

**ASX Release** 

1 June 2021

## CASTILLO COPPER LIMITED ACN 137 606 476

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ASX/ LSE Symbol: CCZ

## Expanded drilling campaign set to commence at Big One Deposit

- Following a successful geophysics survey, which comprised six 500-700m lines across the 1,200m strike event at the Big One Deposit<sup>1</sup>, CCZ's geology team have finalised a new 26 drillhole campaign for 2,828m to extend known mineralisation:
  - A key focus is to build on the stellar results derived from previous programs which included the following best intercepts –

303RC: 40m @ 1.64% from (fm) surface incl: 11m @ 4.40% fm 24m, 5m @ 7.34% fm 28m & 1m @ 16.65% fm 29m<sup>2</sup>

301RC: 44m @ 1.19% Cu fm surface incl: 14m @ 3.55% fm 27m, 3m @ 10.88% fm 37m & 1m @ 12.6% fm 37m²

BO017: 34m @ 1.51% Cu from surface incl: 21m @ 2.25% Cu fm surface, 12m @ 3.44% Cu fm 3m, 6m @ 4.79% Cu fm 3m and 1m @ 9.4% fm  $9m^2$ 

- Through reconciling legacy drilling and geochemical data against the 2D and 3D geophysical models, the geology team have optimised and expanded the campaign to target several newly identified bedrock conductors:
  - This includes a large, interpreted anomaly north-west of the line of lode that suggests extensive underlying copper mineralisation is potentially located along fault structures rather than constrained within the trachyte dyke.
- Logistical support for the upcoming campaign is now in place, while the drilling crew is slated to arrive and commence work within the next one-to-two weeks.
- In readiness for the next phase of the campaign, which will see drilling move on to the Arya and Sansa Prospects, the geology team are reviewing all key data points to ensure optimal results:
  - ❖ Notably, there are several bedrock conductors across these two prospects that are prime drill-test targets including EG01 – which is interpreted to be 130m thick, 1,500m by 450m, and circa 430m deep³.
- In line with the CCZ's strategic intent to evolve into a mid-tier copper group, the Board remains optimistic 2021 will be a transformative year.

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Castillo Copper's Managing Director Simon Paull commented: "Reconciling geophysics findings with legacy drilling and geochemical data should enable CCZ's geology team to design effective drilling campaigns for the Big One Deposit, Arya and Sansa Prospects with a high degree of confidence. Consequently, as we progress through several phases of exploring the Mt Oxide Project over the balance of 2021, the Board is optimistic value can be created for all stakeholders."

**Castillo Copper Limited ("CCZ")** is delighted to announce the geology team has finalised the drilling campaign for the Big One Deposit which will comprise 26 drill-holes for 2,828m. This includes 108m of HQ diamond coring in two drill-holes to collect detailed assay, density, and geotechnical measurements (refer to Appendix B for details). For comparison, the 2020 drilling program totalled 21 RC drill-holes for 1,467m<sup>2</sup>.

The program, which factors in the recent geophysics survey that comprised six 500-700m lines across the 1,200m strike event<sup>1</sup>, is designed to extend known mineralisation and build on previous drill results. This includes:

- 303RC: 40m @ 1.64% fm surface incl: 11m @ 4.40% fm 24m, 5m @ 7.34% fm 28m & 1m @ 16.65% fm 29m<sup>2</sup>
- 301RC: 44m @ 1.19% Cu fm surface incl: 14m @ 3.55% fm 27m, 3m @ 10.88% fm 37m & 1m @ 12.6% fm 37m2
- BO017: 34m @ 1.51% Cu from surface incl: 21m @ 2.25% Cu fm surface, 12m @ 3.44% Cu fm 3m, 6m @ 4.79% Cu fm 3m and 1m @ 9.4% fm 9m<sup>2</sup>

## **OPTIMAL TARGETS**

## **Big One Deposit**

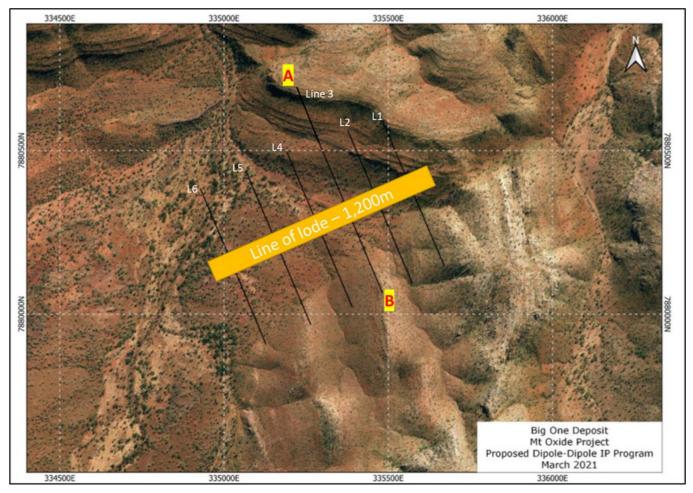
As a result of reconciling historical drilling and geochemical data with the 2D / 3D geophysical models, the geology team has optimised and expanded the drilling campaign at the Big One Deposit. Notably, this includes a large, interpreted bedrock conductor north-west of the line of lode – discovered along Line 3 (Figure 1 & 2) – which is part of the fault structure and not contained within the trachyte dyke.

Note, a summary of the now completed survey and interpretation of the 3D resistivity and chargeability model generated by the geophysicist consultant, GeoDiscovery, is detailed in Appendices B & C.

FIGURE 1: LINE 3 - NEWLY IDENTIFIED BEDROCK CONDUCTORS

Source: CCZ geology team

FIGURE 2: LINE LOCATIONS TRANSVERSING BIG ONE DEPOSIT



Source: CCZ geology team

## **Arya and Sansa Prospects**

Once drilling is complete at the Big One Deposit, the campaign will move across to the Arya and Sansa Prospects (refer Appendix A). In readiness for this phase of the program, the geology team are reviewing all key data points to ensure the highest probability of success.

Across the Arya and Sansa Prospects are several inferred bedrock conductors which are prime test-drill targets including EG01 which is interpreted to be **130m thick**, **1,500m by 450m**, **and circa 430m deep**<sup>3</sup>. Further, there are surface soil and rock chip copper anomalies to support the shallower conductors, EG02 & EG10<sup>3</sup>.

## **Next steps**

The concurrent next steps CCZ's team is working on is as follows:

- Ensuring logistics are in place so the drilling crew can deploy to site within the next 1-2 weeks so work can commence at the Big One Deposit.
- Finalise the design of the drilling program for the Arya and Sansa Prospects.

## For and on behalf of Castillo Copper

Simon Paull

**Managing Director** 

## **ABOUT CASTILLO COPPER**

Castillo Copper Limited is an Australian-based explorer primarily focused on copper across Australia and Zambia. The group is embarking on a strategic transformation to morph into a mid-tier copper group underpinned by its core projects:

- The Mt Oxide project in the Mt Isa copper-belt district, north-west Queensland, which delivers significant exploration upside through having several high-grade targets and a sizeable untested anomaly within its boundaries in a copper-rich region.
- Four high-quality prospective assets across Zambia's copper-belt which is the second largest copper producer in Africa.
- > A large tenure footprint proximal to Broken Hill's world-class deposit that is prospective for zinc-silver-lead-copper-gold.
- Cangai Copper Mine in northern New South Wales, which is one of Australia's highest grading historic copper mines.

The group is listed on the LSE and ASX under the ticker "CCZ."

#### References

- 1) CCZ ASX Release 20 May 2021
- 2) CCZ ASX Release 10 February 2021
- 3) CCZ ASX Release 13 April 2021

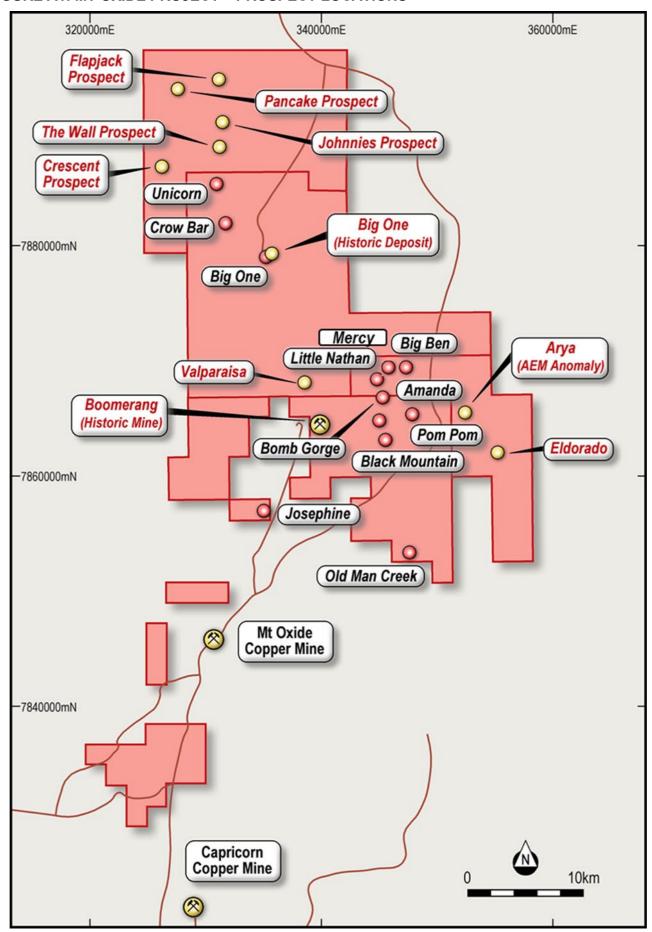
#### **Competent Person Statement**

The information in this report that relates to Exploration Results for "Mt Oxide Project" is based on information compiled or reviewed by Mr Mark Biggs. Mr Biggs is both a shareholder and director of ROM Resources, a company which is a shareholder of Castillo Copper Limited. ROM Resources provides ad hoc geological consultancy services to Castillo Copper Limited. Mr Biggs is a member of the Australian Institute of Mining and Metallurgy (member #107188) and has sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, and Mineral Resources. Mr Biggs holds an AusIMM Online Course Certificate in 2012 JORC Code Reporting. Mr Biggs also consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The Australian Securities Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release.

## APPENDIX A: PROSPECTS WITHIN THE MT OXIDE PROJECT

FIGURE A1: MT OXIDE PROJECT - PROSPECT LOCATIONS



Source: CCZ geology team

## **APPENDIX B: JORC CODE, 2012 EDITION – TABLE 1**

The following JORC Code (2012 Edition) Table 1 is primarily supplied for cover results from the IP Survey at the Big One Deposit.

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>No additional surface or drilling samples have been collected or assayed as this release talks to the recently completed IP ground geophysical survey.</li> <li>Any reference to rock chip samples assay results, please refer to two CCZ ASX releases, 14th September 2020 "Field Analyses verifies high-grade copper with newly identified gold mineralisation at Big One" and 24th September 2020 "Assay results verify high-grade copper at Big One Deposit" for sampling description.</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>	No new drilling has taken place.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	No drilling nor samples were taken.

	<ul> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	
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</li> </ul>	No logging took place.
	<ul> <li>nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</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 subsampling 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>	No drilling nor samples were taken.
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,</li> </ul>	Not applicable as no new sampling or assaying took place.

	reading times, calibrations factors applied and their derivation, etc.  • Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	
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>	Not applicable as no new sampling or assaying took place.
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>The survey, as originally proposed, consisted of the following IP work (as per the survey plan on the next page; Figure B1) six 6 lines each 500m in length with 50m dipoles, totalling 3km.</li> <li>Fender Geophysics had noted in their quote that the methodology may be changed to Pole-Dipole if it is felt this will give better results. Given the line length and depth of the area of interest (150-200m) Fender planned to extend the transmitter sites out by 4 dipoles on the southeast end of the lines to increase depth penetration at that end.</li> <li>The spatial location for these holes has been differentially surveyed into MGA94 – Zone 54. Collar heights are to the Australian Height Datum.</li> </ul>

## FIGURE B1: IP SURVEY LINE LOCATION 21023\_Big One\_Survey Points 21023\_Big One\_Tx Points Fender 🆫 **Big One Project** Project Layout Table B1: Lists the planned drilling program which includes a total of 24 reversecirculation drillholes and 2 HQ diamond holes for a total of 2,828m. Eleven (11) of the RC holes will investigate the large chargeability anomalies identified by the IP survey. Data spacing Data spacing for reporting of Exploration Results. The scope of works for the survey is given below: and o Array: Dipole-Dipole (roll-along) Whether the data spacing and distribution is sufficient distribution to establish the degree of geological and grade Receiver Dipole Length: 50 m continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) Transmitter Dipole Length: 50 m and classifications applied. Domain and Cycle: Time domain - 2 seconds or 0.125 Hz Whether sample compositing has been applied. Line Length: 500 m Number of Lines: 6 Line kms: 3.0 km Whether the orientation of sampling achieves Fender Geophysics (Fender) was contracted to complete a program of Dipole-Orientation unbiased sampling of possible structures and the Dipole array IP survey work for Castillo Copper Limited at the Big One deposit of data in

## relation located within Castillo's Mt Oxide Project in the Mt Isa copper belt (EPM extent to which this is known, considering the deposit 26574), approximately 170km north of Mt Isa (see location map below; Figure geological type. B2). Most of the interpretation comments have been provided by Ms Kate structure If the relationship between the drilling orientation and Nelson of GeoDiscovery. the orientation of key mineralised structures is considered to have introduced a sampling bias, this FIGURE B2: SURVEY GENERAL LOCATION should be assessed and reported if material. Gregory CASTILLO COPPER Big One Location Castillo Copper Castillo EPMs Big One Project Big One Survey Major Roads Four Ways **Q** Localities Three Rivers Fender 🐌 **Big One Project** Cloncurry Mt Isa **Project Location** Report No: Q21010 The core objectives of the survey were to identify massive sulphide bedrock conductors along the 1,200m strike extent that potentially extends known mineralisation and provide geophysical insights into several known yet underexplored nearby anomalies which includes previously mapped gossanous outcrops to the north-east of the recent drilling campaign conducted in Q4 2020. Sample The measures taken to ensure sample security. No new samples were taken. security **Audits** or The results of any audits or reviews of sampling The data was collected by Fender Geophysics, with the data reduction and reviews techniques and data. modelling being conducted by GeoDiscovery, both independent contractors to Castillo Copper

TABLE B1: BIG ONE LOCATION OF NEW PROPOSED DRILLING

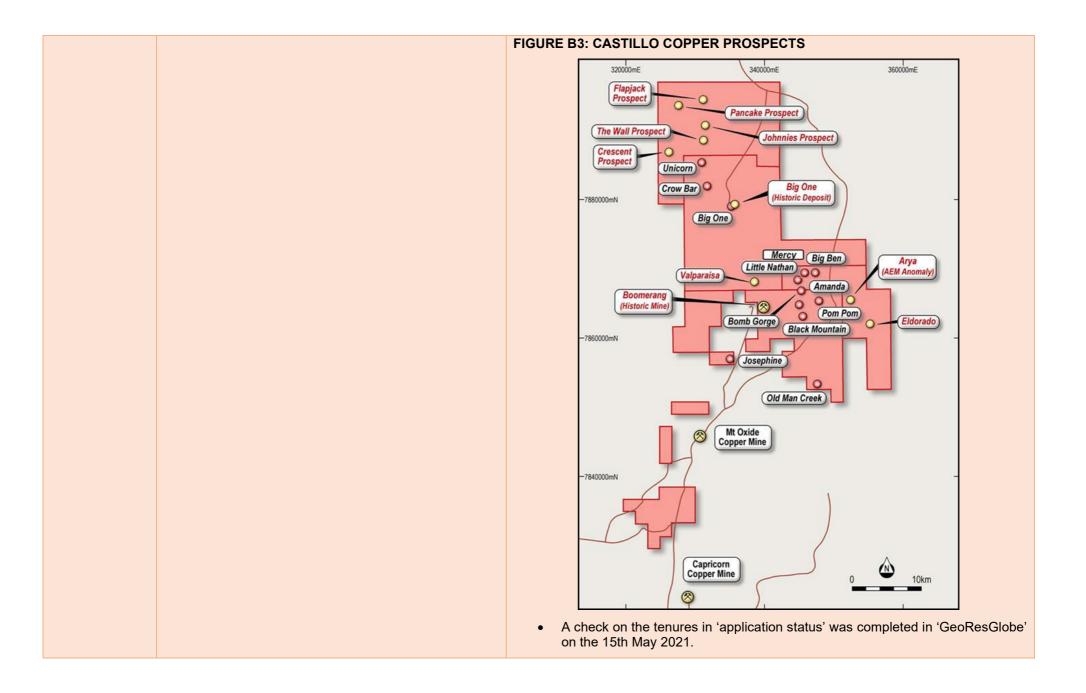
SITEID	Holename	E_MGA94_Z54	N_MGA94_Z55	AHD	Already DRILLED	TDEPTH (m)	TO DRILL (m)	AZIMUTH	DIP	ТҮРЕ	STATUS	COMMENTS
2021_01	301DDH	335407.5	7880328.0	160	42	54	12	325.0	-60.0	DDH	301	Full HQ core; move 5m from RC hole
2021_02	303DDH	335436.3	7880341.0	160	44	54	10	325.0	-60.0	DDH	303	Full HQ core; move 5m from RC hole
2021_03	201RC2	335414.9	7880311.0	160	50	85	35	320.0	-61.0	RC	201RC	Deepen existing hole; is at 50m
2021_04	202RC2	335428.1	7880299.0	160	82	120	38	345.0	-68.0	RC	202RC	Deepen existing hole; is at 83m
2021_05	203RC2	335432.2	7880284.0	160	107	130	23	333.0	-73.0	RC	203RC	Deepen existing hole; is at 103m
2021_06	306RC2	335393.9	7880290.5	165	107	180	73	338.7	-60.1	RC	306RC	Deepen existing hole; is at 107m
2021_07	312RC2	335285.0	7880268.0	160	83	150	67	346.0	-69.0	RC	312RC	Deepen existing hole; is at 82m
2021_08	315RC	335539.5	7880352.3	160	0	180	180	350.0	-60.0	RC	New	Changed azimuth
2021_09	316RC	335482.2	7880295.7	160	0	180	180	325.0	-60.0	RC	New	
2021_10	317RC	335332.9	7880266.2	160	0	180	180	325.0	-60.0	RC	New	
2021_11	318RC	335275.0	7880253.1	160	0	160	160	325.0	-60.0	RC	New	
2021_12	319RC	335232.3	7880238.2	160	0	140	140	325.0	-60.0	RC	New	
2021_13	320RC	335184.7	7880220.5	160	0	120	120	325.0	-60.0	RC	New	
2021_14	321RC	335117.7	7880196.5	160	0	120	120	335.0	-60.0	RC	New	Changed azimuth
2021_15	322RC	335397.1	7880268.0	160	0	120	120	325.0	-60.0	RC	New	
2021_IP_01	323RC	335606.6	7880272.4	172.5	0	130	130	337.4	-60.0	RC	New	As suggested by GeoDiscovery
2021_IP_02	324RC	335499.9	7880530.0	202.1	0	130	130	337.5	-60.0	RC	New	As suggested by GeoDiscovery
2021_IP_03	325RC	335415.0	7880213.0	159.2	0	130	130	337.7	-60.0	RC	New	As suggested by GeoDiscovery

2021_IP_04	326RC	335379.4	7880299.8	154.8	0	130	130	337.7	-60.0	RC	New	As suggested by GeoDiscovery
2021_IP_05	327RC	335324.8	7880172.7	157.9	0	130	130	157.6	-60.0	RC	New	As suggested by GeoDiscovery
2021_IP_06	328RC	335312.0	7880203.8	155.7	0	130	130	337.6	-60.0	RC	New	As suggested by GeoDiscovery
2021_IP_07	329RC	335296.4	7880241.6	156.4	0	130	130	337.6	-60.0	RC	New	As suggested by GeoDiscovery
2021_IP_08	330RC	335159.8	7880189.3	155.6	0	130	130	337.5	-60.0	RC	New	As suggested by GeoDiscovery
2021_IP_09	331RC	335115.5	7880295.7	150.9	0	130	130	157.4	-60.0	RC	New	As suggested by GeoDiscovery
2021_IP_10	332RC	335497.0	7880060.0	155	0	100	100	180.0	-60.0	RC	New	extra from IP anomaly
2021_IP_11	333RC	335461.0	7880427.0	152	0	100	100	75.0	-60.0	RC	New	extra from IP anomaly

## 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 following mineral tenures are held 100% by subsidiaries of Castillo Copper Limited, totalling an area of 736.8 km² in the "Mt Oxide North Project" and as illustrated by Figure B3.</li> <li>EPM 26574 (Valparaisa North) – encompasses the Big One historical mineral resource, Holder Total Minerals Pty Ltd, granted 12-June-2018 for a 5-year period over 100 sub-blocks (323.3Km²), Expires 11-June-2023.</li> <li>EPM 26462 (Big Oxide North) – encompasses the 'Boomerang' historical Prospect and the 'Big One' historical mine, Holder: QLD Commodities Pty Ltd, granted: 29-Aug-2017 for a 5-year period over 67 sub-blocks (216.5Km²), Expires: 28-Aug-2022.</li> <li>EPM 26525 (Hill of Grace) – encompasses the Ayra (previously Myally Gap) significant airborne EM anomaly, Holder: Total Minerals Pty Ltd for a 5-year period over 38 sub-blocks (128.8Km²), Granted: 12-June-2018, Expires: 11-June-2023.</li> <li>EPM 26513 (Torpedo Creek/Alpha Project) – Granted 13-Aug-2018 for a 5-year period over 23 sub-blocks (74.2Km²), Expires 12-Aug-2023; and</li> <li>EPMA 27440 (The Wall) – Granted on the 08-March-2021 over 70 sub-blocks (~215Km²) by Castillo Copper Limited. Expires 7th March 2026.</li> </ul>



# Exploration done by other parties

 Acknowledgment and appraisal of exploration by other parties.

- Historical QDEX / mineral exploration reports have been reviewed for historical tenures that cover or partially cover the Project Area in this announcement. Federal and State Government reports supplement the historical mineral exploration reporting (QDEX open file exploration records).
- Most explorers were searching for Cu-Au-U, and, proving satellite deposit style
  extensions to the several small sub-economic copper deposits (e.g., Big Oxide
  and Josephine).
- With the Mt Oxide North Project in regional proximity to Mt Isa and numerous historical and active mines, the Project area has seen portions of the historical mineral tenure subject to various styles of surface sampling, with selected locations typically targeted by shallow drilling (Total hole depth is characteristically less than 50m).
- The Mt Oxide North project tenure package has a significant opportunity to be reviewed and explored by modern exploration methods in a coherent package of EPM's, with three of these forming a contiguous tenure package.
- Various Holders and related parties of the 'Big One' historical mining tenure (ML8451) completed a range of mining activities and exploration activities on what is now the 'Big One' prospect for EPM 26574. The following unpublished work is acknowledged (and previously shown in ASX releases' reference lists):
  - Katz, E., 1970, Report on the Big One, Mt Devine, and Mt Martin Mining Lease Prospects, Forsayth Mineral Exploration NL, report to the Department of Mines, CR5353, 63pp
  - West Australian Metals NL, 1994. Drill Programme at the "Big One"
     Copper Deposit, North Queensland for West Australian Metals NL.
  - Wilson, D., 2011. 'Big One' Copper Mine Lease 5481 Memorandum dated 7 May 2011.
  - Wilson, D., 2015. 'Big One' Mining Lease Memorandum dated 25 May 2015: and
  - Csar, M, 1996. Big One & Mt Storm Copper Deposits. Unpublished field report.
- The reader of the current ASX Release is referred to the CCZ's first publication of the 1993 historical reverse circulation drilling results for additional diagrams and drilling information ("Historic drill data verifies grades up to 28.40% Cu from <50m in supergene ore at Mt Oxide Pillar") released on the ASX by CCZ on the 14-January-2020.</p>
- The SRK Independent Geologists Report released by CCZ on the ASX on 28-July-2020 contains further details on the 'Exploration done by other parties -

		Acknowledgment and appraisal of exploration by other parties' this report is formally titled "A Competent Persons Report on the Mineral Assets of Castillo Copper Limited" Prepared as part of the Castillo Copper Limited (ASX: CCZ, LSE: CCZ) LSE Prospectus, with the effective date of the 17-July-2020.
Geology	Deposit type, geological setting, and style of mineralisation.	<ul> <li>The Mt Oxide North project is located within the Mt Isa Inlier of western Queensland, a large, exposed section of Proterozoic (2.5 billion- to 540-million-year-old) crustal rocks. The inlier records a long history of tectonic evolution, now thought to be like that of the Broken Hill Block in western New South Wales.</li> <li>The Mt Oxide North project lies within the Mt Oxide Domain, straddling the Lawn Hill Platform and Leichhardt River Fault Trough. The geology of the tenement is principally comprised of rocks of the Surprise Creek and Quilalar Formations which include feldspathic quartzites, conglomerates, arkosic grits, shales, siltstones and minor dolomites and limestones.</li> <li>The Project area is cut by a major fault zone, trending north- northeast – south-southwest across the permits. This fault is associated with major folding, forming several tight synclines- anticline structures along its length.</li> <li>The Desktop studies commissioned by CCZ on the granted mineral tenures described four main styles of mineralisation account for most mineral resources within the rocks of the Mt Isa Province (after Withnall &amp; Cranfield, 2013).</li> </ul>
		<ul> <li>Sediment hosted silver-lead-zinc – occurs mainly within fine-grained sedimentary rocks of the Isa Super basin within the Western Fold Belt. Deposits include Black Star (Mount Isa Pb-Zn), Century, George Fisher North, George Fisher South (Hilton) and Lady Loretta deposits.</li> <li>Brecciated sediment hosted copper – occurs dominantly within the Leichhardt, Calvert, and Isa Super basin of the Western Fold Belt, hosted in brecciated dolomitic, carbonaceous, and pyritic sediments or brecciated rocks proximal to major fault/shear zones. Includes the Mount Isa copper orebodies and the Esperanza/Mammoth mineralisation.</li> <li>Iron-oxide-copper-gold ("IOCG") – predominantly chalcopyrite-pyrite magnetite/hematite mineralisation within high grade metamorphic rocks of the Eastern Fold Belt. Deposits of this style include Ernest Henry, Osborne, and Selwyn; and</li> <li>Broken Hill type silver-lead-zinc – occur within the high-grade metamorphic rocks of the Eastern Fold Belt. Cannington is the major example, but several smaller currently sub-economic deposits are known.</li> </ul>

- Gold is primarily found associated with copper within the IOCG deposits of the Eastern Fold Belt. However, a significant exception is noted at Tick Hill where high grade gold mineralisation was produced, between 1991 and 1995 by Carpentaria Gold Pty Ltd, some 700 000 tonnes of ore was mined at an average grade of 22.5 g/t Au, producing 15 900 kg Au. The Tick Hill deposit style is poorly understood (Withnall & Cranfield, 2013).
- ROM Resources had noted in a series of recent reports for CCZ on the granted tenures, that cover the known mineralisation styles including:
  - Stratabound copper mineralisation within ferruginous sandstones and siltstones of the Surprise Creek Formation.
  - Disseminated copper associated with trachyte dykes.
  - o Copper-rich iron stones (possible IOCG) in E-W fault zones; and
  - possible Mississippi Valley Type ("MVT") stockwork sulphide mineralisation carrying anomalous copper-lead-zinc and silver.
- The Mt Oxide and Mt Gordon occurrences are thought to be breccia and replacement zones with interconnecting faults. The Mt Gordon/Mammoth deposit is hosted by brittle quartzites, and Esperanza by carbonaceous shales. Mineralisation has been related to the Isan Orogeny (1,590 1,500 Ma).
- Mineralisation at all deposits is primarily chalcopyrite-pyrite-chalcocite, typically as massive sulphide within breccias.
- At the Big One prospect, West Australian Metals NL described the mineralisation as (as sourced from the document "West Australian Metals NL, 1994. Drill Programme at the "Big One" Copper Deposit, North Queensland for West Australian Metals NL."):
  - The targeted lode / mineralised dyke is observable on the surface. The mineralisation targeted in the 1993 drilling programmed is a supergene copper mineralisation that includes malachite, azurite, cuprite, and tenorite, all associated with a NE trending fault (062° to 242°) that is intruded by a porphyry dyke.
  - The mineralised porphyry dyke is vertical to near vertical (85°), with the 'true width' dimensions reaching up to 7m at surface.
  - At least 600m in strike length, with strong Malachite staining observed along the entire strike length, with historical open pits having targeted approximately 200m of this strike. Exact depth of mining below the original ground surface is not clear in the historical documents, given the pits are not battered it is anticipated that excavations have reached 5m to 10m beneath the original ground surface.

- Associated with the porphyry dyke are zones of fractured and/or sheared rock, the siltstones are described as brecciated, and sandstones around the shear as carbonaceous.
- The known mineralisation from the exploration activities to date had identified shallow supergene mineralisation, with a few drillholes targeting deeper mineralisation in and around the 200m of strike historical open cut pits.
- A strongly altered hanging wall that contained malachite and cuprite nodules. Chalcocite mineralization has been identified but it is unclear on the prevalence of the Chalcocite; and
- The mineralisation was amenable to high grade open pit mining methods of the oxide mineralization (as indicated by numerous historical open pit shallow workings into the shear zone).
- Desktop studies commissioned by CCZ and completed by ROM Resources and SRK Exploration have determined that the Big One prospect is prospective for Cu, Co, and Ag.
- Desktop studies commissioned by CCZ have determined the Boomerang prospect contains:
  - Secondary copper staining over ~800m of strike length.
  - Associated with a major east-west trending fault that juxtaposes the upper Surprise Creek Formation sediments against both the underlying Bigie Formation and the upper Quilalar Formation units.
- At the 'Flapjack' prospect there is the additional potential for:
  - o Skarn mineralisation for Cu-Au and/or Zn-Pb-Cu from replacement carbonate mineralisation, particularly the Quilalar Formation.
  - Thermal Gold Auroele mineralisation is a potential model due to the high silica alteration in thermal aureole with contact of A-Type Weberra Granite – related to the Au mineralisation; and/or
  - o IOCG mineralisation related to chloride rich fluids.
- At the 'Crescent' prospect there is the additional potential for:
  - o Skarn mineralisation for Cu-Au and/or Zn-Pb-Cu from replacement carbonate mineralisation, particularly the Quilalar Formation; and/or
  - Thermal Gold Auroele mineralisation is a potential model due to the high silica alteration in thermal aureole with contact of A-Type Weberra Granite related to the Au mineralisation; and

		<ul> <li>IOCG mineralisation related to potassic rich fluids.</li> </ul>
		At the 'Arya' prospect there is the additional potential for:
		<ul> <li>Supergene mineralisation forming at the surface along the fault, fault breccia, and the Surprise Creek Formation 'PLrd' rock unit ('Prd' historical).</li> </ul>
		<ul> <li>Epigenetic replacement mineralisation for Cu (with minor components of other base metals and gold) from replacement carbonate mineralisation, particularly the Surprise Creek Formation.</li> </ul>
		<ul> <li>Skarn mineralisation for Cu-Au and/or Zn-Pb-Cu from replacement carbonate mineralisation, particularly the Surprised Creek Formation.</li> </ul>
		<ul> <li>Sulphide mineralisation within breccia zones, along stress dilation fractures, emplaced within pore spaces, voids, or in other rock fractures; and/or</li> </ul>
		<ul> <li>IOCG mineralisation related to chloride rich fluids.</li> </ul>
		<ul> <li>A selection of publicly available QDEX documents / historical exploration reports have been reviewed, refer to Section 2, sub-section "Further Work" for both actions in progress and proposed future actions.</li> </ul>
		<ul> <li>The SRK Independent Geologists Report released by CCZ on the ASX on 28- July-2020 contains further details on the 'Geology - Deposit type, geological setting and style of mineralisation': this report is formally titled "A Competent Persons Report on the Mineral Assets of Castillo Copper Limited" Prepared as part of the Castillo Copper Limited (ASX: CCZ, LSE: CCZ) LSE Prospectus, with the effective date of the 17-July-2020.</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> </ul>	This ASX release concerns itself with geophysical survey whereas previous ASX releases have discussed the 2020 drilling program in detail.
	<ul> <li>easting and northing of the drill hole collar</li> </ul>	
	<ul> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> </ul>	
	o dip and azimuth of the hole	
	o down hole length and interception depth	
	, ,	

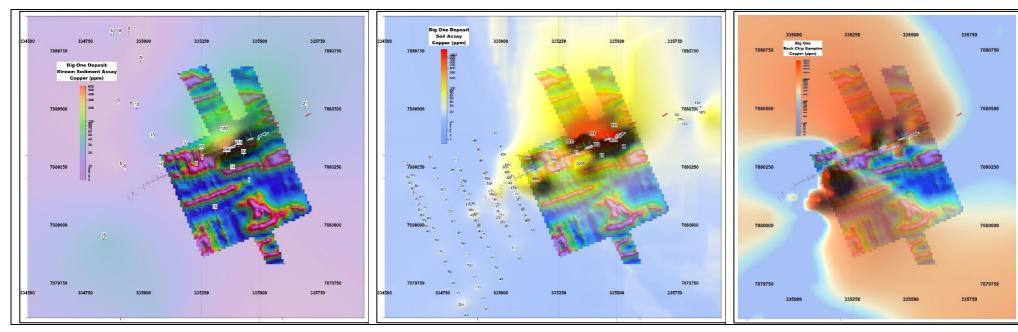
	<ul> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	
Data aggregation methods	<ul> <li>In reporting 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>	The new work was a ground geophysical dipole-dipole IP survey so there was no sample to aggregate.
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 (eg 'down hole length, true width not known').</li> </ul>	<ul> <li>The strike of the dyke is at 73 degrees (east) and variably 70-85 degrees dip to the south. The mineralised zones for copper (&gt;500ppm) interested in drillholes range from 1m to 44m wide apparent, averaging 9m apparent (6.8m true width). The IP survey was designed to intersect the strike of the mineralisation at a perpendicular angle.</li> <li>All mineralised intervals (i.e., &gt;500ppm) have been reported in this and previous ASX releases as the "as-intersected" apparent thickness (in metres) and given that most drillholes dip at -60 degrees from the horizontal, true intersection widths will be less, but will be calculated during the block modelling process.</li> </ul>
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	<ul> <li>Appropriate diagrams are presented in the body and the Appendices of the current ASX Release. Where scales are absent from the diagram, grids have been included and clearly labelled to act as a scale for distance.</li> <li>Maps and Plans presented in the current ASX Release are in MGA94 Zone 54, Eastings (mN), and Northing (mN), unless clearly labelled otherwise.</li> <li>A series of cross-sections were generated at Big One displaying copper analyses in ppm to aid interpretation and exploration planning as can be seen</li> </ul>

in Figure B4, below, which shows the geological section through which IP Line 3 traverses. FIGURE B4: NORTH-SOUTH CROSS-SECTION AT BO\_306RC Big One Deposit copper >100-1000 ppm Cu 8m @ 0.41% Cu 5m @ 0.66% Cu, Incl. 1m @ 1.30% C 12m @ 0.79% Cu Incl. 3m @ 2.03% Cu & 1m @ 4.27% Cu Halo Zone 1m @ 1.46% Cu 75mRL Balanced Where comprehensive reporting of all • All survey lines except Line 6 which was scrapped in favour of extending Line 3 reporting Exploration Results is not practicable, are discussed in detail in Appendix 3, following the JORC Table 1. representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. Other Other exploration data, if meaningful and • Several airborne EM and magnetic surveys have been conducted nearby by material, should be reported including (but not historical explorers and Castillo Copper has conducted its own surface sampling substantive limited to): geological observations; geophysical program prior to drilling commencing as noted above.

survey results; geochemical survey results; bulk

#### exploration samples - size and method of treatment; • As a result of further examination CCZ's geology team made the following recent data metallurgical test results: bulk density. key interpretations: groundwater. geotechnical and rock o The full assay results, which included the entire twenty-one (21) drillcharacteristics: potential deleterious holes completed are awaiting some clarifications and re-assay of contaminating substances. composites before a complete assessment of the data can be made and reported. Surface geochem sampling plots for copper ppm (Figure B5, below) highlight drilled and some undrilled anomalies. The presence of at least two mineralised lenses and a low-grade halo (100-1,500ppm) around the main ore body appears to hold along strike. o For drill-holes 213RC, 301RC, 303RC, 307RC, and 313RC the mineralisation is spread out which is significant given the trachyte to diorite dyke is generally 4-6m wide. o There is more than one dyke, however they may be offshoots of the main body. Compositions vary as rock types logged from the chips in both 1993 and the current campaign include trachyte, diorite, and granite (more probably a porphyritic syenite). Some of the drillholes will need to be deepened (or used as a seed hole for downhole EM) as they appear not to have been drilled deep enough to intersect the projected dyke at depth. The affected holes are 201RC, 202RC, 203RC, and 304RC. Planning for the IP Survey highlighted more target areas near Big One to the south and south-west where there are more trachyte dyke swarms that could be affected by structural control. Further work The nature and scale of planned further work Future potential work is described within the body of the ASX Release, and will (e.g., tests for lateral extensions or depth include: extensions or large-scale step-out drilling). o Of the current planned drilling program, eleven (11) of the reverse Diagrams clearly highlighting the areas of circulation drillholes are designed to target chargeability anomalies possible extensions, including the main identified from interpretation of the resistivity 3D block model. geological interpretations and future drilling Geological mapping and rock chip sampling over the anomalous areas, provided this information is not chargeability zones along each survey line commercially sensitive. Ground gravity and/or magnetic surveys. Reverse Circulation Drilling Diamond Coring. Block modelling and wireframing. Resource Estimation.

## FIGURE B5: BIG ONE IP 3D SHALLOW MODEL OVERLAIN BY SURFACE GEOCHEMICAL ASSAY RESULTS



## Notes:

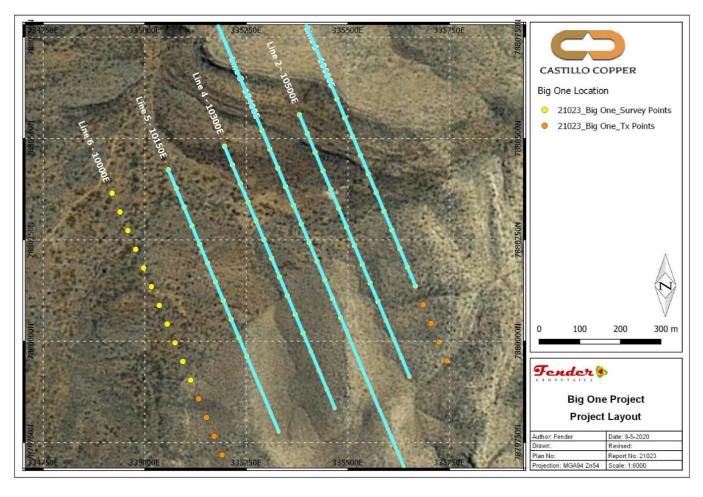
- Colour relief contour plots are all for copper assays in ppm. All coordinates are MGA94-Zone 54.
- > Plots, left to right, are for open-file and company sampling for stream sediments (-80#), soil, and rock chips.

## **APPENDIX C: APPENDIX 3: IP SUMMARY OF SURVEY RESULTS**

## **INTRODUCTION**

Castillo Copper retained Fender Geophysics to complete a total of five reconnaissance lines of 50m dipoledipole (DP-DP) Induced Polarisation (IP) surveying over the company's Big One prospect in May 2021. The location of the planned versus actual lines are shown in black on Figure C1 and Figure C3 with respect to the mapped dyke (blue), copper assays (orange) and mapped geology (black lines).

FIGURE C1: BIG ONE IP SURVEY TRAVERSE LINES



Due to the mine being privately held under mining lease (ML5481, now defunct) historical work has focussed on drilling and geochemical sampling, with no detailed geophysical data collection.

The copper intersected to date appears to be associated with a NE-SW trending dyke. It occurs in two zones - oxidised (malachite, azurite, tenorite, cuprite) and chalcocite. The aim of the IP survey was to ascertain if the copper mineralisation intersected to date has a discernible electrical response (chargeable and / or conductive). If so, it is hoped that other zones of similar electrical response can be highlighted to better focus the upcoming drill program. As drilling had occurred along the main trachyte/microsyenite dyke, calibration of the resistivity and chargeability responses was possible.

Six lines were originally planned to be acquired over intersected mineralisation associated with the dyke, however due to anomalous readings located at the end of lines, Lines 1 and 3 were extended in a NW direction, therefore Line 6 was not acquired at this stage. The lines are orientated NW-SE (perpendicular to the dyke) and spaced between 100 - 150m apart. Figure C3 displays the regional magnetic data (1991 MIM dataset).

Not unexpectedly, the copper mineralisation intersected to date does not display a mappable magnetic response, likely the result of the regional nature of the available magnetics. The highest intensity magnetic response is located to the east of the region of interest and thought to reflect possible underlying Eastern Creek Volcanics. Interestingly, the copper mineralisation appears to be associated with the north-western edge of the magnetic feature. The acquisition of detailed magnetics at appropriate line spacing should be considered.

Figure C2 illustrates the available open file airborne EM surveys from the QLD Department of Resources. There is no airborne EM coverage at Big One.

**AUSAEM Survey Lines EPM 26574** EPM 26426 EPM 26525 EPM 26513 

FIGURE C2: OPEN FILE AIRBORNE EM SURVEYS

Figure C3 displays the regional magnetic data (1991 MIM Open Range Survey). Not unexpectedly, the copper mineralisation intersected to date does not display a mappable magnetic response, likely the result of the regional nature of the available magnetics. The highest intensity magnetic response is located to the east of the region of interest and thought to reflect possible underlying Eastern Ck Volcanics. Interestingly, the copper mineralisation appears to be associated with the north-western edge of the magnetic feature. The acquisition of detailed magnetics at appropriate line spacing should be considered.

FIGURE C3: REDUCED TO POLE REGIONAL MAGNETICS WITH HIGH PASS (4KM) FILTER APPLIED

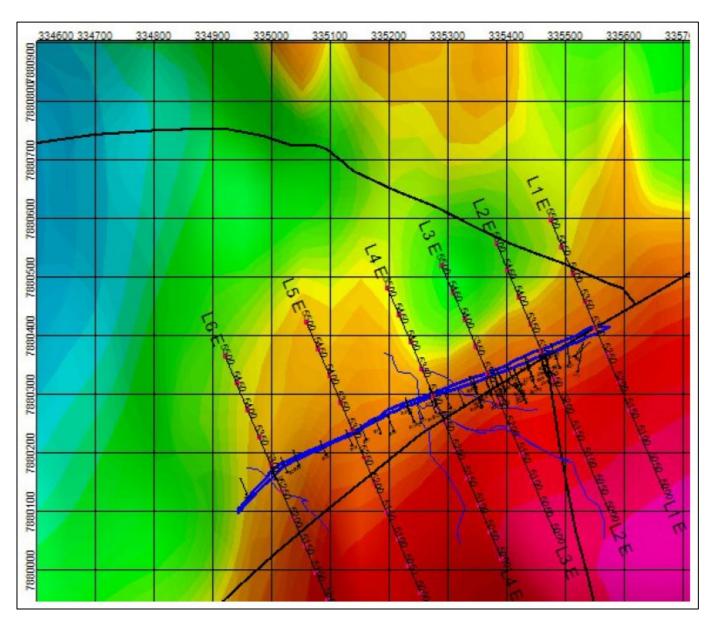
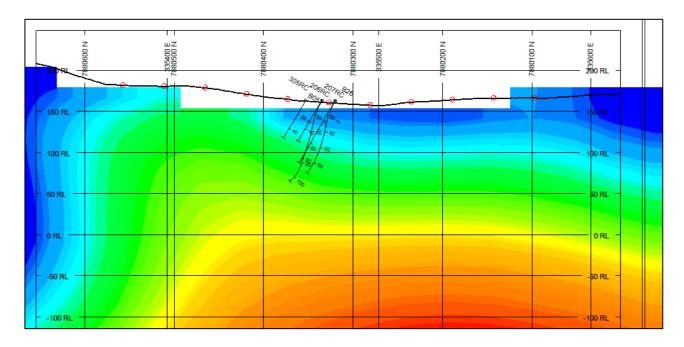


Figure C4 illustrates modelling of the regional magnetic data (1991 MIM Open Range Survey) along traverse Line 4. The section is looking east.

FIGURE C4: LINE 4 MODELLED TMI AND DRILLING



The depth of penetration of the survey was between 160-180m below the surface, that showed that mineralisation on some lines extended beyond these depths. Figures C5 and C6 show cross-sections of chargeability in mV/V for Lines 3 and 4, showing existing drilling, additional undrilled and unmapped anomalies, and proposed drilling.

FIGURE C5: LINE 3 CHARGEABILITY AND PROPOSED DRILLING (YELLOW)

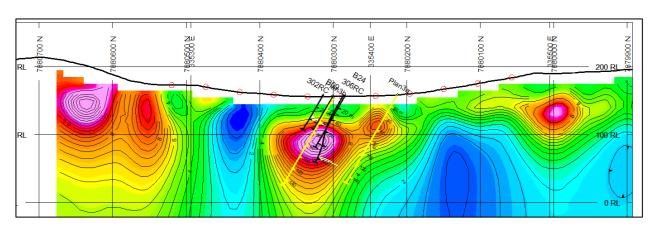
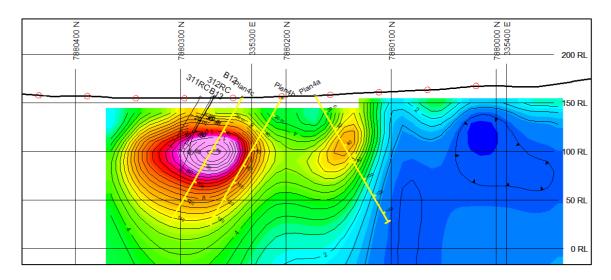


FIGURE C6: LINE 4 CHARGEABILITY AND PROPOSED DRILLING (YELLOW)



## 2D IP Chargeability and Resistivity Modelling

2D chargeability and resistivity modelling were then undertaken on the data using the Geotomo "RES2DINV" software tools. The tool allows data QC as well as inverse modelling to determine 2-D resistivity and IP models for the subsurface. A final check made there to remove any obvious outliers in the data prior to modelling and after first initial model run. The initial modelling was undertaken using a fine mesh (half unit dipole), smooth model inversion and a second model run and 12.5m cell size. IP chargeability was modelled for channels 10 - 15.

The smooth model output produces model changes in a smooth manner and minimises the difference between measured and calculated results point by point. The level of detail returned in the smooth IP models is high, especially near surface.

To allow direct comparison between profiles, the same resistivity colour-stretch has been applied to each line of the DP-DP survey. Resistive regions in the 2D models are displayed in warm colours, conductive regions in cool colours (top model) and regions of high chargeability are displayed with warm colours (bottom model). Topography has been included in all the models.

The 2D modelling indicates a maximum depth penetration of around 150 - 180 m (at N=10). Modelled 2D chargeability was found to range between 0 - 15 mV/V with several weak to moderate chargeable zones / trends mapped in the top 150m.

The 2D modelling of this survey data indicates a variably resistive response with sone regions of higher conductivity noted in the top 25 - 50m, particularly in topographically low regions likely to reflect clays associated drainage. The variably resistive basement is also interrupted in places, with regions of elevated conductivity (indicative of faults / possible association with mineralisation).

Results from line 3 (10400) and Line 4 (10300), as shown in Figures C5 and C6, indicate that the mineralisation is weak to moderately chargeable and generally resistive (but may be associated with structures displaying slight decrease in resistivity). It appears that the drilling undertaken to date proximal to Line 4 (10300) and Line 5 (10150) have not adequately tested areas of elevated chargeability. Several untested zones of elevated chargeability are also mapped on the northern lines.

It is recommended that where modelling indicates elevated chargeability occurs near surface, that the response be checked in the field to see if it can be explained by lithology. It is important to note that not all chargeable anomalies will reflect mineralisation – typically clays, uneconomic sulphides and some lithologies such as shales can also give chargeable responses.

## 3D IP Chargeability and Resistivity Modelling

3D modelling was undertaken to obtain an improved representation of the chargeability distribution in 3D. Topography was included in the 3D modelling. Although the 3D modelling is a compromise in that you lose some of the detail along line (evident in the 2D models) due to the necessary increased cell size, the benefits of 3D model output include ability to map trends between lines (useful for mapping stratigraphy and potential structures) as well as the model output may give indications of anomalies between lines.

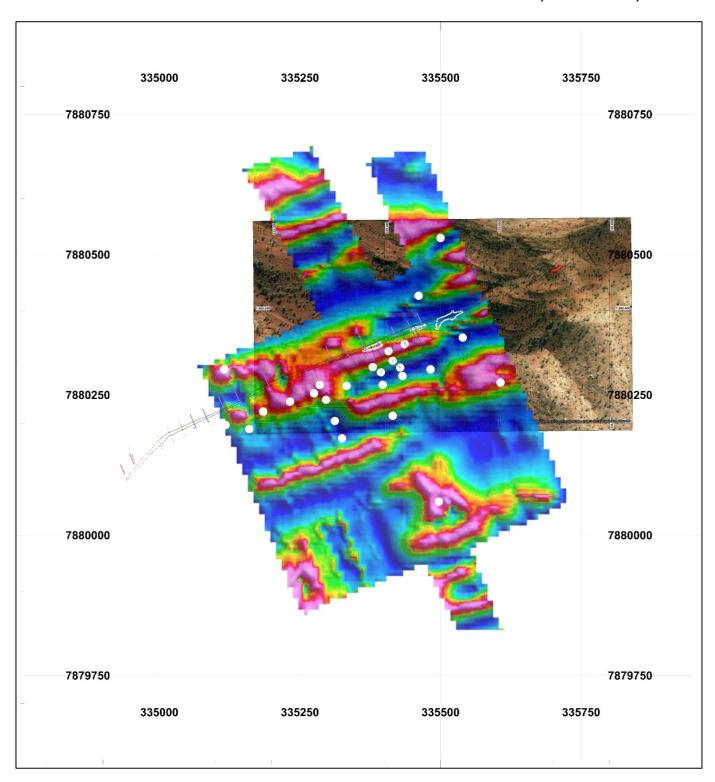
The DP-DP profiles were input into a 3D modelling package "Res3DInv". This package uses the smoothness-constrained least-squares inversion technique to produce a 3D model of the subsurface chargeability and resistivity. Whilst the output displays slightly less detail than the 2D smooth sections along line, more continuity of anomalies is noted, especially between lines.

The output from the "Res3DInv" model was imported into Geosoft, clipped to data boundaries and topography and regular depth slices (20m intervals) through the 3D chargeability and resistivity model

output, as well as sections were extracted at regular intervals. A representative snapshot of output from Res3DInv is shown in Figure C7, at a representative 40m depth slice and tilt-filtered through the 3D chargeability model.

Several shallow and deeper trends are evident in the data. These have been highlighted by applying a tilt derivate to the model output in in the figure. It is thought that these trends may reflect structures that may be important in understanding the mineralisation control.

FIGURE C7: SHALLOW CHARGEABILITY AND PROPOSED 2021 DRILLING (WHITE DOTS).



## **Conclusions & Recommendations**

3D inversion modelling of available IP sections acquired at the Big One prospect has been undertaken to provide an improved representation to the resistivity and chargeability distribution in the 3D space. In general, results are broadly like the detailed 2D section modelling (previous section) although there is a slight decrease in resolution along line, particularly near surface. This is to be expected with 3D modelling. The benefit of the 3D modelling is that more continuity is noted between lines and the centre of anomalies have been shifted to between line in some places.

The 3D modelling indicates the maximum depth of investigation of the DP-DP survey is likely to be around 150 - 180m at N=10. The known copper mineralisation displays a weak to moderate chargeable response and is generally resistive (although also appears to be proximal to a slight increase in conductivity which may reflect shears / structures).

It should be noted that whilst there is typically a direct correlation between chargeability and sulphide / clay concentration, it does not necessarily correlate to economic mineralisation. Lower amplitude chargeable anomalies can be of interest. It should also be recognised that a lower amplitude anomaly may simply reflect a deeper source (less power reaching source at greater depths).

Chargeable zones modelled at or near surface should be field verified to see if the response can be explained by lithology or evidence of sulphides. It is therefore recommended that the IP model output be reviewed in conjunction with other auxiliary datasets such as field mapping geochemistry and structural interpretation. Acquisition of detailed magnetics and gravity data would also assist structural interpretations.

In addition to the region of known mineralisation, it is recommended that the chargeability output be used to better target the continuation of chargeable trends (proximal to the dyke). A possible low – moderately chargeable off-shoot is also mapped adjacent and to the SW of the main known mineralised body and is worthy of further testing. To the north of the dyke, some higher chargeable responses are also noted. These features should be ground-truthed to see if they can be explained by a mapped sedimentary copper horizon.

As a result of the evaluation of data from the IP surveys carried out, the following recommendations are made:

- The 2D section models are likely to give the most accurate representation of the earth's conductivity and chargeability variations and should be used when drill targeting. The 3D model output allows trends and structures to be mapped and may give some indications of off-line anomalies.
- Treat anomalies on the edge of lines (and at depth) with caution. Although care was taken to remove spurious data, some edge effects may persist in the data. Before testing any anomalies, GeoDiscovery can check the raw data to verify if a particular anomaly likely to be real.
- 50m DP-DP is shown to be a cost-effective method to cover ground relatively quickly and map the
  electrical properties of the top 150m or so. If drill testing the regions of elevated chargeability proves
  successful, a larger 100m DP-DP or P-DP campaign may be considered to cover more ground and
  to greater depth.
- Incorporate the 3D and 2D IP models into the available geological database to determine the extent
  to which the chargeable zones may or may not have been tested, as well as their geological /
  stratigraphic significance.
- It is recommended that where IP anomalies occur near surface, a field visit is undertaken to see if anomaly can be explained by surficial clays / lithology.