**ASX Announcement** **19 April 2023**

# High-grade rock chips up to 7.28% Cu, 18.65g/t Au and 55g/t Ag continue to expand the mineralised footprint of the Llahuin Copper-Gold/Moly porphyry project Chile

## Highlights:

- **A rock chip sampling and mapping program started in 2022 and continuing in 2023 has identified further high-grade veins in the Llahuin Project area 500m North of the Cerro-Ferro 1.9km Geochem target**
- **Gold panned in samples**
- **Vein swarms host the higher-grade mineralisation within the porphyry breccia, so understanding the vein systems is important in refining drill hole locations**
- **Several high-grade veins west of Ferrocarril were sampled up to 7.28% Cu**
- **An outcropping vein 500m north of Cerro de Oro 18.65g/t Au, 0.1% Cu and 1g/t Ag and 4m along strike with <u>7.56g/t Au, 0.09% Cu and 2g/t Ag</u>**

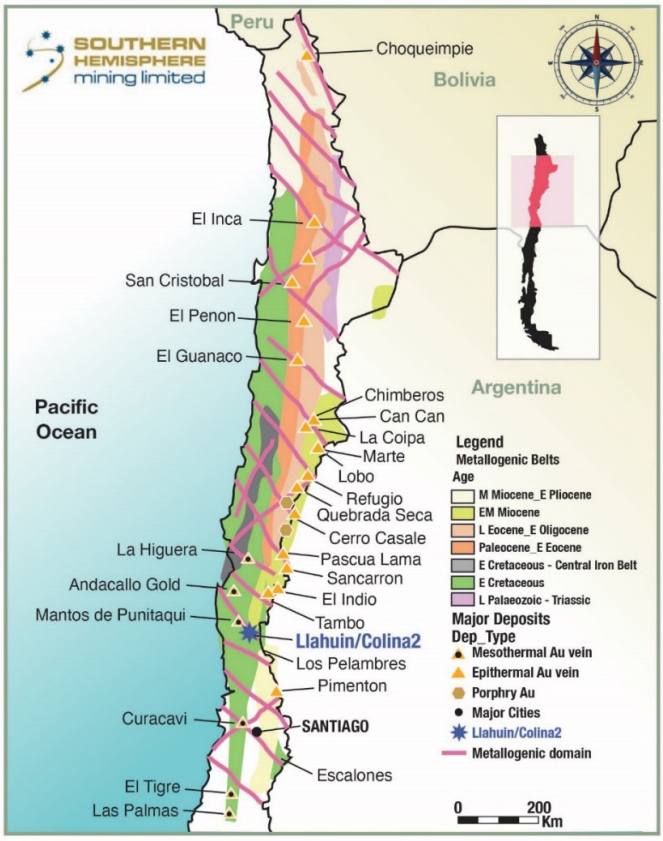


*Figure 1 Location Map of Llahuin Project – Chile*

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Southern Hemisphere Mining Limited ("Southern Hemisphere" or "the Company) (ASX: SUH) reports that the geological mapping of areas previously unexplored within the project area continues and has identified additional mineralised veins in areas outside known resources in the project area. All rock chip assays are presented in Table 1 below with better grades highlighted in red.

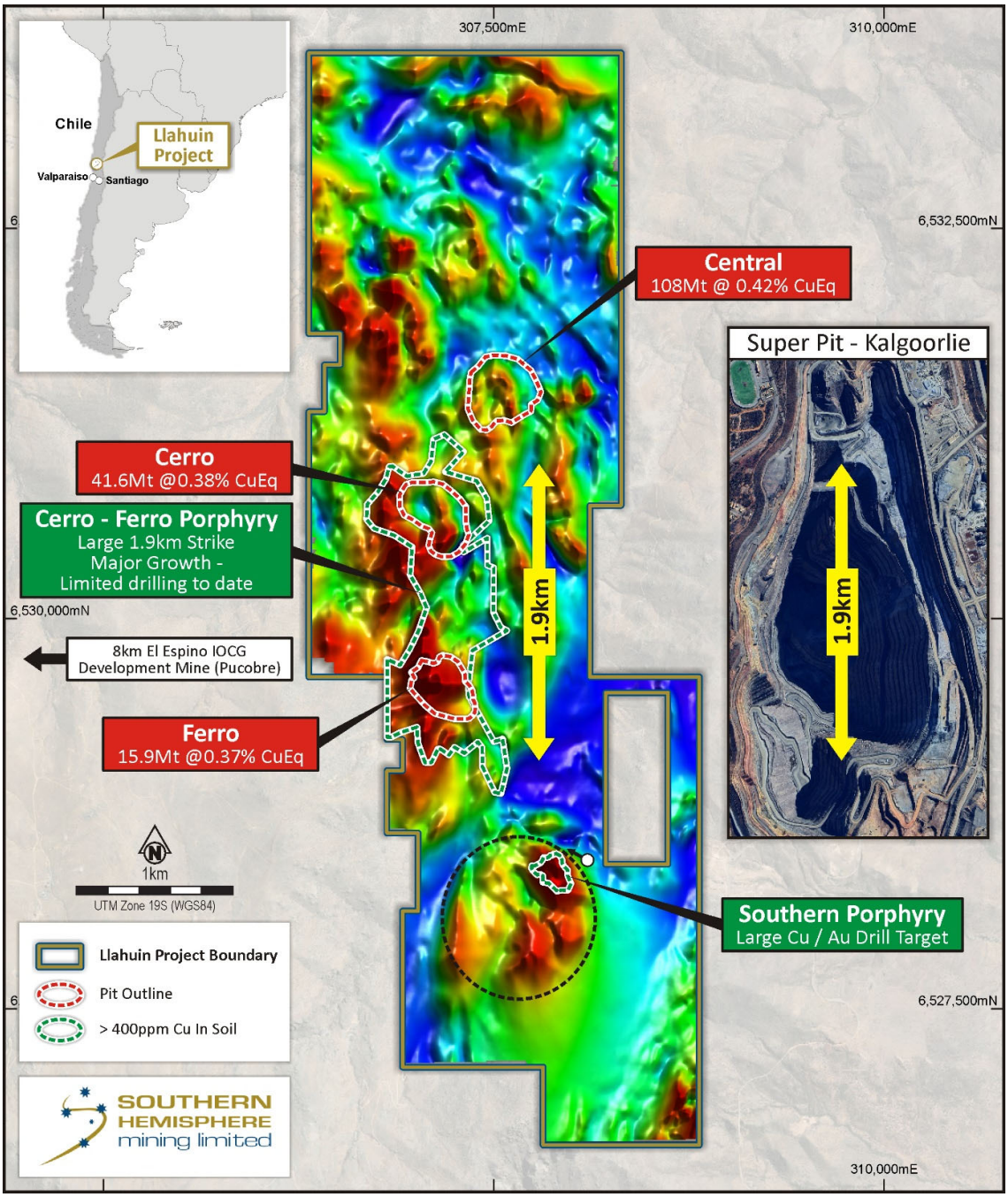


***Figure 2 Project map showing the large growth target at Cerro-Ferro deposits link and comparative scale to the Kalgoorlie Super-Pit***

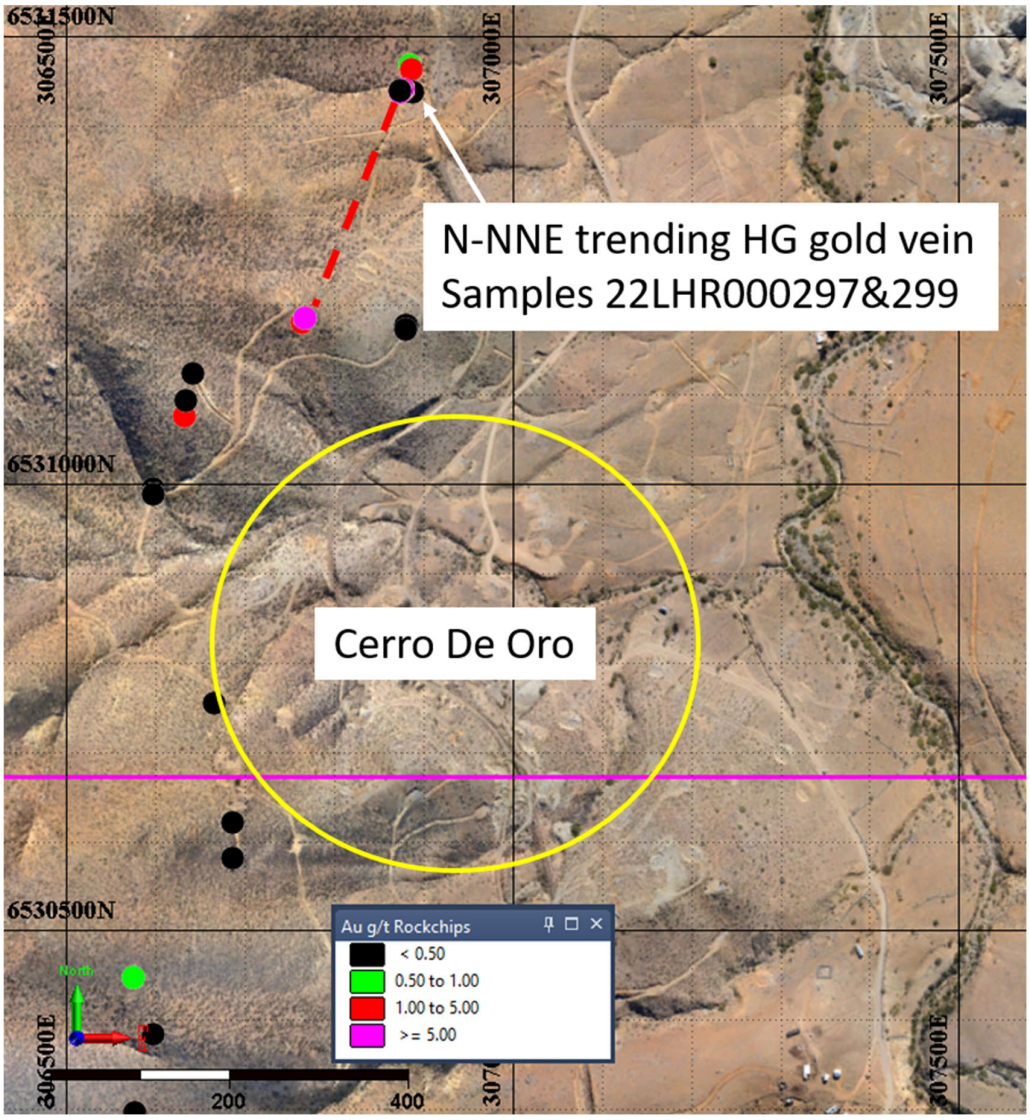


***Figure 3 Location of high-grade gold samples north of Cerro De Oro resource***

The high-grade gold rock chips are from a vein 500m north of Cerro de Oro which was revisited and 5 samples were collected and crushed and panned for gold at site with all five showing visible gold tails in the pan.

One sample about half a fist size produced a 2.5cm long gold tail (Figure 5) with further methodical sampling planned to test the vein in the historical adit.

Several north trending and east dipping veins were sampled west of Ferrocarril with high grade copper with the location shown in Figure 4 below.

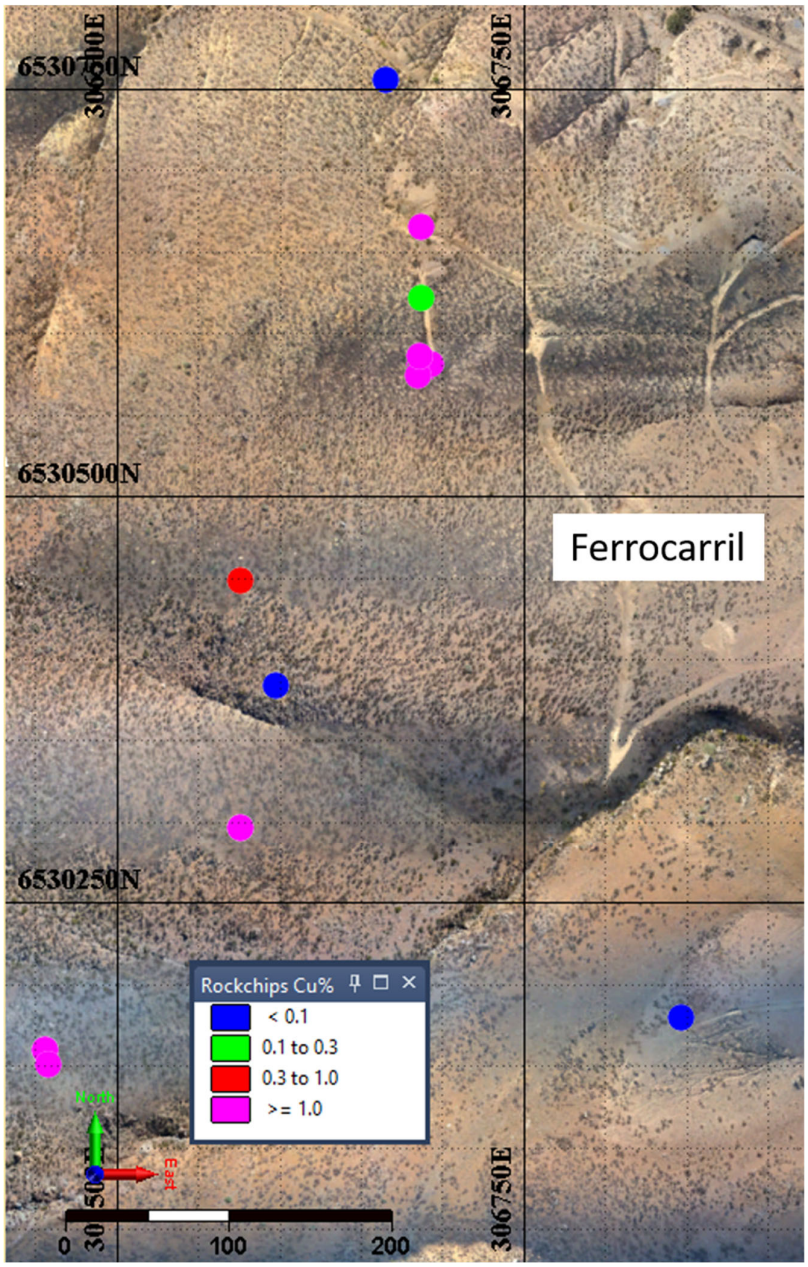


*Figure 4 Ferrocarril high-grade copper veins*

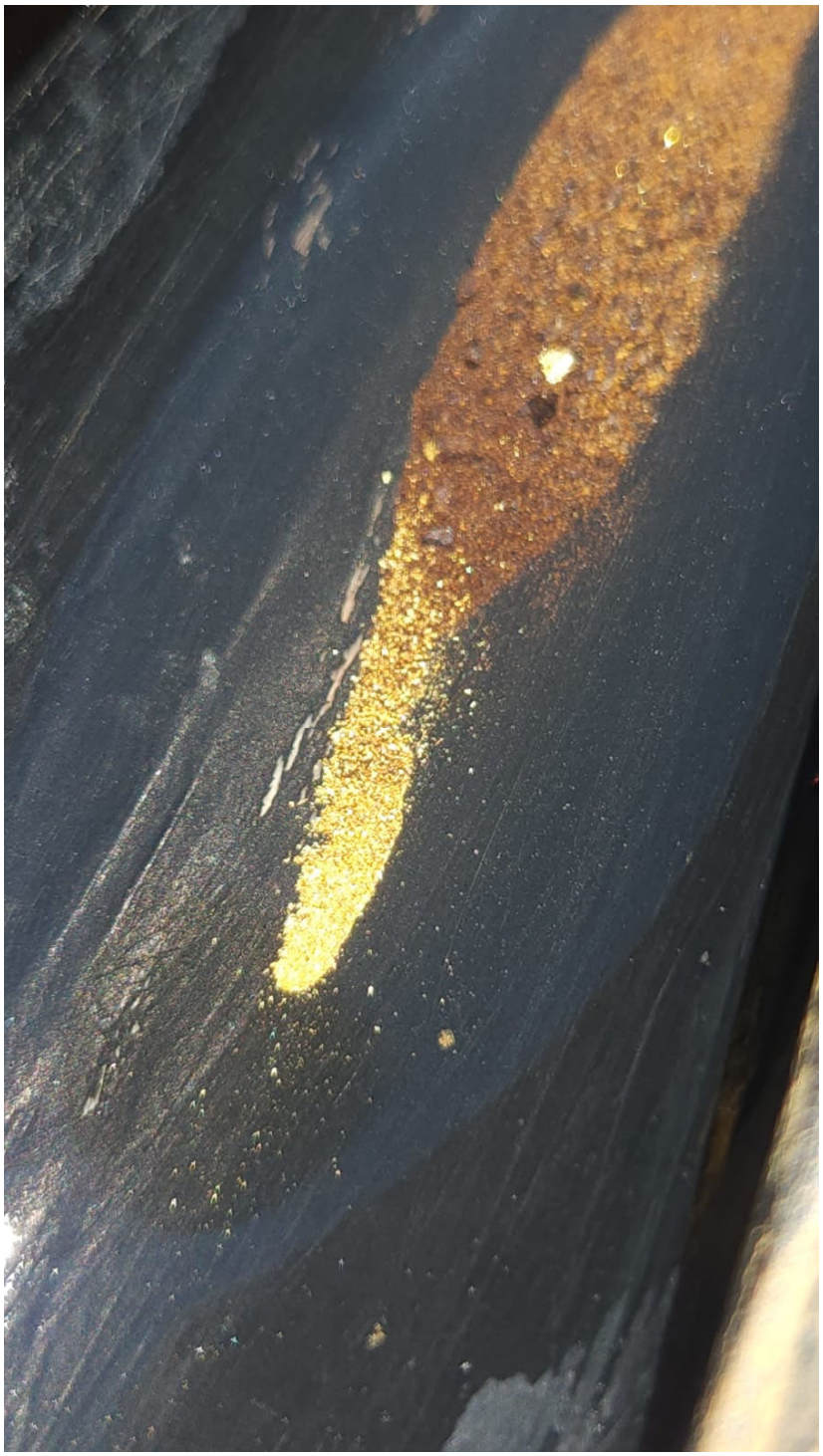

***Figure 5 Panned gold tail (near sample 22LHR000297 and 299)***

The Company regularly submits standards and blanks with each laboratory submission as part of the on-going QAQC program. No issues with the ALS laboratory data have been observed for the rock chip sampling program.

The mapping and sampling program is continuing in 2023 to add to the understanding of the veins and vein swarms to assist in refining drill locations . Further exploration work continues to expand the target opportunities for copper/gold/moly/silver resource expansion within the concessions.

Approved by the Board for release.

**CONTACTS:**
For further information on this update or the Company generally, please visit our website at www.shmining.com.au or contact the Company :

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**BACKGROUND INFORMATION ON SOUTHERN HEMISPHERE MINING:**

Southern Hemisphere Mining Limited is an experienced minerals explorer in Chile, South America. Chile is the world's leading copper-producing country and one of the most prospective regions of the world for major new copper discoveries. The Company's projects include the Llahuin Porphyry Copper-Gold Project and the Los Pumas Manganese Project, both of which were discovered by the Company.

Llahuin Copper/Gold/Moly Project: Total Measured and Indicated Resources - JORC (2004) Compliant. As announced to the market on 18 August 2013.

| Resource (at 0.28% Cu Equiv cut-off) | Tonnes Millions | Cu % | Au g/t | Mo % | Cu Equiv* |
|---|---|---|---|---|---|
| *Measured* | 112 | 0.31 | 0.12 | 0.008 | 0.42 |
| *Indicated* | 37 | 0.23 | 0.14 | 0.007 | 0.37 |
| ***Measured plus Indicated*** | **149** | **0.29** | **0.12** | **0.008** | **0.41** |
| *Inferred* | 20 | 0.20 | 0.19 | 0.005 | 0.36 |
| *Total M+I+I* | 169 | 0.28 | 0.128 | 0.008 | 0.40 |

**Note: *Copper Equivalent ("Cu Equiv"):** *The copper equivalent calculations represent the total metal value for each metal, multiplied by the conversion factor, summed and expressed in equivalent copper percentage. These results are exploration results only and no allowance is made for recovery losses that may occur should mining eventually result. It is the Company's opinion that elements considered have a reasonable potential to be recovered as evidenced in similar multi-commodity natured mines. Copper equivalent conversion factors and long-term price assumptions used are stated below:*

## Notes on copper recovery from historical test work

- "*Recoveries of copper vary between 75% Cu and 91% Cu with the weighted average of the results being 84% Cu, which is a typically acceptable commercial level*";
- "*Recoveries of gold vary between 41% Au and 57% Au, which is in line with expectations given the relatively low gold grades within the deposit*"; and
- "*Flotation concentrates produced during testing contained the resource weighted average copper grade of 28% Cu and 4.9g/t Au. They also contained low levels of deleterious materials in the concentrate. Given that these tests were designed to set parameters and were not optimized, the results indicated good flotation process characteristics*".

Copper Equivalent Formula= Cu % + Au (g/t) x 0.72662 + Mo % x 4.412 Price Assumptions- Cu ($3.40/lb), Au ($1,700/oz), Mo ($15/lb)

Los Pumas Manganese Project: Total Measured and Indicated Resources - JORC (2004) Compliant. As announced to the market on 25 March 2011.

| Resource (at 4% Mn cut-off) | Tonnes Millions | Mn % | $SiO_2$ % | $Fe_2O_3$ % | Al % | K % | P % |
|---|---|---|---|---|---|---|---|
| *Measured* | 5.27 | 7.39 | 57.85 | 2.78 | 5.62 | 2.88 | 0.05 |
| *Indicated* | 13.06 | 7.65 | 55 | 2.96 | 5.64 | 2.92 | 0.05 |
| ***Measured plus Indicated*** | **18.34** | **7.58** | **55.82** | **2.91** | **5.62** | **2.91** | **0.05** |
| *Inferred* | 5.39 | 8.59 | 51.44 | 2.72 | 5.49 | 2.69 | 0.06 |
| ***Total*** | **23.73** | **7.81** | | | | | |

Metallurgical studies have demonstrated greater than 38% Mn concentrates are achievable by DMS with low impurities and high silica product.

In relation to the above resources, the Company confirms that it is not aware of any new information or data that materially affects the information in the announcements, and all material assumptions and technical parameters in the announcements underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

**COMPETENT PERSON / QUALIFIED PERSON STATEMENT:**

The information in this report that relates to copper and gold exploration results for the Company's Projects is based on information compiled by Mr Adam Anderson, who is a Member of The Australasian Institute of Mining and Metallurgy and The Australian Institute of Geoscientists. Mr Anderson 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 Anderson is a consultant for the Company and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.
For further information, please refer to the Technical Reports and News Releases on the Company's website at www.shmining.com.au.

## JORC Table 1

### Appendix 1 Rock chip Location Data and Results

***Llahuin Recent Gold± Copper ± Silver Rock chip Results***

| Sample_ID | Zone | East | North | RL | Au g/t | Ag g/t | Cu% |
|---|---|---|---|---|---|---|---|
| 23LHR000255 | CERRO DE ORO | 306881.9 | 6531177 | 1413 | 0.097 | 1 | 0.028 |
| 23LHR000256 | CERRO DE ORO | 306879.6 | 6531178 | 1413 | 0.098 | 1 | 0.026 |
| 23LHR000257 | CERRO DE ORO | 306881.2 | 6531176 | 1412 | 0.012 | <1 | 0.017 |
| 23LHR000258 | CERRO DE ORO | 306879.7 | 6531173 | 1416 | 0.029 | <1 | 0.011 |
| 23LHR000259 | CERRO DE ORO | 306632.7 | 6531076 | 1462 | **3.72** | 1 | 0.033 |
| 23LHR000260 | CERRO DE ORO | 306633.7 | 6531093 | 1471 | 0.264 | 1 | 0.054 |
| 23LHR000261 | CERRO DE ORO | 306641.7 | 6531123 | 1466 | 0.218 | <1 | 0.044 |
| 23LHR000262 | CERRO DE ORO | 306766.9 | 6531185 | 1447 | **6.58** | 3 | 0.084 |
| 23LHR000263 | CERRO DE ORO | 306763.9 | 6531181 | 1444 | 1.075 | 5 | 0.085 |
| 23LHR000264 | CERRO DE ORO | 306597.4 | 6530989 | 1433 | 0.017 | <1 | 0.006 |
| 23LHR000265 | CERRO DE ORO | 306597.2 | 6530995 | 1433 | 0.034 | <1 | 0.006 |
| 23LHR000266 | CERRO DE ORO | 306665 | 6530756 | 1455 | 0.065 | 2 | 0.058 |
| 23LHR000267 | CERRO DE ORO | 306686.3 | 6530622 | 1495 | 0.39 | 1 | 0.257 |
| 23LHR000268 | CERRO DE ORO | 306685.8 | 6530582 | 1504 | 0.488 | 2 | 1.13 |
| 23LHR000269 | CERRO DE ORO | 306685.9 | 6530581 | 1502 | 0.41 | <1 | **5.775** |

| Sample_ID | Zone | East | North | RL | Au g/t | Ag g/t | Cu% |
|---|---|---|---|---|---|---|---|
| 23LHR000270 | CERRO DE ORO | 306686.6 | 6530579 | 1502 | 0.497 | 2 | **5.187** |
| 23LHR000271 | CERRO DE ORO | 306575.1 | 6530448 | 1573 | 0.635 | <1 | 0.571 |
| 23LHR000272 | CERRO DE ORO | 306597.7 | 6530385 | 1539 | 0.473 | 2 | 0.11 |
| 23LHR000273 | CERRO DE ORO | 306575.9 | 6530297 | 1542 | 1.065 | <1 | **3.742** |
| 23LHR000274 | CERRO DE ORO | 306575.9 | 6530297 | 1542 | 0.112 | 2 | **2.128** |
| 23LHR000275 | CERRO DE ORO | 306455.9 | 6530160 | 1573 | 1.51 | 4 | **7.284** |
| 23LHR000276 | CERRO DE ORO | 306455.9 | 6530160 | 1573 | 0.666 | 55 | **5.305** |
| 23LHR000277 | CERRO DE ORO | 306457.8 | 6530151 | 1582 | 0.566 | 15 | **2.868** |
| 23LHR000278 | SOUTHERN PORPHYRY | 307748.1 | 6528540 | 1504 | 0.046 | 1 | 0.005 |
| 23LHR000279 | SOUTHERN PORPHYRY | 307821.7 | 6528507 | 1521 | 0.034 | <1 | 0.023 |
| 23LHR000280 | SOUTHERN PORPHYRY | 307851.6 | 6528434 | 1542 | 0.029 | 2 | 0.035 |
| 23LHR000281 | SOUTHERN PORPHYRY | 307891.1 | 6528399 | 1542 | 0.058 | 1 | 0.093 |
| 23LHR000282 | SOUTHERN PORPHYRY | 307981.1 | 6528371 | 1565 | 0.161 | <1 | 0.022 |
| 23LHR000283 | SOUTHERN PORPHYRY | 307989.7 | 6528372 | 1576 | 0.032 | 1 | 0.028 |
| 23LHR000284 | SOUTHERN PORPHYRY | 308003.1 | 6528382 | 1576 | 0.424 | 1 | 0.03 |
| 23LHR000285 | SOUTHERN PORPHYRY | 308017.6 | 6528393 | 1577 | 0.815 | 1 | 0.027 |
| 23LHR000286 | SOUTHERN PORPHYRY | 307708.5 | 6528556 | 1502 | 0.023 | 1 | 0.002 |
| 23LHR000287 | SOUTHERN PORPHYRY | 307712.3 | 6528558 | 1497 | <0.005 | 3 | 0.001 |
| 23LHR000288 | LLAHUIN | 307795.2 | 6531913 | 1401 | <0.005 | 1 | 0.934 |
| 23LHR000289 | LLAHUIN | 307789.2 | 6531903 | 1379 | 0.005 | 3 | 0.193 |
| 23LHR000290 | LLAHUIN | 307883.4 | 6532095 | 1453 | 0.355 | 5 | 2.986 |
| 23LHR000291 | LLAHUIN | 308060 | 6532261 | 1509 | 0.997 | 1 | 1.578 |
| 23LHR000292 | LLAHUIN | 308093.6 | 6532306 | 1510 | 0.01 | 3 | 0.341 |
| 23LHR000293 | LLAHUIN | 308191.3 | 6532391 | 1552 | <0.005 | 1 | 0.002 |
| 23LHR000294 | CERRO DE ORO | 306884.8 | 6531468 | 1371 | 0.997 | 2 | 0.009 |
| 23LHR000295 | CERRO DE ORO | 306886.4 | 6531467 | 1370 | 0.098 | <1 | 0.027 |
| 23LHR000296 | CERRO DE ORO | 306886.6 | 6531464 | 1372 | 1.73 | 1 | 0.231 |
| 23LHR000297 | CERRO DE ORO | 306874.1 | 6531438 | 1371 | **18.65** | 1 | 0.102 |
| 23LHR000298 | CERRO DE ORO | 306873.2 | 6531439 | 1378 | 0.034 | 1 | 0.052 |
| 23LHR000299 | CERRO DE ORO | 306876.2 | 6531441 | 1378 | **7.56** | 2 | 0.085 |
| 23LHR000300 | CERRO DE ORO | 306887.2 | 6531438 | 1375 | 0.024 | <1 | 0.043 |
| 23LHR000301 | CERRO DE ORO | 306884.8 | 6531438 | 1373 | 0.007 | <1 | 0.042 |
| 23LHR000302 | CERRO DE ORO | 306883.9 | 6531439 | 1375 | 0.009 | <1 | 0.004 |

| Sample ID | Zone | East | North | RL |
|---|---|---|---|---|
| 23LHR000255 | CERRO DE ORO | 306881.9 | 6531177 | 1413 |
| 23LHR000256 | CERRO DE ORO | 306879.6 | 6531178 | 1413 |
| 23LHR000257 | CERRO DE ORO | 306881.2 | 6531176 | 1412 |
| 23LHR000258 | CERRO DE ORO | 306879.7 | 6531173 | 1416 |
| 23LHR000259 | CERRO DE ORO | 306632.7 | 6531076 | 1462 |
| 23LHR000260 | CERRO DE ORO | 306633.7 | 6531093 | 1471 |
| 23LHR000261 | CERRO DE ORO | 306641.7 | 6531123 | 1466 |
| 23LHR000262 | CERRO DE ORO | 306766.9 | 6531185 | 1447 |
| 23LHR000263 | CERRO DE ORO | 306763.9 | 6531181 | 1444 |

| Sample ID | Zone | East | North | RL |
|---|---|---|---|---|
| 23LHR000264 | CERRO DE ORO | 306597.4 | 6530989 | 1433 |
| 23LHR000265 | CERRO DE ORO | 306597.2 | 6530995 | 1433 |
| 23LHR000266 | CERRO DE ORO | 306665 | 6530756 | 1455 |
| 23LHR000267 | CERRO DE ORO | 306686.3 | 6530622 | 1495 |
| 23LHR000268 | CERRO DE ORO | 306685.8 | 6530582 | 1504 |
| 23LHR000269 | CERRO DE ORO | 306685.9 | 6530581 | 1502 |
| 23LHR000270 | CERRO DE ORO | 306686.6 | 6530579 | 1502 |
| 23LHR000271 | CERRO DE ORO | 306575.1 | 6530448 | 1573 |
| 23LHR000272 | CERRO DE ORO | 306597.7 | 6530385 | 1539 |
| 23LHR000273 | CERRO DE ORO | 306575.9 | 6530297 | 1542 |
| 23LHR000274 | CERRO DE ORO | 306575.9 | 6530297 | 1542 |
| 23LHR000275 | CERRO DE ORO | 306455.9 | 6530160 | 1573 |
| 23LHR000276 | CERRO DE ORO | 306455.9 | 6530160 | 1573 |
| 23LHR000277 | CERRO DE ORO | 306457.8 | 6530151 | 1582 |
| 23LHR000278 | SOUTHERN PORPHYRY | 307748.1 | 6528540 | 1504 |
| 23LHR000279 | SOUTHERN PORPHYRY | 307821.7 | 6528507 | 1521 |
| 23LHR000280 | SOUTHERN PORPHYRY | 307851.6 | 6528434 | 1542 |
| 23LHR000281 | SOUTHERN PORPHYRY | 307891.1 | 6528399 | 1542 |
| 23LHR000282 | SOUTHERN PORPHYRY | 307981.1 | 6528371 | 1565 |
| 23LHR000283 | SOUTHERN PORPHYRY | 307989.7 | 6528372 | 1576 |
| 23LHR000284 | SOUTHERN PORPHYRY | 308003.1 | 6528382 | 1576 |
| 23LHR000285 | SOUTHERN PORPHYRY | 308017.6 | 6528393 | 1577 |
| 23LHR000286 | SOUTHERN PORPHYRY | 307708.5 | 6528556 | 1502 |
| 23LHR000287 | SOUTHERN PORPHYRY | 307712.3 | 6528558 | 1497 |
| 23LHR000288 | LLAHUIN | 307795.2 | 6531913 | 1401 |
| 23LHR000289 | LLAHUIN | 307789.2 | 6531903 | 1379 |
| 23LHR000290 | LLAHUIN | 307883.4 | 6532095 | 1453 |
| 23LHR000291 | LLAHUIN | 308060 | 6532261 | 1509 |
| 23LHR000292 | LLAHUIN | 308093.6 | 6532306 | 1510 |
| 23LHR000293 | LLAHUIN | 308191.3 | 6532391 | 1552 |
| 23LHR000294 | CERRO DE ORO | 306884.8 | 6531468 | 1371 |
| 23LHR000295 | CERRO DE ORO | 306886.4 | 6531467 | 1370 |
| 23LHR000296 | CERRO DE ORO | 306886.6 | 6531464 | 1372 |
| 23LHR000297 | CERRO DE ORO | 306874.1 | 6531438 | 1371 |
| 23LHR000298 | CERRO DE ORO | 306873.2 | 6531439 | 1378 |
| 23LHR000299 | CERRO DE ORO | 306876.2 | 6531441 | 1378 |
| 23LHR000300 | CERRO DE ORO | 306887.2 | 6531438 | 1375 |
| 23LHR000301 | CERRO DE ORO | 306884.8 | 6531438 | 1373 |
| 23LHR000302 | CERRO DE ORO | 306883.9 | 6531439 | 1375 |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling techniques* | • *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.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *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.* | • Riffle split RC samples were collected for each metre of drilling to obtain 1m samples from which approx. 4kg was split and sent to the ALS laboratory in Chile. The 4kg sample is crushed to -2mm from which a 1kg sample is split and pulverized to 85% passing -75µm and a 30g charge is taken for standard fire assay with AAS finish. Any multi-element assays are done using Multi-Element Ultra Trace method combining a four-acid digestion with ICP-MS instrumentation. A four-acid digest is performed on 0.25g of sample to quantitatively dissolve most geological materials. Elements and detection limits are presented below. Drillcore is cut in half with a diamond saw and half the core is sampled on a metre by metre basis.<br>• Historical RC samples are collected at 1m intervals from RC-LLA-001 to RC-LLA-014 and then 2m intervals in RC holes numerically thereafter. Historical RC drilling samples were collected on a 2m basis and split to around 3kg using a single tier riffle splitter and sent to ALS Chile for sample preparation and analysis. Samples are dried at 70 degrees Celsius for up to 24hrs then the entire sample is crushed to -2mm and a 1kg sample is split and pulverized to 80% passing 150mesh. A 400 gram pulp is split off and a 30gram charge taken for Fire Assay and Cu and Mo with all assays by AAS. The AAS analytical procedures are ISO 9001:2008 certified and are in accordance with ISO/IEC 17025<br>• Samples of the historical drillcore recently sampled were half HQ core samples on a one metre basis and were submitted to ALS in La Serena. Samples are dried at 70 degrees Celsius for up to 24hrs then the entire sample is crushed to -2mm and a 1kg sample is split and pulverized to 80% passing 150mesh. A 400 gram pulp is split off and a 30gram charge taken for Fire Assay and multi element assays using ICPMS and OES.<br>• Soils were collected by clearing topsoil then digging to the "B-Horizon" is collected and passed through a -1mm sieve to collect approximately 600grams into a paper Geochem sample bag. A reference sample of approximately 100grams is put into labelled RC chip trays for future reference and the remaining 500gr is sent to the ALS laboratory in La Serena. The lab takes the entire sample which is pulverized to 85% passing |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|

-75µm and a 30gram charge is taken for fire assay then dissolved in a 4-acid digest with gold read by Atomic Absorption (Au-AA23). Silver and copper were analysed by AA technique. The first 210 samples were analysed for copper at the ALS La Serena laboratory and in house using an Olympus Vanta "M series" Pxrf. Results were compared between the laboratory and the Pxrf and showed an $R^2$ value of 0.999. After sample 210 the Cu assays are done solely using the Pxrf machine.

- Rockchips are collected by taking a sample using a geological hammer to take an in situ sample of material from the rockface and at Llahuin are assayed for Au (AA23), Ag(AA62) and Cu(AA62)

## REPORTABLE ELEMENTS AND RANGES

| Method Code | Analyte | Unit | Lower Limit | Upper Limit |
|---|---|---|---|---|
| Au-AA23 | Au | ppm | 0.005 | 10.0 |

ME-MS61 Analytes and Reporting Ranges

| Analyte | Units | Lower Limit | Upper Limit | Analyte | Units | Lower Limit | Upper Limit | Analyte | Units | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ag | ppm | 0.01 | 100 | Al | % | 0.01 | 50 | As | ppm | 0.2 | 10000 |
| Ba | ppm | 10 | 10000 | Be | ppm | 0.05 | 1000 | Bi | ppm | 0.01 | 10000 |
| Ca | % | 0.01 | 50 | Cd | ppm | 0.02 | 1000 | Ce | ppm | 0.01 | 500 |
| Co | ppm | 0.1 | 10000 | Cr | ppm | 1 | 10000 | Cs | ppm | 0.05 | 500 |
| Cu | ppm | 0.2 | 10000 | Fe | % | 0.01 | 50 | Ga | ppm | 0.05 | 10000 |
| Ge | ppm | 0.05 | 500 | Hf | ppm | 0.1 | 500 | In | ppm | 0.005 | 500 |
| K | % | 0.01 | 10 | La | ppm | 0.5 | 10000 | Li | ppm | 0.2 | 10000 |
| Mg | % | 0.01 | 50 | Mn | ppm | 5 | 100000 | Mo | ppm | 0.05 | 10000 |
| Na | % | 0.01 | 10 | Nb | ppm | 0.1 | 500 | Ni | ppm | 0.2 | 10000 |
| P | ppm | 10 | 10000 | Pb | ppm | 0.5 | 10000 | Rb | ppm | 0.1 | 10000 |
| Re | ppm | 0.002 | 50 | S | % | 0.01 | 10 | Sb | ppm | 0.05 | 10000 |
| Sc | ppm | 0.1 | 10000 | Se | ppm | 1 | 1000 | Sn | ppm | 0.2 | 500 |
| Sr | ppm | 0.2 | 10000 | Ta | ppm | 0.05 | 500 | Te | ppm | 0.05 | 500 |
| Th | ppm | 0.01 | 10000 | Ti | % | 0.005 | 10 | Tl | ppm | 0.02 | 10000 |
| U | ppm | 0.1 | 10000 | V | ppm | 1 | 10000 | W | ppm | 0.1 | 10000 |
| Y | ppm | 0.1 | 500 | Zn | ppm | 2 | 10000 | Zr | ppm | 0.5 | 500 |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Drilling techniques* | • *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).* | • Recent RC drilling was completed using a Schramm 685 RC drilling rig using a face sampling hammer with a 5.25inch diameter bit by R Muñoz drilling.<br>• Historical Drilling across the Llahuin Project area has been completed by three different drilling companies. They include HSB Sondajes, Geosupply and R Muñoz Ltd for both RC drilling and diamond drilling. Historical diamond drilling was HQ core size and was not orientated. |
| *Drill sample recovery* | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *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.* | • Recent RC Samples were weighed and weights recorded to ensure recovery is acceptable. RC driller lifts off between each metre to ensure sample separation between each metre. There doesn't appear to be a relationship between sample recovery and grade as sample recovery is excellent. A booster and auxiliary compressor were utilized to keep all RC samples dry.<br>• Historical RC drilling encountered water table ie wet samples between 20 to 100m depth. The water table is generally encountered between 20m and 100m from surface. Where the water table is encountered, a rotary splitter is used to assist with RC sample quality. Approximately sixty percent (60%) of the RC samples are reported to be wet. This issue has been partially remediated by using diamond drilling in preference to RC drilling for all further historical resource definition drilling. AMS concluded no significant bias in using the wet RC drill holes.<br>• Historical RC and DC drilling and data collection methods applied by SHM have been reviewed by AMS during successive site visits for the historical drilling. |
| *Logging* | • *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.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | • The samples were geologically logged on site. Logging was both qualitative and quantative in nature for both recent drilling and historical drilling. All drillcore and RC drillholes were logged in entirety. All core was photographed and the photographs catalogued.<br>• Soil data capture sheets are handwritten recoding the GPS location, sample number, the GPS point number, Depth of sample and colour. |
| *Sub-sampling techniques* | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and* | • RC samples were collected into a green plastic bag which is then riffle split into a numbered calico bag for each metre of drilling. The majority of the |

| Criteria | JORC Code explanation | Commentary |
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| *and sample preparation* | *whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | RC samples were dry as holes were stopped if the RC drilling went wet. If significant groundwater was encountered an auxiliary compressor and booster were utilized to keep the sample dry. Field duplicates were not collected but can be split later to confirm results.<br>• Historical DC samples are taken on 2m intervals. In some places, this sample interval overlaps lithological contacts, although contacts are hard to determine in places due to pervasive alteration. Drill core has not been orientated for structural measurements. The core is cut lengthways with a diamond saw and half-core is sent for assay. The half-core is bagged every 2m and sent for preparation, while the remaining half-core is returned to the labelled cardboard core box. A cardboard lid is placed on the box, and it is stored in a newly constructed weatherproof storage facility (warehouse) for future reference<br>• There is no relationship between the sample size and the grain size of the material being sampled |
| *Quality of assay data and laboratory tests* | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *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.*<br>• *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.* | • The assay technique utilized is "industry Standard" fire assay with AAS finish for gold which is a total digestion technique.<br>• For the **Recent Drilling** appropriate industry standard CRM' s and blanks were inserted into the sample stream at a rate of 1:10 samples for both standards and blanks. This is considered above industry standard for the recent drilling and there is no apparent bias of any significance.<br>• **Historical drilling -** Blanks and field duplicates are inserted at irregular intervals, at a range of between 1:20 and 1:50.<br>• A total of 1,738 laboratory standards have been analysed in a large variety of Cu and Au grade ranges, and there is no apparent bias of any significance (AMS June 2013)<br>• A total of 462 blanks have been inserted into the sample stream (RC and DDH).<br>• Soil samples are analysed by a handheld Olympus Vanta "M series" Pxrf instrument using a 90 second read time for all samples using the three beam method. No calibration factors have been used with the Pxrf.<br>• The Olympus supplied standard and blank is read approximately every 20 samples and this data is entered into an appropriate spreadsheet. No obvious problems are apparent in the QAQC data for the Pxrf. |

| Criteria | JORC Code explanation | Commentary |
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| *Verification of sampling and assaying* | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • The company's exploration manager (QP) has made a site visit and inspected the sampling methods and finds them up to industry standard for the recent drilling.<br>• Prior to March 2012, DDH was performed predominantly as tails at the termination of some of the RC holes. DDH performed from April 2012 has been from the surface with a total of 4 diamond drill holes twinned to pre-existing RC drill holes. Twin hole drilling was completed across the Central Porphyry and Cerro De Oro zones. AMS concluded that there is insufficient data to make a definitive comparison, and that the twins are sufficiently far enough apart to explain some of the grade differences. No new drilling has been twinned yet.<br>• Logging is completed into standardized excel spreadsheets which can then be loaded into an access front end customized database for all sample types.<br>• There have been no adjustments to the assay data.<br>• Historical sampling and assaying techniques were independently verified by Mr. Bradley Ackroyd of Andes Mining Services who undertook a site visit to the Llahuin Copper-Gold Project between 5 th and 8 th of May 2013. He inspected the drill sites, drill core and chips, logging, sample collection and storage procedures as well as the office set-up and core processing facilities. Mr. Ackroyd also observed all the available surface exposures of the deposit across the Llahuin project area. In addition, Mr. Ackroyd undertook a short review of the quality control and assurance procedures employed at the project site. |
| *Location of data points* | • *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.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | The precision of the standard hand held GPS units is poor in this region of Chile so a licensed surveyor was employed to pick up the new drillhole locations and the topography. The survey was performed by Mr. Luciano Alfaro Sanders using a total station instrument. The collars picked up to within 0.1m accuracy. This accuracy was not able to be checked, however the relative positions of the drill holes has been confirmed during the site visits.<br>Soil samples are located using a Garmin GPS78 handheld unit which is typically accurate to 3m. Sample locations are also checked by comparing the GPS location to the Orthophoto where possible. A GPS location point is recorded in the GPS for every sample location and also in a handwritten |

| Criteria | JORC Code explanation | Commentary |
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| | | data capture sheet. The GPX file is then downloaded from the GPS and visually checked for spatial accuracy in appropriate spatial software either QGIS or Micromine.<br>Rockchip locations are recorded using a handheld GPS and a written sample date entry sheet which is then transferred in to a data loading sheet. The GPX file from the GPS is then checked spatially against the data sheet using QGIS. |
| *Data spacing and distribution* | • *Data spacing for reporting of Exploration Results.*<br>• *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.*<br>• *Whether sample compositing has been applied.* | • The recent drillhole spacing is approx. 20 to 40m spaced holes in various locations.<br>• Drilling was completed within an existing resource and scout type drilling was completed in previously undrilled areas.<br>• Historical drilling was completed at The Central Porphyry, Cerro de Oro and Ferrocarril zones have been drilled on a nominal spacing of 50m by 50m in the upper portions and 100m x 100m in the lower portions of the deposits.<br>• No sample compositing has been applied in the recent drilling and 2m composites were taken in part of the historical drilling.<br>• Soil samples were collected on a nominal 200m line spacing with 50m sample spacing along lines. Infill soils are collected on a nominal 100m line spacing and 25m sample spacing. The sample line spacing was designed using the Central Porphyry surface footprint as a guide. No sample compositing has been used.<br>• Rockchips have no grid spacing. |
| *Orientation of data in relation to geological structure* | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *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.* | • The drilling was done perpendicular to the **interpreted strike** of the mineralisation to reduce sampling bias.<br>• Soil samples are collected across the interpreted strike of the geology ie on east-west orientated lines. |
| *Sample security* | • *The measures taken to ensure sample security.* | • Samples were collected by a qualified consulting geologist and the samples were delivered to the lab by a company employee. Competent Person Reg No 0336.<br>• Soil samples are placed into sealed plastic bags for transport by either company personnel or courier. The large plastic bags are stapled shut and the laboratory is aware to inform us if they have been opened during |

| Criteria | JORC Code explanation | Commentary |
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| | | transport by the courier but no issues have arisen from this procedure, |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | • Andes Mining Services completed an external audit and review in 2013 of the historical drilling and sampling procedures.<br>• No external audit or review has been conducted on the recent sampling procedures, partly due to COVID travel restrictions. |

## Section 2 Reporting of Exploration Results

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

| Criteria | JORC Code explanation | Commentary |
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| *Mineral tenement and land tenure status* | • *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.*<br>• *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.* | • The Llahuin Project is 100% owned by SUH.<br>• The security of tenure is considered excellent as the licence is 100% owned by SUH. |
| *Exploration done by other parties* | • *Acknowledgment and appraisal of exploration by other parties.* | • Previous drilling on the licence before SUH has been done to industry standard as per AMS report (SUH press release 19th August 2013). |
| *Geology* | • *Deposit type, geological setting and style of mineralisation.* | • Exploration is targeting porphyry Cu-Au style-gold style mineralization hosted in Miocene intrusives (diorite). |
| *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:*<br>  ○ *easting and northing of the drill hole collar*<br>  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>  ○ *dip and azimuth of the hole*<br>  ○ *down hole length and interception depth*<br>  ○ *hole length.*<br>• *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.* | • Appendix 1 |

| Criteria | JORC Code explanation | Commentary |
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| *Data aggregation methods* | • *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.*<br>• *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.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • No data aggregation methods have been used.<br>• A copper equivalent was reported using the following metal prices Cu $3.20, Au $1700/oz, Ag $20/oz and Mo $30/kg. |
| *Relationship between mineralisation widths and intercept lengths* | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *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').* | • Exploration drilling was targeting near surface material in a porphyry Cu-Au system. Therefore the mineralised widths are much greater than the drillhole depths for the Central Porphyry. Drilling at Cerro De Oro is partly infilling historical drilling so therefore downhole widths have been reported and true widths are not established yet as the historical drilling appears to be too widely spaced. Drilling in all areas has been conducted perpendicular to the regional trend observed in outcrop. |
| *Diagrams* | • *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.* | • Appropriate maps have been included in the release. |
| *Balanced reporting* | • *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.* | • A range of grades were included in the release. |
| *Other substantive exploration data* | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | • A drone magnetics survey was completed over the project area in 2021 by GFDas UAV Geosciences Santiago Chile. Survey specifications provided below.<br>• Company: GFDAS Drones and Mining<br>Line direction: 90°-270°<br>Line separation: 25m<br>Tie line Direction: 0-360<br>Tie lines separation: 250m<br>Flight Height: around 25m AGL following topography (according to operational safety conditions)<br>Registration Platform Mag: DJI M300 Drone<br>Registration Platform Topo/ortho: DJI Phantom RTK Pro Drone |

| Criteria | JORC Code explanation | Commentary |
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| | | Geoidal Model: EGM08<br>Flight speed: 5-10m/s<br>Mobile sampling: Fluxgate magnetometer, 25 Hz<br>Resolution: Digital Elevation Model 1 m and<br>Resolution: Orthophoto with 20 cm/pixel<br>Base sampling: Geometrics magnetometer sampling 30s.<br>Positioning: Phantom 4 RTK<br><br>Survey Module:<br>The flight module uses a VTOL drone, powered by rechargeable electric batteries and a positioning system with three GPS antennas. The registration module was miniaturized, simplified and made of low weight components suitable for lifting by the drone. These correspond to the magnetometer, acquirer and analogue-digital converter.<br><br>Magnetic Survey:<br>The data was corrected for Diurnal variances, micro levelled with the use of the tie lines by GFDAS Drones and Mining. They also applied the Reduction to the Pole process on the data (inclination -32.3° and 0.4° declination) that was supplied to our company.<br><br>Topographic flight plan:<br>Due to the strong differences in the elevations of the terrain, it was flown from different points within the north-south polygons with differentiated flight height, to achieve a pixel resolution as requested. These flight heights had a range between 350 m and 460 m (AGL flight height). The overlaps of flight lines were between 75% and 80%, this was done depending on the flight height and detail required. |
| *Further work* | • *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | • Additional soil sampling is planned for the Llahuin Project.<br>• Additional rock chip sampling is planned.<br>• Re-logging of historical drillcore is in progress<br>• Sulfide mapping of the pulps is also planned to assist with the new geological model currently in development |