

### ASX ANNOUNCEMENT 24 September 2014

### GEOPHYSICAL ANALYSIS AND TARGETING AT DOBROYDE, JUNEE PROJECT

### Highlights:

- A 3D geophysical modelling of the Dobroyde gold deposit confirms that alteration system and structures are open at depth with potential for additional gold resources.
- Magnetic response associated with chargeability and resistivity anomalies may indicate presence of buried mineralised intrusion, possibly a porphyry copper-gold system, northwest of Dobroyde.
- Initial ground validation work on the geophysical targets is in progress.

Managing Director, Dr Jeffrey Malaihollo, commented:

"The results of the 3D inversion modelling of geophysical datasets from Dobroyde are highly encouraging. Of particular interest are chargeability and resistivity anomalies that indicate the presence of sulphides and silica-rich alteration within and surrounding the Dobroyde gold deposit. This feature is open-ended to the northwest of Dobroyde and below the depth of any previous drilling, highlighting potential for additional gold resources with possible high-grade areas. Dobroyde has produced some spectacular high-grade gold intercepts within lower grade gold mineralisation from past drilling.

In addition to this, geophysical modelling and targeting analysis have also highlighted magnetic responses with associated chargeability and resistivity anomalies that may indicate the presence of a buried mineralised intrusion northwest of Dobroyde but within the same licence area.

There are significant porphyry copper-gold discoveries close to the Gidginbung gold deposit which is about 50 km north of Dobroyde. Gidginbung and Dobroyde are both high sulphidation epithermal gold deposits and this type of gold deposit is commonly associated with porphyry copper-gold. There is a good chance that a porphyry system occurs near Dobroyde.

Pending the results of our follow-up ground program currently in progress, we hope to commence scout drilling for high-grade gold resources and porphyry gold-copper targets at the end of this year's grain harvest."

Arc Exploration Limited (ASX Code: ARX) is pleased to announce the results of modelling of geophysical data collected from previous surveys conducted over the Dobroyde gold deposit. The geophysical modelling and a targeting analysis were done by Melbourne-based geophysical consultant, Chris Moore of Moore Geophysics Pty Ltd.

The project is located in a major grain and sheep farming area near the regional city of Wagga Wagga in central-western NSW. Dobroyde is located within an exploration licence held by New South Resources Limited ("NSR") on which ARX has the right to earn up to 80%.

Three dimensional ("3D") geophysical inversion modelling and a targeting analysis were performed on magnetic/radiometric data collected from a high-resolution airborne survey flown by Kevron Geophysics in 1996 and IP/Resistivity data collected from ground survey done by Fugro in 2007.

Results from this work are encouraging. They confirm potential for mineralised extensions along an open moderate plunge to the north of Dobroyde that has only been partly tested by previous shallow drilling and also highlight geophysical responses in support of the potential for a mineralised porphyry system at depth.

Dobroyde is hosted in volcanic rocks near the Gilmore Fault Zone, a major structure that controls the distribution of similar high-sulphidation epithermal gold and associated porphyry copper-gold occurrences in the region.

Several targets have been identified and recommended for drill testing. Surface prospecting and rock sampling are in progress over these target areas to validate the geophysical targeting. Pending these results, a scout drilling program may be planned to commence after the grain harvest either later this year or early next year.

# **Background on the Junee Project**

The Junee Project comprises four contiguous Exploration Licences (EL's 6516, 6658, 6768 & 8152) covering about 87 km² that straddle part of the major regional Gilmore Fault Zone and contains rocks of the Junee-Narromine Volcanic Belt, part of the highly prospective Ordovician-Early Silurian Macquarie Volcanic Arc in the Lachlan Orogen.

Large porphyry-related gold and gold-copper deposits, such as Northparkes, Gidginbung and Cowal, occur along this fertile volcanic belt and their distribution is also spatially related to the Gilmore Fault Zone and its associated fault splays.

EL 6516 contains the 77,000-ounce *Dobroyde* gold deposit (see ASX announcements of 3<sup>rd</sup> and 10<sup>th</sup> July 2013) on which historic drilling has produced some spectacular high-grade gold intercepts within a low-grade mineralization envelope (see ASX announcements of 9<sup>th</sup> October and 4<sup>th</sup> November 2013). The deposit is a high-sulphidation type epithermal gold system that occurs in structurally controlled zones of silica-sulphide alteration and cross-cutting baryte-rich breccias surrounded by clay-rich alteration zones in andesitic volcanic host rocks.

The project shows potential to increase in size through the discovery of new gold and gold-copper resources, and occurs near major mine operations and development infrastructure.

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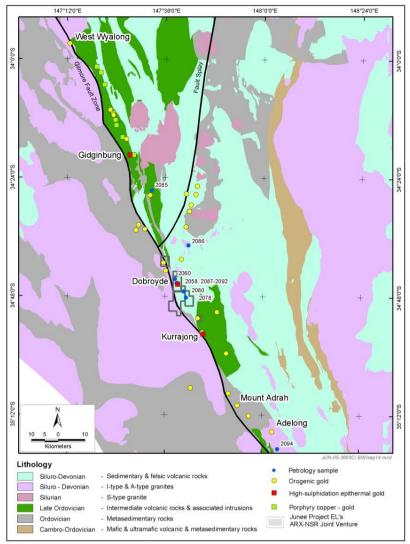
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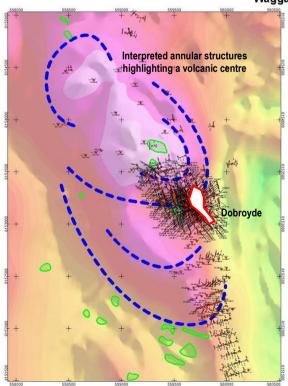
# Competent Person Statement

The information in this announcement that relates to Exploration Results from the Dobroyde gold prospect on the Junee Project in New South Wales, Australia is based on information compiled by Mr Brad Wake, BSc (Applied Geology), who is a Member of the Australian Institute of Geoscientists and Fellow of the Society of Economic Geologists. Mr Wake has sufficient experience that is relevant to the styles of mineralisation and types of deposit under consideration and to the activity which is 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.' Mr Wake is a full time employee of Arc Exploration Limited and consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

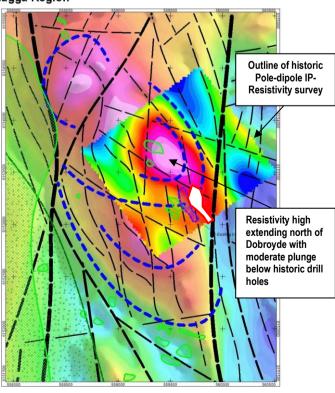
The information in this report that relates to the Dobroyde gold resource is extracted from the report entitled Junee and Oberon Projects - Statement of Resources created and released to the ASX on 10 July 2013. The report referred to above is available to view on the Company's website: <a href="www.arcexploration.com.au">www.arcexploration.com.au</a> 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, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant 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.



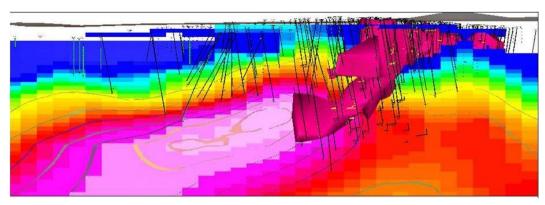
Regional Geology & Gold-Copper Occurrences Wagga Wagga Region



Dobroyde gold deposit outline & drill hole plan on RTP magnetics background



Dobroyde gold deposit outline & resistivity depth plan (100mRL), RTP magnetics background & structural interpretation



Resistivity inversion model - North-South Section (Looking East)
Showing Dobroyde gold resource shell and overlapping resistivity high (magenta) supporting interpretation of an open moderate plunge to the north below historic drill holes



# JORC Code, 2012 Edition – Table 1 report template

**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 (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	No new drilling results are reported herewith.
Drilling techniques	<ul> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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 drilling results are reported herewith.
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>	No new drilling results are reported herewith.
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>	No new drilling results are reported herewith.

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Criteria	JORC Code explanation	Commentary
techniques and sample preparation	<ul> <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>	
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	No new drilling results are reported herewith.
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>	No new drilling results are reported herewith.
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>	No new drilling results are reported herewith.
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>	No new drilling results are reported herewith.
Orientation of data in relation	Whether the orientation of sampling achieves unbiased sampling of possible	No new drilling results are reported herewith.

Criteria	JORC Code explanation	Commentary
to geological structure	<ul> <li>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>	
Sample security	The measures taken to ensure sample security.	No new drilling results are reported herewith.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No new drilling results are reported herewith.

# JORC Code, 2012 Edition – Table 1 report template Section 2 Reporting of Exploration Results

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 Dobroyde gold deposit is wholly contained within EL 6516 and is held 100% by a private company, New South Resources ("NSR") Pty Ltd. ARX has an option to farm- in to the Junee Project, which includes EL 6516. Details were announced in an ARX report released to the ASX 3 July</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The airborne magnetic and radiometric survey mentioned in this announcement was flown by Kevron Geophysics for Gold Mines of Australia (GMA) in1996, with a line spacing of 50m and a mean terrain clearance of 50m.</li> <li>The ground IP-Resistivity survey referred to in this announcement was conducted by Fugro for North South Resources in 2007. The IP and resistivity data were collected using an offset pole dipole array on 50m stations and lines 100m apart.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>Located in the central-southern part of the Lachlan Orogen</li> <li>EL 6516 straddles the highly prospective and regionally significant Gilmore Fault Zone and contains rocks of the Junee-Narromine Volcanic Belt, part of the highly prospective Ordovician-Early Silurian Macquarie Volcanic Arc. Large porphyry-related gold and gold-copper deposits, such as Northparkes, Gidginbung and Cowal, occur along this fertile volcanic belt and their distribution is also spatially related to the Gilmore Fault Zone and its associated fault splays.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>EL 6516 is prospective for high sulphidation-style epithermal gold &amp; porphyry gold-copper within the Ordovician volcanic rock unit.</li> <li>Deposit Geology: The Dobroyde high-sulphidation epithermal gold deposit lies within an inlier of Junawarra Volcanics, which contain andesitic to dacitic lavas, pyroclastics and rhyolitic dykes. It occurs in northwest-trending linear structures adjacent to the major regional Gilmore Fault Zone. The interpreted mineralised envelope is approximately 350m long and 40 to 80 m wide, plunging 20-25 degrees northward.</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:         <ul> <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> </ul> </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>	No new drilling results are reported herewith.
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg 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>	No new drilling results are reported herewith.
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>	No new drilling results are reported herewith.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be	Diagrams are included with this announcement.

Criteria	JORC Code explanation	Commentary
	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.	
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>	No new drilling results are reported herewith.
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, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul> <li>There is no other substantive data to report other than what has appeared in previous announcements on Dobroyde by ARX.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg 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>	A ground evaluation of the geophysical targets is in progress.