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#### 6 December 2017

Company Announcement Officer ASX Limited Exchange Centre 20 Bridge Street SYDNEY NSW 2000

# EXTENSIVE BASE METAL SYSTEM BENEATH BOWDENS SILVER DEPOSIT

#### **Highlights**

- Drilling results confirm extensive zones of base metal mineralisation associated with the large IP chargeability zone beneath the Bowdens Silver resource.
- Results include;
  - 138 metres @ 0.62% zinc, 0.46% lead, 9g/t silver from 276 metres including:
  - 59.65 metres @ 0.75% zinc, 0.58% lead, 9g/t silver from 312.35 metres and:
  - 25.05 metres @ 0.99% zinc, 0.67% lead, 10g/t silver from 377.95 metres.
- The results demonstrate the existence of a significant base metal system hosted in basement rocks beneath the Bowdens Silver Deposit.
- Initial interpretation indicates that deeper drilling is required beneath the intercepted zones.
- Drilling continues.

#### **Bowdens Induced Polarisation Chargeability Drill Testing**

Silver Mines Limited ("Silver Mines" or "the Company") is pleased to advise that it has received final assay results for hole BRD17023 and completed a second hole, BRD17083, into the induced polarisation ('IP') chargeability target directly underneath the Bowdens Silver Deposit.

#### **Drill Hole BRD17023**

BRD17023 was the first drill hole completed into the IP chargeability target directly underneath the Bowdens Silver Deposit (See Figure 1). The hole recorded a significant interval of base metal mineralisation hosted within a stockwork of quartz-carbonate veins within the basement Coomber Formation. The Eastern Fault is recognised to be a significant bounding structure to mineralisation at Bowdens Silver. Several smaller zones of higher zinc and lead were also recorded. The style of base metal mineralisation is broadly consistent with that recorded from deeper drilling completed at Bundarra Deeps, located approximately 250 metres north along-

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strike and now indicates continuous Bundarra Deeps style mineralisation over a 400 metre strike extent which remains open along strike and down dip. Previous announced drilling results at Bundara Deeps recorded intercepts including;

- 31.25 metres @ 3.24% zinc, 1.88% lead, 23g/t silver and 0.4g/t gold (218g/t Ag Eq.)
   from 283.75 metres including;
- 18.25 metres @ 4.6% zinc, 3.0% lead, 31g/t silver and 0.52g/t gold (313g/t Ag Eq.)
   from 283.75 metres and
- 315.2 metres @ 0.70% zinc, 0.41% lead, 26g/t silver (63g/t Ag Eq.) from 96 metres

For further information please refer to ASX release of 15<sup>th</sup> March 2017, 12<sup>th</sup> May 2017 and 7<sup>th</sup> June 2017.

The Bundarra Deeps mineralisation occurs as an extensive, stockwork vein hosted, moderately west dipping body above the Eastern Fault which encompasses smaller, tabular, gently west dipping zones of semi-to massive base metal mineralised horizons.

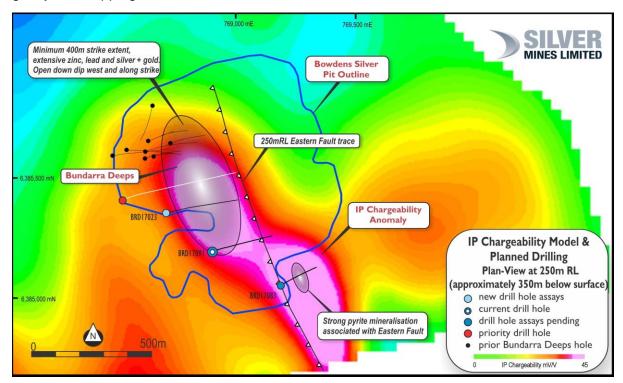


Figure 1. Plan view slice of IP chargeability anomaly at 250mRL (approximately 350 metres below surface) and the planned drilling program.



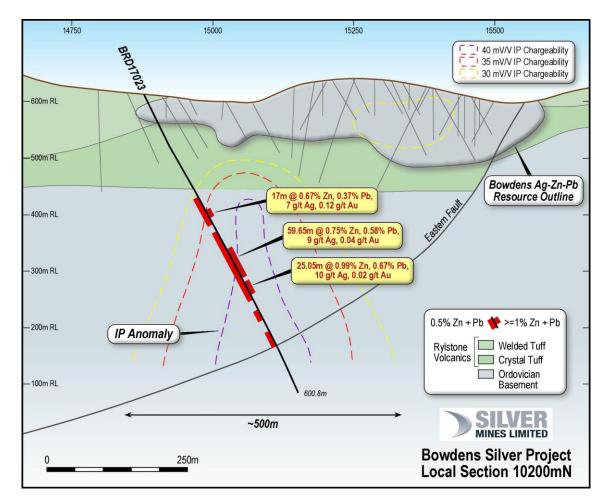


Figure 2. Cross Section of BRD17023.

Table 1: Drill hole intersections for BRD17023 using 1. a minimum 0.5% zinc + lead cut-off over 10 metre interval and up to 10 metre internal continuous dilution, 2. A minimum 1% zinc + lead cut-off over 10 metre interval and up to 5 metre internal continuous dilution or 3. A minimum 2% zinc + lead cut-off over 4 metre interval and up to 1 metre internal dilution.

Cut off	From	То	Interval	Zinc	Lead	Silver	Gold
	(metres)	(metres)	(metres)	(%)	(%)	(g/t)	(g/t)
1	206.2	263	56.8	0.38	0.25	7	0.11
2	233	250	17	0.67	0.37	7	0.12
1	276	414	138	0.62	0.46	9	0.03
2	312.35	372	59.65	0.75	0.58	9	0.04
3	323	327	4	1.69	1.95	27	0.10
2	377.95	403	25.05	0.99	0.67	10	0.02
3	398	402	4	2.40	1.67	21	0.02
1	433	456	23	0.48	0.33	7	0.02
1	479	503.7	24.7	0.39	0.27	5	0.03



#### **Drill Hole BRD17083**

BRD17083 was completed to 459 metres to test the southern extend of the induced polarisation ('IP') chargeability target, located approximately 400 metres along-strike south of BRD17023. The hole intersected intervals of quartz-carbonate vein hosted base metal mineralisation within the basement Coomber Formation. The IP anomaly was explained by strong pyrite mineralisation associated with the Eastern Fault. It is apparent that BRD17083 closes out "Bundarra Deeps" style mineralisation to the south.

Final down-hole assay results from BRD17083 are expected in the coming weeks.

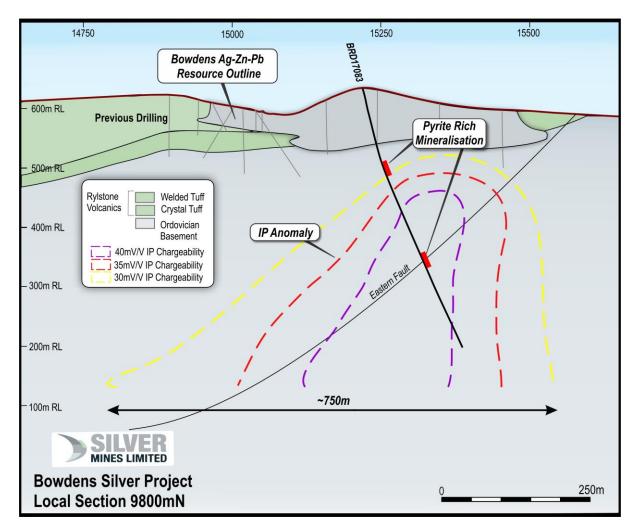


Figure 3. Cross Section of BRD17083.

#### **Discussion**

Silver Mines considers that the Bundarra Deeps mineralisation including the recent results from BRD17023 represents a substantial hydrothermal base-metal system capable of hosting accumulations of massive sulphide horizons. The Company also considers that the source to both the Bundarra Deeps and Bowdens Silver mineralised systems remains to be discovered at depth further west.



Silver Mines is currently assessing to undertake additional geochemical and geophysical studies to assist in the understanding and continued exploration across the Bowdens Silver/Bundarra Deeps target areas.

Drill testing of the Bowdens IP chargeability anomaly will continue in the central portion of the target zone.

#### **About the Bowdens Silver Project**

The Bowdens Silver Project is located in central New South Wales, approximately 26 kilometres east of Mudgee (Figure 3). The recently consolidated project area comprises 1,654 km² (408,000 acres) of titles covering approximately 80 kilometres of strike of the highly mineralised Rylstone Volcanics. Multiple target styles and mineral occurrences have potential throughout the district including analogues to Bowdens Silver, high-grade silver-lead-zinc epithermal and volcanogenic massive sulphide (VMS) systems and copper-gold targets.

Bowdens Silver is the largest undeveloped silver deposit in Australia with substantial resources and a considerable body of high quality technical work already completed. The projects boast outstanding logistics for future mine development.

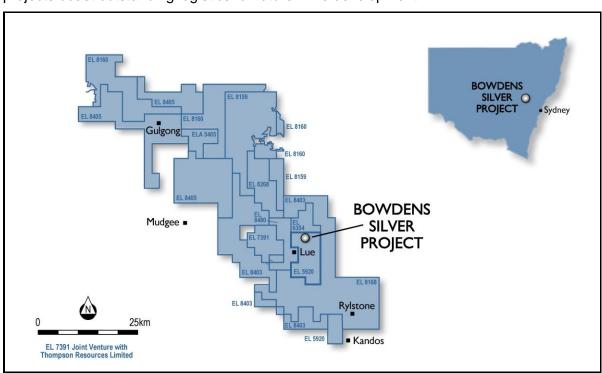


Figure 3. Bowdens Silver tenement holdings in the Mudgee district.

Yours faithfully Silver Mines Limited

Trent Franklin
Company Secretary

Silver Mines Limited ABN: 45 107 452 942



#### **About Silver Mines Limited**

The Silver Mines strategy has been to consolidate quality silver deposits in New South Wales and to form Australia's pre-eminent silver company.

The Company's goal is to provide exceptional returns to shareholders through the acquisition, exploration and development of quality silver projects and by maximising leverage to an accretive silver price.

#### **Competent Persons Statement**

The information in this report that relates to mineral exploration results is based on information compiled or reviewed by Mr Scott Munro who is a full-time employee of the company. Mr Munro is a member of the Australian Institute of Geoscientists (AIG) and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken, to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC code). Mr Munro consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.



## **Appendix 1 Drill Hole Details**

Hole ID	GDA94 East	GDA94 North	RL	Dip	Azimuth (mag)	EOH (m)	Comment
BRD17023	768708	6385345	614	-65	62	600	assays received
BRD17083	769161	6385037	628	-77	45.5	460	assays pending



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# **JORC Code, 2012 Edition – ANNEXURE 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 1m samples from which 3kg was pulverised to produce a 30g 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>Sampling taken from NQ diamond core and from reverse circulation (RC) drill chips.</li> <li>NQ size core - all samples taken as nominal 1 metre intervals from half-cut core and from the same side of the core.</li> <li>RC samples collected on a 1m interval from a cone splitter.</li> <li>Each sample represents approximately 2 kilograms of material</li> <li>Each sample was sent for multi-element assay using ICP techniques with the entire sample pulverized and homogenized with a 50g extractaken for assay.</li> <li>Assays are considered representative of the sample collected.</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>Diamond drilling undertaken using HQ &amp; NQ diamond core rig with standard tube.</li> <li>All core, where unbroken ground allows, is oriented by drilling team and an orientation line along the base of the hole.</li> <li>RC drilling using a 139mm hammer.</li> </ul>



Criteria	JORC Code explanation	Commentary
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>Core recovery is estimated at greater than 95%.</li> <li>Some zones (less than 10%) were broken core with occasional clay zones where some sample loss may have occurred. However, this is not considered to have materially affected the results.</li> <li>RC samples are weighed for each metre and assessed for recovery, contamination and effect of water if present.</li> <li>No significant relationship between sample recovery and grade exists.</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>All diamond holes are logged using lithology, alteration, veining, mineralization and structure including geotechnical structure.</li> <li>RC chip samples are logged using lithology, alteration, veining and mineralization.</li> <li>All core and chip trays are photographed using both wet and dry photography.</li> <li>In all cases the entire hole is logged by a geologist.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core were 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>Minor selective sub-sampling based on geology to a maximum size of 1.3m and a minimum of 0.3m.</li> <li>All core is cut using a Corewise core saw with core rotated 10 degrees to the orientation line to preserve the orientation for future reference.</li> <li>The half (NQ) of the core without the orientation line is removed, bagged and sent to the laboratory for assay.</li> <li>Sample sizes are considered appropriate for the rock type, style of mineralisation, the thickness and consistency of the intersections and assay ranges expected at Bowdens.</li> <li>RC samples are collected from a cone splitter at a 6% split. The cyclone/splitter system is checked periodically throughout each hole and cleaned when necessary. To assess the representation of material sampled a duplicate 6% split sample is collected from a secondary sample chute on the opposite side of the cone splitter at the rate of 1/20.</li> </ul>
Quality of assay data	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is	Samples dispatched to ALS Global laboratories in Orange NSW for sample preparation and gold analysis Au-AA25. 33 multi-element



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and laboratory tests	<ul> <li>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, calibration 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>analysis completed at ALS Brisbane using method ME-ICP61.</li> <li>Site Standards are inserted every 20 samples to check quality control and laboratory standards and blanks every 25 samples to further check results.</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>Significant intersections calculated by site-geologists.</li> <li>All geological logging is entered digitally before inputting into a Maxwell Geoservices database schema.</li> <li>Primary assay data is sent electronically from the lab to the SVL database administrator and then entered into the geological database for validation.</li> <li>All assays matched with the logging sheets and loaded directly from the output provided by the laboratory with no manual entry of assays undertaken.</li> <li>No adjustments were made or required to be made to the assay data.</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>The collar position is initially surveyed using hand-held GPS with accuracy of +- 5 metres. Periodically, Real Time Kinetic by VRS Now surveys are conducted with accuracy of +-1cm.</li> <li>Down hole surveys collected every 30 metres using an electronic downhole reflex survey camera.</li> <li>The terrain includes steep hills and ridges and with a topographical model of 0.034 metre accuracy.</li> <li>All collars recorded in MGA94 zone 55 and also re-projected to a locally defined mine-grid system.</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>This drilling is designed as preliminary exploration targeting a geophysically derived induced polarization chargeability model on approximate 200m spaced sections.</li> </ul>

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Criteria	JORC Code explanation	Commentary
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 orientation was designed to intersect the projection of breccia zones and zones of veins within an overall mineralized envelope.</li> <li>An interpretation of the mineralization has indicated that no sampling bias has been introduced.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>All samples bagged on site under the supervision of two senior geologists with sample bags tied with cable ties before being driven by site personnel to the laboratory in Orange, NSW (~200km from the site)</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>The drilling campaign and drill work includes on-going internal auditing with advice taken on process from external advisors.</li> </ul>

# **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 Bowdens Resource is located wholly within Exploration Licence No EL5920, held wholly by Silver Mines Limited and is located approximately 26km east of Mudgee, New South Wales.</li> <li>The tenement is in good standing.</li> <li>The project has a 2.0% Net Smelter Royalty which reduces to 1.0% after the payment of US\$5 million over 100% of the EL5920.</li> <li>The project has a 1.85% Gross Royalty over 100% of EL5920.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The Bowdens project was previously managed by Kingsgate Consolidated and Silver Standard Ltd, however the new drilling reported under this table is based on work conducted solely by Silver Mines/Bowdens Silver.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Bowdens Deposit is a low sulphidation epithermal base-metal and silver system hosted in Permian Volcanic rocks.</li> <li>Mineralisation includes veins, shear veins and breccia zones within</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>tuff and ignimbrite rocks.</li> <li>Mineralisation is overall shallowly dipping (~15 degrees to the north) with high-grade zones preferentially following a volcanic dome. There are several vein orientations within the broader mineralized zones including some areas of stock-work veins.</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; and</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>	All information is included in Appendix 1 of this report.
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>Intersection calculations based weighted averages on; 0.5% combined lead + zinc cut-off for low grade results, 1% combined lead + zinc cut-off for higher-grade results or a 2% combined lead + zinc cut-off for high-grade results.</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>Mineralisation is both stratabound and vein hosted. The stratigraphy dips moderately to the north while the majority of mineralised veins dip west. Some individual veins intersected were sub-parallel (~10 degrees to core axes). The drilling width is estimated to be 120% of true-width for stratabound mineralisation.</li> </ul>

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Criteria	JORC Code explanation	Commentary
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>Maps and cross-sections provided in the body of this report.</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 results received and compiled to date are reported in this release.</li> <li>Drilling is ongoing with further results expected to provide a more detailed assessment of the mineralised zones.</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 and potential deleterious or contaminating substances.	This report relates to drill data reported from this program.
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>This report relates to a drill program that is designed to test a geophysical induced polarization chargeability target. Drilling is on- going with further results pending.</li> </ul>