**ASX RELEASE**
**15 December 2022**
**ASX Code: GIB**

GIBB RIVER DIAMONDS

# Excellent Metallurgical Results from the Edjudina Gold Project, WA

Initial metallurgical testing of Material from the Neta Gold Prospect, a part of the Edjudina Gold Project in WA, indicates:

- Gold extraction of up to 92.6% from the oxidised, medium grade material.
- Gold extraction of up to 94.5% from the fresh, high grade material.
- Gold extraction of up to 88.6% from the fresh, medium grade material
- One fresh sample of lower grade material with an elevated sulphide content, indicated a lower gold extraction of 76.7%. This lower recovery is likely due to the higher sulphide content in this sample which, by observation, is not representative of the Neta Prospect as a whole.
- There is considerable scope to optimise these results with further testing by changing variables including grind size, residence time, reagent concentrations, regrinds etc.
- None of the leach tests indicated extreme cyanide or lime consumption. This is a positive indicator at this stage. Further reagent optimisation can be completed in any future testwork programs.
- The Board is very pleased with these first pass metallurgical results, especially for the medium grade oxide and the high grade fresh material, which are such important components of the Neta Gold Prospect in terms of gold endowment.
- The Company is progressing resource work at the Neta Gold Project and aims to have a resource published as soon as is practicable.

Neta Gold Prospect – Phase 6 drilling program

## 1.0 Neta Gold Prospect Metallurgical Testwork

Gibb River Diamonds Limited ('GIB' or the 'Company') is pleased to announce the results of the latest metallurgical testwork for the Neta Gold Prospect, a part of the Edjudina Gold Project (GIB 100%) situated in the Eastern Goldfields of Western Australia.

This testwork was conducted under the supervision of Orway Mineral Consultants ('Orway') as GIB's partner in metallurgical studies of the Edjudina Project. The work was led by OMC Principal Metallurgist Fred Kock (FAusIMM), who has 36 years of experience in the mining industry, including 18 years production management experience in the gold industry as well as commissioning, flowsheet development and study experience.

This report is a summary of three phases of metallurgical testwork at Neta to date. The full metallurgical Testwork Review document is attached as Appendix A to this report.

### Phase 1 Testwork

The Phase 1 testwork consisted of medium grade, weathered, oxide ore from early aircore (AC) drilling. The results from this work were initially reported in the GIB ASX announcement dated 27 November 2020, titled 'Excellent Metallurgical Recoveries from Bottle Roll Testing of the Neta Lodes Gold Discovery'[4]. This Phase 1 testwork has now been further reviewed by Orway and is included in this report for completeness.

### Phase 2 Testwork

The Phase 2 testwork was commissioned to test low grade, fresh, unweathered ore from reverse circulation (RC) drilling.

### Phase 3 Testwork

The Phase 3 testwork was commissioned to test both medium grade and high grade unweathered ore from RC drilling.

## 2.0 Metallurgical Testwork Results Summary

The initial metallurgical testing of the recently discovered Neta Lodes Gold Prospect at the Edjudina Gold Project has produced the following gold extraction:

**Neta Prospect Best Gold Recoveries Summary - Direct Cyanidation**

| Testing Phase | Extraction Au % | Leach Time Hours | Oxidation State | Comment |
|---|---|---|---|---|
| 1 | 92.6 | 48 | Oxide | Medium Grade (MG) |
| 2 | 76.7 | 24 | Fresh | Low Grade (LG) |
| 3 | 94.5 | 48 | Fresh | High Grade (HG) |
| 3 | 88.6 | 24 | Fresh | Medium Grade |

The Board is very pleased with these first pass metallurgical results, especially for the medium grade oxide material (92.6%) and the high grade fresh material (94.5%), which are such important components of the Neta Gold Prospect in terms of gold endowment.

The results for the Phase 2 low grade and to a lesser extent the Phase 3 medium grade ore, suggest that arsenical minerals and/or reactive pyrite contribute significantly to the lower extraction achieved for these samples. Residue grade testing indicates these ores may contain a refractory component, as opposed to being refractory ores.

A significant component of the Phase 2 low grade composite sample was derived from Hole GRC020 89-90m which was logged as 5% pyrite, which may be the reason for the lower recovery of the Phase 2 sample. Levels of sulphide as high as 5% are very unusual within the Neta Prospect and it is likely this composite sample was not representative of the Neta Prospect as a whole. This was an error by GIB in the sample selection for the Phase 2 composite sample (Page 3 Appendix A), partly caused by a lack of available RC samples of appropriate grade at that point in time.

There is considerable scope to optimise these results with further testing by changing variables including grind size, residence time, reagent concentrations, regrinds etc. Future programs should also focus on improving the residue grade of the fresh samples, including possible concentration via flotation and concentrate treatment options. Arsenopyrite associated refractory gold components can often be liberated with fine grinding of a concentrate or moderate oxidation and these can be looked at as the project progresses.

### 2.1 Reagent Consumption

None of the leach tests indicated extreme cyanide or lime consumption, and further reagent optimisation will be completed in any future testwork programmes. This is a positive indicator.

### 2.2 Sampling Method

It should be noted that AC and RC drilled samples are not ideal for metallurgical testwork, but do provide an indication of the gold extraction. Future metallurgical testwork should be done on diamond core to provide more definitive extraction numbers.

## 3.0 Summary

The Board is very pleased with these first pass metallurgical results, especially for the medium grade oxide and the high grade fresh material, which are such important components of the Neta Gold Prospect in terms of gold endowment. There is also considerable scope to further optimise these results with additional testing.

The Company is progressing resource work at the Neta Prospect and aims to have a resource published as soon as is practicable. The Neta Prospect is a part of the Edjudina Gold Project (GIB 100%) which is situated in the heart of the prolific Eastern Goldfields of WA.

Jim Richards
Executive Chairman

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*For various Table 1's and associated supporting technical and assay data regarding the original drilling and exploration results at Neta, refer to the references below:*

**References:**

[1]GIB Acquires Option to Purchase the Historic and High Grade Edjudina Gold Project in the Eastern Goldfields of WA; GIB ASX Release dated 16 July 2020

[2]Triumph Project Exploration Report; Nexus Minerals Limited dated 15 August 2019

[3]Major Drilling Discovery at Edjudina Gold Project, WA includes 36 metres at 4.0 g/t Au from 4 metres; GIB ASX Release dated 8 October 2020

[4]Excellent Metallurgical Recoveries from Bottle Roll Testing of the Neta Lodes Gold Discovery; GIB ASX Release dated 27 November 2020

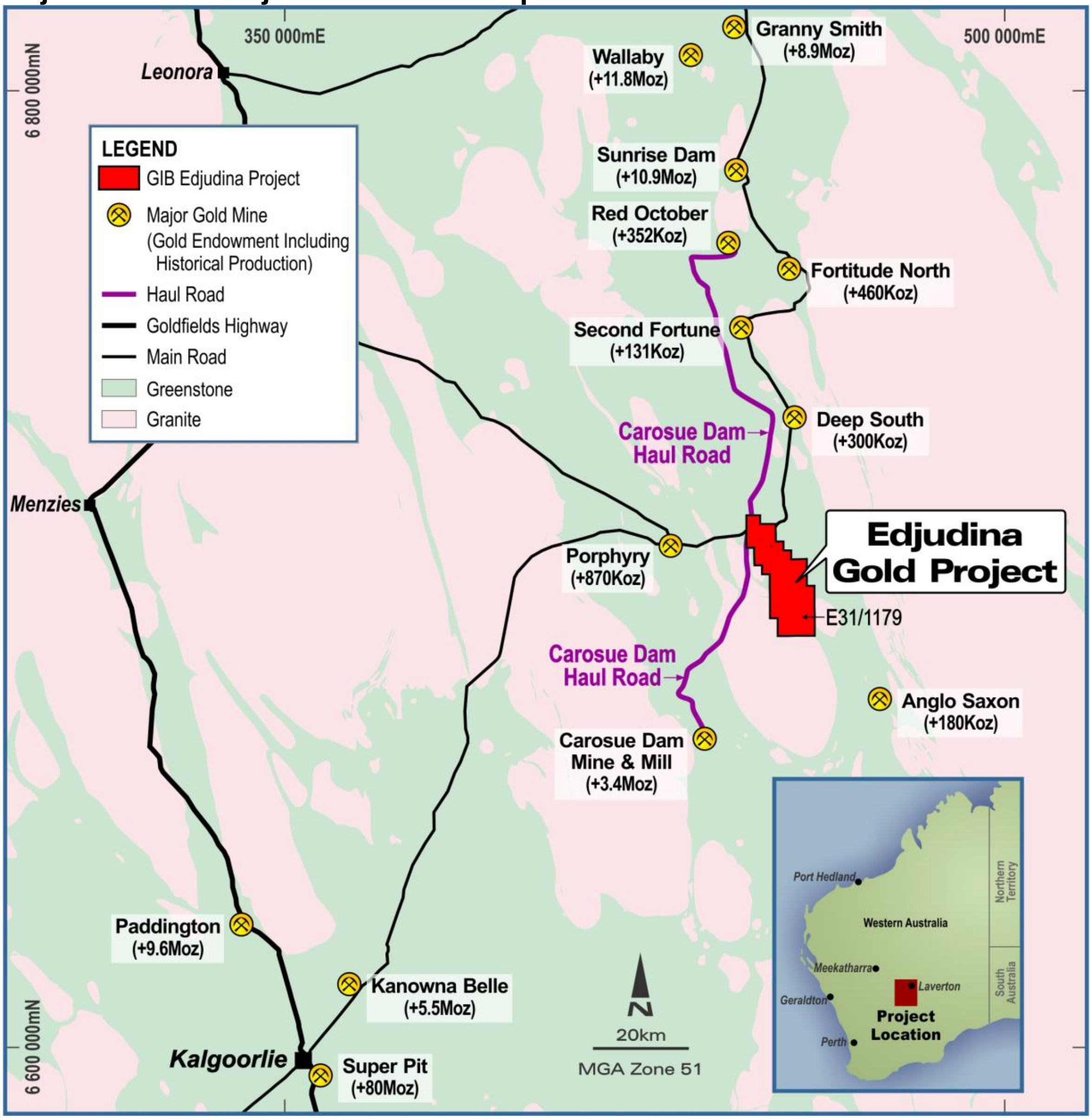
Plus various other GIB ASX Releases pertaining the Neta Gold Prospect

**Competent Persons Statements**

*The information in this report that relates to exploration results, sampling, sample representivity of testwork and metallurgy is based on information compiled by Mr. Jim Richards who is a Member of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Mr. Richards is a Director of Gibb River Diamonds Limited. Mr. Richards has sufficient experience which is relevant to the style of mineralisation, type of deposit and type of testwork 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. Richards consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.*

*The information in this report that relates to the interpretation of the metallurgical testwork and extraction is based on information compiled by Mr. Fred Kock who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr. Kock is a Director of Orway Mineral Consultants Pty Ltd and have been engaged by Gibb River Diamonds Ltd to prepare the documentation for the Metallurgical Testwork for the Neta Gold Prospect in Western Australia. Mr. Kock has sufficient experience which is relevant to the style of mineralisation, type of deposit and type of testwork 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. Kock consents to the inclusion in the report of the matters based on the information in the form and context in which it appears*

## Edjudina Gold Project – Location Map




## Appendix 1: Neta Gold Prospect Testwork Review, Orway Mineral Consultants

# JORC Code, 2012 Edition – Table 1

## Section 1 Sampling Techniques and Data

| 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.* | • All AC samples riffle split to 87.5 : 12.5, RC samples cyclone split to 95 : 5. Riffle splitter cleaned by compressed air between every sample; cyclone cleaned at the end of every rod.<br>• Split component was placed in numbered calico bags (approx. 1kg sample per bag), remainder went into a bucket and was placed on the ground.<br>• Sample duplicates were created at the direction of the supervising geologist by re-splitting the 87.5% component.<br>• Blanks and standards were inserted during drilling by the supervising geologist.<br>• In selected areas 6m composites were collected using a PVC spear and submitted for analysis. These composite samples do not have standards, duplicates, or blanks.<br>• Samples were submitted to Nagrom (Perth) or Jinning (Kalgoorlie) for pulverisation to generate a 30g charge for fire assay analysis.<br>• 1m contiguous chip-channel samples were collected in two historic pits by using a geopick to chip a continuous line of rock chips into calico bags. Sample site reported is 449381mE, 6707156mN. |
| *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).* | • Topdrive Drillers AC Rig 1, 85mm rod string with AC bit; Slimline RC hammer used where ground condition required.<br>• Profile Drilling RC Rig 2, 150mm hammer bit. A stabiliser rod and a 3m heavy wall rod were used behind the hammer to minimise drillhole deviation. |
| *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.* | • Sample recovery visually assessed on a metre-by-metre basis.<br>• Driller directed to use the minimum necessary air pressure to minimise loss of fine component.<br>• All samples riffle (AC) or cyclone (RC) split to ensure a representative sample distribution.<br>• No sample bias is known or expected due to preferential loss/gain of fine/coarse material. |
| *Logging* | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate* | • All drill spoil from all holes was quantitatively geologically logged in detail on a metre-by-metre basis to a level of detail to support |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| | *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.* | appropriate Mineral Resource estimation, mining studies and metallurgical studies.<br>• The 87.5% split from three AC drillholes for the 2020 campaign (Phase 1), all RC drillholes for the 2022 campaign (Phase 2), all RC drillholes for the 2022 Deeps campaign (Phase 3) and all drillholes from the March 2022 Phase 7 RC campaign were bagged on a metre-by-metre basis for metallurgical studies. |
| *Sub-sampling techniques and sample preparation* | • *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 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.* | • Every metre in these drill campaigns was riffle split to 87.5 : 12.5 (AC) or cyclone split to 95 : 5 (RC)<br>• >>99% of samples were sampled dry. Sample wetness was recorded during logging.<br>• Duplicate samples were generated in real time by re-splitting the<br>• 87.5% component (AC), or using the second cyclone port (RC).<br>• Lab samples were pulverized to -80µm to generate a 30g charge for fire assay analysis.<br>• GIB inserted standards, duplicates and blanks into laboratory sample submissions. This is in addition to internal lab QAQC procedures.<br>• GIB deems sample sizes to be appropriate to 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.* | • Samples were pulverized to -80µm to generate a 30g charge for four acid digest and fire assay (FA/AAS) analysis. This is a total<br>• technique.<br>• In addition to internal laboratory QAQC procedures, GIB inserted duplicates, standards, and blanks into the lab samples.<br>• GIB's standards are from Geostats (Fremantle) and blanks are white brickies sand or crushed diabase. Duplicates are described above.<br>• GIB analysed both its own QAQC samples and the internal lab QAQC samples and deems acceptable levels of accuracy and precision have been established. |
| *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.* | • Two laboratories were used. 64 samples from 16 Sample Submissions intersecting the Neta Lodes bodies were submitted to Intertek Perth for cross-checking. Significant intersections have been verified by multiple GIB personnel.<br>• No twinned holes were used.<br>• Drilling, sampling, primary data, and data verification procedures |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| | | were drawn up prior to fieldwork and are stored on the GIB server.<br>• Physical copies of all data are stored in the GIB office.<br>• Duplicate/repeat samples (samples with multiple assays) were averaged to calculate the gold value for those samples. No other adjustments were made to assay data. |
| *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.* | • Once drilled, drillhole collars were recorded by DGPS. Datum is MGA94 zone 51.<br>• In addition to GPS, LiDAR and high-definition drone imagery was used to site drillholes. |
| *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.* | • Drillholes were spaced on nominal 20 x 20 or 10 x 10 grids with local adjustments due to ground conditions.<br>• No Mineral Resource or Ore Reserve procedures or classifications have been applied.<br>• Sample compositing has been applied only to duplicate/repeat samples. |
| *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.* | • With one exception all drillholes were oriented 60° towards 231. Local foliation is ~75° towards 051. As such these drillholes are oriented approximately perpendicular to foliation.<br>• To the best of GIB's current knowledge there is no sampling bias in these drilling programs.<br>• Chip channel samples were collected perpendicular to foliation. |
| *Sample security* | • *The measures taken to ensure sample security.* | • Samples were collected by GIB personnel in real time during drilling. Calico bags containing composite samples or 1m splits were placed in green cyclone bags and cable tied closed, and collected in a safe location until lab delivery.<br>• Samples were delivered and offloaded at the lab by GIB staff, where they were placed in Bulka containers prior to processing.<br>• After delivery, samples were kept at the fenced Lab compound. Lab personnel are on site during work hours and all access points are closed and locked overnight. |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | • An internal review of sampling techniques and data deemed GIB's processes to be compatible with JORC 2012 requirements. |

## 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* | • *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.* | • E31/1179 is a granted tenement located in the Yerilla Mineral Field approximately 140km NE from Kalgoorlie. It is held 100% by Gibb River Diamonds Limited with no other interests or royalties. |
| *Exploration done by other parties* | • *Acknowledgment and appraisal of exploration by other parties.* | GIB is compiling a database of historic mining and exploration activity. A brief chronology is included below:<br>• The main period of mining activity on the Edjudina line of workings (the 'Edjudina Line') occurred between 1897 and 1921.<br>• Government Geologist Andrew Gibb Maitland made the first documented description of the Edjudina Line in 1903, which was followed up by reports in 1903 and 1905 by State Government Mining Engineer Alexander Montgomery. These reports described a number of private batteries being run on the Edjudina Line at this time, with some ore also carted to the nearby State Battery at Yarri.<br>• A minor revival in mining took place from 1936-1939, which was curtailed by the start of World War 2.<br>• In 1974-75 Australian Anglo American Ltd explored the Edjudina line, followed by United Nickel Exploration, Cambrian Exploration, Penzoil of Australia Ltd (1979-81) and Paget Gold Mining (1983-1989)<br>• In 1993 Pancontinental picked up the ground and conducted drilling operations, relinquishing the ground in 1995. Little exploration work was conducted over the next 14 years with the exception of Gutnick Resources who are reported as having completed some wide spaced drilling during this time, however a complete dataset for this work is still being sourced.<br>• From 2010 to 2014 CoxsRocks Pty Ltd, a WA based private company, conducted a ground magnetic survey, auger soil geochemistry and limited aircore drilling.<br>• The Edjudina Gold Project has been held by Nexus Mt Celia Pty Ltd from 2014 to present with one limited RC drilling program |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | conducted in that time. |
| *Geology* | • *Deposit type, geological setting and style of mineralisation.* | • Historic reports describe mineralisation as occurring within silicified, boudinaged stromatolites which were mineralised and then deformed during diagenesis and regional deformation. In this situation gold is stratabound and almost entirely hosted within the quartz boudins.<br>• At this stage of exploration GIB believes there may also have been a broader hydrothermal alteration event at Neta in which Au mineralisation is associated with Si-Fe alteration and possibly with porphyry intrusions. Pyrite and/or arsenopyrite are associated with mineralisation in fresh rock in some parts. |
| *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.* | • See list of 'References' in text |
| *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.* | • Duplicates and repeats were averaged for samples with multiple assays to calculate a final grade<br>• No other changes were made to geochemical data. |
| *Relationship between mineralisation widths* | • *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.* | • With one exception all drillholes were oriented 60° towards 231. Local foliation is ~75° towards 051. As such these drillholes are oriented approximately perpendicular to foliation.<br>• Historic reports describe mineralisation as occurring within silicified, boudinaged stromatolites which were mineralised and |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *and intercept lengths* | • *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').* | then boudinaged during diagenesis and regional deformation. In this situation gold is stratabound and almost entirely hosted within the quartz boudins. |
| *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.* | • See Maps, Tables and Figures within the body of this announcement. |
| *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.* | • n/a – see body of this Announcement for comprehensive reporting of results. |
| *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.* | • While historical drillhole information exists in some areas it is, in aggregate, not possible to report this drilling to JORC 2012 standards. In most cases the only data available to GIB is drillhole collar locations (local grid) and gold analyses. |
| *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.* | • The Company is progressing resource work at the Neta Project and aims to have a resource published as soon as is practicable.<br>• See information in 'References' for geological interpretation data and figures. |

## Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Database integrity* | • *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*<br>• *Data validation procedures used.* | • No data was used for Mineral Resource purposes.<br>• All subsamples comprising these metallurgical samples were selected based on their representative grade for the resulting composite metallurgical sample. The metallurgical laboratory undertook its own gold analyses of the incoming samples, confirming the grades of the composite samples.<br>• Composite sample data was checked by two geologists. |
| *Site visits* | • *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*<br>• *If no site visits have been undertaken indicate why this is the case.* | • Numerous site visits have been made by Mr. Richards, who is Executive Chairman of GIB and a Competent Person for this report. Mr. Richards has been closely involved in all aspects of |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| | | drilling and geological modelling at the Neta Gold Project.<br>• The Company deems a site visit by a consultant metallurgist to be unnecessary for this initial metallurgical work. |
| *Geological interpretation* | • *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*<br>• *Nature of the data used and of any assumptions made.*<br>• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*<br>• *The use of geology in guiding and controlling Mineral Resource estimation.*<br>• *The factors affecting continuity both of grade and geology.* | • Not required for this metallurgical testwork. |
| *Dimensions* | • *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.* | • Not applicable to this metallurgical testwork. |
| *Estimation and modelling techniques* | • *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*<br>• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*<br>• *The assumptions made regarding recovery of by-products.*<br>• *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*<br>• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*<br>• *Any assumptions behind modelling of selective mining units.*<br>• *Any assumptions about correlation between variables.*<br>• *Description of how the geological interpretation was used to control the resource estimates.*<br>• *Discussion of basis for using or not using grade cutting or capping.*<br>• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.* | • Not applicable to this metallurgical testwork.<br>• No by-products have been modelled.<br>• There is no modelling of deleterious elements in this report. |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| *Moisture* | • *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.* | • Not applicable to this metallurgical testwork. |
| *Cut-off parameters* | • *The basis of the adopted cut-off grade(s) or quality parameters applied.* | • Not applicable to this metallurgical testwork. |
| *Mining factors or assumptions* | • *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.* | • Not applicable to this metallurgical testwork. |
| *Metallurgical factors or assumptions* | • *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.* | • Three metallurgical testwork campaigns have been conducted to date at Nagrom Laboratories in Perth, Western Australia. These are:<br>○ PHASE 1 - Campaign T2909 consisting of oxide ore (Carlsen Oxide tested in Dec-2020) from early AC drilling.<br>○ PHASE 2 - Campaign T3034, is unweathered Carlsen ore from RC drilling (Carlsen Fresh – tested in Feb-2022).<br>○ PHASE 3 - Campaign T3124 consisted of a high grade (HG) and medium grade (MG) sample, representing unweathered Carlsen ore from deeper RC drilling (Carlsen Fresh – tested in Nov-2022).<br>• Leach testwork was performed under a variety of leach conditions. These included leach tests with and without gravity gold removal, direct cyanidation (DCN) with no carbon in the leach, and also carbon in leach (CIL) testwork.<br>• Oxide material (Phase 1) has extraction percentages of 92.3 – 92.6%. Solids residue values were ≈0.15 g Au/t.<br>• The extraction percentages for unweathered ore (Phase 3 and Phase 2) varied greatly between 75 and 95%. The residue grades for unweathered samples were however similar, predominately around the 0.4 – 0.46 g/t with the odd slightly lower value closer to 0.3 g/t. This suggests that the recovery improvement may be predominately related to the increased |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | grade and that the refractory component in the ore may be more of a constant in the 0.3 to 0.45 g/t range. This would suggest that the ore may contain a small refractory component, as opposed to being a refractory ore.<br>• The reported testwork is indicative, and future metallurgical programs should be conducted on diamond drill core. |
| *Environmen-tal factors or assumptions* | • *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.* | • Not applicable to this metallurgical testwork. |
| *Bulk density* | • *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*<br>• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*<br>• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.* | • Not applicable to this metallurgical testwork. |
| *Classification* | • *The basis for the classification of the Mineral Resources into varying confidence categories.*<br>• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*<br>• *Whether the result appropriately reflects the Competent Person's view of the deposit.* | • Not applicable to this metallurgical testwork. |
| *Audits or reviews* | • *The results of any audits or reviews of Mineral Resource estimates.* | • Not applicable to this metallurgical testwork. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Discussion of relative accuracy/ confidence* | • *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*<br>• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*<br>• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.* | • Not applicable to this metallurgical testwork. |

## End

ORWAY MINERAL CONSULTANTS

# NETA GOLD PROSPECT

## Testwork Review

### Gibb River Diamonds

Report No. 7568 Rev 1 13 December 2022

Orway Mineral Consultants (WA) Pty Ltd
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## EXECUTIVE SUMMARY

Jim Richards, Executive Chairman of Gibb River Diamonds ("COMPANY") requested Orway Mineral Consultants (WA) Pty Ltd (OMC) to perform a metallurgical testwork review of the Neta Gold Prospect located on the Edjudina line of workings in the Eastern Goldfields of WA.

Three metallurgical testwork campaigns have been conducted to date at the Nagrom Laboratories in Perth, Western Australia. These were:

- **PHASE 1** - Campaign T2909 consisting of oxide ore (Carlsen Oxide tested in Dec-2020) from early AC drilling.
- **PHASE 2** - Campaign T3034, is unweathered Carlsen ore from RC drilling (Carlsen Fresh – tested in Feb-2022).
- **PHASE 3** - Campaign T3124 consisted of a high grade (HG) and medium grade (MG) sample, representing unweathered Carlsen ore from deeper RC drilling (Carlsen Fresh – tested in Nov-2022).

It should be noted that AC and RC drilled samples are not ideal for metallurgical testwork, but will provide an indication of the extraction. Future metallurgical testwork should however be done on diamond core to provide more definitive extraction numbers.

Comprehensive head assays were conducted via Fire Assay (FA) and Screen Fire Assay (SFA) for gold, and X-ray fluorescence (XRF) spectroscopy for quantifying the elemental composition of oxide materials. Phase 3 included elemental assays using ICP analysis.

**Head Assays**

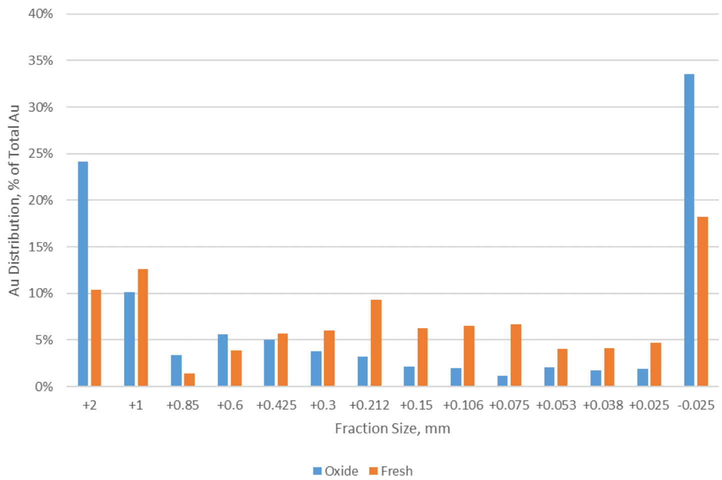
| | | Phase 1 | Phase 2 | Phase 3 | |
|---|---|---|---|---|---|
| | | Dec-20 | Feb-22 | Nov-22 | |
| Composite ID | | GAC Comp | Carlsen Fresh | HG RC Comp | MG RC Comp |
| Composite Mass | kg | 90.4 | 117.3 | 59.1 | 64.5 |
| Au (Leachwell) | ppm | 2.285 | 1.529 | | |
| **Au (Ave Fire Assay)** | **ppm** | **2.20** | **1.47** | **10.00*** | **7.51*** |
| Au (Fire Assay 1) | ppm | 2.10 | 1.50 | 8.78 | 5.26 |
| Au (Fire Assay 2) | ppm | 2.29 | 1.44 | 11.23 | 9.77 |
| **Au (SFA Average)** | **ppm** | | | **7.86** | **3.74** |
| Au (SFA 1) | ppm | | | 7.98 | 3.71 |
| Au (SFA2) | ppm | | | 7.74 | 3.76 |
| Ag | ppm | | | 10 | 4 |
| $As_2O_3$ | % | 0.098 | 0.087 | | |
| As | ppm | *742 #* | *659 #* | 170 | 1290 |
| $SO_3$ | % | 0.076 | 3.921 | | |
| $S_T$ | % | | | 1.8 | 2.3 |
| $S^{2-}$ | % | | | 1.77 | 2.27 |
| TC | % | | 3.7 | 4.8 | 7.2 |
| TOC | % | | 0 | 0 | 0.4 |

**NOTE** *** : FA results do not align with the rest of the testwork**
**# : Converted from $As_2O_3$**

It should be noted that the client indicated the Phase 2 samples (February 2022) provided were potentially skewed by having a metre of drill material (Hole GRC 020 89-90m) that was logged at 5% sulphide. This is not representative of Neta which typically has less than 1% sulphide in the mineralised material. This problem is further compounded by this sulphatic sample having almost double the grade of the other three samples that make up that composite. Phase 2 results should therefore be viewed with caution and additional testwork is recommended for the shallow Fresh material.

The gold grade determined by FA on the Phase 3 samples indicated very high grades that did not align with the rest of the testwork. SFA assays were also included, which aligned much better with the rest of the testwork, indicating the potential for spotty / coarse gold in the higher grade samples.

The assay by size on -3.35mm samples for the Phase 1 and 2 head samples showed that the gold is predominately concentrated in the coarse and the ultrafine fractions, as can be seen graphically below. Size by assay testwork was excluded from the Phase 3 testwork campaign since no GRG tests were included.




**Assay by Size**

Gravity Recoverable Gold (GRG) testwork was conducted on the Phase 1 and 2 samples and the tails from these tests were subjected to cyanidation. The total gold reporting to the gravity concentrates (cumulative for all three grind stages) for the testwork was 22.9% in the Phase 1 Oxide sample and 43.7% in the Phase 2 Fresh sample.

The GRG test removes a concentrate from the sample, and this concentrate gets assayed. Any other elements that report to the concentrate (typically heavier sulphides also containing gold, but not free milling gravity recoverable gold) are also removed and assayed (and could influence the subsequent leach recovery). The GRG result is therefore the maximum theoretical gravity recovery that can be expected. There are more refined modelling techniques available to estimate actual gravity recovery, but the industry rule of thumb is typically ⅔ of the GRG value is recovered via a gravity circuit on production scale, shown as the True Gravity Recoverable Gold below.

**Gravity Recoverable Gold Results**

| SAMPLE | Phase 1 Oxide | | Phase 2 Fresh | |
|---|---|---|---|---|
| | Mass Yield(%) | Au (%) | Mass Yield(%) | Au (%) |
| Primary Knelson Concentrate $P_{90}$ 0.85mm | 0.47% | 9.99% | 0.54% | 19.94% |
| Secondary Knelson Concentrate $P_{50}$ 0.075mm | 0.41% | 2.78% | 0.62% | 6.23% |
| Tertiary Knelson Concentrate $P_{80}$ 0.075mm | 0.40% | 10.12% | 0.52% | 17.54% |
| Tertiary Tailing $P_{80}$ 0.075mm | 98.72% | 77.10% | 98.33% | 56.29% |
| **Gravity Recoverable Gold** | | **22.9%** | | **43.7%** |
| **True Gravity Recoverable Gold (⅔ of GRG)** | | **≈15%** | | **≈30%** |

Leach testwork was performed under a variety of leach conditions. These included leach tests with and without gravity gold removal, direct cyanidation (DCN) with no carbon in the leach, and also carbon in leach (CIL) testwork. Note that gravity gold was removed, and the concentrate leached via an Intensive Cyanidation (IC) process and the concentrate tails returned to the gravity tails prior to leaching in the leach testwork reported below. The grind size for the leach testwork was $P_{80}$ 75 µm. The following table summarises the leach results.

**Leach Testwork Results**

| Comp ID | DCN / CIL | Au Head Grade (g/t) | | Au Extraction (%) | | | | Au Tail Grade (g/t) | Reagents (kg/t) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Assay | Calc. | Gravity | 8-hr | 24-hr | 48-hr | | NaCN | Lime |
| PH 1 Oxide | DCN | 2.102 / 2.293 | 1.987 | - | 89.7 | 91.8 | 92.6 | 0.149 | 0.11 | 1.2 |
| PH 1 Oxide | DCN | 2.102 / 2.293 | 1.957 | 15.3 | 70.3 | 84.9 | 92.3 | 0.151 | 0.22 | 1.14 |
| PH 2 Fresh | DCN | 1.502 / 1.444 | 1.463 | - | 72.8 | 76.7 | 75.7 | 0.382 | 0.13 | 1.03 |
| PH 2 Fresh | DCN | 1.502 / 1.444 | 1.526 | 30.2 | 88.5* | 86.2* | 79.4* | 0.314* | 0.10 | 1.75 |
| PH 2 Fresh | CIL | 1.502 / 1.444 | | 30.2 | 77.5 | 77.7 | 75.7 | 0.438 | | |
| PH 3 HG | DCN | 7.98 / 7.74 # | 7.322 | 41.7 | 90.8 | 92.0 | 94.5 | 0.436 | 0.30 | 0.42 |
| PH 3 HG | CIL | 7.98 / 7.74 * | | 41.7 | 93.6 | 95.3 | 95.8 | 0.331 | | |
| PH 3 MG | DCN | 3.71 / 3.76 # | 3.740 | 34.3 | 83.6 | 91.0 | 88.2 | 0.439 | 0.27 | 1.64 |
| PH 3 MG | CIL | 3.71 / 3.76 * | | 34.3 | 87.0 | 88.6 | 87.7 | 0.461 | | |

**NOTE** *** : Questionable result not aligning with the other testwork**

There is a reasonable agreement in the final extraction between the various leach tests after 48hours. The one anomaly is the Phase 2 Fresh sample DCN leach with gravity. This leach indicated significant preg-robbing that was not seen in the direct cyanidation with the leach residue increasing again after the initial 8 hrs of leaching. Furthermore, the final test result still had a lower final residue grade than the same sample with a CIL leach. The result of this test should therefore be treated with caution.

The fresh samples leached quickly to completion with the gravity component removed, but the leach kinetics were slower with whole of ore leaching, therefore requiring more leach time.

None of the leach tests indicated extreme cyanide or lime consumption, and further reagent optimisation will be completed in future testwork programmes.

Better recoveries were achieved for the Phase 3 testwork, above 92% for the high-grade sample and 87.7% for the medium grade sample.

The residue grades for both Phase 3 and Phase 2 sample were similar, predominately around the 0.4 – 0.46 g/t with the odd slightly lower value closer to 0.3 g/t. This suggests that the recovery improvement may be predominately related to the increased grade and that the refractory component in the ore may be more of a constant in the 0.3 to 0.45 g/t range. This would suggest that the ore may contain a refractory component, as opposed to being a refractory ore.

Further work will be required to investigate possible solutions to reduce the residue grade of the Phase 2 and Phase 3 samples.

Diagnostic leach testwork was initiated on all the samples to better understand the gold deportment. The results suggest that arsenical minerals and/or reactive pyrite contribute significantly to the lower extraction achieved for the Phase 2 Fresh and to a lesser extent the Phase 3 MG ore. Very good agreement between the gravity – leach cyanide soluble gold deportment and the original leach tests were achieved, allowing for some confidence in the repeatability of the results.

**Diagnostic Leach Testwork Results**

| Stage : Diagnostic Sequence | Description | Ph 1 Oxide Distribution | PH 2 Fresh Distribution | PH 3 HG Distribution | PH 3 MG Distribution |
|---|---|---|---|---|---|
| | | (%) | (%) | (%) | (%) |
| **Mercury Amalgamation / Intensive Cyanidation**<br><br>**Cyanidation** | **Gravity-Recoverable Gold Content followed by**<br><br>**Cyanide-Soluble Gold Content Determination** | **95.0** | **74.9** | **95.7** | **88.1** |
| HCl Digest / Cyanidation | Carbonates & Reactive Sulphides Gold Content Determination | 2.4 | 3.7 | 1.24 | 1.52 |
| $HNO_3$ Digestion / Cyanidation | **Arsenical Minerals** & **Reactive Pyrite** Gold Content Determination | 1.2 | **17.9** | 2.47 | **9.48** |
| Aqua Regia Digestion | Remaining Sulphides & Acid-Soluble Mineral Gold Content Determination | 0.6 | 2.9 | 0.54 | 0.93 |
| Total Fire Assay Smelt | Silicate (Gangue) Encapsulated Gold Content Determination | 0.8 | 0.6 | 0.02 | 0.01 |
| **Total Calculated Gold Content:** | | **100** | **100** | **100** | **100** |

It is again stressed that the reported testwork is indicative, and that future metallurgical programmes should be conducted on diamond drill core only.

The future programmes should also focus on improving the residue grade of the Fresh samples, including possible concentration via flotation and concentrate treatment options. Arsenopyrite associated refractory gold components can often be liberated with fine grinding of a concentrate or moderate oxidation.

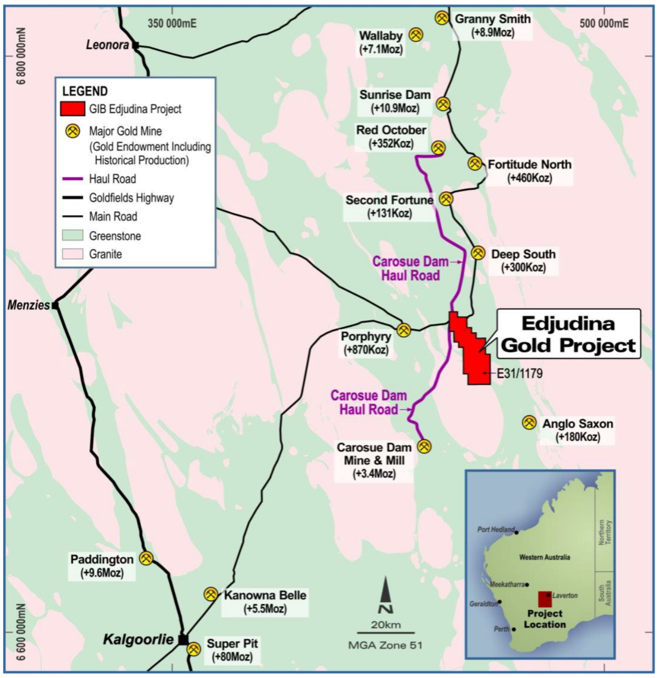
## 1.0 INTRODUCTION

Jim Richards, Executive Chairman, of Gibb River Diamonds ("COMPANY") requested Orway Mineral Consultants (WA) Pty Ltd (OMC) to perform a metallurgical testwork review of the Neta Gold Prospect located on the Edjudina line of workings in the Eastern Goldfields of WA.

OMC has had no prior involvement with this prospect.

The client has undertaken three phases of metallurgical testwork, namely; Phase 1 on Oxide material, Phase 2 on shallow Fresh ore and Phase 3 on deep Fresh ore. OMC has been requested to provide:

- A review of the available data.
- A metallurgical report for Gibb River Diamonds directors based upon the available data, this would include recommendations for further metallurgical work.
- A summary report of the Directors report, which is suitable for an ASX release (JORC standard, i.e. Table 1 report, with a JORC qualified metallurgical person for sign-off).




The following files have been supplied by the client:

- Phase 1 Metallurgical Testwork (Excel & PDF versions): *Gravity and Leach Testwork T2909 - Gibb River Diamonds Limited 20201229*
- Phase 2 Metallurgical Testwork (Excel & PDF versions): *Gravity and Leach Testwork T3034 - Gibb River Diamonds Limited 20220218*
- Phase 3 Metallurgical Testwork (Excel spreadsheet): *HG and MG Testwork T3124 - Gibb River Diamonds Limited 20221103*
- ASX release detailing the Phase 1 drilling program (*264_EdjudinaDrilling_Ph1_ToASX*)
- ASX release detailing results of Phase 1 metallurgical testwork (*279_NetaMet_Ph2_ToASX_Amended*)

Additional data on sample location and geological logs were also provided.

## 2.0 SAMPLE DETAIL

Three metallurgical testwork campaigns have been conducted to date at the Nagrom Laboratories in Perth, Western Australia. Sample T2909 is Oxide ore (Carlsen Oxide tested in Dec-2020) from early AC drilling. Sample T3034, is unweathered Carlsen ore from deeper RC drilling (Carlsen Fresh – tested in Feb-2022) and Samples T3124 (High Grade HG and Medium Grade MG) representing the deep fresh material. All samples were selected by the client.

The collar locations for the intercepts used to make up the composite samples are shown in Figure 2-1, with the holes used for the 2020 samples highlighted in yellow, the 2022 sample holes highlighted in green and the Deep samples are identified by red markers.

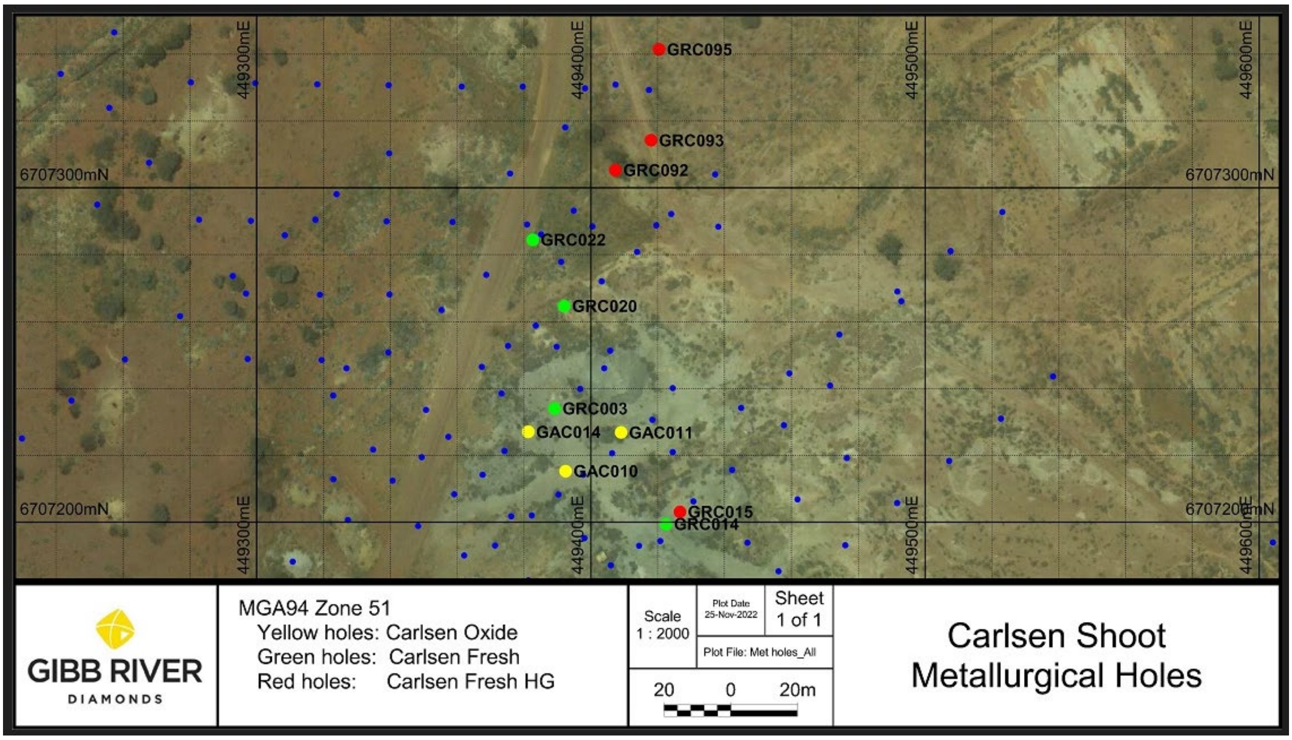



**Figure 2-1 Drill Collar Locations for Met Samples**

The following comment was received from the client Exploration Manager regarding the resource:

*The client hypothesis is that mineralisation is hosted in a (carbonate?) altered sericitic phyllite, with highest grades associated with strong silicification and some sulphides. In the regolith this presents as strong iron alteration with some silicification and no sulphides, down to approximately 55m (44m TVD). Quartz-carbonate veining is present but is associated with lower gold grades (<4g/t Au). I've only seen VG in one sample and have been unsuccessful in trying to pan gold from multiple +25g/t regolith samples so it's likely very fine grained.*

*The footwall mineralisation is a chlorite-amphibole phyllite, sometimes associated with a quartz-phyric porphyry or quartz veining, so there may be an element of fault control.*

The geological detail for the various intercepts that constituted the make-up of the composite samples are summarised in Table 2-1.

**Table 2-1 Composite Make-up**

| HoleID | From m | To m | Weight kg | Assay Au_ppm | Geology |
|---|---|---|---|---|---|
| **December 2020 Sample Composite** | | | | | |
| GAC010 | 8 | 9 | 3.0 | 3.31 | medium brown very fine grained (VFg) strongly foliated (FolS) limonite-altered phyllite + 10% massive translucent white Qz |
| GAC010 | 9 | 10 | 5.6 | 1.30 | medium brown VFg FolS limonite-altered phyllite + 10% massive translucent white Qz |
| GAC011 | 28 | 29 | 5.8 | 2.27 | 80% massive translucent white Qz, 20% intensely Fe-Si altered phyllite |
| GAC011 | 29 | 30 | 7.8 | 2.12 | Strongly weathered intensely Si-Fe altered phyllite with 5% massive translucent white Qz |
| GAC011 | 34 | 35 | 11.9 | 2.75 | Dark brown strongly weathered strongly hematite altered phyllite |
| GAC011 | 37 | 38 | 8.5 | 3.76 | medium brown VFg FolS strongly weathered moderately limonite-altered phyllite + 5% massive translucent white Qz |
| GAC014 | 39 | 40 | 12.4 | 2.75 | medium brown VFg FolS strongly weathered limonitic phyllite + 50% intensely Qz-limonite altered phyllite |
| GAC014 | 42 | 43 | 9.3 | 2.03 | medium brown VFg FolS strongly weathered limonitic phyllite + 50% intensely Qz-limonite altered phyllite |
| GAC014 | 48 | 49 | 9.0 | 1.91 | medium brown-red VFg FolS strongly weathered moderately limonite-hematite altered sericitic phyllite + 75% intensely Qz-Fe altered phyllite |
| GAC014 | 51 | 52 | 11.9 | 1.28 | medium brown VFg FolS strongly weathered moderately limonite altered phyllite |
| GAC014 | 54 | 55 | 9.3 | 1.80 | medium brown VFg FolS strongly weathered moderately limonite altered phyllite |
| **February 2022 Sample Composite** | | | | | |
| GRC003 | 73 | 74 | 25.0 | 1.19 | very fine grained (VFg) strongly foliated (FolS) sericitic phyllite with 5% massive translucent white Qz. Likely weak carbonate/quartz alteration |
| GRC015 | 84 | 85 | 29.8 | 1.30 | as above, no Qz veining |
| **GRC020** | **89** | **90** | **34.2** | **2.48** | medium grey VFg FolS moderately to strongly silicified sericitic phyllite with 5% medium grey Qz containing **~5% pyrite** |
| GRC022 | 95 | 96 | 33.6 | 1.28 | medium grey green VFg FolS sericitic phyllite |

**Table 2-2 Phase 3Composite Make-up**

| HoleID | From m | To m | Weight kg | Assay Au_ppm | Geology |
|---|---|---|---|---|---|
| **November 2022 HG Sample Composite** | | | | | |
| GRL015 | 69 | 70 | 30.9 | 11.48 | Light greeny cream very fine grained strongly foliated sericitic phyllite with 50% massive translucent quartz containing ~2% very fine grained dendritic ?arsenopyrite |
| GRC092 | 120 | 121 | 30.0 | 5.48 | Light green-grey weak-mod carbonate-altered phyllite with 75% light grey massive translucent quartz containing 1-2% fine grained disseminated pyrite and ?arsenopyrite |
| **November 2022 MG Sample Composite** | | | | | |
| GRC093 | 170 | 171 | 33.5 | 2.76 | Medium grey strongly carbonate-altered phyllite with 50% light grey moderately foliated quartz containing ~0.5% pyrite |
| GRC095 | 149 | 150 | 32.5 | 2.64 | Medium grey moderately ?Si-altered phyllite with 75% medium grey weakly translucent quartz (some quartz-carbonate) containing 2% pyrite |

It should be noted that the client indicated the Phase 2 samples (February 2022) provided were potentially skewed by having a metre of drill material (Hole GRC 020 89-90m ) that was logged at 5% sulphide. This is not representative of Neta which typically has less than 1% sulphide in the mineralised material. This problem is further compounded by this sulphatic sample having almost double the grade of the other three samples that make up that composite. Phase 2 results should therefore be viewed with caution and additional testwork is recommended for the shallow Fresh material.

It should be noted that AC and RC drilled samples are not ideal for metallurgical testwork, but will provide an indication of the extraction considering the oxide nature of the material. Future metallurgical testwork should however be done on diamond core to provide more definitive extraction numbers.

# 3.0 SAMPLE ANALYSIS

## 3.1 Head Assays

Analysis were completed under the following regimes:

- Au analysed by Leachwell
- Au also analysed in duplicate via 30g aliquot Fire Assay, followed by cupellation and the precious metal bead digested in aqua regia. The digest solution is analysed by ICP
- The Nov 2022 Deep samples were also analysed via Screen Fire Assay (SFA) due to the erratic nature of the fire assay results.
- Oxides analysed via XRF
- Elemental analysis via ICP
- LOI1000 analysed via TGA
- Total Carbon and Total Organic Carbon analysed via CS2000

Pertinent analysis results are summarised in Table 3-1. Of note is the poor correlation of the fire assays for the November 2022 samples. This is likely due to the "spotty" nature of coarse gold. The assays were repeated using the Screen Fire Assay (SFA) method, which resulted in a much better correlation and agreement with the calculated head grades from the rest of the testwork program.

**Table 3-1 Comparative Assays**

| | | Phase 1 | Phase 2 | Phase 3 | |
|---|---|---|---|---|---|
| | | Dec-20 | Feb-22 | Nov-22 | |
| Composite ID | | GAC Comp | Carlsen Fresh | HG RC Comp | MG RC Comp |
| Composite Mass | kg | 90.4 | 117.3 | 59.1 | 64.5 |
| Moisture | % | 3.4 | 3.9 | 3.0 | 2.4 |
| Au (Leachwell) | ppm | 2.285 | 1.529 | | |
| **Au (Ave Fire Assay)** | **ppm** | **2.20** | **1.47** | **10.00 *** | **7.51 *** |
| Au (Fire Assay 1) | ppm | 2.10 | 1.50 | 8.78 | 5.26 |
| Au (Fire Assay 2) | ppm | 2.29 | 1.44 | 11.23 | 9.77 |
| **Au (SFA Average)** | **ppm** | | | **7.86** | **3.74** |
| Au (SFA 1) | ppm | | | 7.98 | 3.71 |
| Au (SFA2) | ppm | | | 7.74 | 3.76 |
| Ag | ppm | | | 10 | 4 |
| $As_2O_3$ | % | 0.098 | 0.087 | | |
| As | ppm | | | 170 | 1290 |
| $SO_3$ | % | 0.076 | 3.921 | | |
| $S_T$ | % | | | 1.8 | 2.3 |
| $S^{2-}$ | % | | | 1.77 | 2.27 |
| TC | % | | 3.7 | 4.8 | 7.2 |
| TOC | % | | 0 | 0 | 0.4 |

**NOTE * : FA results do not align with the rest of the testwork**

Comprehensive head assays were conducted via X-ray fluorescence (XRF) spectroscopy for quantifying the elemental composition of oxide materials. This work was completed on both the Phase 1 and Phase 2 composites. The results are summarised in Table 3-2.

**Table 3-2 Phase 1 and Phase 2 Head Assays**

| Analysis | Unit | Oxide | Fresh |
|---|---|---|---|
| $Fe_2O_3$ | % | 15.602 | 9.457 |
| $SiO_2$ | % | 50.042 | 44.978 |
| $Al_2O_3$ | % | 7.68 | 11.758 |
| $As_2O_3$ | % | 0.098 | 0.087 |
| BaO | % | 0.022 | 0.025 |
| CaO | % | 6.766 | 8.704 |
| Cl | % | 0.06 | 0.001 |
| CoO | % | 0.004 | 0.004 |
| $Cr_2O_3$ | % | 0.026 | 0.033 |
| CuO | % | 0.012 | 0.006 |
| $K_2O$ | % | 1.561 | 2.607 |
| MgO | % | 4.522 | 4.791 |
| MnO | % | 0.227 | 0.168 |
| $Na_2O$ | % | 0.281 | 0.341 |
| NiO | % | 0.012 | 0.01 |
| $P_2O_5$ | % | 0.058 | 0.064 |
| PbO | % | 0.016 | 0.001 |
| $Sb_2O_3$ | % | 0 | 0.004 |
| $SO_3$ | % | 0.076 | **3.921** |
| SrO | % | 0.005 | 0.008 |
| $TiO_2$ | % | 0.345 | 0.47 |
| $V_2O_5$ | % | 0.049 | 0.028 |
| ZnO | % | 0.019 | 0.008 |
| $ZrO_2$ | % | 0.013 | 0 |
| LOI1000 | % | 12.93 | 13.03 |
| TC | % | | 3.7 |
| TOC | % | | 0 |

Comprehensive elemental assays for the Phase 3 samples were done via ICP and is summarised in Table 3-3.

**Table 3-3 Phase 3 Head Assays**

| Analysis | Unit | HG RC Comp | MG RC Comp |
|---|---|---|---|
| Al | % | 4.86 | 2.29 |
| As | % | 0.017 | 0.129 |
| Ba | % | 0.026 | 0.007 |
| Bi | ppm | 2.5 | 0 |
| Ca | % | 8.35 | 9.08 |
| Cd | ppm | 28 | 12 |
| Ce | ppm | 3 | 6 |
| Co | % | 0.003 | 0.003 |
| Cr | % | 0.022 | 0.013 |
| Cu | % | 0.015 | 0.009 |
| Dy | ppm | 1.5 | 2.5 |
| Er | ppm | 1 | 1.7 |
| Eu | ppm | 0.4 | 0.4 |
| Fe | % | 7.36 | 16.27 |
| K | % | 1.618 | 0.813 |
| Li | ppm | 0 | 0 |
| Mg | % | 3.36 | 4.35 |
| Mn | % | 0.146 | 0.292 |
| Mo | ppm | 1 | 0 |
| Na | % | 0.272 | 0.037 |
| Ni | % | 0.008 | 0.006 |
| P | % | 0.022 | 0.012 |
| Pb | % | 0.067 | 0.014 |
| Sb | ppm | 0 | 1 |
| Sc | ppm | 27 | 60 |
| Ta | ppm | 1 | 1 |
| Tb | ppm | 0.2 | 0.4 |
| Te | ppm | 0 | 0 |
| Th | ppm | 0 | 0 |
| Ti | % | 0.151 | 0.122 |
| Tl | ppm | 0.3 | 0.2 |
| Tm | ppm | 0.2 | 0.3 |
| U | ppm | 0 | 0 |
| V | ppm | 100 | 200 |
| W | ppm | 0 | 0 |
| Y | ppm | 9 | 17 |
| Yb | ppm | 1 | 1.5 |
| Zn | ppm | 500 | 500 |

### 3.2 Assay by Size – Phase 1 and Phase 2 Head sample -3.35mm top size

The assay by size analysis done on the Phase 1 & 2 samples reveal that the majority of the gold is in the minus 25 micron fraction for the Oxide testwork, and to a lesser degree in the Fresh campaign. Conversely, the Fresh campaign had a finer overall particle size distribution that the Oxide work. The grade profile is variable across the fractions, suggesting that the distribution may be skewed due to the nature of the AC / RC drilled samples.

The data is summarised in Table 3-4 and Figure 3-1.

**Table 3-4 Assay by Size - Head Sample**

| | Phase 1 - Oxide | | | Phase 2 - Fresh | | |
|---|---|---|---|---|---|---|
| Size (mm) | Mass Yield (%) | Grade (ppm Au) | Au (%) | Mass Yield (%) | Grade (ppm Au) | Au (%) |
| +2 | 16.41 | 2.801 | 24.18 | 8.31 | 2.013 | 10.41 |
| +1 | 16.08 | 1.209 | 10.11 | 13.73 | 1.520 | 12.65 |
| +0.85 | 3.58 | 1.756 | 3.42 | 2.17 | 1.054 | 1.44 |
| +0.6 | 6.18 | 1.588 | 5.63 | 5.50 | 1.208 | 3.90 |
| +0.425 | 4.99 | 1.934 | 5.04 | 5.57 | 1.666 | 5.70 |
| +0.3 | 4.85 | 1.299 | 3.83 | 5.84 | 1.748 | 6.06 |
| +0.212 | 3.59 | 1.587 | 3.26 | 3.62 | 2.499 | 9.35 |
| +0.15 | 3.39 | 1.157 | 2.12 | 5.18 | 1.969 | 6.26 |
| +0.106 | 2.73 | 1.341 | 2.03 | 3.05 | 3.643 | 6.51 |
| +0.075 | 2.01 | 1.130 | 1.19 | 4.30 | 2.480 | 6.67 |
| +0.053 | 2.51 | 1.535 | 2.04 | 2.38 | 3.055 | 4.05 |
| +0.038 | 2.43 | 1.263 | 1.72 | 2.99 | 2.116 | 4.13 |
| +0.025 | 2.52 | 1.339 | 1.91 | 3.24 | 2.442 | 4.69 |
| **-0.025** | **28.74** | 2.072 | **33.53** | **34.13** | 0.918 | **18.19** |
| **$F_{80}$ (mm)** | **1.77** | | - | **1.15** | | - |
| **Reconstituted Grade** | | **1.804** | | | **1.643** | |

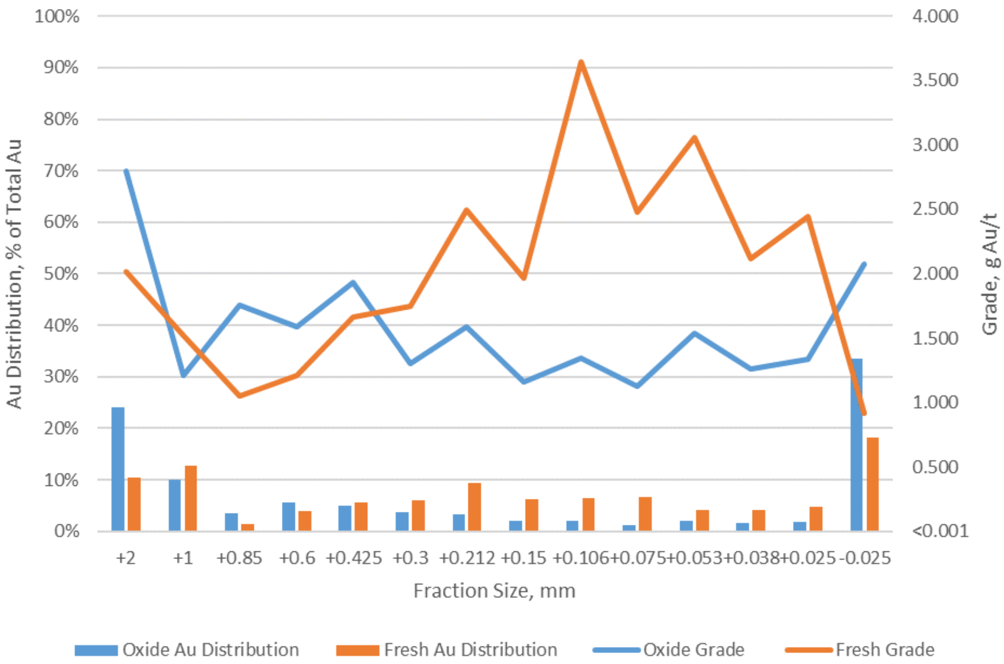



**Figure 3-1 Au Distribution by Size**

The particle size distribution is compared in Figure 3-2.

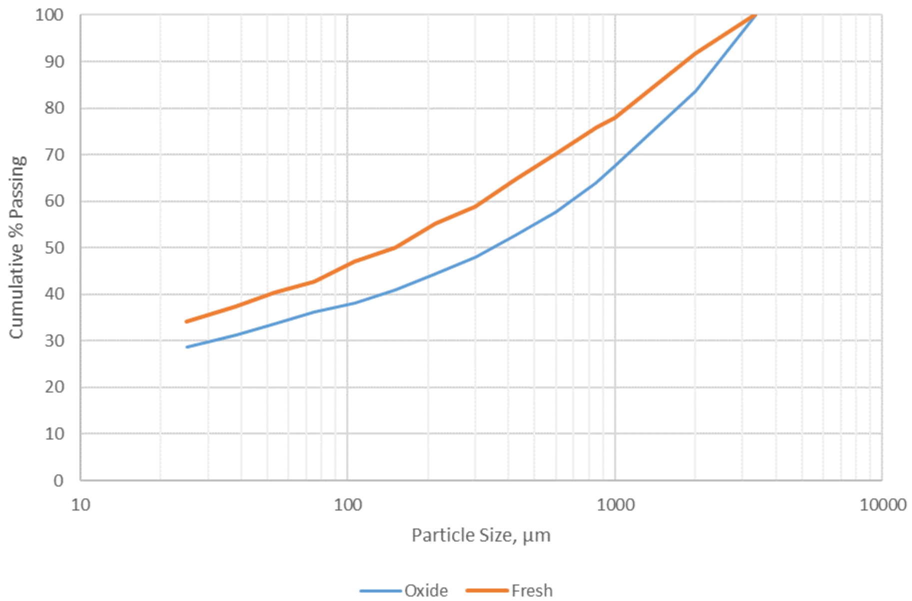



**Figure 3-2 Particle Size Distribution**

## 4.0 GRAVITY CONCENTRATION

### 4.1.1 Gravity Recoverable Gold (GRG) Testwork – Phase 1 and Phase 2 Samples

This section outlines the standard procedure for a GRG testwork approach as described in: "GRAVITY RECOVERYOF GOLD FROM WITHIN GRINDING CIRCUITS" by Ish Grewal et al.

*The gravity-recoverable-gold content of an ore, as obtained via a GRG test, provides a* ***quantitative theoretical limit of gold that can be recovered*** *using batch-type centrifugal concentrators (BCC). The test itself consists of a sequential liberation via grinding followed by gravity concentration using a lab scale BCC. The concentrates and the final tails products are screened and analyzed for gold by particle size class. The progressive grind approach limits the smearing of gold particles and allows for the recovery of GRG as it is liberated. The results from the test are presented as a cumulative GRG distribution as well as GRG distribution by particle size class.*

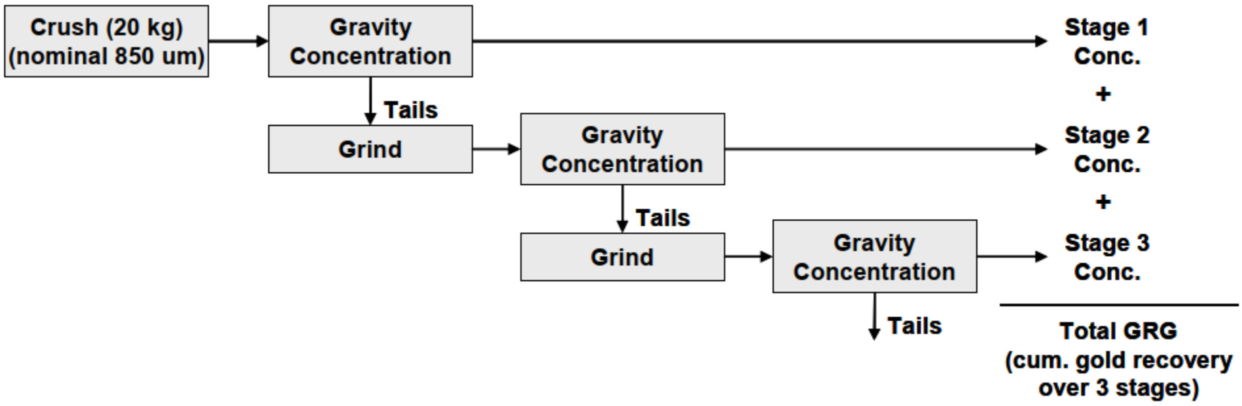



**Figure 4-1 GRG Test Flowsheet**

The concentrate mass and gold contribution to each stage is summarised in Table 4-1. It is shown that the total gold reporting to the gravity concentrates (cumulative for all three grind stages) is 22.9% in the Oxide work and 43.7% in the Fresh results.

The GRG test removes a gravity concentrate from the sample, and this concentrate is assayed via fire assay. Any other elements that report to the concentrate (typically heavier sulphides also containing gold, but not gravity recoverable gold) are also destroyed by assay. The GRG result is therefore the maximum theoretical gravity recovery that can be expected. There are more refined modelling techniques available to estimate actual gravity recovery, but the industry rule of thumb is typically ⅔ of the GRG value, as shown as the True Gravity Recoverable Gold in Table 4-1.

**Table 4-1 GRG Results**

| SAMPLE | Phase 1 Oxide | | Phase 2 Fresh | |
|---|---|---|---|---|
| | Mass Yield (%) | Au (%) | Mass Yield (%) | Au (%) |
| Primary Knelson Concentrate $P_{90}$ 0.85mm | 0.47% | 9.99% | 0.54% | 19.94% |
| Secondary Knelson Concentrate $P_{50}$ 0.075mm | 0.41% | 2.78% | 0.62% | 6.23% |
| Tertiary Knelson Concentrate $P_{80}$ 0.075mm | 0.40% | 10.12% | 0.52% | 17.54% |
| Tertiary Tailing $P_{80}$ 0.075mm | 98.72% | 77.10% | 98.33% | 56.29% |
| **Gravity Recoverable Gold** | | **22.90%** | | **43.71%** |
| **True Gravity Recoverable Gold (⅔ of GRG)** | | **15.3%** | | **29.1%** |

The gold deportment in the gravity concentrate and gravity tail is shown in Figure 4-2 and Figure 4-3. It is clear that most of the gold in the tail is in the fines (sub 25µm) fraction, which is typically the size where the efficiency of the Knelson Concentrators are poor.

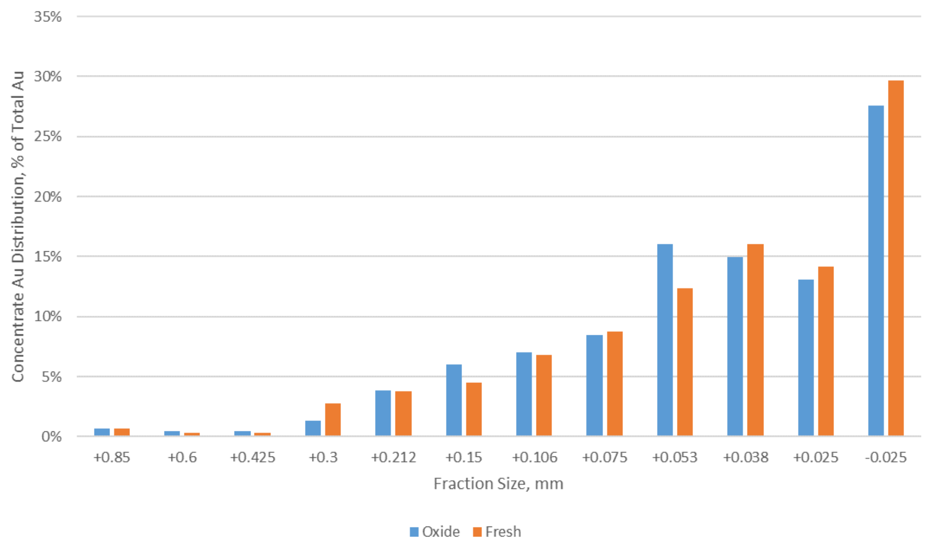



**Figure 4-2 GRG Concentrate Gold Deportment**

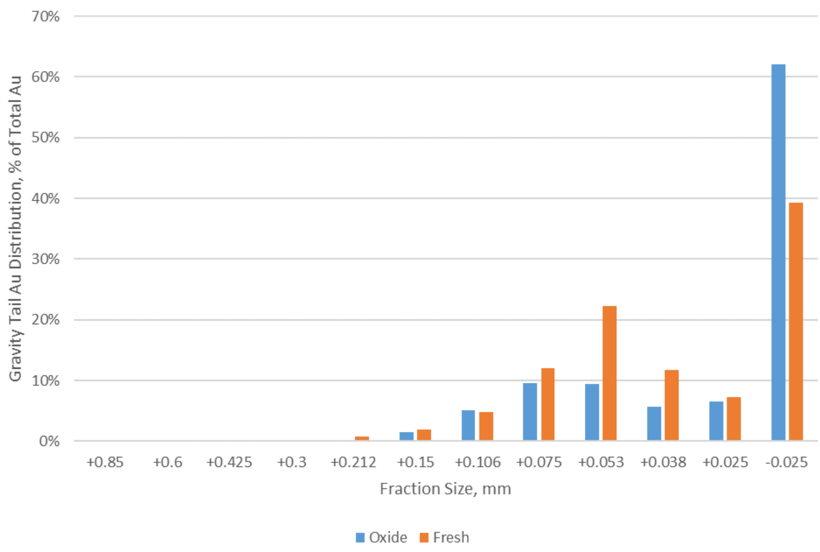



**Figure 4-3 GRG Tail Gold Deportment**

### 4.1.2 Gravity Gold Extraction – Phase 3 Samples

The full GRG tests were not completed on the Phase 3 samples due to the potential to overstate recoveries on the gravity tail leach. For this testwork, the sample was ground to 80% passing 75 µm and passed through a 3" Knelson Concentrator.

**Table 4-2 Gravity Gold – Phase 2 and Phase 3 Samples**

| Sample: | Unit | PH 2 Fresh | PH 3 - HG | PH 3 - MG |
|---|---|---|---|---|
| **Gravity Concentration** | | | | |
| Size $P_{80}$ | µm | 75 | 75 | 75 |
| Knelson Bowl Size | Inch | 3 | 3 | 3 |
| Feed Rate | kg/min | 0.75 | 0.75 | 0.75 |
| Assay Head (FA / SFA Average) | ppm | 1.473 | 7.86 | 3.74 |
| Calculated Assay (Gravity) | ppm | 1.697 | 7.40 | 3.83 |
| Concentrate Mass | % of Total | 2.04 | 1.57 | 1.57 |
| Concentrate Gold | % of Total | 47.4 | 65.3 | 52.30 |
| Gravity Tail Mass | % of Total | 97.96 | 98.43 | 98.43 |
| Gravity Tail Gold | % of Total | 54.7 | 34.7 | 47.7 |
| **Intensive Cyanidation** | | | | |
| Feed Mass | g Dry | 122.9 | 93.3 | 93.7 |
| Pulp Density: | % solids | 20 | 20 | 20 |
| Leachwell Addition: | % w/w | 2.0 | 2.0 | 2.0 |
| 50% NaOH Addition: | % w/w | 0.8 | 0.8 | 0.8 |
| NaCN addition: | % w/w | 5.0 | 5.0 | 5.0 |
| Leach Time: | hours | 24 | 24 | 24 |
| **Gravity Gold** | % | 45.3 | 62.6 | 51.5 |
| **True Gravity Recoverable Gold (⅔ of GG)** | **%** | **30.2** | **41.7** | **34.3** |

# 5.0 LEACH TESTWORK

## 5.1 Direct Cyanidation – Phase 1 and Phase 2 Head Samples

Standard cyanide bottle roll tests were done on the head samples without gravity gold extraction under the conditions summarised in Table 5-1. Note that no bottle roll tests were done on the Phase 3 sample that did not include gravity concentration.

**Table 5-1 Leach Conditions - Head Sample**

| Sample: | Unit | Phase 1 Oxide | Phase 2 Fresh |
|---|---|---|---|
| Size $P_{80}$ | µm | 75 | 75 |
| Feed Mass | g Dry | 500.0 | 500.0 |
| Pulp Density: | % solids | 40 | 40 |
| Initial Cyanide Dose: | ppm | 500 | 500 |
| Leach Time: | hours | 48 | 48 |
| Start pH: | | 11.02 | 11.45 |
| Final pH: | | 10.50 | 11.54 |
| Start DO | ppm | 10.5 | 10.6 |
| Final DO | ppm | 10.3 | 7.3 * |
| Initial Cyanide: | ppm | 500.0 | 500.0 |
| Final Cyanide: | ppm | 468.3 | 491.2 |
| Cyanide Consumption: | kg/t | 0.11 | 0.13 |
| Lime addition: | kg/t | 1.20.96 | 1.03 |

**Note * - Higher oxygen demand noted**

The leach results are summarised in Table 5-2. The extraction in the Oxide testwork is significantly better than the Fresh work, but the reason for this is not obvious from the data available. The leach curve suggests that preg-robbing may be occurring, but the higher sulphite ($SO_3$) identified by the head assay may also infer further association with sulphide minerals, typically pyrite and / or arsenopyrite.

**Table 5-2 Leach Results - Head Sample**

| Comp ID | Au Head Grade (g/t) | | Au Extraction (%) | | | Au Tail Grade (g/t) | Reagents (kg/t) | |
|---|---|---|---|---|---|---|---|---|
| | Assay | Calc. | 8-hr | 24-hr | 48-hr | | NaCN | Lime |
| Oxide | 2.102 / 2.293 | 1.987 | 89.7 | 91.8 | 92.6 | **0.149** | 0.11 | 1.2 |
| Fresh | 1.502 / 1.444 | 1.463 | 72.8 | 76.7 | 75.7 | **0.382** | 0.13 | 1.03 |

## 5.2 Leach Testwork – Including Gravity Extraction

The tail following gravity extraction were submitted to bottle roll leach tests. As discussed above, the fact that some of the sulphides are also destroyed as part of the assay process of the concentrate, means that the leach result on the GRG tail could potentially be slightly optimistic for the Phase 1 and 2 testwork. For Phase 3, the gravity concentrate was subjected to intensive cyanidation and returned to the gravity tails prior to leaching. The leach conditions are summarised in Table 5-3.

**Table 5-3 Leach Conditions – Gravity Tail Samples**

| Sample: | Unit | PH 1 Oxide | PH 2 Fresh | PH 3 HG | PH 3 MG |
|---|---|---|---|---|---|
| Size $P_{80}$ | µm | 75 | 75 | 75 | 75 |
| Feed Mass | g Dry | 499.7 | 499.5 | 999.6 | 999.6 |
| Pulp Density: | % solids | 40 | 40 | 40 | 40 |
| Initial Cyanide Dose: | ppm | 500 | 500 | 500 | 500 |
| Leach Time: | hours | 48 | 48 | 48 | 48 |
| Start pH: | | 10.65 | 8.10 | 10.55 | 10.63 |
| Final pH: | | 10.50 | 11.68 | 10.50 | 10.54 |
| Start DO | ppm | 10.2 | 12.1 | 11.1 | 10.5 |
| Final DO | ppm | 8.7 | 7.7 | 11.4 | 10.9 |
| Initial Cyanide: | ppm | 500.0 | 500.0 | 500.0 | 500.0 |
| Final Cyanide: | ppm | 474.0 | 475.0 | 458.4 | 479.1 |
| Cyanide Consumption: | kg/t | 0.22 | 0.10 | 0.30 | 0.27 |
| Lime addition: | kg/t | 1.14 | 1.75 | 0.42 | 1.64 |

The leach results are shown in Table 5-4.

In order to get a holistic view of extraction response when combining gravity followed by a cyanide leach, the following procedure was followed:

- The overall recovery was calculated using the reconstituted (calculated) head grade from the gravity test, and the final solids residue from the leach test on the gravity tail bottle roll.
- To approximate the leach curve, the ratio of the calculated gold in solution at each time interval divided by the total gold in solution at the end of the leach was determined.
- This ratio was then applied to the overall extraction to obtain an indicative leach curve after gravity has been removed.

There is a very good agreement of the tail residue grade for Oxide sample.

The tails residue was about 20% higher for the whole ore leach than on the Phase 2 Fresh sample gravity tail leach. However, when evaluating the leach curves between the two tests, it is evident that the tests behaved very differently even though there was little difference in the leach conditions. CIL testwork aligned with the whole ore leach (DCN), and the Phase 2 Fresh leach should therefore be treated with caution.

The Phase 3 HG and MG results also aligned well.

**Table 5-4 Leach Results – Gravity Tail Sample**

| Comp ID | $P_{80}$ (µm) | Au Head Grade (g/t) | | Au Extraction (%) | | | | Au Tail Grade (g/t) | Reagents (kg/t) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Assay | Calc. | Gravity | 8-hr | 24-hr | 48-hr | | NaCN | Lime |
| PH 1 Oxide | 75 | 2.102 / 2.293 | 1.957 | 15.3 | 70.3 | 84.9 | **92.3** | **0.151** | 0.22 | 1.14 |
| PH 2 Fresh | 75 | 1.502 / 1.444 | 1.526 | 30.2 | 88.5* | 86.2* | **79.4*** | **0.314*** | 0.10 | 1.75 |
| PH 3 HG | 75 | 7.98 / 7.74 # | 7.322 | 41.7 | 90.8 | 92.0 | **94.5** | **0.436** | 0.30 | 0.42 |
| PH 3 MG | 75 | 3.71 / 3.76 # | 3.740 | 34.3 | 83.6 | 91.0 | **88.2** | **0.439** | 0.27 | 1.64 |

**NOTE** *** : Leach result inconsistent with the rest of the testwork**
**# : - Screen Fire Assay**

### 5.3 Leach vs Carbon-in-Leach (CIL)

The gravity tail samples of the Phase 2 and Phase 3 Fresh samples were subjected to CIL tests to determine whether the potential preg-robbing could be mitigated. To enable the determination of leach kinetics in the CIL tests, three separate tests were performed at 4, 24 and 48 hours respectively on each sample. The leach conditions are summarised in Table 5-5 and the leach results in Table 5-6.

**Table 5-5 CIL Leach Conditions**

| Target Parameters | Unit | PH 2 Fresh | PH 3 HG | PH 3 MG |
|---|---|---|---|---|
| **Gravity Tail Leach** | | | | |
| Size $P_{80}$ | µm | 75 | 75 | 75 |
| Feed Mass | g Dry | 974 | 994.5 | 1001.3 |
| Pulp Density: | % solids | 40 | 40 | 40 |
| Initial Cyanide Dose: | ppm | 500 | 500 | 500 |
| Leach Time: | hours | 4, 24 & 48 | 4, 24 & 48 | 4, 24 & 48 |
| Carbon Addition | g/L | 10 | 10 | 10 |
| Start pH: | | >10.5 | 10.71 | >10.66 |
| Start DO | ppm | >7 | 10.15 | 10.21 |
| Cyanide Addition | g | | 0.74 | 0.75 |
| Lime addition: | kg/t | | 0.24 | 0.40 |

**Table 5-6 Leach Results – Gravity Tail Sample**

| Comp ID | $P_{80}$ (µm) | Au Head Grade (g/t) | Au Extraction (%) | | | | Au Tail Grade (g/t) # |
|---|---|---|---|---|---|---|---|
| | | | Gravity | 4-hr | 24-hr | 48-hr | |
| PH 2 FR | 75 | 1.502 / 1.444 | 30.2 | 77.5 | 77.7 | **75.7** | **0.438** |
| PH 3 HG | 75 | 7.98 / 7.74 * | 41.7 | 93.6 | 95.3 | **95.8** | **0.331** |
| PH 3 MG | 75 | 3.71 / 3.76 * | 34.3 | 87.0 | 88.6 | **87.7** | **0.461** |

**NOTE # : Residue for 48h CIL leach only.**
*** : Screen Fire Assay**

The kinetic leach curves for all the leach testwork is compared in Figure 5-1 and Figure 5-2.

Note the difference in the PH2 Fresh – incl Gravity curve is significantly different when compared to the other PH2 curves. This curve suggests that good extraction is achieved early in the leach, but then decreases, typically suggesting preg-robbing. This phenomenon was however not seen in the leach without gravity or the CIL. Both these tests behaved similarly, which leads to the conclusion PH2 Fresh – incl. gravity test results are most likely anomalous.

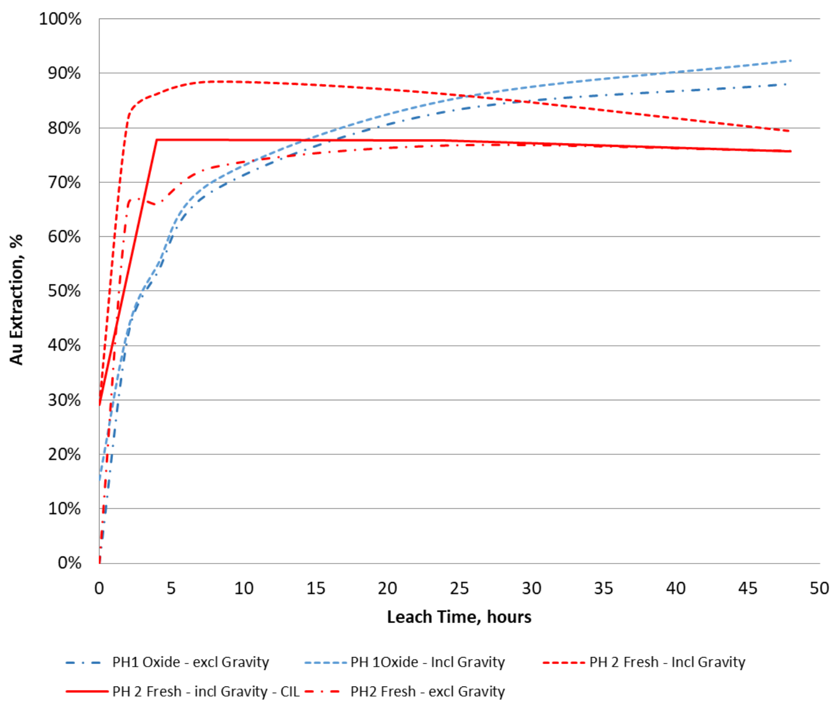



**Figure 5-1 PH 1 and 2 Leach Curve Comparison**

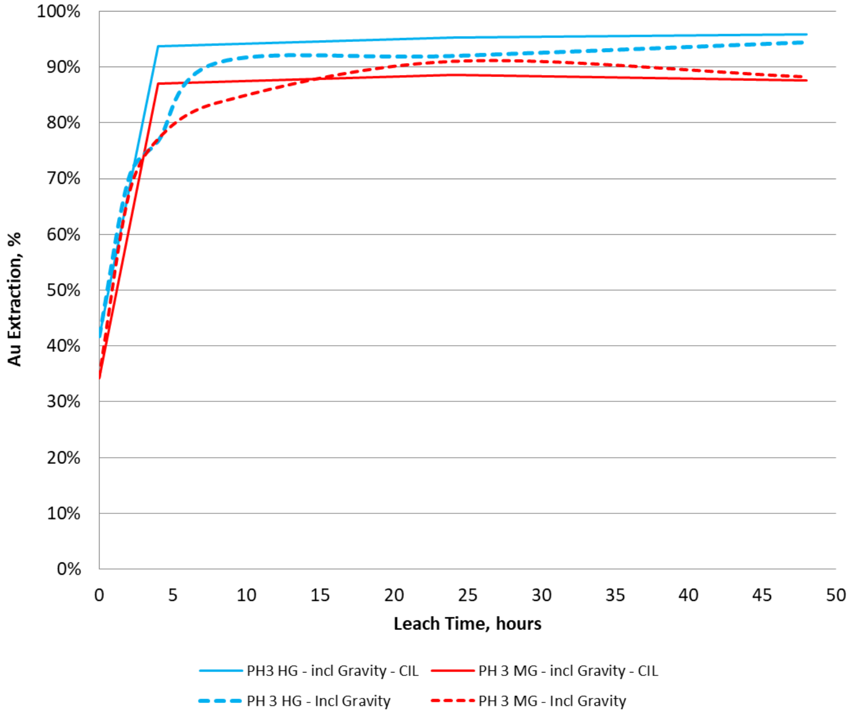



**Figure 5-2 PH 3 Leach Curve Comparison**

### 5.4 Summary Comparison

In order to compare the leach results for each sample campaign, all the leach results are summarised in Table 5-7. The individual tests are identified whether it was direct cyanidation (DCN), carbon in leach (CIL) and whether gravity was removed or not.

**Table 5-7 Leach Results Comparison – All Sample**

| Comp ID | DCN / CIL | Au Head Grade (g/t) | | Au Extraction (%) | | | | Au Tail Grade (g/t) | Reagents (kg/t) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Assay | Calc. | Gravity | 8-hr | 24-hr | 48-hr | | NaCN | Lime |
| PH 1 Oxide | DCN | 2.102 / 2.293 | 1.987 | - | 89.7 | 91.8 | 92.6 | 0.149 | 0.11 | 1.2 |
| PH 1 Oxide | DCN | 2.102 / 2.293 | 1.957 | 15.3 | 70.3 | 84.9 | **92.3** | **0.151** | 0.22 | 1.14 |
| PH 2 Fresh | DCN | 1.502 / 1.444 | 1.463 | - | 72.8 | 76.7 | 75.7 | 0.382 | 0.13 | 1.03 |
| PH 2 Fresh | DCN | 1.502 / 1.444 | 1.526 | 30.2 | 88.5* | 86.2* | **79.4*** | **0.314*** | 0.10 | 1.75 |
| PH 2 Fresh | CIL | 1.502 / 1.444 | | 30.2 | 77.5 | 77.7 | 75.7 | 0.438 | | |
| PH 3 HG | DCN | 7.98 / 7.74 # | 7.322 | 41.7 | 90.8 | 92.0 | **94.5** | **0.436** | 0.30 | 0.42 |
| PH 3 HG | CIL | 7.98 / 7.74 # | | 41.7 | 93.6 | 95.3 | 95.8 | 0.331 | | |
| PH 3 MG | DCN | 3.71 / 3.76 # | 3.740 | 34.3 | 83.6 | 91.0 | **88.2** | **0.439** | 0.27 | 1.64 |
| PH 3 MG | CIL | 3.71 / 3.76 # | | 34.3 | 87.0 | 88.6 | 87.7 | 0.461 | | |

**NOTE** *** : Leach result inconsistent with the rest of the testwork**
**# : Screen Fire Assay**

Excluding the questionable PH2 test which indicated preg-robbing and the PH3 HG CIL, all other Fresh ore tests returned leach residues in the 0.38-0.46 g/t range.

This suggests that the recovery improvement may be predominately related to the increased grade and that the refractory component in the ore may be more of a constant in the 0.3 to 0.45 g/t range. This would suggest the that the ore may contain a refractory component, as opposed to being a predominately refractory ore.

## 6.0 DIAGNOSTIC LEACH TESTS

Diagnostic leach tests can be very useful to qualitatively assess how gold occurs within the ore and the extent to which it may be refractory. These generally involve the sequential leaching of gold with progressively more aggressive reagents, producing a qualitative assessment of the gold deportment within the sample. The following description was adapted from*: "SRK News Issue #53, Metallurgy & Mineral Processing" by Eric J Olin.*

A typical 5-Stage diagnostic leach procedure includes:

**Stage 1**: *Gravity concentration to remove the gravity recoverable gold from the sample, followed by cyanidation of the tailing to determine the cyanide leachable gold. Typically, a sample is ground and then subjected to gravity concentration with a centrifugal gravity concentrator, followed by Intensive Cyanidation. The concentrate is fire assayed for gold. The gravity tailing is subjected to cyanidation and the residue is assayed for gold. Gold recovered during Stage 1 is not considered refractory. A portion of the cyanidation leach residue is advanced to Stage 2.*

**Stage 2***: Leach residue is reacted with hydrochloric acid to dissolve labile sulphide minerals such as pyrrhotite and liberate any gold that may be associated with them. The residue is then subjected to cyanidation and a sample of the residue is assayed for gold. A portion of the leach residue is advanced to Stage 3.*

**Stage 3***: Leach residue from Stage 2 is reacted in a nitric acid leach to dissolve more resistant sulphide minerals such as reactive pyrite and arsenopyrite, and liberate any gold that might be locked in these minerals. The residue is then subjected to cyanidation and a sample of the residue is assayed for gold.*

**Stage 4***: Leach residue is reacted in an Aqua Regia leach to dissolve any remaining sulphides and acid soluble minerals not dissolved by hydrochloric or nitric acid. Aqua regia ("regal water" or "royal water") is a mixture of nitric acid and hydrochloric acid, optimally in a molar ratio of 1:3, so named by alchemists because it can dissolve the noble metals gold and platinum.*

**Stage 5***: The residue is assayed for gold. Any gold remaining is assumed to be locked in silicates.*

**Table 6-1 Diagnostic Leach Results**

| Stage : Diagnostic Sequence | Description | Ph 1 Oxide | | PH 2 Fresh | | PH 3 HG | | PH 3 MG | |
|---|---|---|---|---|---|---|---|---|---|
| | | (g/t) Recovered | Distribution (%) | (g/t) Recovered | Distribution (%) | (g/t) Recovered | Distribution (%) | (g/t) Recovered | Distribution (%) |
| Combined Mercury Amalgamation / Intensive Cyanidation<br>and Cyanidation | Gravity-Recoverable Gold Content Determination<br>Cyanide-Soluble Gold Content Determination | 1.399 | 95.0 | 1.105 | 74.9 | 7.524 | 95.73 | 3.288 | 88.06 |
| HCl Digest / Cyanidation | Carbonates & Reactive Sulphides Gold Content Determination | 0.036 | 2.4 | 0.054 | 3.7 | 0.098 | 1.24 | 0.057 | 1.52 |
| $HNO_3$ Digestion / Cyanidation | **Arsenical Minerals** & **Reactive Pyrite** Gold Content Determination | 0.018 | 1.2 | 0.263 | **17.9** | 0.194 | 2.47 | 0.354 | **9.48** |
| Aqua Regia Digestion | Remaining Sulphides & Acid-Soluble Mineral Gold Content Determination | 0.008 | 0.6 | 0.042 | 2.9 | 0.042 | 0.54 | 0.035 | 0.93 |
| Total Fire Assay Smelt | Silicate (Gangue) Encapsulated Gold Content Determination | 0.012 | 0.8 | 0.009 | 0.6 | 0.002 | 0.02 | 0.001 | 0.01 |
| **Total Calculated Gold Content:** | | **1.473** | **100** | **1.473** | **100** | **7.860** | **100** | **3.735** | **100** |

## 7.0 FUTURE METALLURGICAL TESTWORK

Follow up work will be required to better define the ore, Fresh ore and PH2 Fresh ore in particular. The scouting program should investigate possible solutions to reduce residue grades.

It is recommended to collect samples from diamond drill holes that represent the proposed mining and mill feed inventory. This should be combined into a master composite for testwork to understand recoveries and to identify a potential flowsheet. Given the different weathering states and mineralisation, this may need to be split into different samples, oxide, fresh and deep fresh master composites. In compositing these samples the reconstituted grade should be targeted at close to the expected average mine grades.

The following loosely outlines the recommended metallurgical test work Scope of Work. The fluid nature of scouting testwork often results in the outcome of one test no longer requires another test, or it could also require additional tests to be considered.

Typically, around 120 – 150kg will be required:

- Send core to the laboratory in individual core sections. Determine whether core must be cut for downhole assays that can be used for Resource QA/QC purposes. Typically, it is advantageous that ¼ core is assayed so that grade profile per interval is understood to aid in producing the composite samples.
- Comminution samples to be removed
  - SMC, BWi and Ai comminution testwork to be conducted
- Crush and composite a metallurgical sample targeting the average resource gold and sulphur grade
- Comprehensive elemental head assay (Au, As, $C_{tot}$, $C_{org}$, Hg, Sb Te, $S_{tot}$, $S^{2-}$ & full ICP)
- Do a standard 5-stage diagnostic leach to determine gold association
- Do standard bottle roll cyanidation tests at two grind sizes (75 and 125µm) to establish a baseline for Au extraction. Tests to include gravity gold with amalgamation, with amalgamation tails returned to the gravity tail prior to leaching
- Do scouting flotation tests to screen a few common reagents at the two grind sizes
- Select the best grind and reagent suite and then undertake bulk flotation to produce concentrate for further testwork.
- Do mineralogy on both the concentrate (QEMSCAN + gold search) and tail (XRD) sample The flotation concentrate and combined rougher tail fraction should be submitted for quantitative mineralogical analysis by QEMSCAN (quantitative evaluation of minerals by scanning electron microscopy) and XRD (X-ray diffraction for mineral speciation only), mainly focusing on the mode of occurrence of gold minerals and sulphides. Submicron gold grains and solid solution gold in pyrite and arsenopyrite should be investigated by LA-ICP-MS.
- Comprehensive head assay on flotation concentrate and tail
- UFG testwork on flotation concentrate to – 10 -15 micron

- Standard bottle roll test on each UFG sample as well as flotation tail
- 2 stage roast and POX / roast / Biox / Albion amenability testwork (To determine oxidation potential)

Note that the full scouting program may not be required if good results are achieved on the early tests. As such the program should be undertaken sequentially with interim analysis if cost is more important than schedule.

## 8.0 DISCLAIMER

The material and advice produced by OMC as contained in this report is based on the data generated by the testwork performed and OMC takes no responsibility and accepts no liability for the use of or reliance upon any such material or advice by any third party. Should a third party suffer any loss or damage as a result of using or relying upon such material or advice, OMC shall in no way be liable to the client or the third party.

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*Prepared by ORWAY MINERAL CONSULTANTS (WA) PTY LTD:*

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*Countersigned by:*

Brian Putland

*Principal Metallurgist*