Project – 2022 RC Drill Hole Collar Summary

Hole ID	Target	Hole Type	Northing (m)	Easting (m)	RL (m)	Hole Depth (m)	Azimuth (°)	Dip (°)	Assay Status
CITD0003	Transfer	RC	7,681,694	420,270	269	166	0	-90	Received
CITD0004	Transfer	RC	7,681,720	418,818	278	250	0	-90	Received
CITD0005	Transfer	RC	7,682,458	418,417	273	202	0	-90	Received
CITD0006	Transfer	RC	7,682,028	417,680	275	220	0	-90	Received
RFRN0009	<b>Rimfire N</b>	RC	7,699,253	393,693	270	202	0	-90	Received
RFRN0010	Rimfire N	RC	7,699,161	393,939	270	202	0	-90	Received
RFRN0011	Rimfire N	RC	7,699,024	394,319	269	190	0	-90	Received
RFRN0012	Rimfire N	RC	7,700,546	394,665	266	286	0	-70	Received
RFRN0013	Rimfire N	RC	7,699,264	395,345	268	304	210	-70	Received
RFRN0014	Rimfire N	RC	7,699,644	394,497	270	256	8	-70	Received

### (MGA Zone 51/GDA 20)

Notes: Drill Hole Collar Table:

• Refer to Citadel JV Project JORC Table 1 Section 1 for full drill hole information; including drill technique, sampling, and analytical details.



**About Antipa Minerals:** Antipa Minerals Ltd (ASX: AZY) (**Antipa** or the **Company**) is a leading mineral exploration company with a strong track record of success in discovering world-class gold-copper deposits in the highly prospective Paterson Province of Western Australia. The Company's exploration and advancement programme is focused on identifying and unlocking the full potential of the region, which offers significant opportunities for profitable mining operations.

The Company's tenement holding covers over 5,100 square kilometres in a region that is home to Newcrest's world-class Telfer mine and some of the world's more recent large copper-gold deposits including Rio Tinto's Winu and Newcrest-Greatland Gold's Havieron.

Exploration success has led to the discovery of several major mineral deposits on Antipa's ground, including the wholly owned, flagship Minyari Dome Project. Minyari Dome currently hosts a 1.8 Moz gold resource (at 1.6 g/t) which was the subject of a recent Scoping Study (August 2022) confirming the potential for a sizeable initial development with further substantial upside.

Antipa is pursuing an aggressive drilling programme this year, targeting substantial and rapid growth to the existing goldcopper resources at Minyari Dome and delivering strong further value enhancement to the existing development opportunity.

Minyari Dome is complemented by three growth projects which have attracted major listed miners to agree multi-milliondollar farm-in and joint venture (JV) arrangements:

- Citadel Project (32% Antipa): Rio Tinto JV over 1,200km<sup>2</sup>
- Wilki Project (100% Antipa): Newcrest farming-in 1,470km<sup>2</sup>
- Paterson Project (100% Antipa): IGO farming-in 1,550km<sup>2</sup>



**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.



#### Minyari Dome Project May 2022 Mineral Resource Estimate

Minyari Dom	e Project	(Antipa 10	0%)								
Deposit	Au cut- off	Category	Tonnes (Mt)	Au grade (g/t)	Cu grade (%)	Ag grade (g/t)	Co (%)	Au (oz)	Cu (t)	Ag (oz)	Co (t)
Minyari	0.5 Au	Indicated	15.00	1.17	0.19	0.54	0.04	567,000	27,800	259,600	5,930
Minyari	0.5 Au	Inferred	2.70	1.12	0.12	0.31	0.02	96,000	3,300	26,300	640
Minyari	1.5 Au	Indicated	4.40	2.30	0.26	0.83	0.03	328,000	11,400	118,400	1,450
Minyari	1.5 Au	Inferred	6.20	2.61	0.22	0.66	0.03	523,000	13,800	132,700	1,590
Total Minyari			28.30	1.66	0.20	0.59	0.03	1,514,000	56,300	537,000	9,610
WACA	0.5 Au	Indicated	1.69	0.97	0.11	0.17	0.02	52,000	1,900	9,400	310
WACA	0.5 Au	Inferred	1.54	1.02	0.12	0.18	0.02	51,000	1,800	9,100	300
WACA	1.5 Au	Inferred	1.63	1.69	0.11	0.17	0.03	89,000	1,900	9,000	560
Total WACA			4.86	1.23	0.11	0.18	0.02	192,000	5,600	27,500	1,170
Minyari South	0.5 Au	Inferred	0.15	4.51	0.56	1.04	0.05	22,000	900	5,100	80
Total Minyari S	outh		0.15	4.51	0.56	1.04	0.05	22,000	900	5,100	80
Sundown	0.5 Au	Inferred	0.20	1.38	0.36	0.72	0.03	9,000	700	4,700	60
Total Sundown			0.20	1.38	0.36	0.72	0.03	9,000	700	4,700	60
WACA West	0.5 Au	Inferred	0.39	0.73	0.17	0.81	0.03	9,000	700	10,200	120
WACA West	1.5 Au	Inferred	0.01	0.86	0.50	0.05	0.01	304	55	17	1
Total WACA We	est		0.40	0.73	0.18	0.79	0.03	9,304	755	10,217	121
Total Minyari D	ome Proj	ect	33.92	1.60	0.19	0.54	0.03	1,746,304	64,255	584,517	11,041

#### Notes:

1. Discrepancies in totals may exist due to rounding.

2. The resource has been reported at cut-off grades above 0.5 g/t and 1.5 g/t gold equivalent (Aueq); the calculation of the metal equivalent is documented below.

3. The 0.5 g/t and 1.5 g/t Aueq cut-off grades assume open pit and underground mining, respectively.

4. The resource is 100% owned by Antipa Minerals.

#### Citadel Project (Antipa 32% and Rio Tinto 68% JV) May 2021 Mineral Resource Estimate

Citadel Proj	ect (Antipa 32%	b)							
Deposit	Au cut-off	Category	Tonnes (Mt)	Au grade (g/t)	Cu grade (%)	Ag grade (g/t)	Au (Moz)	Cu (t)	Ag (Moz)
Calibre	0.5 Au	Inferred	92	0.72	0.11	0.46	2.10	104,000	1.3
Magnum	0.5 Au	Inferred	16	0.70	0.37	1.00	0.34	58,000	0.5
Total Citadel	Project (100% ba	isis)	108	0.72	0.15	0.54	2.44	162,000	1.8

#### Notes:

1. The resource has been reported at cut-off grades above 0.5 g/t and 0.8 g/t gold equivalent (Aueq); the calculation of the metal equivalent is documented below.

2. Both the 0.5 g/t and 0.8 g/t Aueq cut-offs assume large scale open pit mining.

3. The resource tonnages tabled are on a 100% basis, with Antipa's current joint venture interest being approximately 32.6% (subject to determination of final expenditure levels).

4. Small discrepancies may occur due to the effects of rounding.



#### Wilki Project (Antipa 100%) May 2019 Mineral Resource Estimate

Wilki Project (100%)										
Deposit	Au cut-off	Category	Tonnes (Mt)	AU grade (g/t)	Au (oz)					
Chicken Ranch	0.5 Au	Inferred	0.8	1.6	40,300					
Tims Dome	0.5 Au	Inferred	1.8	1.1	63,200					
Total Wilki Project			2.4	1.3	103,500					

#### Notes:

1. Small discrepancies may occur due to the effects of rounding.

2. Wilki Project Mineral Resources are tabled on a 100% basis, with Antipa's current interest being 100%.

**Competent Persons Statement – Exploration Results:** The information in this document 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 undertaking 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'. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements, all of which are available to view on <u>www.antipaminerals.com.au</u> and <u>www.asx.com.au</u>. Mr Mason, whose details are set out above, was the Competent Person in respect of the Exploration Results in these original market announcements.

Competent Persons Statement - Mineral Resource Estimations for the Minyari Dome Project Deposits, Calibre Deposit, Magnum Deposit and Chicken Ranch Area Deposits and Tim's Dome Deposit: The information in this document that relates to relates to the estimation and reporting of the Minyari Dome Project deposits Mineral Resources is extracted from the report entitled "Minyari Dome Project Gold Resource Increases 250% to 1.8 Moz" created on 2 May 2022 with Competent Persons Ian Glacken, Jane Levett, Susan Havlin and Victoria Lawns, the Tim's Dome and Chicken Ranch deposits Mineral Resources is extracted from the report entitled "Chicken Ranch and Tims Dome Maiden Mineral Resources" created on 13 May 2019 with Competent Person Shaun Searle, the Calibre deposit Mineral Resource information is extracted from the report entitled "Calibre Gold Resource Increases 62% to 2.1 Million Ounces" created on 17 May 2021 with Competent Person lan Glacken, and the Magnum deposit Mineral Resource information is extracted from the report entitled "Calibre and Magnum Deposit Mineral Resource JORC 2012 Updates" created on 23 February 2015 with Competent Person Patrick Adams, all of which are available to view on www.antipaminerals.com.au and www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant original market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

The information in this document that relates to the **Scoping Study for the Minyari Dome Project** is extracted from the report entitled "Strong Minyari Dome Scoping Study Outcomes" reported on 31 August 2022 which was compiled by Competent Person Roger Mason, which is available to view on <u>www.antipaminerals.com.au</u> and <u>www.asx.com.au</u>. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the study in the relevant original market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.



### **Gold Metal Equivalent Calculations**

### Gold Metal Equivalent Information – Minyari Dome Project Mineral Resource Gold Equivalent reporting cut-off grade:

The 0.5 g/t and 1.5 g/t Aueq cut-off grades assume open pit and underground mining, respectively.

A gold equivalent grade (**Aueq**) has been calculated from individual gold, copper, silver and cobalt grades. This equivalent grade has been calculated and declared in accordance with Clause 50 of the JORC Code (2012), using the following parameters:

- The metal prices used for the calculation are as follows:
  - US\$ 1,944 per oz gold
  - US\$ 4.74 per lb copper
  - US\$ 25.19 per oz silver
  - US\$ 77,380 per tonne cobalt
- An exchange rate (A\$:US\$) of 0.7301 was assumed
- Metallurgical recoveries for by-product metals, based upon Antipa test-work in 2017 and 2018, are as follows:
   Copper = 85.0%, Silver = 85%, Cobalt = 68%
- The gold equivalent formula, based upon the above commodity prices, exchange rate and recoveries, is thus:
   Aueq = (Au g/t) + (Ag g/t \* 0.011) + (Cu % \* 1.42) + (Co % \* 8.42)

### Gold Metal Equivalent Information - Calibre Mineral Resource Gold Equivalent reporting cut-off grade and Gold Equivalent grade:

A gold equivalent grade (**Aueq**) has been calculated from individual gold, copper and silver grades. This equivalent grade has been calculated and declared in accordance with Paragraph 50 of the JORC Code, using the following parameters:

- The metal prices used for the calculation are as follows:
  - US\$ 1,874 /oz gold
  - US\$ 4.50 /lb copper
  - US\$ 25.25 /oz silver
- An exchange rate (A\$:US\$) of 0.722 was assumed.
- Metallurgical recoveries, based upon Antipa test-work in 2014, are as follows:
  - Gold = 84.5%, Copper = 90.0%, Silver = 85.4%
- A factor of 105% (as with the previous estimate) has been applied to the recoveries for gold, copper and silver to accommodate further optimisation of metallurgical performance. Antipa believes that this is appropriate, given the preliminary status of the recovery test-work.
- Tungsten has not been estimated and does not contribute to the equivalent formula.
- The gold equivalent formula, based upon the above commodity prices, exchange rate, recoveries, and using individual metal grades provided by the Citadel Project Mineral Resource Estimate table, is thus:
  - **Aueq =** Au (g/t) + (1.75\*Cu%) + (0.014\*Ag g/t)

#### Gold Metal Equivalent Information - Magnum Mineral Resource Gold Equivalent reporting cut-off grade:

A gold equivalent grade (**Aueq**) has been calculated from individual gold, copper, silver and tungsten grades. This equivalent grade has been calculated and declared in accordance with Paragraph 50 of the JORC Code, using the following parameters:

- The metal prices used for the calculation are as follows:
  - US\$ 1,227 /oz gold
  - US\$ 2.62 /lb copper
  - US\$ 16.97 /oz silver
  - US\$ 28,000 /t WO<sub>3</sub> concentrate
  - An exchange rate (A\$:US\$) of 0.778 was assumed.
- Metallurgical recoveries, based upon Antipa test-work in 2014, are as follows:
  - Gold = 84.5%, Copper = 90.0%, Silver = 85.4% and W = 50.0%
- A factor of 105% (as with the previous estimate) has been applied to the recoveries for gold, copper and silver to accommodate further optimisation of metallurgical performance. Antipa believes that this is appropriate, given the preliminary status of the recovery test-work.
- Note that the tungsten recovery of 50% is considered indicative at this preliminary stage based on the initial metallurgical findings.
- Conversion of W% to WO<sub>3</sub>% grade requires division of W% by 0.804.



- The gold equivalent formula, based upon the above commodity prices, exchange rate, and recoveries, is thus: - Auer =  $(Au(g/t) \times 0.845) + ((\%Cu \times (74.32/50.69) \times 0.90)) + ((Ag(g/t) \times (0.70/50.69) \times 0.854)) + ((\%W/0.804))$ 
  - Aueq =  $(Au (g/t) \times 0.845) + ((\%Cu \times (74.32/50.69) \times 0.90)) + ((Ag (g/t) \times (0.70/50.69) \times 0.854)) + ((\%W/0.804 \times (359.80/50.69) \times 0.50))$

It is the Company's opinion that all the metals included in the metal equivalents calculations above have a reasonable potential to be recovered and sold.



### PATERSON IGO FARM-IN PROJECT – Air Core Drill Hole Sampling

JORC Code 2012 Edition: Table 1 - Section 1 Sampling Techniques and Data (Criteria in this section shall apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (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.</li> </ul>	<ul> <li>2022 Air Core (AC)</li> <li>Prospects/targets have been sampled by 51 AC drill holes, totaling 3,637 metres, with an average drill hole depth of 71 metres.</li> <li>Assay results have been received for 49 of the 2022 AC drill holes.</li> <li>AC drill holes were drilled on a broad regional basis, generally at 400m spaced AC holes on 1.5km spaced drill lines, with the spacing adapted where testing direct geophysical (aerial electromagnetic and/or aeromagnetic) or geochemical targets.</li> <li>Drill hole locations and orientations for the 2022 holes are tabulated in the body of this report.</li> <li>AC sampling</li> <li>AC sampling was carried out using industry best practice and carried out under Antipa-IGO joint venture (JV) protocols and QAQC procedures.</li> <li>AC sample piles representing 1m intervals were spear sampled to accumulate 4m composite samples for analysis, with a total of 2 to 3 kg collected into prenumbered calico bags.</li> <li>The final metre of each hole was spear sampled to collect a total of 2 to 3 kg of cuttings into a prenumbered calico bag.</li> <li>All samples are pulverised at the laboratory to produce material for assay.</li> </ul>

Criteria	JORC Code explanation	Commentary
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>Air Core (AC) Drilling</li> <li>All AC holes were drilled by a Mantis 300 rig equipped with a 600cfm/200psi compressor owned and operated by Wallis Drilling Pty Ltd.</li> <li>All drill holes were completed using an 85 mm AC blade bit.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>AC sample recovery and sample quality were recorded via visual estimation of sample volume and condition of the drill spoils.</li> <li>AC sample recovery typically ranges from 90 to 100%, with only very occasional samples with less than 70% recovery.</li> <li>AC sample recovery was maximized by endeavoring to maintain dry drilling conditions as much as practicable; the AC samples were almost exclusively dry.</li> <li>Relationships between recovery and grade are not evident and are not expected given the generally excellent and consistently high sample recovery.</li> <li>AC results are generated for the purpose of exploration and potentially for Mineral Resource estimations.</li> </ul>
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>AC Drill Logging         <ul> <li>Geological logging of 100% of all AC sample intervals was carried out recording colour, weathering, lithology, mineralogy, alteration, veining and sulphides.</li> <li>Logging includes both qualitative and quantitative components.</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether siffled, tube compled, retain split, etc.</li> </ul>	Logging at site is entered directly into a notebook computer running acQuire and uploaded weekly to IGO's SQL database. AC Samples • One metre samples were collected from a cyclone into
	<ul> <li>If non-core, whether Hyred, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>a plastic bucket and then laid out on the ground in rows of 10 or 20 samples.</li> <li>Compositing AC samples of 4m to Proterozoic bedrock was undertaken via combining 'Spear' samples of the intervals to generate a 2 to 3 kg (average) sample weight.</li> <li>The final metre of each hole was spear sampled to collect a total sample weight of 2 to 3 kg.</li> <li>All samples are pulverised at the laboratory to produce material for assay.</li> </ul>
		<ul> <li>AC Sample Preparation</li> <li>Sample preparation of AC samples was completed at ALS laboratories in Perth following industry best practice in sample preparation involving oven drying, coarse crushing of the AC sample down to approximately 10 mm, followed by pulverisation of the entire sample (total prep) using Essa LM5 grinding mills to a grind size of 85% passing 75 µm and split into a sub–sample/s for analysis.</li> <li>The sample sizes are considered to be appropriate to correctly represent the sulphide style of mineralisation encountered in the region, the thickness and consistency of the intersections and the sampling methodology.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF</li> </ul>	<ul> <li>The sample preparation technique for AC samples are in line with industry standards in sample preparation.</li> <li>The sample sizes are considered appropriate to</li> </ul>

Criteria	JORC Code explanation	Commentary
	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.	<ul> <li>represent mineralisation.</li> <li>Sample preparation checks for fineness were carried out by the laboratory as part of its internal procedures.</li> <li>AC Analytical Techniques <ul> <li>All samples were submitted to the ALS laboratory in Perth.</li> <li>All samples were dried, crushed, pulverised and split to produce a sub–sample for a 25g sample.</li> <li>Following preparation, 4m composite samples were analysed for a 53-element suite with an ICP-MS finish. Pulverised material was digested and refluxed with nitric and hydrochloric ('aqua regia digest') acid suitable for weathered AC samples. Aqua regia can digest many different mineral types including most oxides, sulphides and carbonates but will not totally digest refractory or silicate minerals. Elements reported were Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Pd, Pt, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn and Zr).</li> <li>Following sample followed by an ICP-MS finish. Elements reported were Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Na, Nb, Nd, Ni, P, Pb, Pr, Rb, Re, S, Sb, Sc, Se, Sm, Sn, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn and Zr. The four acid digestion method can be considered near total for all elements.</li> <li>All 1m AC samples were also analysed for Au, Pd and Pt by fire assay of a 30g subsample with inductively</li> </ul></li></ul>

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>coupled plasma atomic emission spectroscopy finish. Si was determined via 15g pXRF scan of pulverised sample, and LOI determination by robotic thermo- gravimetric analysis at 1,000°C.</li> <li>No geophysical tools were used to determine any element concentrations in this report.</li> <li>Quality control procedures involved insertion/collection of CRMs, blanks, and duplicates at approximately 20 sample intervals in the field.</li> <li>Inter laboratory cross-checks analysis programmes have not been conducted at this early stage.</li> <li>In addition to supplied CRM's, ALS includes in each sample batch assayed certified reference materials, blanks and up to 10% replicates.</li> <li>Selected anomalous samples are re-digested and analysed to confirm results.</li> <li>Significant intersections have been visually verified by one or more alternative company personnel and/or contract employees.</li> <li>All logging is entered directly into a notebook computer using the company's logging system. No adjustments or calibrations have been made to any assay data collected.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>km = kilometre; m = metre; mm = millimetre.</li> <li>Drill hole collar locations are surveyed using a handheld Garmin 64S GPS which has an accuracy of ± 3m.</li> <li>The drilling co-ordinates are all in GDA20 MGA Zone 51 co-ordinates.</li> <li>Vertical AC drill holes do not require azimuth checking for drill rig set-up.</li> <li>Drill hole inclination is set by the driller using a</li> </ul>

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	Data spacing for reporting of Exploration Results	<ul> <li>clinometer on the drill mast and checked by the geologist prior to the drilling commencing.</li> <li>AC drill hole down hole surveys         <ul> <li>No downhole surveys are undertaken for AC drill holes.</li> <li>If defaulted, the topographic surface is set to 264m RL.</li> </ul> </li> <li>AC drill sample compositing is sometimes applied for</li> </ul>
	<ul> <li>But a spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Act drill sample compositing is sometimes applied for the reporting of the exploration results.</li> <li>Regional AC drill programme (soil and structural targets): <ul> <li>Spacing was variable with a nominal 400m along-section drill spacing and nominal 1.5km section line spacing.</li> <li>Drill lines were orientated northeast to southwest perpendicular to regional geological trends.</li> <li>A total of 8 drill lines were drill tested with varied numbers of drill holes per line dependent on target ranking and accessibility around seif dunes.</li> <li>The typical section spacing/drill hole distribution is not considered adequate for the purpose of Mineral Resource estimation.</li> </ul> </li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>Drill lines were orientated northeast to southwest and perpendicular to the regional geological trends in the target areas.</li> <li>No consistent and/or documented material sampling bias resulting from a structural orientation has been identified for the "regional" soil and structural targets at this point in time.</li> </ul>
Sample security	• The measures taken to ensure sample security.	• The chain of sample custody is managed by IGO to ensure appropriate levels of sample security.

Criteria	JORC Code explanation	Commentary
		<ul> <li>Samples were stored at IGO managed field camps for up to two weeks prior to transport to ALS Perth via</li> </ul>
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	<ul> <li>Sampling techniques and procedures are regularly reviewed internally, as is the data.</li> </ul>

### PATERSON IGO FARM-IN PROJECT – Surficial Geochemical Soil and Rock Chip Sampling

## JORC Code 2012 Edition: Table 1 - Section 1 Sampling Techniques and Data (Criteria in this section shall apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (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.</li> </ul>	<ul> <li>2022 Surficial Geochemical Soil Sampling</li> <li>The Paterson Farm-in Project regional / project scale soil geochemical sampling programme was sampled over an area covering 80 km<sup>2</sup> (2,113 samples).</li> <li>Assay have been received for all 2022 soil samples.</li> <li>Soil sampling was conducted on a nominal 160m x 160m grid spacing across three target areas (the 2022 programme being predominantly infill to anomalous 2021 soil sampling grids).</li> <li>Soil sampling was carried out under Antipa-IGO joint venture (JV) protocols and QAQC procedures as per industry best practice.</li> <li>Samples were collected at a nominal depth of 10 to 30cm using a plastic or aluminium scoop and sieved to a &lt;2mm sample fraction. All &gt;2mm material and organic matter was removed prior to sampling.</li> <li>A 500g to 1kg sample was collected in a plastic bag at each sample site and "double bagged" prior to transport to retain moisture and fine particulates.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>2022 Surficial Geochemical Rock Chip Sampling         <ul> <li>The Paterson Farm-in Project regional scale geochemical rock chip sampling programme was sampled over an area covering 43 km<sup>2</sup> (326 samples).</li> <li>Assay have been received for all 2022 rock chip samples.</li> </ul> </li> <li>2022 Surficial Geochemical Soil Sampling         <ul> <li>Sample preparation of soil samples was completed at ALS laboratories in Perth following industry best practice in sample preparation involving oven drying to 105 degrees Celsius and screening to &lt;53 microns for analysis.</li> </ul> </li> <li>2022 Surficial Rock Chip Sampling         <ul> <li>Sample preparation of rock chip samples was completed at ALS laboratories in Perth following industry best practice in sample preparation involving oven drying to 105 degrees Celsius and screening to &lt;53 microns for analysis.</li> </ul> </li> <li>2022 Surficial Rock Chip Sampling         <ul> <li>Sample preparation of rock chip samples was completed at ALS laboratories in Perth following industry best practice, including coarse crushing and pulverizing using Essa LM5 grinding mills to a grid size of 85% passing 75 µm.</li> </ul></li></ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>The sample preparation technique for soil samples is documented by IGO's standard procedure documents and is in line with industry standards in sample preparation.</li> <li>The sample sizes are considered appropriate to represent mineralisation.</li> <li>Sample preparation checks for fineness were carried out by the laboratory as part of its internal procedures.</li> <li>Soil Analytical Techniques         <ul> <li>All samples were submitted to ALS laboratory in Perth.</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		All samples were dried, screened to <53um and split
		to produce a sub–sample for a 25g sample which is
		digested and refluxed with perchloric, nitric and
		hydrochloric ('four-acid digest') acid suitable for soil
		samples and is considered a near total digest. The
		four-acid can digest many different mineral types
		including most oxides, sulphides, carbonates and
		silicate minerals but will not totally digest refractory
		minerais. Analytical analysis using ICP-IVIS (Ag, Al, As,
		Ba, Be, Bi, Ca, Cu, Ce, Co, Ci, Cs, Cu, Fe, Ga, Ge, Fi, III,
		$K_{1}$ La, Li, Wig, Will, Wo, Na, Nb, Ni, F, Fb, Nb, Ne, S, Sb,
		• A concrete 25g sub cample was cold digested and
		<ul> <li>A separate 25g sub-sample was cold digested and rofluxed with pitric acid and hydrochloric acid ("agua</li> </ul>
		regia") and heated to 130 degrees Celsius for 40
		minutes to determine gold content
		For samples which returned Au greater than the upper
		detection limit with the agua regia digest a lead
		collection fire assay on a 50-gram sample with Atomic
		Absorption Spectroscopy was undertaken to
		determine gold content with a lower detection limit of
		0.005ppm.
		No geophysical tools were used to determine any
		element concentrations in this report.
		• Field QC procedures involve the use of commercial
		certified reference material (CRM's) for assay
		standards. Five (CRMs) and five field duplicates were
		collected for every 200 samples.
		Inter laboratory cross-checks analysis programmes
		have not been conducted at this stage.
		In addition to IGO supplied CRM's, ALS includes in
		each sample batch assayed certified reference

Criteria	JORC Code explanation	Commentary
		<ul> <li>materials, blanks and up to 10% replicates.</li> <li>Rock Chip Sample Analytical Techniques</li> <li>All samples were submitted to ALS laboratory in Perth.</li> <li>All samples were dried and split to produce a sub-sample of 30g.</li> <li>A multi-element super trace method was used, combining a four acid digestion with ICP-MS instrumentation. Four acid digestions quantitatively dissolve nearly all minerals (Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, P, Pb, Pr, Rb, Re, S, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, TI, Tm, U V, W, Y, Yb, Zn and Zr).</li> <li>Pt, Pd &amp; Au was determined on a 30g sub-sample by a standard lead oxide collection fire assay with an ICP-AES finish.</li> <li>A 15g sub-sample was scanned using a portable XRF to determine Si, Ti and Zr values.</li> <li>In addition to IGO supplied CRM's, ALS includes in each sample batch assayed certified reference materials, blanks and up to 10% replicates.</li> </ul>
	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No adjustments or calibrations have been made to any assay data collected.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>km = kilometre; m = metre; mm = millimetre.</li> <li>Sample locations are surveyed using a handheld Garmin 64S GPS which has an accuracy of ± 3 m.</li> <li>The sample co-ordinates are all in GDA20 MGA Zone 51 co-ordinates.</li> <li>If defaulted, the topographic surface is set to 264m</li> </ul>

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>RL.</li> <li>Soil samples were collected on a nominal 160m x 160m sample grid.</li> <li>Rock chip samples were collected over three sample areas covering a total 43 km<sup>2</sup> area on a nominal 100m basis across available outcrop.</li> <li>Sample type, data spacing and distribution is not appropriate to establish the degree of continuity for a Mineral Resource.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>No sample compositing has been applied.</li> <li>No consistent and/or documented material sampling bias resulting from a structural orientation has been identified for soil or rock chip sampling at this point in time.</li> <li>The surface geochemical sampling grid was orientated on a northeast to southwest orientation perpendicular to the dominant regional stratigraphic trend (northwest).</li> </ul>
Sample security	• The measures taken to ensure sample security.	<ul> <li>Chain of sample custody is managed by IGO to ensure appropriate levels of sample security.</li> <li>Samples were stored at IGO managed field camps for up to two weeks prior to transport to ALS Perth via Port Hedland by Bishops Transport.</li> </ul>
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	<ul> <li>Sampling techniques and procedures are regularly reviewed internally, as is the data.</li> </ul>

### PATERSON IGO FARM-IN PROJECT – Air Core Drilling and Surficial Geochemical Soil and Rock Chip Sampling

Section 2 – Reporting of Exploration Results (Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>In July 2020, a farm-in agreement between Antipa Minerals and IGO Itd was executed in respect to a 1,550 km<sup>2</sup> area in the Paterson Province, collectively known as the Paterson Project.</li> <li>WA (DMIRS) Exploration licences E45/3917, E45/3918 and E45/5458 are located within the Paterson Project.</li> <li>On 1 March 2022, the management and operatorship responsibilities of the Paterson Project farm-in agreement was transferred to IGO Ltd.</li> <li>A 1% net smelter royalty is payable to Sandstorm Gold Ltd on the sale of all metals (excluding uranium) on Exploration Licences E45/3917, E45/3918.</li> <li>A Split Commodity Agreement exists with Paladin Energy whereby it owns the rights to uranium on Exploration Licences E45/3917, E45/3918.</li> <li>The Tenements are contained completely within land where the Martu People have been determined to hold Native Title rights.</li> <li>Land Access and Exploration Agreements are in place with the Martu People.</li> <li>The company maintains a positive relationship with the Martu People, who are Native Title parties in the area.</li> <li>The tenements are in 'good standing' and no known impediments exist.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>The exploration of Paterson Project area was variously conducted by the following major resources companies:         <ul> <li>Prior to 1980 limited to no mineral exploration activities;</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>Newmont (1984 to 1989)</li> <li>BHP Australia (1991 to 1997);</li> <li>MIM Exploration Pty Ltd (1990 to 1993)</li> <li>Newcrest (1987 to 2015)</li> <li>Antipa Minerals Ltd (2011 onwards).</li> <li>Antipa and IGO Ltd (2020 onwards)</li> </ul>
Geology	• Deposit type, geological setting and style of mineralisation.	<ul> <li>Paterson Project Tenement Area:</li> <li>The geological setting is Paterson Province Proterozoic aged meta-sediment hosted hydrothermal shear, fault and strata/contact controlled precious and/or base metal mineralisation which is typically sulphide bearing. The mineralisation in the region is interpreted to be granite related. The Paterson is a low-grade metamorphic terrane but local hydrothermal alteration and/or contact metamorphic mineral assemblages and styles are indicative of a high-temperature local environment. Mineralisation styles include vein, stockwork, breccia and skarns.</li> </ul>
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</li> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul> <li>A summary of all available information material to the understanding of the exploration region exploration results can be found in previous Western Australia (WA) DMIRS publicly available reports.</li> <li>All the various technical and exploration reports are publicly accessible via the WA DMIRS' online WAMEX system.</li> <li>The specific WA DMIRS WAMEX and other reports related to the exploration information the subject of this public disclosure have been referenced in previous public reports.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide details of all exploration completed by the Company since 2011; these reports are all available to view on</li> </ul>

Criteria	JORC Code explanation	Commentary
		www.antipaminerals.com.au and www.asx.com.au.
Data aggregation methods	<ul> <li>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.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>Any reported aggregated intervals have been length weighted.</li> <li>No density or bulk density is available and so no density weighting has been applied when calculating aggregated intervals.</li> <li>No top-cuts to gold or copper have been applied (unless specified otherwise).</li> <li>The following lower cut-off grades are applied to pathfinder elements:         <ul> <li>≥ 30 ppb gold; and/or</li> <li>≥ 200 ppm copper; and/or</li> <li>≥ 205 ppm silver; and/or</li> <li>≥ 25 ppm Bismuth; and/or</li> <li>≥ 100 ppm Cobalt; and/or</li> <li>≥ 100 ppm Zinc; and/or</li> <li>≥ 200 ppm Lead; and/or</li> <li>≥ 100 ppm Molybdenum</li> </ul> </li> <li>Higher grade intervals of mineralisation internal to broader zones of mineralisation are reported as included intervals.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul> <li>Regional Geophysical Targets (AEM ± aeromagnetic):</li> <li>The drill section spacing and sampling, at this stage, is insufficient to establish the geometrical relationships between the drill holes and any mineralised structures.</li> <li>Therefore, at this stage the reported intersection lengths are down hole in nature and the true width, which will be dependent</li> </ul>

Criteria	JORC Code explanation	Commentary
		on the local mineralisation geometry/setting, is not known.
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul> <li>All appropriate maps and sections (with scales) and tabulations of intercepts are reported or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide maps and sections (with scales) and tabulations of intercepts generated by the Company since 2011; these reports are all available to view on www.antipaminerals.com.au and www.asx.com.au.</li> </ul>
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.	<ul> <li>All significant results are reported or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide details of all significant exploration results generated by the Company since 2011; these reports are all available to view on <u>www.antipaminerals.com.au</u> and <u>www.asx.com.au</u>.</li> </ul>
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.	<ul> <li>All meaningful and material information has been included in the body of the text or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> <li>Zones of mineralisation and associated waste material have not been measured for their bulk density.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Planned further work:         <ul> <li>Ongoing review and interpretations of the 2022 and all historical exploration data;</li> <li>Planning and execution of follow-up exploration activities to identify potential economic mineralisation;</li> </ul> </li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>Geophysical data modelling (including AGG and aeromagnetics); and</li> <li>Full geological interpretation including 3D modelling.</li> <li>All appropriate maps and sections (with scales) and tabulations of intercepts are reported or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> </ul>

### CITADEL RIO TINTO JOINT VENTURE PROJECT – Reverse Circulation Drill Hole Sampling

JORC Code 2012 Edition: Table 1 - Section 1 Sampling Techniques and Data (Criteria in this section shall apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (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</li> </ul>	<ul> <li>2022 Reverse Circulation (RC) Drilling <ul> <li>A total of 10 holes for 2,278m of RC drilling occurred across the Citadel JV Project.</li> <li>RC samples were collected from a static cone splitter on 2m intervals.</li> <li>Cyclone/splitter hygiene audits were carried out regularly to ensure the best quality samples were collected.</li> <li>Assay results have been received for all 10 RC drill holes.</li> <li>Drill hole locations and orientations for all 2022 holes are tabulated in the body of this report.</li> </ul> </li> <li>Reverse Circulation (RC) Sampling <ul> <li>RC sampling was carried out under Rio Tinto Exploration Pty Ltd (RTX) protocols and QAQC procedures as per industry best practice.</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
	information.	<ul> <li>RC drilling was used to obtain 2m samples which generally range from 4 to 8.5kg in the basement.</li> <li>A subset of each RC sample is retained in chip trays (per 2 metres) and the coarse reject (residual material from the primary crush at the lab) is kept in Perth for repeat or tertiary analyses as needed.</li> </ul>
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>Reverse Circulation (RC) Drilling</li> <li>A face sampling RC bit was used.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>Reverse Circulation (RC) Drill Samples</li> <li>RC sample recovery was maximized by endeavoring to maintain dry drilling conditions as much as practicable.</li> <li>Relationships between recovery and grade are not evident and are not expected given the generally excellent and consistently high sample recovery.</li> <li>RC samples were also weighed on arrival at the laboratory. Sample weights were reviewed to identify potential loss.</li> <li>There is potential for a minor loss of sample in the running sand cover in the Permian due to the unconsolidated nature of this unit. No evidence for loss exists in basement samples.</li> </ul>
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	<ul> <li>Reverse Circulation (RC) Drill Logging</li> <li>Geological logging of 100% of all intervals was carried out recording colour, weathering, lithology, mineralogy, alteration, veining and sulphides.</li> <li>Logging includes both qualitative and quantitative</li> </ul>

Criteria	JORC Code explanation	Commentary
	The total length and percentage of the relevant intersections logged.	<ul> <li>components.</li> <li>Magnetic Susceptibility measurements were collected for all intervals using a handheld KT-10 magnetic susceptibility reader.</li> <li>The logging of the RC chips was done after sieving and washing of the material collected from the RC rig's cyclone.</li> <li>All the drill holes were logged before sampling.</li> <li>All logging is entered directly into a ruggedized Toughbook and is only uploaded into an acQuire database once a series of QAQC checks have been completed.</li> <li>The RC chip trays were photographed wet.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Reverse Circulation (RC) Samples</li> <li>Sample preparation of RC samples was completed at ALS Limited laboratory in Perth following industry best practice in sample preparation involving oven drying, coarse crushing of the RC sample down to 6mm to 8mm, coarse crushing down to a nominal 70% passing -2 mm followed by a second pass at 2mm to produce a 750 gram sub-sample, followed by pulverisation of the entire sample (total prep) using a LM2 grinding mill to a grind size of 85% passing 75 µm and split into 30 gram sub–sample/s for analysis.</li> <li>Duplicate samples were collected at each stage of the preparation, with a rate of 1:20 (field duplicates) or 1:55 (crush and pulp duplicates) samples. Duplicate results show acceptable levels of precision for the style of mineralisation.</li> <li>The sample sizes are considered appropriate to correctly represent the vein hosted style of mineralisation encountered in the region, the</li> </ul>

Criteria	JORC Code explanation	Commentary
		thickness and consistency of the intersections and the
		sampling methodology.
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>Analytical Techniques</li> <li>All samples were submitted to an ALS Limited laboratory in Perth.</li> <li>51 elements were analysed for using 4-acid digest followed by ICP-OES/MS measurements including qualitative Au, Pt and Pd.</li> <li>30 grams of sample were used for Au analysis by fire assay with ICP-AES finish. Any Au samples which trigger the over range analysis method (&gt;10ppm Au) will be analysed with AAS finish.</li> <li>Portable XRF analysis on pulp for Cr, Nb, S, Si, Ta, Ti, Y and Zr was done using a SciAps X200 instrument.</li> <li>Quality control samples consisted of field duplicates (1:20), crush duplicates (1:55), pulp duplicates (1:55), blanks (1:50) and commercial certified reference materials (3:100) with the grade of the inserted standards not revealed to the laboratory.</li> <li>All the QAQC data is verified by a competent geologist in the acQuire database before being used, and the analysed batches are continuously reviewed to ensure they are performing within acceptable accuracy and precision limits for the style of mineralisation. Any failures during this quality control process requires the batch to be re-analysed prior to acceptance in the database.</li> <li>Sample preparation checks for fineness were carried out by the laboratory as part of its internal procedures.</li> <li>In addition to RTX supplied CRM's, ALS Limited laboratory includes in each sample batch assayed</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>certified reference materials, blanks and up to 10% replicates.</li> <li>Selected anomalous samples are re-digested and analysed to confirm results.</li> <li>No geophysical tools were used to determine any element concentrations in this report.</li> <li>Inter laboratory cross-checks analysis programmes have not been conducted at this stage.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>All the sample intervals were visually verified using high quality chip tray photography through Imago.</li> <li>All logging is entered directly into the acQuire interface in a Toughbook laptop which is backed up daily.</li> <li>Further data validation is carried out during upload to the acQuire database prior to data being available for use.</li> <li>No adjustments or calibrations have been made to any assay data collected, which are electronically uploaded from the laboratory to the database.</li> <li>A systematic analysis of duplicate samples was carried out at each stage of sampling including field, crush and pulp duplicates. The results from this analysis were within acceptable range for this type of mineralisation.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>km = kilometre; m = metre; mm = millimetre.</li> <li>Drill hole collar locations were surveyed using a R2 Trimble GPS which has an accuracy of ± 0.2m.</li> <li>The drilling co-ordinates are all in Geocentric Datum of Australia GDA20 MGA Zone 51 co-ordinates.</li> <li>Inclined RC drill holes are checked for drill rig set-up azimuth using a Suunto Sighting Compass from two directions.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>Drill hole inclination is set by the driller using a clinometer on the drill mast and checked by the geologist prior to the drilling commencing.</li> <li>Drill hole down hole surveys were completed for the majority of RC holes with the exception of any RC holes drilled vertical.</li> <li>The topography is relatively flat, and if defaulted the topographic surface is set to 250m RL.</li> <li>Table 1 in this Report is in GDA20 / MGA Zone 51.</li> <li>Prior to 2019 the Company has utilised and referenced a local grid at Calibre which is defined below:         <ul> <li>Calibre Local Grid 0.00m east is 421,535.53m east in GDA94 / MGA Zone 51;</li> <li>Calibre Local Grid 0.00m north is 7,691,393.40m north in GDA94 / MGA Zone 51;</li> <li>Calibre Local Grid North (360°) is equal to 315° in GDA94 / MGA Zone 51; and</li> <li>Calibre Local Grid elevation is equal to</li> </ul> </li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>The reporting of RC assay results as broader intersection intervals may occur on the basis tabulated in the body of this report.</li> <li>Regional Geophysical Targets (aerial electromagnetics ± aeromagnetics ± IP/GAIP):         <ul> <li>Drill spacing was variable depending on target rank, target dimensions (along strike and/or across strike); if more than one drill line per target then drill lines were generally spaced approximately 200 to 700 m apart with an average drill hole spacing on each</li> </ul> </li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>section between 100 to 200 m.</li> <li>The typical section spacing/drill hole distribution is not considered adequate for the purpose of Mineral Resource estimation.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>No consistent and/or documented material sampling bias resulting from a structural orientation has been identified for the "regional" geophysical targets, Calibre or Magnum at this point in time.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples were assigned a unique sample number. All RC samples were placed in calico bags clearly marked with the assigned sample number, and placed in bulka bags, wrapped in plastic and transported by company transport to Port Hedland and by private haulage to the ALS sample preparation facility in Wangara, Perth, Western Australia.</li> <li>Each sample was given a barcode at the laboratory and the laboratory reconciled the received sample list with physical samples. Barcode readers were used at the different stages of the analytical process.</li> <li>The laboratory uses a LIMS system that further ensures the integrity of results.</li> </ul>
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Sampling techniques and procedures are regularly reviewed internally, as is the data.

CITADEL RIO TINTO JOINT VENTURE PROJECT – Gradient Array Induced Polarisation Survey:

JORC Code 2012 Edition: Table 1 - Section 1 Sampling Techniques and Data (Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (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.</li> </ul>	<ul> <li>2022 Gradient Array Induced Polarisation Survey <ul> <li>The ground based 2022 Gradient Array Induced Polarisation (GAIP) survey was undertaken by an independent geophysical contractor/service provider.</li> <li>The IP survey employed the following equipment and sampling techniques: <ul> <li>Survey Type = Induced Polarisation;</li> <li>Array = Gradient;</li> <li>Number of Arrays = 5;</li> <li>IP receiver electrodes (Rx) spacing = 100m;</li> <li>Receiver line spacing = 200 - 850m;</li> <li>Domain = Time Domain;</li> <li>Cycle = 0.125 Hz;</li> <li>Resultant final output = Apparent Chargeability (Milliseconds) and Apparent Resistivity (Ohm.m).</li> </ul> </li> </ul></li></ul>
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>Not applicable to geophysical survey.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	Not applicable to geophysical survey.

Criteria	JORC Code explanation	Commentary
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> <li>If core, whether cut or sawn and whether quarter, half or all</li> </ul>	Not applicable to geophysical survey.
	<ul> <li>If core, whether cut of summand whether quarter, half of an core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	• Not applicable to geophysical survey.
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>The ground Induced Polarisation (IP) survey was undertaken by an independent geophysical contractor/service provider.</li> <li>The survey was carried out using a gradient array configuration with 100m spaced receiver electrodes.</li> <li>A total of five gradient arrays were surveyed for a total of approximately 123 line-km.</li> <li>The Induced Polarisation equipment consisted of Transmitter(s) and Receiver apparatus. A 50kw motor generator drove the Search Ex 50kva transmitter supplying up to 50.0 kva continuous power.</li> <li>Transmitter electrodes (aluminum plates) were used to inject a stable current.</li> <li>The secondary voltage, denoted Vs, was nominally</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>measured every 100 metres, using a SMARTem24 16 Channel receiver.</li> <li>The receiver was used to take all of the data for the survey. From the Vs Apparent Resistivity and Apparent Chargeability were derived. The decay curve was separated into pre-programmed windows. The stack size was typically 20 cycles.</li> <li>Porous Pot receiver electrodes (Pb/PbCl<sub>2</sub> solution) were used.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>Not applicable to geophysical survey.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>km = kilometre; m = metre; mm = millimetre.</li> <li>IP Stations were determined by a standard hand-held Garmin GPS.</li> <li>The IP survey coordinates are in GDA94 MGA Zone 51 coordinates.</li> <li>Local IP survey coordinates are for the purposes of line and station reference points.</li> <li>This release has no reference to previously unreported drilling.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Not applicable to geophysical survey.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the</li> </ul>	<ul> <li>Not applicable to geophysical survey.</li> </ul>

Criteria	JORC Code explanation	Commentary
	orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	
Sample security	• The measures taken to ensure sample security.	Not applicable to geophysical survey.
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>All digital IP data was subjected to rigorous auditing and vetting by the independent geophysical contractor/service provider and data manager.</li> <li>In addition, all digital IP data was also subjected to an audit by independent geophysical consultants Terra Resources Pty Ltd.</li> </ul>

## CITADEL RIO TINTO JOINT VENTURE PROJECT – Reverse Circulation Drill Programme and Gradient Array Induced Polarisation Survey

Section 2 – Reporting of Exploration Results (Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>The Calibre and Magnum deposits and Mineral Resources are located within Exploration Licence E45/2877.</li> <li>The Rimfire target area is located within Exploration Licence E45/2876.</li> <li>Transfer target is located within Exploration Licence E45/4561.</li> <li>The GAIP survey was located within Exploration Licences E45/2876 and E45/4212.</li> <li>On 9 October 2015 Farm-in and Joint Venture (JV) Agreements were executed between Antipa and Rio Tinto Exploration Pty Limited (a wholly owned subsidiary of Rio Tinto Ltd).</li> <li>Currently Antipa Mineral Ltd has a 32.6% interest and Rio Tinto has a 67.4% in all Citadel JV Project tenements.</li> <li>Exploration licences E45/2876, E45/2877 and E45/4561 are contained completely within land where the Martu People have been determined to hold Native Title rights. No historical or environmentally sensitive sites have been identified in the immediate exploration licences E45/2874 and E45/2901 are contained completely within land where the Nyangumarta People have been determined to hold Native Title rights. No historical or environmentally sensitive sites have been identified in the immediate exploration activity areas.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>exploration activity areas.</li> <li>The tenements are all in 'good standing' with the Western Australian DMIRS.</li> <li>No known impediments exist, including to obtain a licence to operate in the area.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Prior to 1991, limited to no known mineral exploration activities.</li> <li>1991 to 1996 BHP Australia completed various regional airborne geophysical surveys (e.g. aeromagnetics, radiometrics, GeoTEM, ground magnetics, surface EM), geochemical Air core and selected diamond core drilling programmes across a significant area which covered the Citadel JV Project. Whilst this era of exploration highlighted a number of areas as being variously anomalous, BHP did not locate any basement (Proterozoic) precious or base metal mineralisation. In 1995 BHP Minerals completed an MMI-A/MMI-B soil programme over an area which was ultimately found to be the region within which the Magnum deposit was located.</li> <li>1997 to 2002 JV partners Croesus-Gindalbie completed minor surface geophysical surveys (e.g. electromagnetics) and various drilling programmes across parts of the Citadel JV Project (i.e. 17 x Diamond core, 10 x RC and 134 x Air core drill holes) leading to the discovery of the Magnum Au-Cu-Ag deposit, and its partial delineation, in 1998.</li> <li>2002 to 2003 JV partners Teck Cominco and Croesus-Gindalbie completed detailed aeromagnetic and radiometric surveys over the entire Citadel JV Project, Pole-Pole IP over eight targets and limited drilling (i.e. four x Diamond core holes) within the Citadel JV</li> </ul>

Criteria	JORC Code explanation	Commentary
		Project.
		<ul> <li>2004 to 2005 JV partners NGM Resources and</li> </ul>
		Croesus-Gindalbie completed limited drilling (i.e. 3 x
		Diamond core holes) at selected Citadel JV Project
		prospects intersecting minor Au-Cu-Ag mineralisation
		at the Colt prospect.
		<ul> <li>2006 to 2010 Glengarry Resources/Centaurus Metals</li> </ul>
		undertook re-processing of existing data and re-
		logging of some drill core. No drilling or geophysical
		surveys were undertaken, and so no new exploration
		results were forthcoming.
		<ul> <li>2011 to 2015 Antipa Minerals Ltd completed</li> </ul>
		exploration of the Citadel JV Project including both
		regional and prospect/area scale geophysical surveys
		(i.e. VTEM, ground EM, DHEM, ground magnetics and
		ground gravity) and geochemical surveys (i.e. MMI-
		M™ and SGH™ soil programmes) and drilling
		programmes (i.e. diamond core and RC) resulting in
		two greenfield discoveries in 2012, i.e. Calibre and
		Corker, and subsequent drilling programmes.
		October 2015 to March 2017 Antipa Minerals Ltd
		operators under a Farm-in Agreement executed on the
		9 October 2015 between Antipa and Rio Tinto
		Exploration Pty Limited ("Rio Tinto"), a wholly owned
		subsidiary of Rio Tinto Limited. RC drilling at Calibre in
		late 2015, and in 2016 an extensive IP survey, a
		regional target RC drilling programme and single
		(deep) diamond core hole were completed.
		April 2017 to March 2019 Rio Tinto as operators under
		the Farm-in Agreement (see above).
		<ul> <li>2017 and 2018 exploration activities included:</li> </ul>
		Further extensive IP survey (2017) in the

Criteria	JORC Code explanation	Commentary
		southeastern portion of E45/2877;
		Air Core drilling Programme (2017) in the
		central region (Rimfire area) of E45/2876;
		RC drilling programme (2017) testing targets
		located on E45/2876 (Rimfire area) and
		45/2877 (Calibre area);
		RC drilling programme (2018) testing several
		targets located on E45/2876 and 45/4561;
		and
		Two (2017 and 2018) aerial electromagnetic
		surveys primarily over various portions of all
		of the Citadel JV Project tenements have
		been completed.
		March to December 2019 inclusive Antipa Minerals
		above)
		above).
		2019 exploration activities included.
		Fulther extensive GAIP surveys across
		Airborne Falcon® AGG gravity survey across
		the entire project:
		BC drill programme testing various
		greenfield targets across various project
		tenements: and
		• Diamond core drill programme at the Calibre
		deposit on tenement E45/2877.
		• January 2020 onwards Rio Tinto Ltd operators under
		the Joint Venture Agreement.
		2020 exploration activities included:
		• Diamond core and RC drill programme at the
		Calibre deposit on tenement E45/2877;
		RC and diamond core drill programme

testing various greenfield targets activation various project tenements; and         • Further extensive GAIP surveys acrovations project tenements.         • 2021 exploration activities included:         • RC and diamond core drill programm testing various greenfield targets activations project tenements;         • Continuation of the GAIP survey pro
across prospective structural corrido Rimfire detailed aeromagnetic surve covering 110km <sup>2</sup> with orthogonal su lines; Preliminary metallurgical test-work al geotechnical evaluations at Calibre; Appraisal work in respect of early st project development options for Cal and Ongoing processing and interpretati geophysical and drill hole data, toge with Calibre deposit and Magnum D modelling to identify further priority 2022 exploration activities included: RC drill programme testing greenfiel targets across various project tenem Gradient Array Induced Polarisation Calibre metallurgical test-work and a work in respect of early stage project development options; and

Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Citadel JV Project region of the Paterson Province is located on the Anketell Shelf of the Yeneena Basin, a Neoproterozoic aged sequence of meta-sedimentary rocks, mafic intrusives and granitoids that has been intruded by post-mineralisation Cambrian dolerite dykes and is entirely covered by younger Phanerozoic sediments typically ranging in thickness of between 10 to 130 m.</li> <li>The Paterson Province is a low to moderate grade metamorphic grade (i.e. greenschist to lower- amphibolite) terrane, with local hydrothermal alteration and/or contact metamorphic mineral assemblages and styles are indicative of a high- temperature local environments.</li> <li>Precious and/or base metal mineralisation is hydrothermal in nature and is shear, fault and strata/contact controlled and is typically sulphide bearing.</li> <li>Mineralisation styles include vein, stockwork, breccia and skarns.</li> <li>Mineralisation includes chalcopyrite, pyrite, pyrrhotite, bismuthine, sphalerite, galena, scheelite and wolframite.</li> </ul>
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</li> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the</li> </ul>	<ul> <li>A summary of all available information material to the understanding of the exploration region exploration results can be found in the main body of the report (including drill hole collar table providing collar coordinates, orientations and length for all reported drill holes).</li> <li>A summary of all available previously reported information material to the understanding of the exploration region exploration results can also be found in previous Western Australia (WA) DMIRS publicly available reports.</li> </ul>

Criteria	JORC Code explanation	Commentary
	Competent Person should clearly explain why this is the case.	<ul> <li>All the various technical and exploration reports are publicly accessible via the WA DMIRS' online WAMEX system.</li> <li>The specific WA DMIRS WAMEX and other reports related to the exploration information the subject of this public disclosure have been referenced in previous public reports.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide details of all exploration completed by the Company since 2011; these reports are all available to view on www.antipaminerals.com.au and www.asx.com.au.</li> <li>Note that this JORC Criteria is N/A to the GAIP survey.</li> </ul>
Data aggregation methods	<ul> <li>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.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>This release has no reference to previously unreported drill results, sampling, assays, or mineralisation.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide details of all exploration completed by the Company since 2011; these reports are all available to view on www.antipaminerals.com.au and www.asx.com.au.</li> <li>The reported average intersection grades may be length-weighted averages, with a minimum downhole intersection interval length of generally 1m and maximum internal dilution allowed is generally 10m.</li> <li>If used Metal equivalence is defined in the body of this report.</li> <li>Note that this JORC Criteria is N/A to the GAIP survey.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul> <li>Regional Geophysical Targets (IP/GAIP ± aeromagnetic ± AEM):</li> <li>The drill section spacing and sampling, at this stage, is insufficient to establish the geometrical relationships between the drill holes and any mineralised structures.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>Therefore, at this stage the reported intersection lengths are down hole in nature and the true width, which will be dependent on the local mineralisation geometry/setting, is not known.</li> <li>Note that this JORC Criteria is N/A to the GAIP survey.</li> </ul>
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul> <li>All appropriate maps and sections (with scales) and tabulations of intercepts are reported or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> <li>This release has no reference to previously unreported drill results, sampling, assays or mineralisation.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide maps and sections (with scales) and tabulations of intercepts generated by the Company since 2011; these reports are all available to view on www.antipaminerals.com.au and www.asx.com.au.</li> </ul>
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul> <li>All significant results are reported or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> <li>This release has no reference to previously unreported drill results, sampling, assays or mineralisation.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide details of all significant exploration results generated by the Company since 2011; these reports are all available to view on <u>www.antipaminerals.com.au</u> and <u>www.asx.com.au</u>.</li> </ul>
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater,</li> </ul>	<ul> <li>This announcement refers to previous exploration results including geophysics, drill results and geology which can be found in previous public reports.</li> <li>All meaningful and material information has been included in the body of the text or can sometimes be</li> </ul>

Criteria	JORC Code explanation	Commentary
	geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>found in previous WA DMIRS WAMEX publicly available reports.</li> <li>Zones of mineralisation and associated waste material have been measured for their specific gravity ("density") at target areas that were tested with diamond drilling. The measurement used the hydrostatic/gravimetric method (Archimedes Principle of buoyancy).</li> <li>Multi element assaying has been conducted variously for a suite of potentially deleterious elements including arsenic, sulfur, lead, zinc and magnesium.</li> <li>Geotechnical logging (e.g. Recovery, RQD and Fracture Frequency) is not possible for RC drill material; however, all diamond core holes (i.e. Calibre, Magnum, Corker, Blue Steel, etc) receive geotechnical logging. No geotechnical logging was obtained from the WA DMIRS WAMEX reports.</li> <li>Downhole information on structure type, dip, dip direction, alpha angle, beta angle, gamma angle, texture and fill material are not possible for RC drill material; however all diamond core holes (i.e. Calibre, Magnum, Corker, Blue Steel, etc) receive structural logging which can be obtained from the Company's pre-existing SQL database and WA DMIRS WAMEX reports.</li> <li>Metallurgical test-work results available on these particular tenements is restricted to the Calibre gold- copper-silver-tungsten deposit. Preliminary metallurgical test-work results are available for the Calibre deposit, this report is available to view on www.antipaminerals.com.au and www.asx.com.au, and is summarised below:</li> </ul>

Criteria	JORC Code explanation	Commentary
Criteria	JORC Code explanation	<ul> <li>Commentary         <ul> <li>The Calibre deposit's simple and coarse grained copper mineralogy is almost exclusively chalcopyrite. Very limited to no copper oxide or other copper sulphide minerals were observed. The gangue mineralogy is dominated by quartz and feldspar. Straightforward mineralogy has produced very favourable metallurgical outcomes from the low copper ore grades of Calibre.</li> <li>Preliminary metallurgical test work was completed at the Bureau Veritas Minerals Pty Ltd laboratories in Perth, Western Australia under the management of Bureau Veritas metallurgists and Antipa's Managing Director.</li> <li>A master 39 kilogram metallurgical composite sample was composed of material from 90 individual samples. All samples were collected from diamond core representative of the Calibre gold-coppersilver-tungsten mineralisation. As no oxide mineralisation is known to occur at Calibre the samples were all of primary and transitional mineralisation.</li> </ul> </li> </ul>
		metal grades comparable to the Calibre Inferred Mineral Resource. The head grade for the composite used in the definitive metallurgical test was 0.63 g/t gold, 0.23%
		copper, 0.80 g/t silver, 0.02% tungsten tri-

Criteria	JORC Code explanation	Commentary
Criteria	JORC Code explanation	Commentary         oxide and 0.97% sulfur.         • The preliminary metallurgical test work which focused on the precious and base metals has comprised: <ul> <li>Mineralogical, and metallurgical data investigation via the QEMSCAN® micro-analysis system;</li> <li>HLS density beneficiation test work;</li> <li>Sulphide Flotation;</li> <li>Tungsten Flotation; and</li> <li>Cyanide leaching of sulphide flotation tailings for recovery of remaining gold and silver.</li> </ul> <li>The Calibre mineralisation is planned to be crushed and ground with the following products being produced:             <ul> <li>A sulphide concentrate containing copper, gold and silver;</li> </ul> </li>
		<ul> <li>Gold doré (containing gold and silver); and</li> <li>Tungsten concentrate.</li> <li>Preliminary metallurgical test work has shown that saleable products for copper, gold and silver can be produced from the Calibre mineralisation at good metallurgical recoveries.</li> <li>Further test-work is required with respect to tungsten concentrate specifications; however, the initial results are considered encouraging, including mineralogy investigation using QEMSCAN® which</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>revealed the tungsten minerals to be comparatively coarse grained and well liberated. As a consequence, a conservative recovery of 50% was assumed for tungsten.</li> <li>Heavy Liquid Separation (HLS) test work was used to assess the amenability of the ore to physical upgrade processes such as gravity. The HLS results highlighted the excellent density beneficiation qualities of the Calibre mineralisation.</li> <li>Geophysical surveys carried out over significant regions of the Citadel JV Project include aerial and ground electromagnetics, aerial and ground magnetics, aerial radiometrics, ground induced polarisation/resistivity, aerial (AGG) and ground gravity, and magnetic susceptibility from drill sample material. Satellite imagery is also available.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Planned further work:         <ul> <li>Planning and execution of follow up exploration activities, including drilling, to identify potential economic grade mineralisation;</li> <li>Ongoing review and interpretations of all exploration data including interpretation of various geophysical survey data to identify further priority targets;</li> <li>Full geological interpretation including 3D modelling where data supports;</li> <li>Ongoing appraisal work in respect of early stage project development options for Calibre;</li> <li>Possible Calibre deposit Mineral Resource</li> </ul> </li> </ul>



Criteria	JORC Code explanation	Commentary
		estimate update.
		All appropriate maps (with scales) and tabulations of
		GAIP anomalies are reported or can sometimes be
		found in previous WA DMIRS WAMEX publicly
		available reports.