

ASX Announcement 2 May 2016

# **NEW GOLD TARGETS IDENTIFIED AT TOPACIO**

# **HIGHLIGHTS**

- Success on first stage of Topacio Farm-in Agreement exploration
- Geological mapping identifies new targets at the Topacio Gold Project
  - o Additional epithermal vein targets at West Topacio, El Sahino and Buena Vista
  - Porphyry and high sulphidation mineralisation potential at La Plazuela
- Extensive soil sampling program nearing completion
- Final permitting and approvals underway for airborne geophysical program

**Oro Verde Limited (ASX: OVL)** ("Oro Verde" or "the Company") is pleased to announce that geological mapping by a consulting geologist, specialising in epithermal and porphyry systems, has identified new large scale targets, including potential for buried porphyry style copper-gold mineralisation, at the Topacio Gold Project, located in southeastern Nicaragua (Figure 1). Additional detailed exploration is required to investigate and validate these new target models.

The geological mapping forms part of the Stage 1 exploration program of the Farm-In Agreement between **Newcrest Limited (ASX: NCM)** ("Newcrest") and Oro Verde, executed at the end of November 2015<sup>1</sup>, through which the parties aim to discover a multi-million ounce gold deposit at the Topacio Gold Project.

The key objective of the Stage 1 exploration program, which commenced in January 2016, is to identify highly prospective vein, alteration, geochemical, geophysical and structural targets for drilling in the second half of 2016. The Stage 1 program includes:

- ✓ Detailed geological mapping and sampling
- ✓ Concession-wide 400m x 400m grid soil sampling program
- ✓ Airborne geophysics magnetics and radiometrics

Oro Verde's Managing Director, Mr. Trevor Woolfe, commented "We are highly encouraged by the new targets identified by recent geological mapping. In addition to the low sulphidation epithermal targets that have potential to increase the existing historical gold resource, the La Plazuela zone shows indications of a buried intrusive system that has potential to host porphyry style copper-gold mineralisation."

<sup>&</sup>lt;sup>1</sup> Refer to ASX announcement dated 30 November 2015 "Newcrest Signs A\$11M Farm-in Agreement with Oro Verde"



Figure 1 Major Nicaraguan gold deposits and the Topacio Gold Project

#### **TARGET GENERATION**

The Topacio Gold Project consists of a 93km<sup>2</sup> concession located in the southeast of Nicaragua (Figure 1), however the veins making up the existing gold resource are concentrated within an area of less than 4km<sup>2</sup>. While approximately 35km (combined strike length) of low sulphidation epithermal veins have so far been identified on the concession, much of the concession remains either unexplored or under-explored, providing scope for additional vein discoveries. A geological mapping program, undertaken by Mr Simon Meldrum, a respected consultant specialising in epithermal and porphyry systems, was initiated in early 2016 and began by focussing on 5 main areas of the concession<sup>2</sup>.

Meldrum believes that the structural patterns and vein development observed over the area studied reflect a classic stress rotation and stress reversal regime, resulting in a graben style pull-apart basin with a classic 'trap door style' structural setting for the vein system. Some other key technical observations of the study include:

- The veined structures exhibit classic low sulphidation vein types and textures, hosted in most instances by acid sulphate altered volcanics. Pre, syn and post mineralisation brecciation is evident along the structures, including phreatic breccias in localised areas, crackle, jigsaw and fault breccias and hydrothermal breccias. Quartz styles are dominated by sugary silica, which is viewed as an alteration product, white or grey banded quartz, crustiform and comb textured clear crystalline quartz, and lesser amethystine, saccharoidal, chalcedonic and opaline quartz.
- Though the Topacio low sulphidation vein complex dominates the concession geology, 'brown fields' targets in close proximity to the vein system include the potential for:
  - i. Outcropping low sulphidation epithermal veining in the Buena Vista area,
  - ii. Concealed (ponded) low sulphidation mineralisation in the El Sahino area and under the West Topacio Silica Cap, and
  - iii. Scope for intrusion related (porphyry) Au-Cu-Mo mineralisation in the La Plazuela area.
  - iv. In addition, there is no geological or geochemical information for approximately 30% of the claim block which can be classed as a green fields target area.
- The data depicts Topacio as a good exploration opportunity with potential for increasing vein hosted gold–silver resources and scope for new discoveries which could develop into large scale targets.

Some of the key target areas generated (Figure 2) include the following:

<sup>&</sup>lt;sup>2</sup> Refer to ASX announcement dated 22 February 2016 "Newcrest and Oro Verde Commence Aggressive Program to Outline Large Scale Gold Resource"

## **Topacio Vein System**

The Topacio Vein System covers an area of approximately 5km east-west by approximately 3km north-south (Figure 2). Multiple veins in two main orientations (northeast and northwest) are contained within this **epithermal vein system**. Approximately 4km (combined strike length) of the 35km of mapped veins within the system are included in the existing inferred resource, that is estimated to contain over 340,000 ounces of gold (NI 43-101 compliant), and have undergone significant trenching/sampling and lesser diamond drilling. As a result, much of the exposed vein system has not been systematically evaluated. Further detailed assessment of this additional 30km of under-explored vein system is required to adequately define the width and grade variability of the veins and also to test the potential for larger volume, lower grade stockwork mineralisation between and adjacent to the many veins.

## **West Topacio Silica Cap**

At the western extremity of the Topacio Vein System (Figure 2), the veins exposed at surface come to an abrupt apparent termination. In this region, the topography is more elevated and resistive, suggesting a likely silica cap. The silica styles observed are more likely to be of high temperature, advanced argillic facies alteration and therefore highlighting a **proximal intrusive driven fluid source**. The implications are that the silica cap is potentially masking the continuation of the epithermal vein system below, and that, if the silica cap formed pre-gold mineralisation, then the rising mineralising fluids may have ponded/pooled beneath this resistive silica cap. A program of additional prospecting is required around this West Topacio Silica Cap region, which, combined with awaited soil geochemistry and airborne geophysics, is expected to highlight buried structures that may host **concealed vein type gold mineralisation**.

## El Sahino Silica Cap

To the southeast of the Topacio resource area, an extensive (at least 4.5km²) silica cap zone is identified in the El Sahino area (Figure 2), defined by a flat, table-top topography. Here, flat lying fine grained laminated sediments have been selectively replaced by low temperature silica. To date, only vein structures on the north and northeast margin of this silica cap zone have been found to be gold mineralised, including the Rebeca vein. While gold and silver values from previous sampling within the silica cap area have generally been low grade, elevated Mo, Hg and As within this area is significant, suggesting fluid leakage through the silica cap and **potential for fluid ponding and development of gold and silver mineralisation** below the cap.

#### **Buena Vista**

The potential of the Buena Vista area – to the northeast of the Topacio resource area (Figure 2) - was highlighted by Oro Verde during reconnaissance exploration in 2015 with surface rock chip sampling grades up to 3.35g/t Au recorded<sup>3</sup>. The mineralisation relates to a NE trending silicified and veined structure that is spatially distinct from the Topacio vein zone. The local geology is characterised by several dacitic stocks emplaced into andesitic volcanics and stratified sediments. However, the characteristics of this area suggest a possible repeat of the geological factors that are favourable for **epithermal vein type grade development** within the core of the Topacio Vein System. Buena Vista requires further prospecting and detailed mapping to determine if the area could be developed into a separate gold camp.

## La Plazuela

In the under-explored southwestern corner of the concession, an area of topographic elevation consists of two hills named Cerro Tortuga and Cerro de los Ahogados, separated by the La Plazuela saddle between those hills (Figure 2). The mapping has identified this region as a potential target for high sulphidation mineralisation in association with a possible deeper **porphyry copper-gold system**. Mapped hydrothermal breccias cutting through a silica cap at surface are suggestive of a zone of hydrothermal alteration. Elevated molybdenum results from initial surface sampling support the concept of a concealed intrusive source for the breccias. Further detailed investigation is required to test this model.

<sup>&</sup>lt;sup>3</sup> Refer to ASX announcement dated 15 June 2015 "High Gold Grades from West Mico Vein at Topacio"

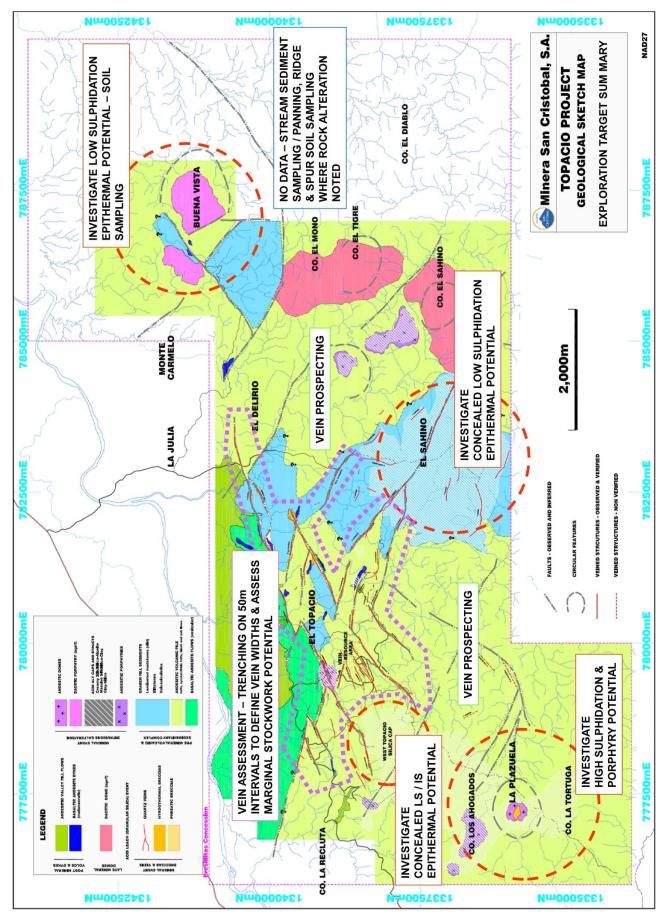


Figure 2 Topacio Project – Geological Interpretation Map and Exploration Targets

### **Additional Targets**

Due to the under-explored nature of much of the 93km<sup>2</sup> Topacio concession, a number of other areas outside of the named targets above still require additional prospecting (Figure 2). The area to the south of the Topacio resource area, between the La Plazuela and El Sahino silica caps, is one of the areas that warrant further investigation, particularly for vein type mineralisation. The area east of the Topacio Vein System and between the El Sahino and Buena Vista targets, also requires more detailed ground follow up. The far-east and northeast of the concession has so far had no exploration activity by Oro Verde or documented by previous explorers.

In these areas particularly, the combination of broad spaced soil sampling geochemistry and the concession-wide airborne geophysical program (magnetics and radiometrics) will be critical in identifying target areas for additional ground follow up.

#### **SOIL SAMPLING PROGRAM**

Oro Verde is now well advanced with its systematic **soil sampling program** across the Topacio concession. The program of 400m x 400m offset grid sampling is expected to be completed by mid May with a third team now added, with final geochemical results to follow shortly after. A period of data analysis and interpretation will follow to determine priority targets, as well as to identify areas that may require more detailed, closer spaced soil sampling. Using Newcrest's extensive knowledge and experience with low sulphidation epithermal systems, this program will utilise critical multi-element pathfinder geochemistry to characterise the mineralised system at Topacio and assist with target generation for the next phase of drilling.

#### **AIRBORNE GEOPHYSICAL SURVEY**

The planned airborne geophysical survey across the Topacio concession will incorporate a combination of magnetics and radiometrics, to map stratigraphy and major structural controls, as well as near surface alteration zones. These features will allow identification of areas indicative of vein emplacement, in addition to potential zones of buried intrusive systems (porphyries), such as those contemplated for the La Plazuela area. The permitting and approvals process for the airborne geophysical survey has experienced some local administrative delays. However, these delays are necessary for both Oro Verde and Newcrest to be satisfied that the safety and security measures in place for the heli-borne program are best practice, and will allow for safe and smooth execution of the program.

#### **TOPACIO PROJECT BACKGROUND**

Oro Verde holds an Option to Purchase Agreement over the high grade Topacio Gold Project, located in southeastern Nicaragua (Figure 1). Details can be found in the announcement to the ASX dated 27 February 2015<sup>4</sup>. The project already contains a historical NI 43-101 (Canadian standard, similar to JORC) compliant Inferred Resource of:

2,716,176 tonnes at 3.9 g/t gold, containing 340,345 ounces of gold, at a 1.5 g/t gold cut-off

National Instrument 43-101 ("NI 43-101") is a national instrument for the Standards of Disclosure for Mineral Projects within Canada and as such this estimate is a foreign estimate and is not reported in accordance with the JORC code (Australia). A competent person has not done sufficient work to classify the foreign estimate as mineral resources in accordance with the JORC code and it is uncertain that following evaluation and/or further exploration work that the foreign estimate will be able to be reported as mineral resources in accordance with the JORC code.

<sup>&</sup>lt;sup>4</sup> Refer to ASX announcement dated 27 February 2015 "Oro Verde Proceeds to Acquire Topacio Gold Project"

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**About Oro Verde Limited:** Oro Verde Ltd is a mineral exploration company focused on identifying and developing significant gold projects in Central America, particularly Nicaragua. Oro Verde holds an Option to Purchase Agreement to acquire 100% of the Topacio Gold Project in Nicaragua that currently contains a NI43-101 compliant Inferred Mineral Resource of 340,000 ounces of gold. An A\$11.0 million 5 year farm-in agreement was signed on November 25, 2015 with global gold major Newcrest Limited (ASX: NCM) – to jointly explore for multi-million ounce gold deposits on the Topacio Gold Project. Oro Verde also holds 100% of the early stage San Isidro Gold Project, also in Nicaragua, located adjacent to the 2.3 million ounce La India gold project.

#### COMPETENT PERSON STATEMENTS

The information in this document that relates to Exploration Results is based on information compiled by Mr Trevor Woolfe BSc Hons (Geol), who is a Member of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Mr Woolfe is the Managing Director and a shareholder of the Company, and is employed through consultancy Shordean Pty Ltd. Mr Woolfe has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is 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 Woolfe consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this document that relates to earlier Exploration Results is extracted from the following report: "Oro Verde Proceeds to Acquire Topacio Gold Project" created on 27 February 2015 and completed under Mr Trevor Woolfe as Competent Person and available to view on www.asx.com. Mr Trevor Woolfe BSc Hons (Geol) is a Member of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

The information in this document that relates to Historical Mineral Resources is extracted from the report entitled "Acquisition of High Grade Gold Project" created on 11 November 2014 and available to view on www.asx.com. The Company confirms that it is not in possession of any new information or data that materially impacts on the reliability of the estimates in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

# 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, randochips, or specific specialised industry standard measureme tools appropriate to the minerals under investigation, such down hole gamma sondes, or handheld XRF instruments, et These examples should not be taken as limiting the browneaning of sampling.</li> <li>Include reference to measures taken to ensure samprepresentivity and the appropriate calibration of a measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Mater to the Public Report.</li> <li>In cases where 'industry standard' work has been done the would be relatively simple (eg 'reverse circulation drilling wused to obtain 1 m samples from which 3 kg was pulverised produce a 30 g charge for fire assay'). In other cases moexplanation may be required, such as where there is coangold that has inherent sampling problems. Unusu commodities or mineralisation types (eg submarine nodule may warrant disclosure of detailed information.</li> </ul>	nt reported in this announcement as c). ad ale eny ial is as to tre
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hamme rotary air blast, auger, Bangka, sonic, etc) and details (eg co diameter, triple or standard tube, depth of diamond tails, fac sampling bit or other type, whether core is oriented and if s by what method, etc).	re e-
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 preferential loss/gain of fine/coarse material.</li> </ul>	re nd
Logging	<ul> <li>Whether core and chip samples have been geologically an geotechnically logged to a level of detail to support appropria Mineral Resource estimation, mining and metallurgical studie</li> <li>Whether logging is qualitative or quantitative in nature. Co (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersection logged.</li> </ul>	te are reported in this announcement s. re
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc as whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriatene of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stage to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representation of the in situ material collected, including for instance result for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the processing temporal being expended.</li> </ul>	are reported in this announcement  ass  es  ve
Quality of assay data and laboratory tests	<ul> <li>material being sampled.</li> <li>The nature, quality and appropriateness of the assaying at laboratory procedures used and whether the technique considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading time calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standard blanks, duplicates, external laboratory checks) and wheth acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	is are reported in this announcement  RF the
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by eith independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, da verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	are reported in this announcement
Location of data points  Data spacing and	<ul> <li>Accuracy and quality of surveys used to locate drill hole (collar and down-hole surveys), trenches, mine workings at other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> <li>Data spacing for reporting of Exploration Results.</li> </ul>	are reported in this announcement Grid system used is UTM Zone 16 with datum NAD27 Central It will be necessary to undertake a detailed topographic controlater in the program. This section is not relevant as no new sampling or drilling results
distribution	<ul> <li>Whether the data spacing and distribution is sufficient establish the degree of geological and grade continu appropriate for the Mineral Resource and Ore Reser estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	ity

Criteria	JORC Code explanation	Commentary
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiases 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 an reported if material.</li> </ul>	are reported in this announcement
Sample security	The measures taken to ensure sample security.	This section is not relevant as no new sampling or drilling results are reported in this announcement
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	This section is not relevant as no new sampling or drilling results are reported in this announcement

# 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 Topacio Gold Project is a Nicaraguan mining concession, known as Presillitas, held by Topacio S.A. Oro Verde Limited holds an Option to Purchase Agreement over the concession through 100% owned subsidiary Minera San Cristobal SA.</li> <li>The concession is in good standing and no known impediments exist (see map elsewhere in this report for locations).</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Previous exploration of the Topacio Gold Project has consisted of mapping, stream sampling, rock chip sampling, soil sampling, trenching, diamond drilling and feasibility studies in 3 main periods:  1980s – CPRM (Brasil)  1990s – Triton Mining (Canada)  2010-2013 – FDG Mining/Tango Gold (Canada)  The latter group has produced resource estimates that are consistent with NI 43-101 (Canadian) standards.  The Company is reviewing previous exploration data and as such is not in a position to appraise the quality of exploration by other parties.
	Deposit type, geological setting and style of mineralisation.	The Topacio Gold Project is a low sulphidation epithermal gold-(silver) vein type system (along with stockworks and brecciation) set in a sequence of tertiary volcanics – essentially of andesitic and basaltic composition. The project is located in the SE of Nicaragua in the province known as RACCS (South Caribbean Coast Autonomous Region).  The main veins are NE striking and dipping steeply and variably to the NW and SE. Other veins in the broader concession strike NW and are also steeply dipping. Veins are generally up to 3m wide but in places may blow out to widths of more than 20m.
Drill hole Information	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:  a easting and northing of the drill hole collar  elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar  dip and azimuth of the hole  down hole length and interception depth  hole length.  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.	No drilling was undertaken in the current program
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	No data aggregation methods have been applied
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.  If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.  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').	This is not relevant to the current mapping program

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>	Appropriate maps/plans relevant to the current surface mapping program are available in the body of this report.
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>	This section is not relevant as no new sampling or drilling results are reported in this announcement
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	References to other exploration data relevant to the current mapping program are referenced throughout the report
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions, 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>The Company is currently reviewing all available data on the project and formulating its ongoing work program. As stated in the report, the current mapping program will be assessed in conjunction with imminent soil sampling geochemistry results and airborne geophysical survey results to determine priority targets for follow up studies.</li> <li>Maps within the report outline the latest geological interpretation and identify possible target areas</li> </ul>