



# Echo Resources Limited

ACN 108 513 113

29 November 2016  
ASX Announcement  
ASX Code: EAR

## SOIL SAMPLING RESULTS HIGHLIGHT PRIORITY DRILL TARGETS SOUTH OF JULIUS

### HIGHLIGHTS

- Numerous drill-ready anomalous targets identified by an extensive soil sampling programme completed 7km south of the Julius Gold Deposit
- Discrete gold in soil anomalies have been defined in the vicinity of the Orpheus and Shady Well prospects (see Figure 1) where historic drilling has returned strong results, including:
  - o 10m @ 15.5 g/t Au from 20m
  - o 6m @ 10.2 g/t Au from 12m
  - o 20m @ 2.8 g/t Au from 38m
  - o 8m @ 12.9 g/t Au from 24m
  - o 7m @ 11.0 g/t Au from 43m
  - o 8m @ 3.5 g/t Au from 54 m
- An excellent opportunity exists to define additional gold resources in an area which has been subject to minimal activity over the past 15 years
- Approval has been granted to allow an extensive aircore drilling program to test these areas to a nominal 50 metre vertical depth in early 2017.

Echo Resources Limited ("Echo", ASX: EAR) is pleased to announce that it has identified new gold anomalies as well as corroborated historical high grade drill intersects following a large and systematic soil sampling program 7 kilometres to the south of the Julius Gold Deposit (see Figure 1).

Chief Executive Officer Mr Simon Coxhell said the results from the soil sampling program provide a large number of targets which will be aggressively pursued with drilling in early 2017.

*"We are encouraged by soil anomalies identified during this program which are coincident, in places, with significant historic drill intersections as high as 15.5g/t from a shallow depth of just 20m. The targets identified by this program will be tested as part of our 2017 resource development program which is designed to define new resources and reserves to feed the Bronzewing mill following completion of mining the Stage 1 at Julius. Combined with our recent strategic analysis of the existing Metaliko open-pittable resources, I am confident that Echo will define new resources and reserves which will ensure a long and profitable mine life", Mr Coxhell said.*



### The Bungara Suture

The area was targeted based on its location relative to the regional Bungara suture, a geophysical zone of disruption visible on both gravity and magnetic images. The Company has had historical drilling success on the margins of the suture which includes a number of prospects requiring further exploration as shown in Figure 1, below.

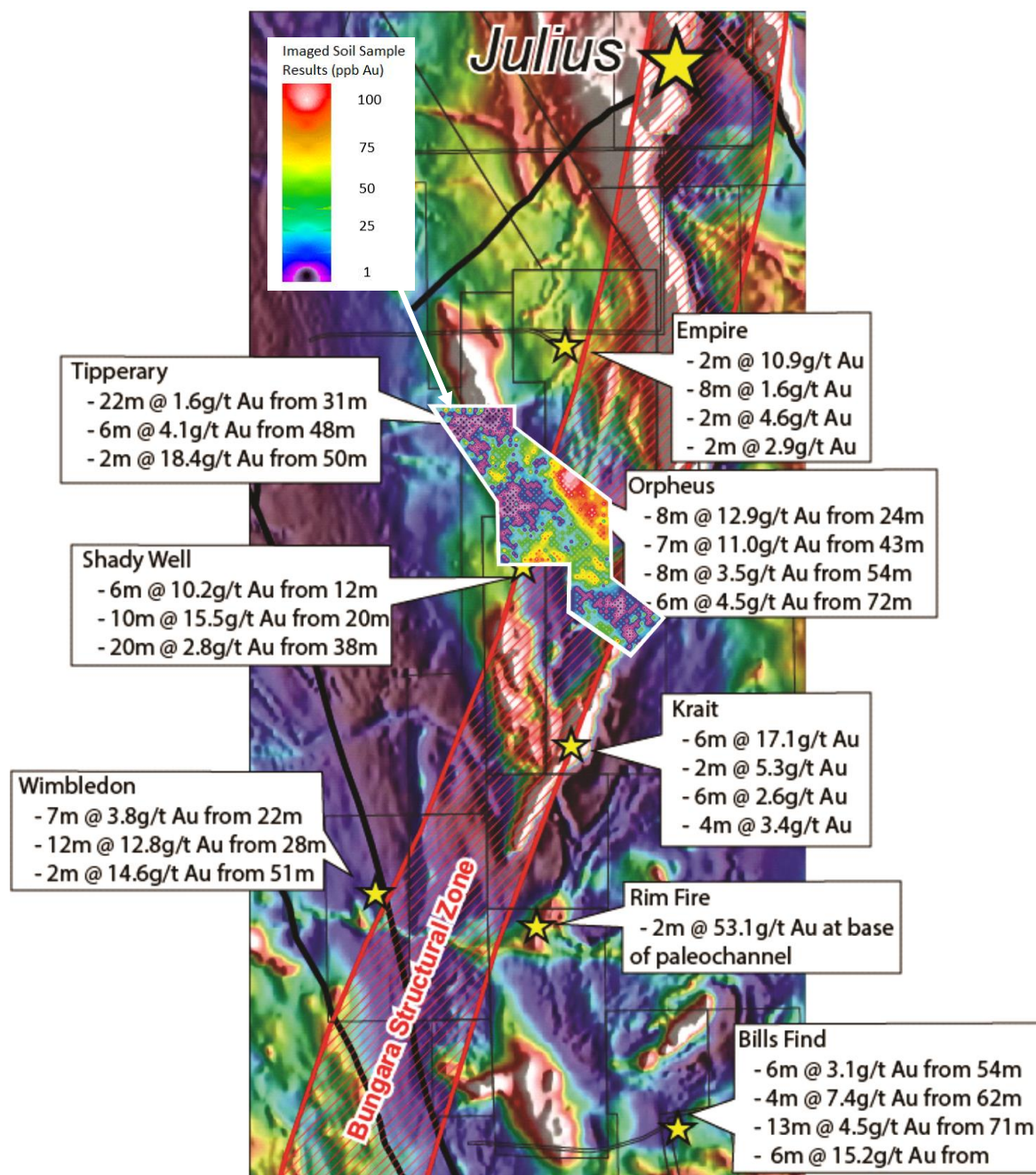


Figure 1: TP Magnetics Image with Soil Sample Area inset with historic drill results overlain<sup>1</sup>

Based on work to date the suture appears to be a major control for known mineralisation and a program including further reconnaissance and drilling is planned to test this hypothesis and maximise the Company's chance of exploration success as soon as possible.

<sup>1</sup> Refer to ASX Announcement dated 10 April 2006 for full results





## Soil Sampling Program

Samples from the extensive soil program were taken on a staggered 100m x 100m grid over a total area of 7km<sup>2</sup> and submitted to Genalysis Intertek (Perth). This program is a part of ongoing low-cost reconnaissance exploration within the Company's highly prospective tenement package and follows detailed analysis of available databases by Southern Geoscience Consultants which also identified a number of key structures of interest in the immediate area of the sampling.

## Sampling Results

Sampling identified a number of areas of strong gold anomalism which are verified in instances where historical drilling is present (see Figure 2), principally located in the oxide zone and providing a number of drill-ready targets for detailed resource drilling.

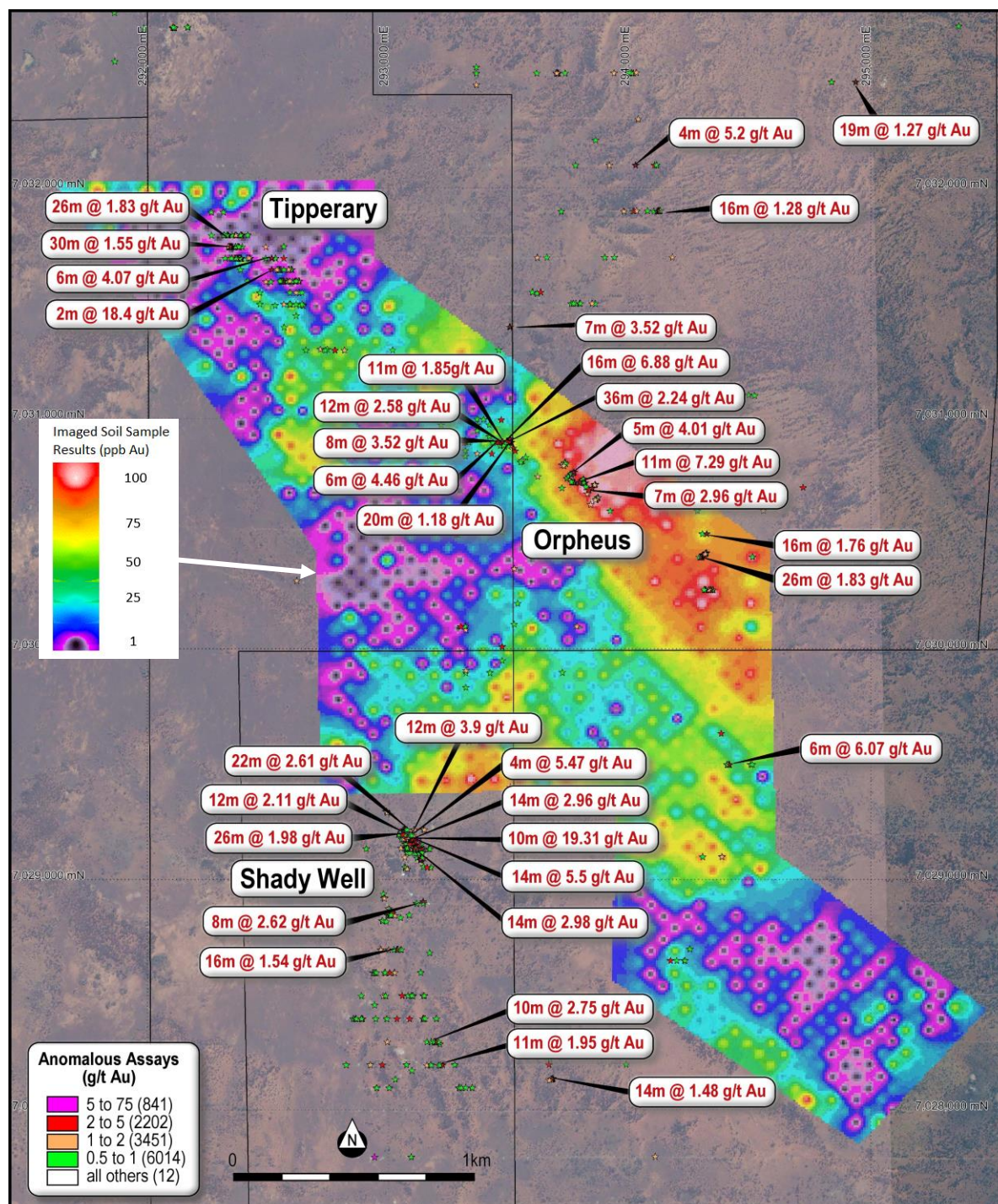


Figure 2: Soil Sample Results with Historical Drill Results at Regional Prospects





This drilling is expected to add to the resource and reserve base of the company and provide additional mine life following the completion of mining of Julius towards the end of 2018, based on the current schedule.

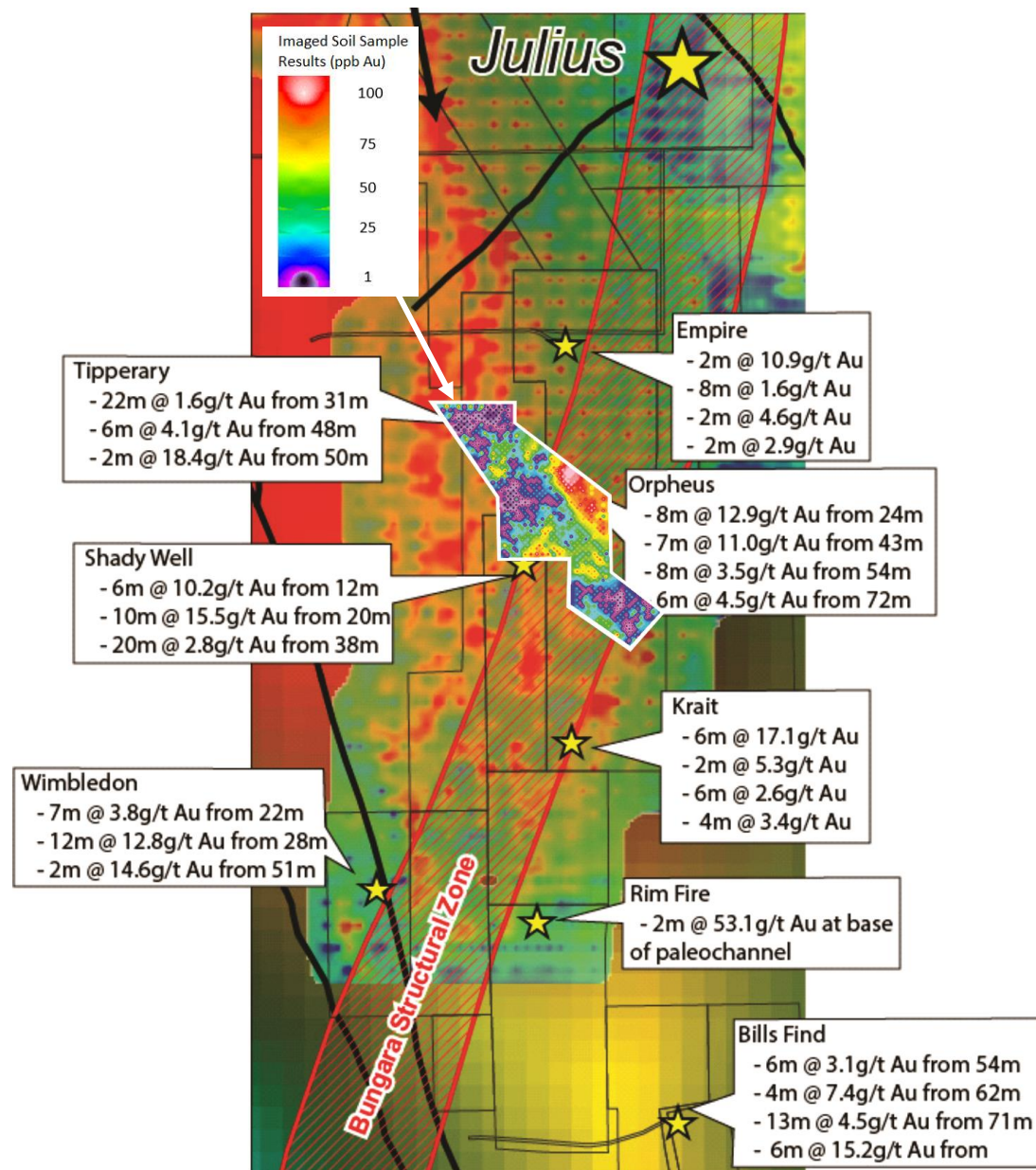


Figure 3: Regional Gravity Image & Bouguer Gravity Anomaly with Soil Sample Area inset<sup>2</sup>

The Company is also pleased to advise that based on two heritage surveys completed over the last month, no sites of significance were found within the Julius Mining Lease Application area.

For further information please contact:

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<sup>2</sup> Refer to ASX Announcement dated 10 April 2006 for full results



### Competent Persons' Declarations

The information in this announcement that relates to Exploration Results and previous historic drilling results is based on information compiled by Simon Coxhell, a Director of Echo Resources and a member of the Australasian Institute of Mining and Metallurgy. He has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that they are 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 Coxhell consents to the inclusion in the report of the matters based on the information in the form and context in which it appears

## JORC Code, 2012 Edition

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Soil sampling was undertaken on a nominal 100m X 100 m staggered grid pattern. The top 20 cm was scrapped aside and the sample then collected and sieved at -1mm.</li> <li>The sieves and spades were cleaned at the end of every sample. Approximately 500 grams of sample was collected from each soil sample collected.</li> <li>Sample locations were recorded by handheld GPS survey with accuracy +/-2 metres.</li> <li>Analysis was conducted by submitting the 500 grams sample whole for preparation by crushing, drying and pulverising at Interdek Laboratories for gold analysis via Fire Assay/ICP.</li> <li>Samples were also analysed for copper, nickel and arsenic</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>No drilling completed.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>No drilling completed.</li> <li>There is insufficient data available at the present stage to evaluate potential sampling bias.</li> </ul>
Logging	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Samples were logged for colour and sample type.</li> <li>All samples were logged, in a qualitative manner.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>No core</li> <li>Sample preparation for all recent samples follows industry best practice and was undertaken by Interdek Laboratories in Perth where they were crushed, dried and pulverised to produce a sub sample for analysis.</li> <li>Sample preparation involving oven drying, followed by rotary splitting and pulverisation to 85% passing 75 microns.</li> <li>QC for sub sampling follows Interdek procedures.</li> <li>No field duplicates were taken.</li> <li>No Blanks were inserted.</li> <li>No Standards were inserted.</li> <li>Sample sizes are considered appropriate to the grain size of the material being sampled.</li> </ul>
Quality of assay data and	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> </ul>	<ul style="list-style-type: none"> <li>The methods are considered appropriate to the style of mineralisation. Extractions are considered near total.</li> <li>No geophysical tools were used to determine any element</li> </ul>



Criteria	JORC Code explanation	Commentary
<i>laboratory tests</i>	<ul style="list-style-type: none"> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<p>concentrations at this stage.</p> <ul style="list-style-type: none"> <li>Laboratory QA/QC involves the use of internal lab standards using certified reference material, blanks, splits and duplicates as part of the in house procedures. Repeat and duplicate analysis for samples shows that the precision of analytical methods is within acceptable limits.</li> </ul>
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The Company's Geologist and field assistant has visually reviewed the samples collected.</li> <li>No twin holes drilled</li> <li>Data and related information is stored in a validated Mapinfo or Micromine database. Data has been visually checked for import errors.</li> <li>No adjustments to assay data have been made.</li> </ul>
<i>Location of data points</i>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All sample locations have been located by GPS with precision of sample locations considered +/-2m.</li> <li>Location grid of plans and coordinates in this release 2016 samples use MGA94, Z51 datum.</li> <li>No Topographic data was used .</li> </ul>
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The samples are nominally spaced on a 100 metre (E-W spacing) with sample spacing along each section on a 100 metres spacing along each line.</li> <li>Data spacing and distribution is sufficient to establish the likely trends of anomalous gold.</li> <li>No Sample compositing has occurred.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The orientation of sampling is considered adequate and there is not enough data to determine bias if any.</li> <li>Mineralised outcrop strikes north-north-west. Sampling was orthogonal to this apparent strike.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Chain of custody is managed by the Company and samples are transported to the laboratory via Company staff with samples safely consigned to Genalysis for preparation and analysis. Whilst in storage, they are kept in a locked yard. Tracking sheets are used track the progress of batches of samples.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No review or audit of sampling techniques or data compilation has been undertaken at this stage.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The area soil sampled is located on granted mining leases located approximately 8 kilometres south of the Julius Gold Deposit, located in the central Yandal Greenstone Belt and is 100% owned by Echo Resources Ltd. Newmont Yandal Operations has the right to buy back a 60% interest in any gold discovery containing aggregate Inferred Mineral Resources of at least 2 million ounces of gold. A third party net smelter royalty of 1.5% applies in respect of all minerals produced from the tenement.</li> <li>The tenement are in good standing</li> <li>No impediments to operating on the permit are known to exist.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>The area soil sampled has previously been drilled by Newmont (and others). A number of significant results have been returned. Echo Resources soil sampling covers the trend of the known mineralization.</li> </ul>



Criteria	JORC Code explanation	Commentary
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The area consists of variable shallow overburden, sub outcropping principally mafic rocks, with minor sediments. Gold mineralization in the area is often found on sheared contact zones and associated with sulphides, shearing and minor quartz veining and zones of silicification.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <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 style="list-style-type: none"> <li>No drilling was undertaken in the soil sampling program.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>No averaging or aggregation techniques have been applied.</li> <li>No top cuts have been applied to exploration results.</li> <li>No metal equivalent values are used in this report.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The orientation or geometry of the mineralised zones strikes in a north-northwesterly direction and dips variably to the east and west.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Appropriate maps are included in main body of report..</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All results for the target economic mineral being gold have been reported.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Previous work by others has highlighted anomalous gold intersections in RAB, aircore and RC drilling in the vicinity of the recent soil sampling area. The Shady Well, Orpheus and Tipperary deposits all lie within the area of the soil sampling. Interesting Tipperary has very little surface gold anomalism, while Orpheus and the Shady Well area exhibit typical values of plus 20 ppb Au, to a maximum of 79 ppb Au.</li> </ul>
Further work	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Future RC, diamond and aircore drilling is being considered to further evaluate these gold in soil anomalies.</li> <li>Refer to maps in main body of report for potential target areas.</li> </ul>