



# RIEDEL

## RESOURCES

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West Perth  
Western Australia 6005

ASX Code: RIE

[riedelresources.com.au](http://riedelresources.com.au)

### KEY COMPANY INFORMATION

#### Capital Structure

Ordinary Shares: 374m  
Unlisted Options: 42.9m

#### Top 20 Shareholders

64%

#### Cash Reserves

A\$2.65m  
(at 30 September 2017)

ASX and Media Release  
21 November 2017

## HIGH PRIORITY TARGETS IDENTIFIED AT CÁRMENES HIGH-GRADE COBALT-COPPER PROJECT

### HIGHLIGHTS

- ✧ **11 high priority targets** already identified by JV Partner, SIEMCALSA.
- ✧ **Numerous targets identified from** initial exploration covering less than **5% of Project area**.
- ✧ Highly significant results confirmed by coincident geophysical and geochemical testwork.
- ✧ Confirms potential for additional cobalt-copper 'pipes' similar in structure and composition to the La Profunda and Divina Providencia mines.
- ✧ All advanced targets show **potential for similar or larger size than the pipe historically mined at La Profunda**.
- ✧ **High-grade 'pipes'** have been shown to **host very significant minerals deposits** such as that at the **Tsumeb Mine in Namibia** and **Industrias Peñoles carbonate-hosted Ojuela mines at Mapimi in Mexico** that produced over 6Mt of polymetallic ore.
- ✧ Geophysical testing of **highly prospective zones** adjacent to the La Profunda high grade Cobalt-Copper mine to be prioritised.

**Riedel Resources Limited** (ASX:RIE) is very pleased to announce highly encouraging results from initial field work conducted by its joint venture partner SIEMCALSA at the Cármenes cobalt-copper project in Northern Spain.

The results, which cover less than 5% of the Project area, confirm the region to be **highly prospective for cobalt-copper 'pipe' style ore bodies, similar in structure and composition to those found at the La Profunda and Divina Providencia<sup>1</sup> former cobalt mines.**

On the field work completed by its JV Partner, Riedel Executive Chairman, Mr Jeffrey Moore said ***"the initial geophysical and geochemical results surpass our expectations and demand the accelerated exploration of the Project area which is still largely untested."***

Immediate plans have been made to step out geophysical and geochemical groundwork along the most prospective zones of the high-priority target corridor. This work will target the presence of further mineralised 'pipes' to the east and west of the La Profunda mine.



## RECENT EXPLORATION SUCCESS

Riedel's JV Partner, SIEMCALSA, has conducted initial fieldwork at Central Cármenes, near the La Profunda former cobalt mine. Additional test work has also been carried out surrounding the Valverdin Mine to the south east.

Results from the geophysical testing were validated and confirmed to be of a high order by the Company's Australian consulting geophysicists, Resource Potentials.

In total, eleven key targets have already been identified from the analysis of data covering less than 5% of the Project area. The zones adjacent to the former La Profunda mine contain nine of the targets, the other two are located proximal to Valverdin.

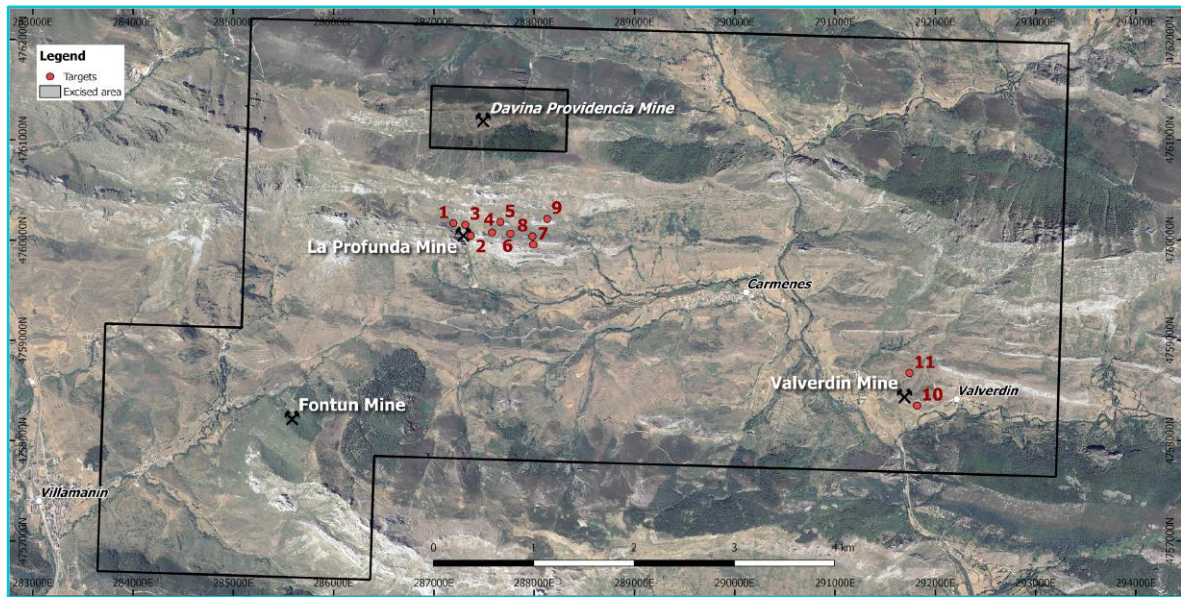


Figure 1 – Location of key targets to date – La Profunda [9] and Valverdin [2]

**All of the targets potentially represent polymetallic concealed (non-outcropping) minerals deposits.** Such characteristics are consistent with the Company's hypothesis that the region is highly prospective due to concealed targets not being easily detected by historic exploration techniques.

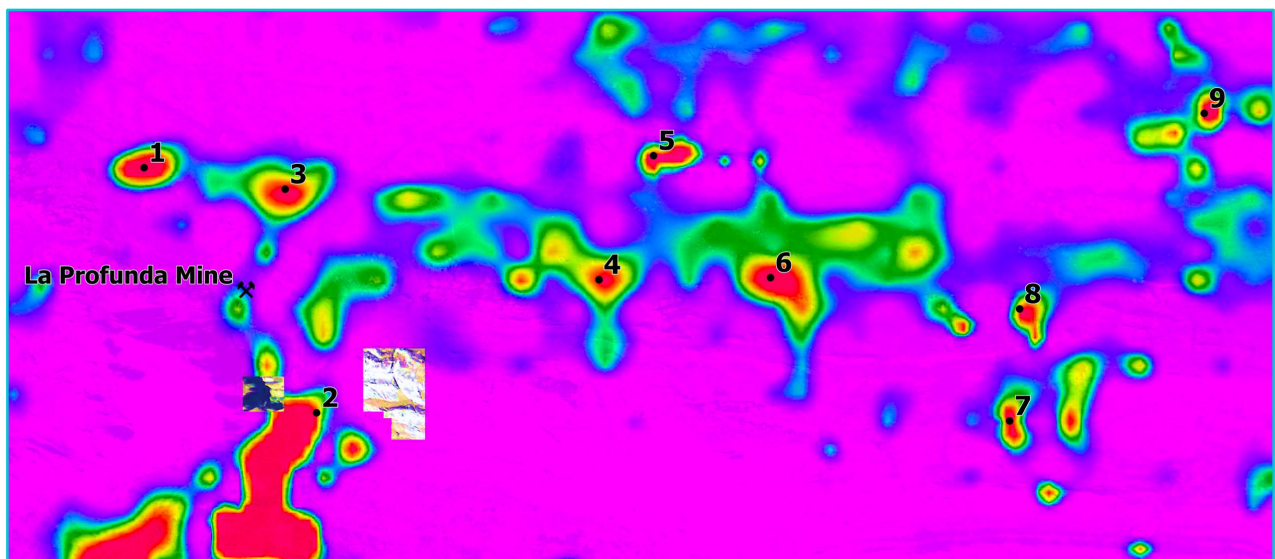


Figure 2 – Radiometric image highlighting 9 initial targets at La Profunda



With a distinct advantage over their predecessors, SIEMCALSA were able to employ multiple modern geophysical and geochemical testing techniques to identify the current targets. The programme of work carried out included:

- ✧ Pole-Dipole Induced Polarisation (PDIP)
- ✧ Radiometric Surveys
- ✧ Rock chip sampling and analysis
- ✧ Soil pH analysis
- ✧ Trenching, sampling and analysis
- ✧ Magnetic Surveys
- ✧ Detailed structural and geological mapping
- ✧ Ion-leach soil geochemical analysis
- ✧ Stream sediment analysis
- ✧ Lithogeochemical sampling

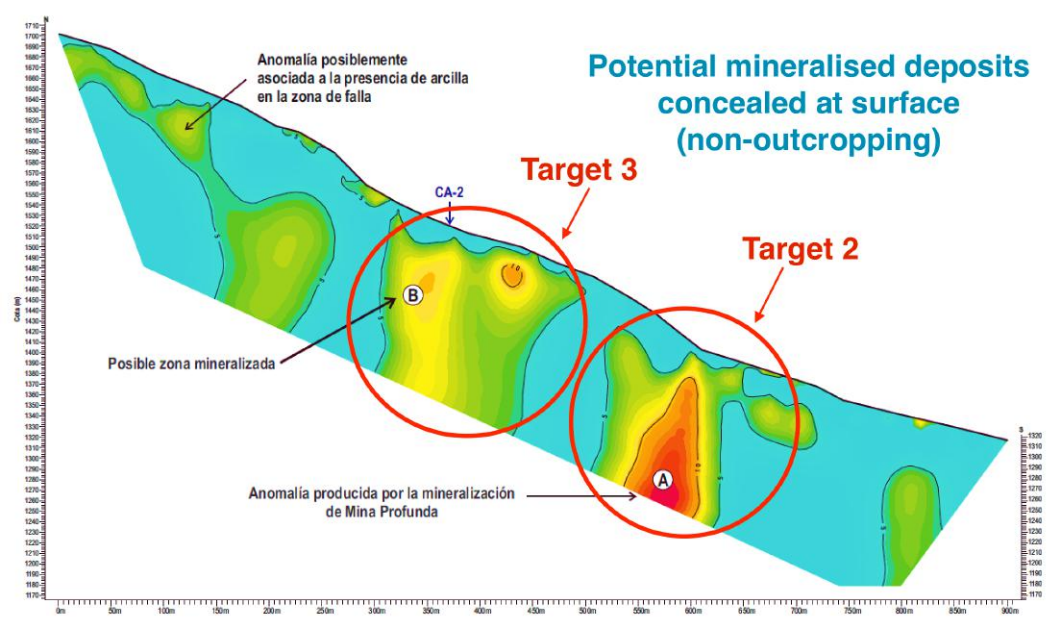


**Figure 3–** Ground IP Surveys can be very effective in identifying non-outcropping minerals deposits



**Figure 4–** Rock samples from La Profunda – typical of cobalt-copper mineralisation

All of Targets 1 to 9 show a strong association with radiometric anomalism. Importantly, at Targets 1 to 3, where Pole-Dipole Induced Polarisation (PDIP) surveys have also been carried out, **coincident IP and radiometric anomalies that are considered characteristic of this style of mineralisation are strongly evident.**



**Figure 5 –** Profunda Targets 2 & 3 - PDIP anomalies (chargeability) already identified showing potential concealed mineralised deposits



Figure 6 – Exploration in historical mine stopes and adits  
La Profunda High Grade Cobalt Copper Mine

Significantly, the PDIP lines, which measure the chargeability and resistivity of the rocks, **could be detecting additional sulphidic mineralisation such as that believed to be found nearby at the historic La Profunda high grade Cobalt-Copper mine.**

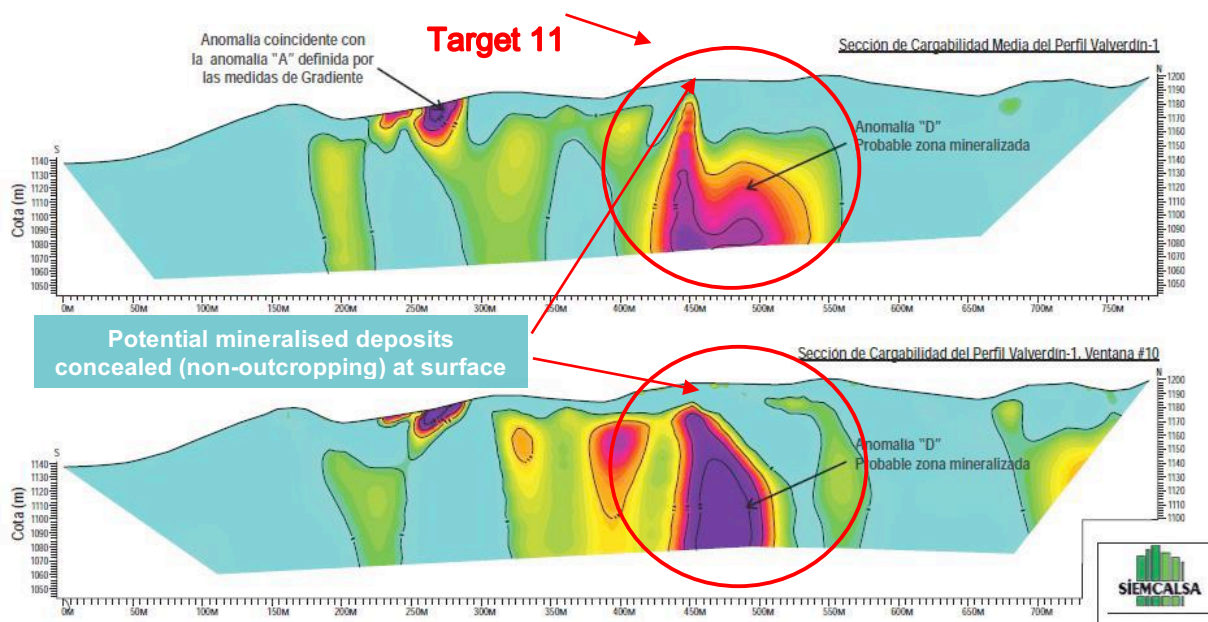


Figure 7 –Valverdin Target 11 - PDIP anomalies (chargeability) already identified showing potential concealed mineralised deposit



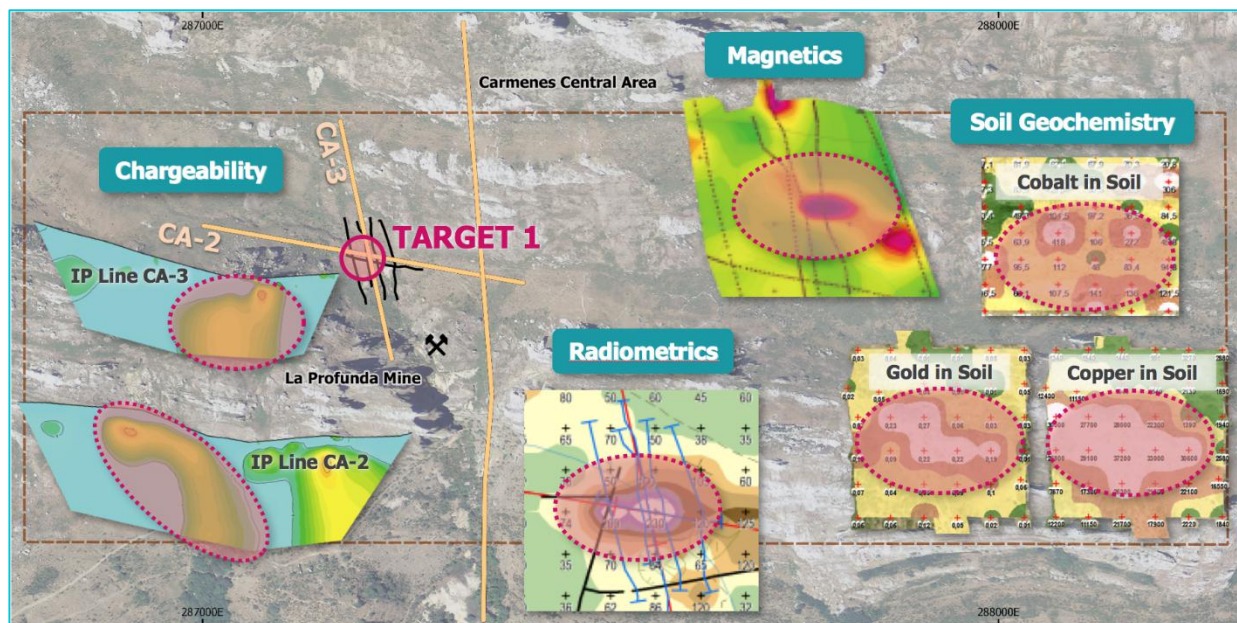
## ADVANCED TARGETS

From the eleven targets identified by SIEMCALSA, additional analysis on targets 1, 2 and 3 has already **resulted in their target status being escalated to advanced**. Importantly, the three most advanced targets are located near the historic La Profunda mine.

Most encouragingly, **coincident signatures have been recorded from multiple tests and all of the advanced targets show potentially larger diameters than the pipe mined at La Profunda**.

### Target 1

- ✓ Pipelike polymetallic body (non-outcropping/concealed)
- ✓ Located north west of the historic La Profunda mine
- ✓ Target dimensions 80m North-South by 20m East-West
- ✓ Coincident signature indicators from multiple tests
  - Radiometrics
  - Magnetics
  - Ground IP (Chargeability)
  - Soil geochemistry (Cobalt, Copper and Gold present in soil)



**Figure 8** – Advanced Target 1 at La Profunda – Confirmed by coincident geophysical and geochemical anomalies (Soil geochemistry – ppb, radiometrics cps)

Similar coincident signatures were encountered on the other advanced targets (2 and 3) near La Profunda and at target 11 near Valverdin (See Figure 9). **Target dimensions also exhibited similar or larger sizes.**

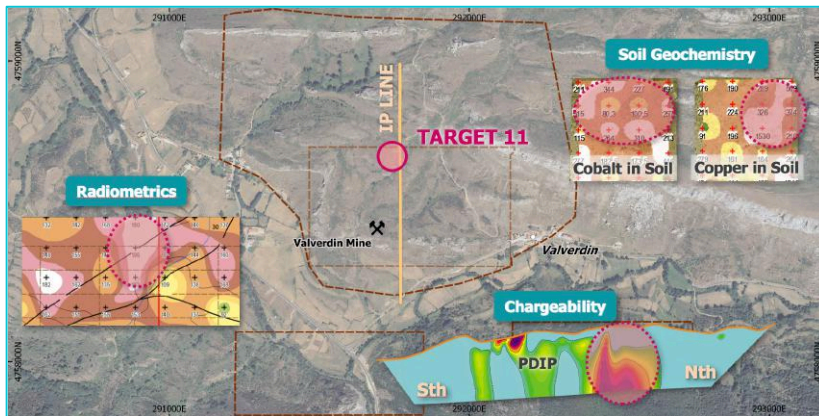


Figure 9 – Advanced Target 11 Valverdin – Confirmed by coincident signature indicators

### Target 11

- ✓ Pipelike polymetallic body (non-outcropping)
- ✓ Located due north of Valverdin mine
- ✓ Target dimensions 80m N-S by 20m E-W
- ✓ **Coincident signature indicators from multiple tests**
  - Radiometrics
  - Ground IP (Chargeability)
  - Soil geochemistry (Co, Cu present in soil)

## DEPOSIT ANALOGUES AND GLOBAL EQUIVALENTS

The deposits identified within the Cármenes Project investigation permit areas can all be linked to a single epithermal event with well-defined zonation that can be associated with a major regional fault-line known as the 'Léon fault'.

The La Profunda and Divina Providencia mines were comprised of 'pipe' or 'cylindrical' style ore bodies with subvertical orientation. It is highly encouraging that the recently identified target anomalies exhibit these same characteristics.

Other globally significant polymetallic mines possessing similar subvertical pipe morphology include:

- **Tsumeb Mine** (Namibia) – from 1905 to 1990 - produced 25Mt (Cu, Co, Zn, Ag, Pb)
- **Mapimi Deposit** (Ojuela Mine – Mexico) – produced 6Mt (Cu, Zn, Au, Ag, Pb)

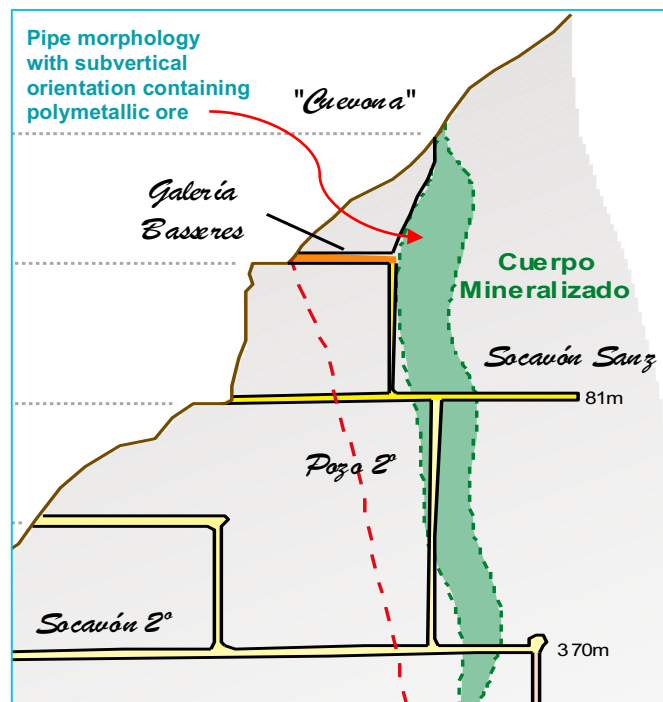


Figure 10 – La Profunda Mine (Spain) La Cueva ('The Cavern') Stope Schematic similar to other globally significant mines



**Figure 11** – Field work by SIEMCALSA has been successful in identifying initial targets with potential cobalt-copper mineralisation

Riedel now intends to **accelerate the follow-up programmes and extend the exploration envelope to identify additional targets** to the eleven already discovered near the historical La Profunda and Valverdin mines.

**Further details on these fast-tracked programmes will be released to the market as soon as possible.**

**For further information please contact:**

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**About Riedel Resources Limited**

Riedel Resources Limited listed on ASX on 31 January 2011 and is an Australian-based exploration company focused on the exploration and development of technology metals in Europe.

Further information can be found at the Company's website [www.riedelresources.com.au](http://www.riedelresources.com.au)

**About SIEMCALSA**

**SIEMCALSA** (*Sociedad De Investigación Y Exploración Minera De Castilla Y León S.A.*) is a parastatal corporation established in 1988 devoted to the promotion and stimulation of the mining sector in the Castilla and León (Spain).

Further information can be found at the Company's website [www.siemcalsa.com](http://www.siemcalsa.com)

**Competent Person's Statement**

*The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Jeffrey Moore, who is a Member of The Australian Institute of Mining and Metallurgy. Mr Moore is a full-time employee of Riedel Resources Limited. Mr Moore has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Moore consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

<sup>1</sup> Excised from Carmenes Project joint venture tenement area. Currently under investigation permit application by SIEMCALSA.



# JORC Code, 2012 Edition – Table 1 report template

## Section 1 Sampling Techniques and Data

Criteria	Commentary
<i>Sampling techniques</i>	<ul style="list-style-type: none"> <li>Overlaying geophysical and geochemical surface sampling results were used to locate potential massive sulphide drill targets. Techniques include: <ul style="list-style-type: none"> <li>Ground radiometric U surveying</li> <li>Geochemistry (soil and stream)</li> <li>Soil pH</li> <li>Rock chip samples</li> <li>Ground magnetics</li> <li>Pole-Dipole Induced Polarization surveys</li> <li>Gradient Array Induced Polarization survey</li> <li>Ground magnetic survey</li> <li>Trenching, sampling and analysis</li> <li>Detailed structural and geological mapping</li> <li>Lithogeochemical sampling</li> <li>Air photos</li> </ul> </li> <li>This style of exploration is appropriate for the copper-cobalt 'pipe' style mineralization prevalent in the project area.</li> </ul>
<i>Drilling techniques</i>	<ul style="list-style-type: none"> <li>No drilling completed to date</li> </ul>
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> <li>No drilling completed to date</li> </ul>
<i>Logging</i>	<ul style="list-style-type: none"> <li>No drilling completed to date</li> </ul>
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> <li>Approximately 500 g of soil is collected from near surface (10-20 cm depth)</li> </ul>
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> <li>Rock chip samples submitted to ALS Seville for multi element (61 elements) and atomic absorption spectroscopy (Au)</li> <li>Radiometric survey – Hand held SAIC Exploranium GR-135 G Plus meter</li> <li>Soil samples submitted to ALS Chemex, Seville Spain for IONIC Leach ICP multi-spectral analysis and pH; replicates submitted at a rate of approximately 1 in 20</li> <li>Ground magnetic survey – GEM overhouser magnetometer set with a 3 second sampling rate; assumed diurnal correction was applied</li> </ul>
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <li>Sample data is stored in an MS Access database</li> <li>Currently no verification of analytical data has been completed</li> </ul>
<i>Location of data points</i>	<ul style="list-style-type: none"> <li>Hand held GPS and orthophoto accurately locate data points to &lt; 1 m in three dimensions</li> <li>Projection system is ETRS89 / ETRS-TM30</li> <li>Topographic surface derived from digital terrain model which is adequate for topographic control of surface sampling</li> </ul>
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>Ground radiometric U surveying on a 25m × 25m grid</li> <li>Geochemistry and pH (soil and stream) – Ion Leach 10 × 10m</li> <li>Ground magnetics ~ La Profunda five NNW-SSE traverse 5m to 15m line spacings; Valverdin ten N to S traverses on 50m line spacings</li> <li>Pole-Dipole Induced Polarization surveys ~ La Profunda 3 PDIP traverses 1,600m total line length 10m to 15m electrode spacings</li> <li>Gradient Array Induced Polarization survey on 50m line spacings, 20m receiver dipole and spacings</li> <li>Ground magnetic survey using roving overhouse magnetometer (3 second sampling rate) N to S traverses, 50m apart, line lengths approximately 400m</li> </ul>



Criteria	Commentary
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• Sampling grid traverse exposed geology</li> <li>• Sampling bias is not expected</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• All sampling carried out under the control SIEMCALSA</li> <li>• Samples stored at laboratory</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• Geophysical consultants, Resource Potentials have reviewed, verified and confirmed the results of geophysical testing</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>• Spanish Mineral investigation Tenements PI 1507 Cármenes and PI 1506 Valverdín are held by Sociedad De Investigación Y Exploración Minera De Castilla Y León S.A. ("SIEMCALSA") and managed by Reidel Resources Limited (Reidel) through a Joint Venture whereby Riedel can earn-in an interest up to 90% in the Cármenes Project by way of funding staged exploration and development expenditure, with provision to acquire the remaining 10%</li> <li>• PI 1506 Valverdín is valid until May 12, 2021</li> <li>• PI 1507 Cármenes is valid until May 12, 2021</li> <li>• Agreements with land owners and authorizations for works have been received by SIEMCALSA with respect to PI 1506 Valverdín</li> <li>• There are no known impediments to obtaining a licence to operate or explore in the tenements under consideration</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>• Available exploration results described above have been prepared by SIEMCALSA</li> <li>• Details of prior exploration and mining is under compilation</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li>• Located in the Castilla y Leon region of Spain, within the Cantabrian Zone of the Iberian Massif of Northern Spain on the southern slope of the Cantabric range, within a 60 km Paleozoic belt</li> <li>• Host rocks are limestones and dolomites of Namurian and Carboniferous ages and the whole area was subject to intense hydrothermal dolomitization</li> <li>• Mineralisation is fracture related, hydrothermal, stratiform carbonate replacement deposit (Cu-Co-Ni (=/-Au-U) as sulphides and arsenides (La Profunda), Au (Valverdin) and Pb-Cu-Zn-Ag (Fontun) in limestone and shale stratigraphy</li> <li>• Extensive alteration</li> <li>• Sub-vertical bodies as pipes and chimneys</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li>• No drilling completed to date</li> </ul>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>• No data aggregation applied</li> </ul>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>• No drilling completed to date</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• Maps and diagrams are provided in body of the report</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• Data is presented for both positive and negative results and can be considered balanced</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• No other substance work completed</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• Continued development of geological framework and prioritisation of drill targets</li> </ul>