

*Havilah Resources Limited* plans to sequentially develop its portfolio of gold, copper, iron, cobalt, tin and other mineral resources in South Australia. Our vision is to become a new mining force, delivering value to our shareholders, partners and the community.

169 million Ordinary Shares -- 36 million Listed Options -- 8 million Unlisted Options

### ASX and Media Release: 2 August 2016

ASX Code: HAV



Gold mineralised veining and replacement in bedrock exposed in Portia open pit floor

# LONGER TERM POTENTIAL INDICATED FOR PORTIA GOLD MINE

## **HIGHLIGHTS**

- High grade bedrock\* gold drilling intersections from southern extensions, including 6 metres of 53.6 g/t.
- Base of Tertiary gold mineralisation averaging 12.2 g/t over 2 metres thickness in southern extensions.
- Primary vein/replacement style bedrock gold mineralisation system confirmed in pit floor.
- Revisions to the mining plan will transform the Portia Gold Mine into a long life mining operation.
- Potential for long term sustained cash flow from the Portia Gold Mine beyond its current life of six months.

**Havilah Resources Limited** ("Havilah" or "Company") is pleased to report that recent drilling results and sampling of bedrock exposures in the floor of the Portia open pit confirm a primary gold mineralised system with excellent prospects for expansion of the current operation into a large, long life mining operation. This will require reworking of the current mine design and the longer term mine plans going forward to ensure the full potential of the Portia gold deposit is unlocked. It will also require securing the appropriate approvals from the Department for State Development for expansion of the mining operation.

\* Bedrock as used here refers to mostly weathered and oxidised free digging metamorphic rocks of Broken Hill age.



High grade bedrock gold intersections from recent drilling of the Portia open pit southern extensions include:

**PTAC 228**: 6 metres of 53.6 g/t Au from 68 - 74 metres **PTAC 231**: 13 metres of 8.4 g/t Au from 79 - 92 metres

These results corroborate earlier high grade bedrock intersections in this vicinity, that were reported during initial resource drilling almost ten years ago (refer ASX announcements of 31 August 2006 and 8 February 2007 - note that all the assumptions underpinning the information continue to apply and have not materially changed) including:

**PTAC 177**: 8 metres of 10.0 g/t Au from 96 -104 metres **PTAC 191**: 26 metres of 15.4 g/t Au from 75 -101 metres **PTAC 193**: 13 metres of 33.5 g/t Au from 84 - 97 metres **PTAC 197**: 25 metres of 14.5 g/t Au from 74 - 99 metres **PTAC 205**: 26 metres of 9.0 g/t Au from 76 - 98 metres

Base of Tertiary gold mineralisation, which has been the primary mining objective at Portia to date, was intersected in all southern extension drillholes and averages 12.2 g/t over approximately 2 metres thickness in nine drillholes. The grades and consistency of this gold mineralisation alone is expected to justify an initial cut back of the southern pit wall by at least 50 metres, without taking into account the underlying bedrock mineralisation (refer to sections attached).

All of the new drilling results reported here have been verified by hand washing of the drill samples as there are often large disparities between conventional laboratory gold fire assays and the larger and more reliable washed samples due to the ubiquitous coarse gold nugget effect (refer to JORC Code Table 1 attached). Other high grade (>30 g/t) conventional gold assays received are supported by abundant visible gold in panned concentrates, and will be reported when results from the more reliable washing and concentration method become available.

Observation of bedrock exposures in the pit floor confirms that the gold mineralisation is a primary feature related to a vein/replacement mineralisation system similar to that at Kalkaroo and in the same regional "prospective sequence" stratigraphic package of rocks. As such the gold mineralisation is likely to be developed over several tens of metres width and have considerable strike and depth extent. A pervasive carbonate - sulphide cross cutting vein system is observed over the 30 metres width of the current pit floor, and the full width will only be evident as further exposures are created by mining (see attached photographs). Sampling and panning of the oxidised vein material accessible in the pit walls shows abundant visible fine-grained gold, similar to that observed in the drill samples. Precise tonnage and grade parameters will only be determined by systematic drilling from the pit floor. With this objective in mind, nine drillholes have already been completed in the current pit floor.

**Commenting on recent developments Havilah Managing Director, Dr Chris Giles, said:** "While we have always suspected on geological grounds that Portia harboured something much larger at depth, it is satisfying to now have the indicative physical evidence before our eyes.

"We are very familiar with the vein/replacement style of mineralisation we are now seeing exposed at Portia, from Kalkaroo and many other prospects we have drilled in the region.

"Experience tells us that such mineralised systems tend to be wide and strike and depth persistent.

"Our target objective is therefore a large gold deposit where the high grade gold zones are surrounded by a background of lower grade gold mineralisation that overall presents a likely economic bedrock mining proposition.

"Given we now have a much clearer picture from mine exposures, our forward drill targeting can be more precisely directed. We plan to do a lot more diamond drilling, that do date we have not had the opportunity of undertaking due to financial constraints.



"Even at this early stage, it is now clear that our modest Portia resource and initial short mine life open pit will require extensive revision as we endeavour to transition Portia towards a long life gold mining operation. "We have removed the bulk of the overburden, have a proven operational gold plant and will soon be debt free, so any incremental increase in gold recovered will materially affect our cash flow in a positive way" he said.

Going forward, Havilah's focus at Portia will now be on the following key tasks:

- 1. Drill-testing the extent of the gold mineralisation from south of Portia (including the Lorenzo prospect) all the way through to North Portia and beyond – a distance of more than 2 km within the current mining lease.
- 2. Revising mine plans and mine designs to incorporate new bedrock resources as they are defined by drilling.
- 3. Permitting work to ensure timely delivery of permits to allow expanded mining plans to proceed in an orderly manner.

### About the Portia gold deposit:

Portia has a JORC Inferred Resource of 720,000 tonnes @ 2.9 g/t for 67,000 ounces of contained gravity recoverable gold (refer to ASX announcement dated 26 June 2009 - note that all the assumptions underpinning the information continue to apply and have not materially changed). The gold occurs as free grains, mostly within a 2-3 metre thick distinctive light grey silty horizon that lies beneath approximately 75 metres of free-digging Tertiary clay and sand overburden. The current mining plan is based on an optimised open pit design that aims to recover at least 80% of this resource. Considerable upside potential exists in the immediately underlying ancient Broken Hill age bedrock that is known to host a major gold mineralised replacement/vein system, and which is considered to be the source of the gold resource currently being mined. Recovery of the gold is by low cost gravity methods that does not require the use of chemicals.

#### **Cautionary Statement**

This announcement contains certain statements which may constitute "forward-looking statements". Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, performance or achievements to differ materially from those expressed, implied or projected in any forward looking statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

### **Competent Persons Statement**

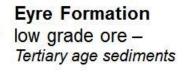
The information in this announcement that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on data and information compiled by geologist, Dr Chris Giles, a Competent Person who is a member of The Australian Institute of Geoscientists. Dr. Giles is Managing Director of the Company and is employed by the Company on a consulting contract. Dr. Giles has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr. Giles consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

For further information visit www.havilah-resources.com.au Contact: Dr Chris Giles, Managing Director, on (08) 8338-9292 or email: info@havilah-resources.com.au





Geology and gold mineralised zones exposed in Portia pit walls.



# Light grey clay

high grade ore – approx. 2m thick base of Tertiary sedimentary layer

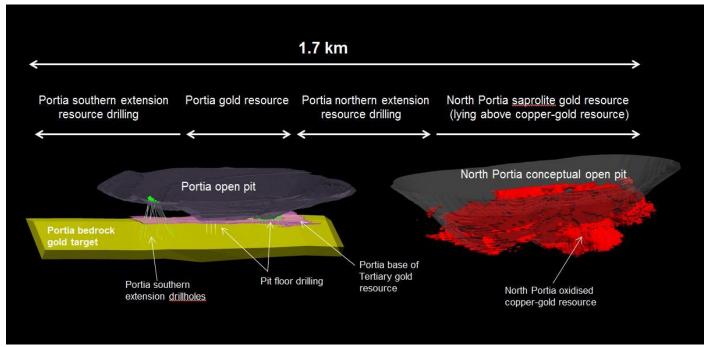
## Bedrock

medium grade ore 1.6 billion year old Broken Hill age metamorphosed graphitic shales dipping east (to right) and cut by gold mineralised vein system (white)



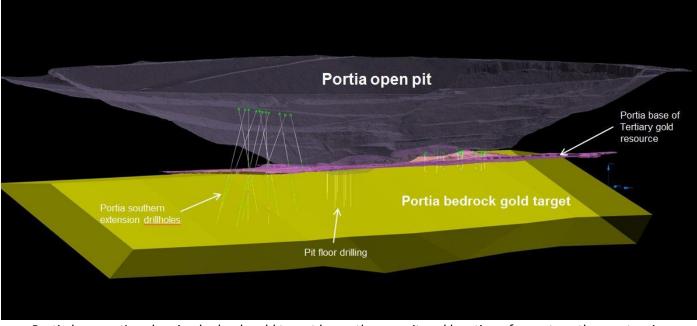


Vein and bedding replacement gold mineralisation and wall rock alteration exposed in Portia pit walls.

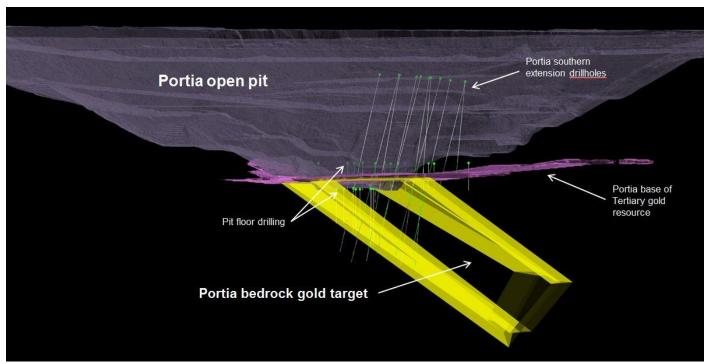


Long section from Portia through North Portia, showing the Portia bedrock gold target and planned drilling areas.





Portia long section showing bedrock gold target beneath open pit and location of recent southern extension drillholes.



Portia cross section showing bedrock gold target beneath open pit and location of recent southern extension and pit floor drillholes.



### Table 1 Drillhole Details

Hole ID	Hole ID Grid system : UTM Zone 54 South (AGD 66 datum)			Dip degrees	EOH metres	
	Easting m	Northing m	RL m	UTM azimuth	- 10 - 10 - 10	
PTAC228	447798	6521654	47.9	343	-75	102
PTAC231	447802	6521650	47.7	270	-75	96
PTAC177	447801	6521820	67.6	180	-70	104
PTAC191	447784	6521775	67.7	270	-85	116
PTAC193	447824	6521775	67.8	270	-85	104
PTAC197	447807	6521800	67.7	270	-85	110
PTAC205	447787	6521795	67.7	270	-85	110



# JORC Code, 2012 Edition – "Table 1"

# **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (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>	<ul> <li>RC or AC drill chips received directly from the drilling rig via a cyclone were riffle split as 0.5 or 1m intervals to obtain 2-3kg samples and collected in numbered calico bags that were submitted to ALS Global assay lab in Adelaide.</li> <li>At ALS assay lab the samples are crushed in a jaw crusher to a nominal 6mm (method CRU-21) from which a 3 kg split is obtained using a riffle splitter. The split is pulverized in an LM5 to 85% passing 75 microns (method PUL-23). These pulps are stored in paper bags.</li> <li>All samples are then analysed for a 33 element package using ALS's ME-ICP61 suite, whereby samples undergo a 4 acid digest and analysis by ICP-atomic emission spectrometry and ICP mass spectrometry. Over limit Cu, Pb and Zn are re-assayed using ME-OG62.</li> <li>Gold is analysed by 50g fire assay, with atomic absorption spectrometry finish using ALS method Au-AA26</li> <li>In order to mitigate the coarse gold nugget sampling problem, Havilah routinely takes the balance of any samples with anomalous gold fire assay results (typically amounting to more than 10 kg sample weight) and produces a concentrate of several grams by gemini tabling and panning. This concentrate is sent to ALS Townsville laboratory for fire assay. Havilah calculates the original sample gold grade by dividing by the weight concentration factor obtained by dividing the fire assay gold prill weight by the original drill sample weight.</li> </ul>
techniques	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).	<ul><li>face-sampling bits, with bit sizes ranging from 120mm to 136mm.</li><li>All AC holes used 121mm blade bit</li></ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul> <li>The sample yield and wetness of the RC and AC samples was routinely recorded in drill logs.</li> </ul>
	Measures taken to maximise sample	Sample recoveries were continuously

Havilah Resources

Criteria	JORC Code explanation	Commentary
	<ul> <li>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>monitored by the geologist on site and adjustments to drilling methodology were made to optimize sample recovery and quality where necessary.</li> <li>Overall RC and AC sample recoveries were at an acceptable level for interpretation purposes.</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 RC and AC samples were logged in detail by experienced geologists directly into a digital logging system with data uploaded directly into an XL spreadsheet.</li> <li>Logging is semi-quantitative and 100% of reported intersections have been logged.</li> <li>Logging is of a sufficiently high standard to support any subsequent interpretations, resource estimations and mining and metallurgical studies.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>RC and AC drill samples are dry 1 or 2 m riffle splits.</li> <li>Sample preparation and assaying methods are summarized above.</li> <li>Quality control procedures include the insertion of standards (1 in 20 samples), blanks (1 in 20 samples) and duplicates (1 in 20 samples) into the regular sample number sequence. If any blank, standard or duplicate is out of spec, re-assay of retained samples is requested of the laboratory as a first step.</li> <li>Sampling size is considered to be appropriate for the style of mineralisation observed. Assay repeatability for gold and other metals has not proven to be an issue.</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>	<ul> <li>All samples are prepared at ALS Global laboratory in Adelaide and assayed interstate. The total assay methods are standard ALS procedure and are considered appropriate at the exploration reporting stage.</li> <li>All gold was determined by fire assay with AAS finish. Higher grade samples were check re-assayed as described below.</li> <li>Other elements were analysed by multi-element digest methods with ICP finish.</li> <li>Quality control procedures include the insertion of standards (1 in 20 samples), blanks (1 in 20 samples) and duplicates (1 in 20 samples) into the regular sample number sequence. If any samples are out</li> </ul>



Criteria	JORC Code explanation	Commentary
		of spec re-assay is requested.
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>Rigorous internal QC procedures are followed to check all assay results.</li> <li>All data entry is under control of a specialist database geologist, who is responsible for data management, storage and security.</li> <li>No adjustments to assay data are carried out.</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>Down hole drill surveys were not conducted due to the shallow depths of the holes.</li> <li>Drillhole collar coordinates are surveyed in UTM coordinates using a differential GPS system with an x:y:z accuracy of 20cm:20cm:40cm and are quoted in ADG 66 datum.</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 is an infill drilling program designed to demonstrate continuity of geology and mineralisation within an existing Inferred Resource. Drillhole spacing is variable, as this is an infill drilling program with holes located to increase density of data.</li> <li>Sample compositing was not used.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>The drillhole azimuth and dip was chosen to intersect the mineralized zones as nearly as possible to right angles and at the desired positions to maximize the value of the drilling data.</li> <li>At this stage, no material sampling bias is known to have been introduced by the drilling direction.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>RC and AC chip samples are directly collected from the riffle splitter in numbered calico bags.</li> <li>Several calico bags are placed in each polyweave bag which are then sealed with cable ties. The samples are transported to the assay lab by Havilah personnel at the end of each field stint.</li> <li>There is minimal opportunity for systematic tampering with the samples as they are not out of the control of Havilah until they are delivered to the assay lab.</li> <li>This is considered to be a secure and reasonable procedure and no known instances of tampering with samples have occurred since drilling commenced</li> </ul>
Audits or	• The results of any audits or reviews of	Ongoing internal auditing of sampling



Criteria

**JORC Code explanation** 

Commentary

reviews

sampling techniques and data.

techniques and assay data has not revealed any material issues.

# **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>Exploration is taking place on Havilah Resources 100% owned mining lease ML6534</li> <li>Security via current valid mining lease granted to Havilah</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Aircore drilling was carried out in the region by the Pasminco – Werrie Gold JV in the late 1990s.</li> </ul>
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul> <li>Stratiform replacement / vein style gold mineralisation within Willyama Supergroup rocks of the Curnamona Craton</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>	<ul> <li>See separate Table1 in this report</li> </ul>
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</li> </ul>	<ul> <li>Intercepts are calculated using the length-weighted averages of individual samples. Minimum grade truncations are applied. Local geology is also used as an input.</li> <li>Where higher grades exist, a separate high grade sub-interval will normally be reported.</li> </ul>

Havilah Resources

Criteria	JORC Code explanation	Commentary
	metal equivalent values should be clearly stated.	
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>Down-hole lengths are reported. Drillholes are always oriented with the objective of intersecting mineralisation as near as possible to right angles, and hence down- hole intersections in general are as near as possible to true width.</li> <li>For the purposes of the geological interpretations and resource calculations the true widths are always used.</li> </ul>
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul> <li>Oblique view showing the location of the drillholes in relation to previous drillholes and the resource model is included.</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>Only meaningful potentially economic grade intervals are reported.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>Relevant geological observations are reported in this and previous announcements. Other data not yet collected or not relevant</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>	<ul> <li>These holes are part of an infill drilling program that is designed to increase the level of confidence in executing a pitwall cutback</li> <li>Resource estimation work will be completed at the conclusion of the drilling program when all assay results are in hand.</li> </ul>