

29 June 2017

Orion Minerals<sup>NL</sup>**ASX Code:** ORN**Issued Capital:**

Ordinary Shares: 912M

Options: 217M

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# Massive Sulphides in first deep drill test at Prieska

**Highlights:**

- Maiden Orion drill hole in Deep Sulphide Target successfully intersects 21 meters ("m") of massive sulphides;
- Intersection is 8m along strike of historical intersection of 12.05m at 4.05% zinc ("Zn") and 2.10% copper ("Cu") (F2007) and validates Orion's high level of due diligence prior to acquisition;
- Drilling continues with core drilling currently underway on six drill holes; and,
- Encouraging geotechnical observation from drilling with competent rock from hanging wall into mineralisation, supporting the proposed mechanised cut and fill mining methods.

**Orion Minerals NL (ASX: ORN) ("Orion or the Company")** is pleased to provide an update on drilling activities at its **Prieska Zinc-Copper Project ("PC Project")**, in South Africa, where Orion's maiden drill hole into the Deep Sulphide Target successfully intersected a 21m zone of massive sulphides. Orion completed the acquisition of the PC Project in March 2017 for an effective 73.33% ownership, with the remaining balance held by Black Economic Empowerment partners as required by South African mining legislation.

Orion is targeting dip and strike extensions to historical underground mining areas at the PC Project, with mineralisation having previously been delineated by extensive drilling and geophysics by previous owners.

The existing underground infrastructure and access to existing services allows Orion to aggressively pursue re-entry to the PC Project and positions Orion at the forefront of its peer group.

**Deep Sulphide Target drilling program**

The Deep Sulphide Target is the down-dip extension to mineralisation previously mined at the Prieska Copper Mine (Figure 1), which is the cornerstone of Orion's development strategy.

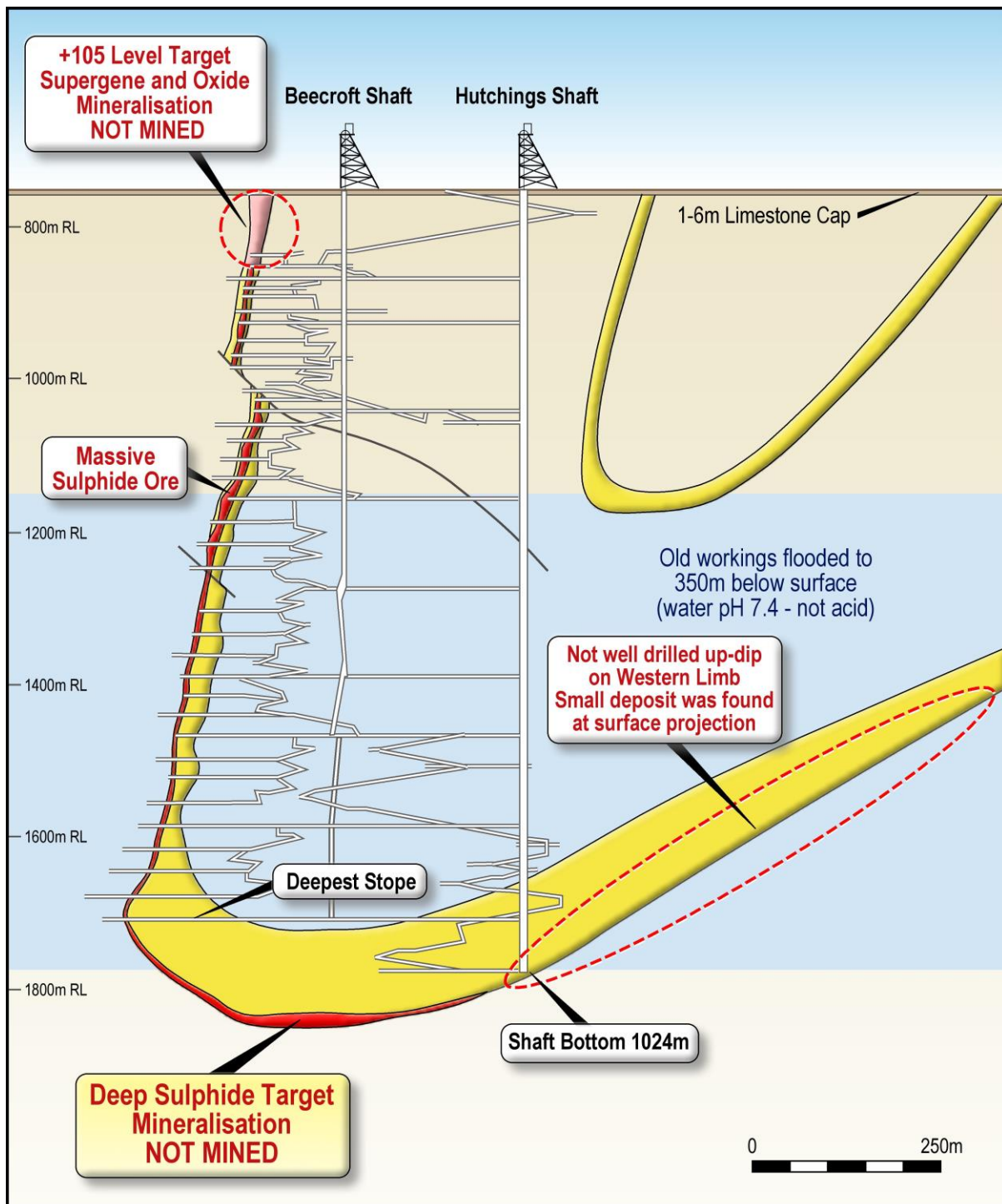
The current program (refer ASX release 9 May 2017) is scoped to systematically test and confirm the extensive historical drilling data (refer ASX release 18 November 2015) with the aim of underpinning a maiden JORC compliant Mineral Resource estimate by cQ1 2018.

The first diamond drill hole testing the Deep Sulphide Target (OCOD048) has successfully intersected massive sulphides from 1061m (Figures 2 and 3). The drill hole has effectively "twinning" historical drill hole F2007, located 8m along strike from OCOD048, which returned a reported intersection of 12.05m at 4.05% Zn and 2.10% Cu (refer ASX release 18 November 2015).

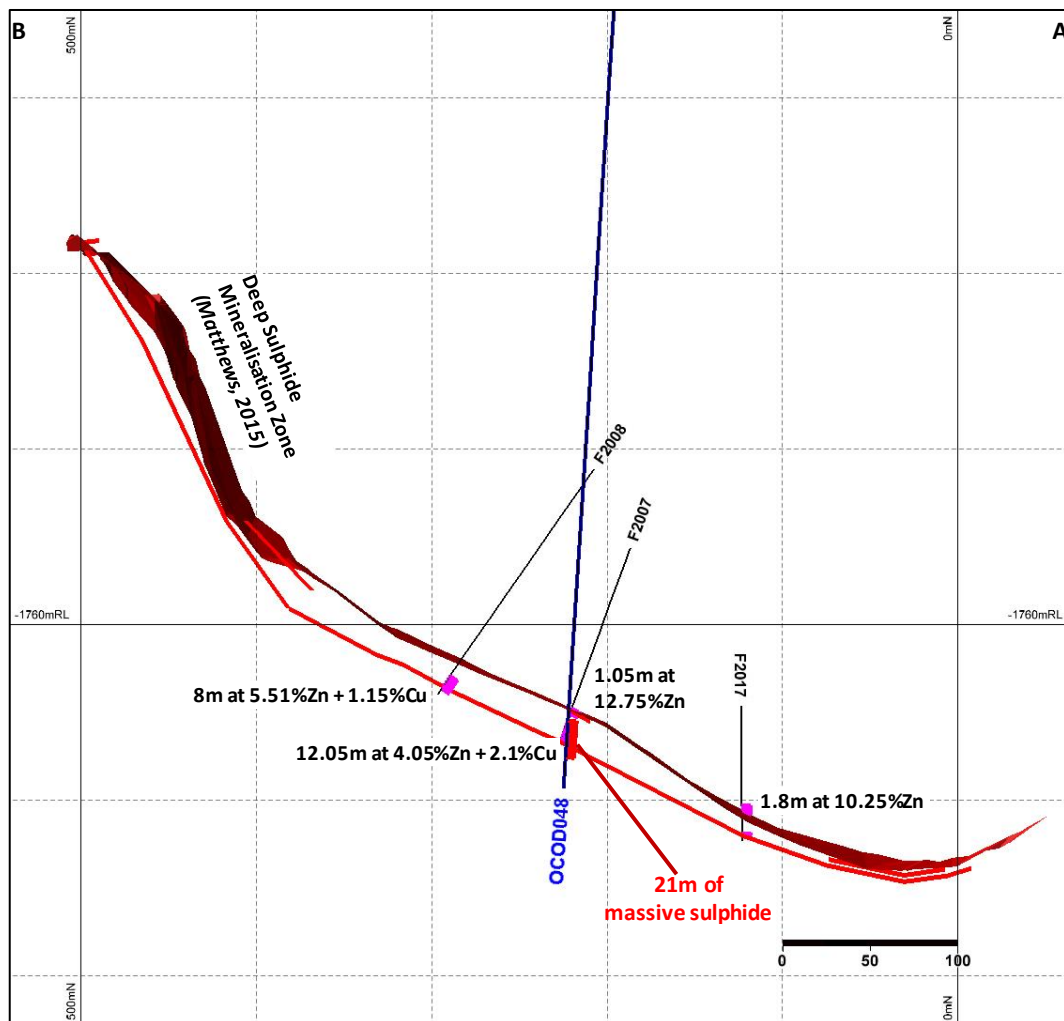
The OCOD048 sulphide intersection is predominantly pyrrhotite and pyrite with chalcopyrite and sphalerite, similar to the sulphides reported in historical drill logs (Figure 3).



Once OCOD048 has reached its target depth of 1200m, a number of deflections, or daughter holes, will be completed to enable mineralisation to be tested at distances of between 30m and 40m from the current intersection (or "mother" hole).



**Figure 1:** Section showing underground workings and mineralisation at the PC Project.



**Figure 2:** Cross Section showing OCOD048, historical drilling and interpreted mineralisation (refer Appendix 1 and ASX release 18 November 2015). Section line shown on Figure 4.

A further six holes are currently in progress (Figures 4 and 5) to provide statistical validation of historic drilling that intersected unmined mineralisation zones in the area. Of these, hole OCOD051 has intersected mineralisation along strike from historical stoping, characteristic of mineralisation in the hanging wall to massive sulphide zones. This provides encouragement that historical mining did not completely extract the mineralisation along strike, but rather focussed on contiguous massive sulphide ore (Figures 4 and 6).

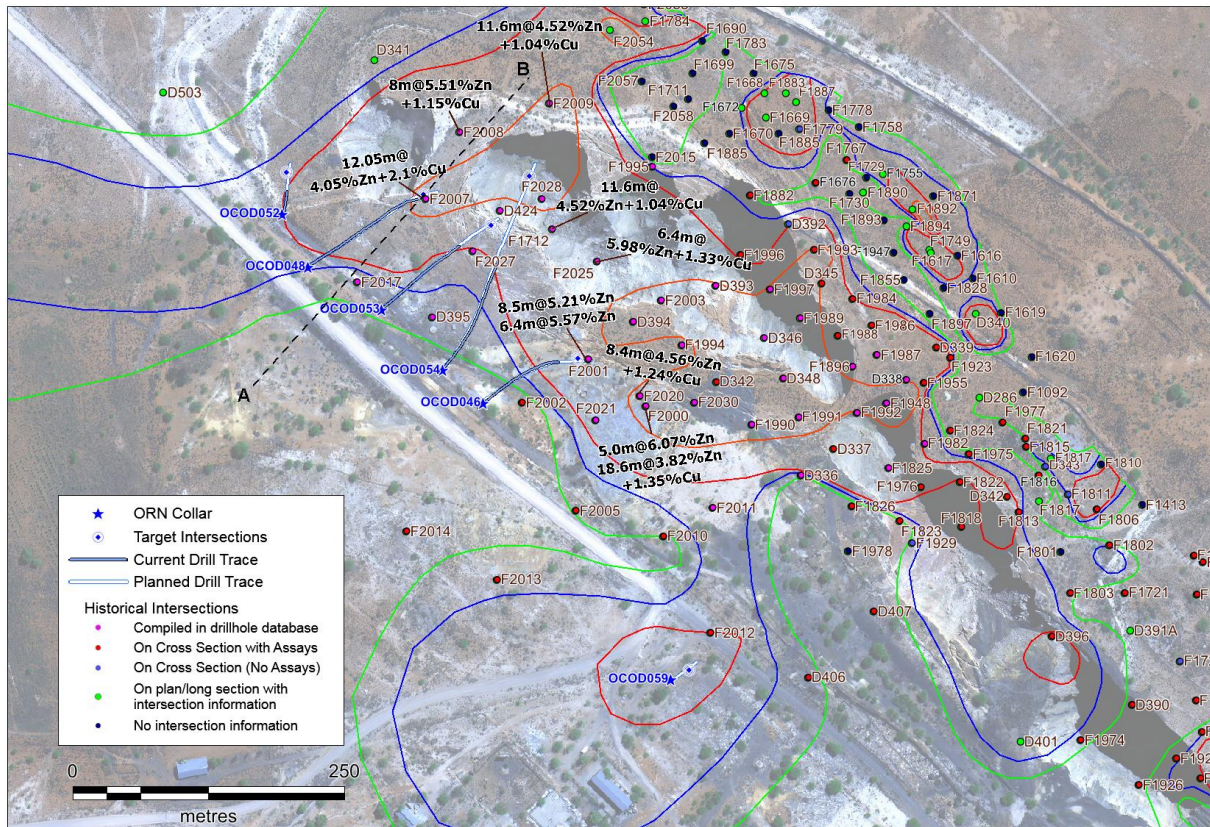
Encouragingly, the geotechnical competency of the recovered core in OCOD048 and other holes currently in progress is excellent. Implying that geotechnical conditions in the hanging wall of deep sulphide mineralisation should support flat dipping mineralisation, using a mechanised, cut & fill mining method.



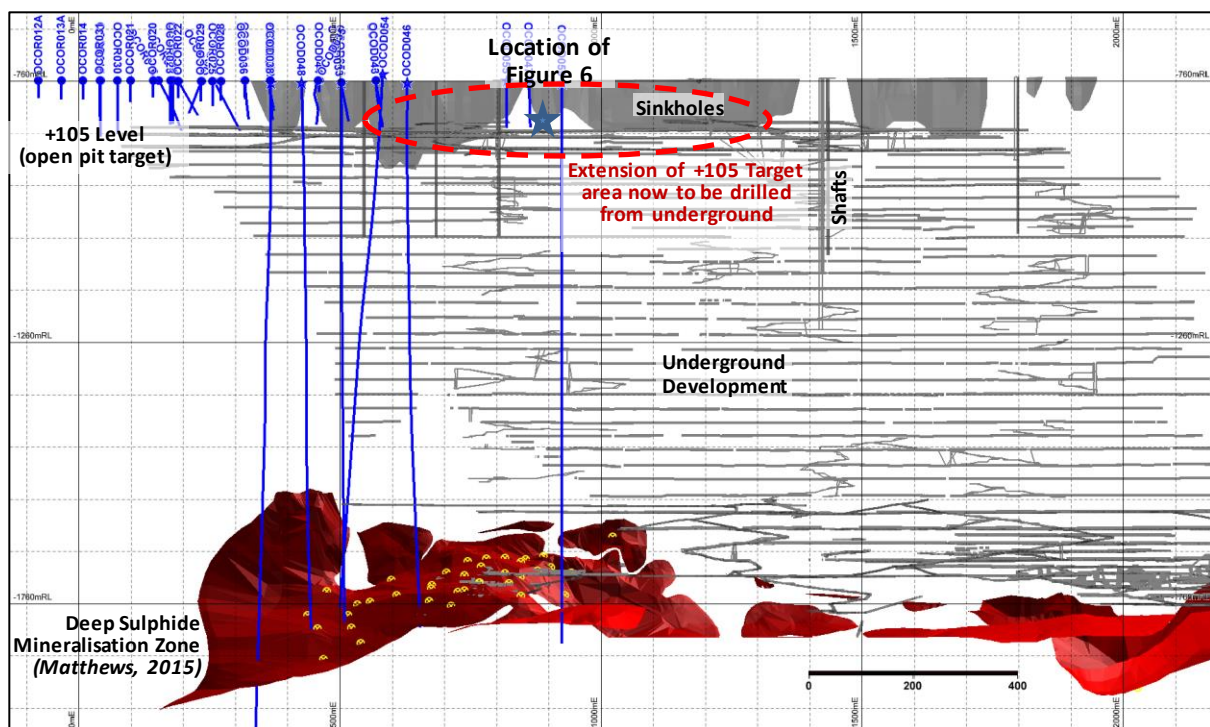


**Figure 3:** Photographs showing massive sulphides in drill core from OCOD048.





**Figure 4:** Plan showing drilling underway to test the Deep Sulphide Target at the PC Project.



**Figure 5:** Long section showing current drilling, historical development, sinkholes and historical drilling intersections at the PC Project.





## +105 Target Area

Encouragement for additional strike extension of the +105 Target Area has been gained from underground inspection of ore drives and draw points on the 105 Level by Orion's geological and mining team.

Painted survey lines on hanging wall of excavations dating back to the time of first mining activities in 1971, confirm that no ground failure has occurred. This is in proximity to the remaining supergene enriched sulphide ore that remains vertically below areas of mining subsidence at surface, (Figure 6) over the northern half of the historic mining area.

On the basis of the encouraging geotechnical information, Orion plans to mobilise two underground drill rigs to infill drill and extend mineralisation drilled from surface at the +105 Target (Figure 5). This drilling is intended to expand the area covered by a maiden Mineral Resource estimate (as defined in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("**JORC Code**")), which is now anticipated in the September 2017 Quarter.



**Figure 6:** Orion's mining and geological team inspect blasted ore remaining in a draw point on 105 level. Note 1971 age paint marks remain on strong mine hanging-wall confirming no failure. Locality of picture is shown in Figure 5.



Orion Minerals NL

A handwritten signature in black ink, appearing to read 'ERROL SMART'.

Errol Smart  
**Managing Director and CEO**

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### **About Orion**

Orion Minerals is focused on acquiring, exploring and developing large tenement holdings or regional scale mineral opportunities in world-class mineral provinces. The Company has acquired quality projects in such mineral provinces.

Orion has recently acquired an effective 73.33% interest in a portfolio of projects including an advanced volcanic massive sulphide zinc-copper exploration project with near-term production potential at the Prieska Zinc-Copper Project, located near Copperton in the Northern Cape province of South Africa, and the Marydale Prospecting Right, a virgin gold discovery of possible epithermal origin, located 60 km from the Prieska Zinc-Copper Project. (refer ASX release 30 March 2017).

In addition to the Prieska Zinc-Copper Project and Marydale Gold Project, the Company has entered into options and earn-in rights agreements over a combined area of 1 606km<sup>2</sup> in the highly prospective Areachap belt, North Cape Province of South Africa (Figure 7). This has secured an outstanding growth and diversification opportunity for the Company. Agreements entered into include:

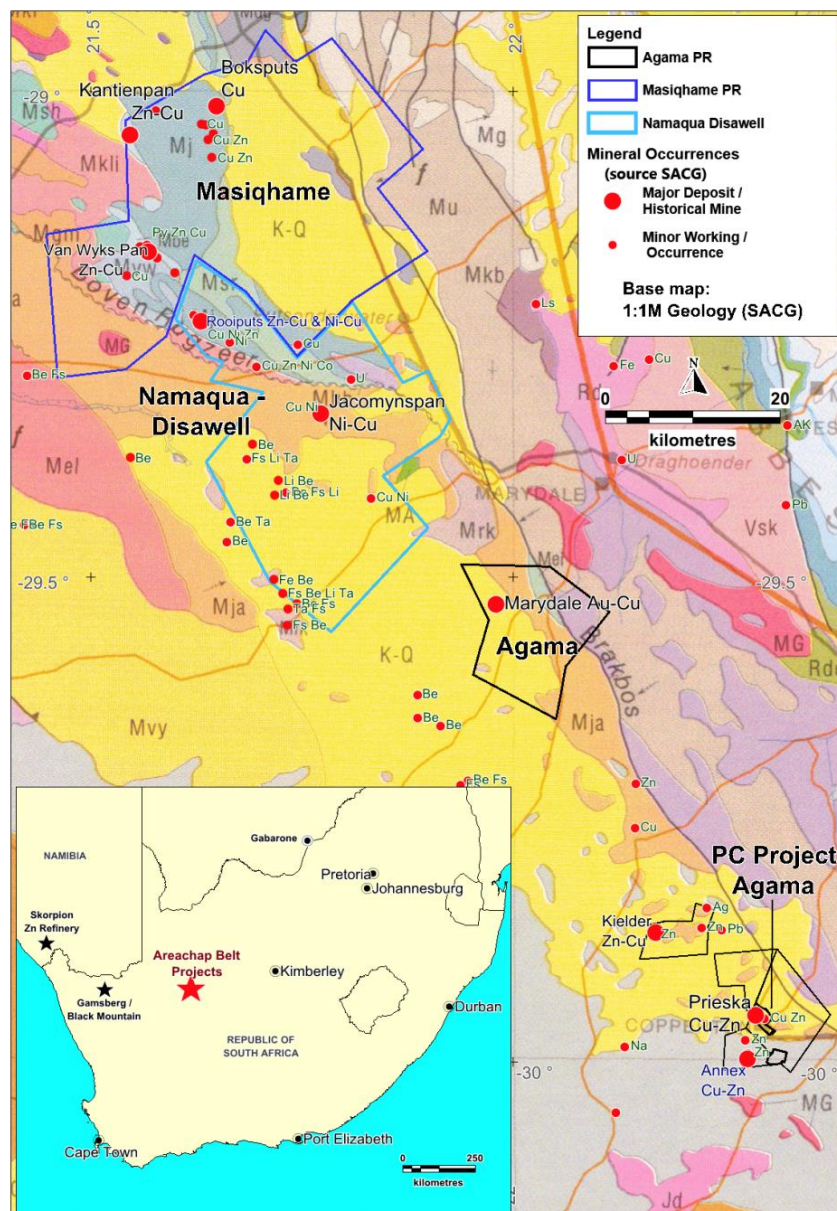
- An earn in right to ultimately earn a 73% interest in a 980km<sup>2</sup> prospecting right area located approximately 80 km north of the Prieska copper Project. The project area contains several VMS and VHMS zinc and copper targets including the advanced stage Kantienpan zinc – copper project. (refer ASX releases 31 May 2016 and 29 April 2016).
- An earn in right to ultimately earn an 80% interest, via a South African registered special purpose vehicle which will be 74% owned by Orion, to prospecting and mining right applications covering a combined and partially overlapping area of 626km<sup>2</sup>. The mineral rights areas include an advanced stage ultramafic hosted nickel – copper project, analogous to the geology of the Fraser Range, Western Australia. Several VMS and VHMS copper-zinc targets are also located within this mineral rights package. (refer ASX release 14 July 2016).



The Company also continues to explore a large tenement package on the Connors Arc in Queensland, where a significant intermediate sulphidation, epithermal gold and silver system has been identified at Aurora Flats. The project lies between the Cracow and Mt Carlton epithermal deposits. The Company's fieldwork has led to the discovery of substantial epithermal systems at the Veinglorious and Chough Prospects.

The Company also has joint ventures over its Fraser Range Project, which are funded to the completion of pre-feasibility by Independence Group NL (ASX: IGO). The Fraser Range Project consists of a substantial tenement holding in the Albany-Fraser Belt, which hosts Australia's two most significant discoveries of the last decade (the Tropicana Gold Deposit and the Nova Nickel-Copper-Cobalt Deposit). (refer ASX release 10 March 2017).

The Company has an experienced management team with a proven track record in exploration, development and adding shareholder value.



**Figure 7:** Regional geology map of the Areachap Belt showing prospecting rights owned by Orion and currently under option to Orion and noted mineral occurrences as per published data from South African Council for Geoscience.





## Competent Persons Statement

The information in this report that relates to Orion's Exploration Results at the PC Project complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("**JORC Code**") and has been compiled and assessed under the supervision of Mr Errol Smart, Orion Minerals Managing Director. Mr Smart (PrSciNat) is registered with the South African Council for Natural Scientific Professionals, a ROPO for JORC purposes 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 JORC Code. Mr Smart consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears. The Exploration Results are based on standard industry practises for drilling, logging, sampling, assay methods including quality assurance and quality control measure as detailed in Appendix 2.

## Disclaimer

This release may include forward-looking statements. Such forward-looking statements may include, among other things, statements regarding targets, estimates and assumptions in respect of metal production and prices, operating costs and results, capital expenditures, mineral reserves and mineral resources and anticipated grades and recovery rates, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions. These forward-looking statements are based on management's expectations and beliefs concerning future events. Forward-looking statements inherently involve subjective judgement and analysis and are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Orion. Actual results and developments may vary materially from those expressed in this release. Given these uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements. Orion makes no undertaking to subsequently update or revise the forward-looking statements made in this release to reflect events or circumstances after the date of this release. All information in respect of Exploration Results and other technical information should be read in conjunction with Competent Person Statements in this release. To the maximum extent permitted by law, Orion and any of its related bodies corporate and affiliates and their officers, employees, agents, associates and advisers:

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- do not make any representation or warranty, express or implied, as to the accuracy, reliability or completeness of the information in this release, or likelihood of fulfilment of any forward-looking statement or any event or results expressed or implied in any forward-looking statement; and
- disclaim all responsibility and liability for these forward-looking statements (including, without limitation, liability for negligence).

**Appendix 1: Significant Intersections from Deep Sulphide drilling at the PC Project.**

Drill hole	East (UTMz34S)	North (UTMz34S)	Depth (m)	From (m)	To (m)	Length (m)	Cu (%)	Zn (%)	Au (g/t)	Ag (g/t)
OCOD046	624611	6686250	---	<i>In Progress</i>						
OCOD048	624450	6686375	---	<i>In Progress</i>						
OCOD051	625814	6685233	---	<i>In Progress</i>						
OCOD052	624426	6686424	---	<i>In Progress</i>						
OCOD054	624518	6686336	---	<i>In Progress</i>						
OCOD057	624574	6686280	---	<i>In Progress</i>						
OCOD059	625446	6685138	---	<i>In Progress</i>						

1. All intersections > 1m and >0.3% copper or > 0.5% zinc are quoted.
2. New results are shown in bold type.
3. Holes abandoned due to excess deviation are not shown in the table.
4. It is recommended that the supporting information contained in Appendix 2 is read in conjunction with these results.



**Appendix 2: The following tables are provided to ensure compliance with the JORC Code (2012) requirements for the reporting of Exploration Results for the PC Project.**

**Section 1 Sampling Techniques and Data**

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

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Percussion / reverse circulation drilling sampled every metre by splitting at the sampling yard.</li> <li>NQ diamond core cut at core yard and half core taken as sample.</li> <li>NQ diamond core sampled on 1m intervals where possible, sample lengths adjusted to ensure samples do not cross geological boundaries or other features.</li> <li>Drilling carried out aiming to define an approximate 45m x 45m pattern by use of "mother" holes and deflections from these holes.</li> <li>Sampling carried out under supervision using procedures outlined below including industry standard QA/QC.</li> <li>Samples submitted for analysis by ALS is pulverized in its entirety and split to obtain a 0.2g sample for digestion and analysis.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>Diamond core drilling using NQ sized core.</li> </ul>
<b>Drill sample recovery</b>	<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>Samples are individually weighed to quantify recovery and variations in recovery are recorded on the sample ledger (e.g. small samples).</li> <li>No grade variation with recovery noted.</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>Logging</b>	<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>All holes logged on 1m intervals using visual inspection of washed drill chips and both full and split core.</li> <li>Qualitative logging of colour, grain size, weathering, structural fabric, lithology, alteration type and sulphide mineralogy carried out.</li> <li>Quantitative estimate of sulphide mineralogy and quartz veining.</li> <li>Logs recorded at the drill site and entered into digital templates at the project office.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<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>NQ core cut at core yard and half core taken as sample.</li> <li>1m samples from reverse circulation drilling collected by passing entire 1 metre sample through a splitter.</li> <li>Sampling on site aims to generate a &lt; 2kg sub sample to enable the entire sample to be pulverised without further splitting.</li> <li>Sample preparation was undertaken at ALS Laboratory Johannesburg, an ISO accredited laboratory. ALS utilises industry best practise for sample preparation for analysis involving drying of samples, crushing to &lt;5mm if required and then pulverising so that +85% of the sample passes 75 microns.</li> <li>CRM's, blanks and replicates are inserted every 30 samples and analysed with each batch.</li> <li>Lab supplied CRM's, blanks and replicates are analysed with each batch.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<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> <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 (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 style="list-style-type: none"> <li>Samples from drilling were submitted to ALS Chemex in Johannesburg. Samples were analysed for base metals using a four acid digest and ICP-OES and for gold by fire assay with AAS finish.</li> <li>External quality assurance of the laboratory assays is monitored by the insertion of blanks, duplicates and certified reference materials (<b>CRM</b>)</li> <li>Coarse field duplicates consisting of a split sub-sample of the original crushed sample material.</li> <li>Three CRMs are alternated through the sample stream and where possible matched to the material being drilled.</li> <li>Two blank are used (pulp and chips).</li> <li>No external laboratory checks have been carried out at this stage.</li> </ul>
<b>Verification of sampling and assaying</b>	<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</li> </ul>	<ul style="list-style-type: none"> <li>The Managing Director is the Competent Person and is personally supervising the drilling and sampling along with experienced geologists.</li> <li>Both the Managing Director and the Technical Director have reviewed</li> </ul>





Criteria	JORC Code explanation	Commentary
	<p>verification, data storage (physical and electronic) protocols.</p> <ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	<p>the raw laboratory data and independent geologists have confirmed the calculation of the significant intersections.</p>
<b>Location of data points</b>	<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>Collar data has been laid out using a handheld GPS and these coordinates are reported here.</li> <li>All of the Orion drill hole collars will be surveyed by a qualified surveyor using a differential GPS which may result in minor adjustments to coordinate data.</li> <li>Downhole surveys are completed using an electronic multi-shot instrument.</li> <li>All data is collected in UTM WGS84 Zone 34 (Southern Hemisphere) and these coordinates are reported above.</li> </ul>
<b>Data spacing and distribution</b>	<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>Drill holes aim to intersect mineralisation on approximately 45m x 45m spacing with infill drilling to be carried out in areas of interest as determined by results.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<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>Drilling is oriented perpendicular, or at a maximum achievable angle to, the attitude of the mineralisation.</li> <li>As a result most holes intersect the mineralisation at an acceptable angle.</li> <li>Where surface access or geotechnical conditions do not allow access to optimal drill collar positions, holes may be inclined.</li> <li>The intersections will be corrected once the mineralised zone is modelled in three dimensions and local attitude can be accurately determined.</li> <li>No sampling bias is anticipated as a result of hole orientations.</li> </ul>
<b>Sample security</b>	<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. Samples were stored on site in a secure locked building and then freighted directly to the lab.</li> </ul>
<b>Audits or reviews</b>	<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 audits or reviews have been carried out at this stage.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<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 Prospecting Right is held by a subsidiary company of Agama Exploration and Mining (Pty) Ltd ("<b>Agama</b>"), which is a wholly owned subsidiary of Orion. As such, Orion effectively holds a 73.33% effective interest in the project.</li> <li>The Prospecting Right covers a strike of 2,200m for the Deep Sulphide mineralisation out of a total interpreted strike of 2,800m.</li> <li>The Prospecting Right covers the complete known strike of the +105 Level Target.</li> <li>All of the required shaft infrastructure and lateral access underground development is available within the Prospecting Right.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<p><u>Deep Sulphide Target</u></p> <ul style="list-style-type: none"> <li>All exploration and life of mine drilling (V, D and F holes) was done by Anglovaal, resulting in a substantial amount of hardcopy data from which the Company has been able to assess the prospectivity of the remaining mineralisation.</li> <li>The Anglovaal exploration resulted in the delineation and development of a large mine.</li> </ul> <p><u>+105m Level Target</u></p> <ul style="list-style-type: none"> <li>The 2012 drilling of the NW section of the +105m Level Target was carried out by the previous owners of the Subsidiary (Orion acquired the subsidiary in March 2017).</li> </ul>
<b>Geology</b>	<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 Copperton deposit is a Volcanogenic Massive Sulphide deposit. The deposit is contained in the Areachap Group, which also hosts the Boks Puts, Areachap, Kielder, Annex Vogelstruisbult and Kantienpan deposits.</li> <li>The historically mined section of the deposit is confined to a tabular, stratabound horizon in the northern limb of a refolded recumbent synform which plunges at approximately 45° to the southeast. It is hosted within deformed gneisses of the Copperton Formation, which have been dated at 1,285 Ma and forms part of the Namaqualand Metamorphic Complex.</li> <li>The mineralised zone outcrop has a strike of 2,400m, was oxidised and or affected by leached and supergene enrichment to a depth of approximately 100m, and outcrops as a well developed gossan. It has a</li> </ul>





Criteria	JORC Code explanation	Commentary
		<p>dip of between 55° and 80° to the northeast at surface and a strike of 130° to the north. The width of the mineralised zone exceeds 35m in places but averages between 7m and 9m. The mineralised zone persists to a depth of 1,100m (as deep as 1,200m in one section) after which it is upturned.</p> <ul style="list-style-type: none"> <li>The +105m Level Target area comprises the oxide / supergene / mixed zone (and a zone of remnant primary sulphides) situated from above the upper limit of mining at approximately 100m depth up to surface.</li> </ul>
<b>Drill hole Information</b>	<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>All Significant Intersections, location data and other drill hole information is tabulated in Appendix 1.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>Significant Intersections are calculated by average of assays result &gt; 0.3% copper or 0.5% zinc and weighted by sample width. In general the significant intersections correspond strongly to geological boundaries (massive sulphides) and are clearly distinguishable from country rock / surrounding samples. No truncations have been applied at this stage.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<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 (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>All intersection widths quoted are down hole widths.</li> <li>Most holes intersected the mineralisation perpendicular or at high angle to the attitude of the mineralisation.</li> <li>The mineralisation has complex geometry and mineralisation widths need to be estimated based on interpretation of surrounding intercepts.</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>Diagrams</b>	<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 diagrams (plan, cross section and long section are shown in the announcement text).</li> </ul>
<b>Balanced reporting</b>	<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 drill holes are listed in Appendix 1, including those with no mineralisation.</li> </ul>
<b>Other substantive exploration data</b>	<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>Hardcopy maps are available for a range of other exploration data. This includes mine survey plans, geological maps, airborne magnetics, ground magnetics, EM, gravity and IP. All available exploration data has been viewed by the Competent Person.</li> <li>The mine operated from 1972 to 1991 and is reported to have milled a total of 45.68 Mt of ore at a grade of 1.11% copper and 2.62% zinc, recovering 0.43 Mt of copper and 1.01 Mt of zinc. Detailed production and metallurgical results are available for the life of the mine.</li> <li>In addition, 1.76 Mt of pyrite concentrates and 8,403 t of lead concentrates as well as amounts of silver and gold were recovered.</li> <li>Copper and zinc recoveries averaged 84.9% and 84.3% respectively during the life of the mine.</li> <li>The initial resource to 840m depth below surface based on 23,000m of drilling in 47 boreholes was stated as 47 Mt. However, more recent publications refer to a resource of 57 Mt.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Drilling is ongoing to test the Deep Sulphide Target with planned holes shown on all figures in this release.</li> </ul>