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Xtract Resources plc
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Xtract Resources Plc
("Xtract" or the "Company")

Bushranger Pit Optimisation & Financial Study

The Board of Xtract Resources Plc ("Xtract" or the "Company") is pleased to announce the successful completion of an updated Pit Optimisation & Financial Modelling Study ("Bushranger Study") to examine the economics of open pit extraction of the copper-gold Mineral Resources currently defined on the Bushranger Porphyry Copper-Gold Project ("Project") in central New South Wales, Australia.

Highlights

· Xtract engaged independent consultants, Optimal Mining Solutions (Pty) Ltd of Australia ("Optimal Mining"), to investigate the economics of a 5Mtpa, 20Mtpa or 25Mtpa open pit mining operation, focussed on the extraction of shallow higher-grade mineralisation from the Bushranger Project.

· The Racecourse Prospect Mineral Resource is 512Mt @ 0.22% CuEq*, at a cut-off of 0.1% CuEq, containing 1.1Mt of copper equivalent metal and classified as Inferred and Indicated in accordance with JORC (2012) (see RNS 23 November 2022).

· The current Racecourse Prospect Mineral Resource has the potential to be economically mined at mining rates of 20Mpta, or greater, and at copper prices of US$10,000/t and above.

· The Bushranger Study concluded that the highest post tax NPV8 of AU$363m (NPV10 - AU$265m) processes ore above 0.10% CuEq at 20mtpa with a sale price of US$11,000/t.

· The Bushranger Study recognised that optimisation of the processing plant capacity, capital costs, operating costs and metallurgical recoveries could greatly improve the economic outcomes of mining the Racecourse deposit. Addition of an ore sorter does not add value at this stage.

· The Company is focusing efforts on further improvements in metallurgical recovery and potential associated cost benefits linked to capital and operating costs.

· The Bushranger Study concluded that due to the large size and relatively low grade of the Racecourse deposit, conditions are expected to be excellent for efficient and productive mining. The current Ascot Mineral Resource is not of sufficient size, or close enough to surface, to warrant mining.

· The Company believes that the discovery of the Ascot prospect porphyry copper deposit (see RNS 9 December 2021) confirms that the Bushranger Project hosts multiple copper-gold porphyry systems and further new discoveries could significantly enhance the economics of the overall Bushranger Project.

*CuEq % = (Cu%) + (Au g/t * 0.6577)% + (Ag g/t * 0.008769) %

Cu Price = US$8800/t, Au Price = US$1800/oz, Ag Price = US$24/oz

Colin Bird, Executive Chairman said: "The final results from the Bushranger Study show that the currently defined Mineral Resources on the Bushranger Project have the potential to be the basis of a large scale, economic mining operation, producing significant free cash flows. The outcomes generated from the mining study are a solid start to understanding the economics of mining the Project's mineral resources

and show there is considerable upside possible through optimisation of plant capacity, capital costs, operating costs and metallurgical recoveries, along with potential incorporation of alternative ore pre-concentration methods. More work is warranted in all these areas but particularly metallurgical studies where improved recoveries could have a knock-on effect on both capital and operating cost. Larger deposits require significantly more capital expenditure and as such warrant considerable study and due diligence at an early stage of project development when optimisation can radically change a Project's fortunes. We are at this stage and with this in mind, the Company will continue with its studies working towards the ultimate mine and operating plan that provides the best scenario for development of the Bushranger resource."

Final Results from Bushranger Study

Following definition of the updated Mineral Resource for the Racecourse Prospect and definition of the maiden Mineral Resource for the Ascot Prospect, Xtract contracted Optimal Mining to complete the Bushranger Study. The Bushranger Study was aimed at examining the economics of 5Mtpa (the high-grade option), 20Mtpa or 25Mtpa open pit mining operation.

Where appropriate, input from other independent consultants was utilised, including Measured Resources (mineral resource estimate), Lycopodium (mineral processing experts) and TOMRA (ore sorting technology). The Bushranger Study was commissioned to assess the open pit potential based on the currently defined Inferred and Indicated Resources. The objective of the Bushranger Study was to assess the potential of the deposit to be initially developed as an open cut mine and to identity material variables which could affect the overall economics of a mining operation at Bushranger. The Bushranger Study included inferred and indicated Mineral Resources some of which are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorised as mineral reserves. The Bushranger Study was based on technical and economic assessments that are insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Bushranger Study will be realised.

The economic limits of the deposit were initially calculated as part of a pit optimisation assessment using Deswik's pseudoflow module. The economic limits of the deposit were calculated applying all foreseeable operating costs and revenues, with capital costs not included. The pit optimisation assessment was undertaken utilising the following assumptions:

- Capital Cost Estimate - AU$713M (10Mtpa), AU$1,159M (20Mtpa)
- Annual Feed Rate (ROM t) - 5Mpta, 20Mtpa and 25Mtpa
- Concentrate Output Cu Grade - 25%
- Copper Metal Recovery - 88%
- Gold Metal Recovery - 82.3%
- Silver Metal Recovery - 75%
- Overall Pit Wall Angle - 460
- Block Model Regularisation - 10m x 10m x 10m Cells
- Ore Dilution Grade Cu - 0%
- Ore Dilution Grade Au - 0 g/t

- Ore Dilution Grade Ag - 0 g/t
- Cut off Grades - 0.10% CuEq*, 0.15% CuEq
- Copper Sales Price - US$8,000/t, $9,000/t, $10,000/t, $11,000/t
- Gold Sales Price - US$1,900/oz
- Silver Sales Price - US$22/oz
- Exchange Rate AUD - US$0.70
- Treatment Cost - US$85/conc t
- Refining Charge Cu - US$/0.085/lb payable copper
- Refining Charge Au - US$/5.00/oz payable gold
- Refining Charge Ag - US$/0.50/oz payable silver
- Mining Cost - AU$1.70/t (20Mtpa), AU$1.67/t (25Mtpa)
- Depth Penalty for Ore - AU$0.0016/t per vertical metre
- Depth Penalty for Waste - AU$0.0023/t per vertical metre
- Environmental Costs - AU$0.052/t (20Mtpa), AU$0.051/t (25Mtpa)
- Royalty (% of ex-mine value) - 4.0%
- Processing Cost - AU$11.63/t milled (20Mtpa), AU$8.41 (20Mpta - low-cost option), AU$10.64/t milled (25Mpta)
- G& A Costs - AU$1.50/t milled (20Mtpa), AU$1.35/t milled (25Mpta)
- Freight - AU$127.30/concentrate t
- Copper Payable % - 95%
- Gold Payable % - between 90% and 98%, with average of ~93% realised
- Silver Payable % - 90%

Using the four different scenarios for the copper price (US$8,000/t, $9,000/t, $10,000/t, $11,000/t), the two different copper cut-off grades (0.10% CuEq and 0.15% CuEq) and the two scenarios for the mining rate (20Mtpa and 25Mtpa), a total of 16 cases were assessed in the pit optimisation assessment for the Racecourse and Ascot Mineral Resources. A separate ore extraction case was considering for reducing the processing cost from AU$11.63/t milled to AU$8.41/t milled. Therefore, in total 17 ore extraction cases were assessed in the pit optimisation assessment and the physical outcomes are given in Table 1.

Case 12, of 25Mtpa mining rate, $11k/t copper sale price and 0.10% CuEq cut-off grade, provides the highest cashflow of ~AU$1.9b. However, as shown by case 17, which is the same as case 12 but with the lower operating costs of AU$8.41/t milled, improvements to the operating costs can significantly impact the economic outcomes, with case 17 generating an additional AU$425M in free cash flow.

The physical outcomes as set out in the link below show that the current Ascot Mineral Resource only generated small quantities, <5Mt of ore, and consequently, is too small to warrant development in its current form:

Table 1 - Bushranger Project Open Pit Mining Analysis - Ore Extraction Cases

http://www.rns-pdf.londonstockexchange.com/rns/5059S_1-2023-11-6.pdf

Due to the grade of the copper-gold mineralisation at the Racecourse deposit, processing costs are nearly 50% of the total operating costs. Pre-concentration of ore has the potential to lower operating costs due to reducing processing mass and accordingly, Xtract had completed tests using the TOMRA ore sorting system as announced on 20 July 2023.

The results from TOMRA tests were inconsistent and following further assessment of the TOMRA results, Optimal Mining have determined that using TOMRA only improves the margin of ore blocks with extremely low copper grades (<0.1%). Accordingly, the conclusion from this assessment is that due to the low potential for providing economic benefits, a sorter for ore pre-concentration was not included in the final financial modelling.

In the next stage of the Bushranger Study, the economic limits of selected pit optimisation assessment scenarios were further developed by Optimal Mining into detailed practical open pit shells with accompanying large out-of-pit dump designs. The practical pit shell designs contained batters and berms and haulage ramps to the process plant and overburden dumps. The pit shells were divided into mining benches, strips and blocks and interrogated by the geological model to provide the quantities and qualities for the seven selected mining scenario schedules.

A detailed dig and dump schedule, including haulage modelling, was completed for all seven detailed cases with the results imported into a financial model for economic assessment.

The seven detailed cases which were fully designed, scheduled and haulage modelled are as follows:

- Option 1 - 5mtpa @ $8k/t copper with 0.25% CuEq cut-off grade
- Option 2 - 20mtpa @ $8k/t copper with 0.15% CuEq cut-off grade
- Option 3 - 20mtpa @ $9k/t copper with 0.15% CuEq cut-off grade
- Option 4 - 20mtpa @ $10k/t copper with 0.10% CuEeq cut-off grade
- Option 5 - 20mtpa @ $11k/t copper with 0.10% CuEq cut-off grade
- Option 6 - same as Option 5 with lower processing cost (case 17)
- Option 7 - same as Option 5 with 5mtpa production rate

Details of the ore extraction cases are set out Table 2 in the link below and summarised as follows:

Item UnitsOption 1Option 2Option 3Option 4Option 5Option 6Option 7

QuantitiesUnit	Total	Total	Total	Total	Total	Total	Total
EBITDA	AU$ '000	$301,075	$832,934	$1,156,980	$1,546,265	$2,090,895	$2,109,517	$1,730,271
Free cash flow	AU$ '000	$185,526	$1,288,250	$1,341,073	$1,541,532	$1,825,980	$1,830,203	$1,549,151
NPV8	AU$ '000	$547,800	-$74,120	-$19,431	$185,950	$362,842	$296,797	-$95,473
Breakeven Copper Price	US$/t	$11,973	$8,313	$9,085	$9,349	$9,900	$10,170	$11,570
NPV10	AU$ '000	$569,354	-$153,145	-$99,466	$104,862	$264,610	$193,973	-$197,086

Table 2 - Bushranger Project Open Pit Mining Analysis - Detailed Schedule Scenarios

http://www.rns-pdf.londonstockexchange.com/rns/5059S_2-2023-11-6.pdf

The following equipment assumptions were applied in the seven detailed schedule scenarios:

1. The following dig units were used in the schedules:

· PC4000 - 1,300 bcm/hr on waste and ore

· PC7000 - 2,000 bcm/hr on ore and 2,100 bcm/hr on waste

· PC8000 - 2,200 bcm/hr on waste and ore

2. All dig units operate for up to 6,000 hours per annum.

3. The following trucks were used in the schedules:

· Komatsu 830E - 83 bcm (220t) capacity, loaded by PC4000's and PC7000's.

· Komatsu 930E - 109 bcm (290t) capacity, loaded by PC8000's.

4. Stockpiling will be pivotal to achieving the required annual ore tonnes.

5. 4 ore stockpiles have been created adjacent to the mill - high grade (>0.25%), medium grade (0.20%-0.25%), low grade (0.15%-0.20%), very low grade (<0.15%)

6. Stockpile loaders rehandle from the ore stockpiles to the crusher in grade priority.

7. Drill and blast is not scheduled but is not expected to be a constraint.

The following mining assumptions were applied in the seven detailed schedule scenarios:

1. Several dependencies were established to ensure the logical sequence of the dig and dump faces, including:

· The entire bench above, in the same phase, must be completed before starting the next bench.

· Blocks must be dug in the correct sequence away from the ramp mouth.

2. Annual ore tonnes are constrained to 5mt, 20mt 25mt, however monthly ore tonnes are slightly higher so any shortfalls can be picked up later in the year.

3. In general, the waste dump logic is as follows:

· Small pit shells (options 1 to 5) only dump to the western dumps.

· The large 20mtpa pit shell (option 6) dumps to the western and eastern dumps.

4. All options dump in the area adjacent to the processing plant first.

5. Ex-pit high grade and medium grade ore is dumped directly to the ROM stockpile if capacity exists, otherwise dumped to ore stockpiles. Low grade ore is always dumped to stockpiles.

Other key mining operation assumptions used in developing the financial models for the seven detailed schedule options were as follows:

1. Vegetation Clearing $5,000/ha

2. Topsoil Removal $6.00/bcm

3. Diesel $1.00/litre (includes fuel rebate)

4. Bulk Explosives $1,375/explosive tonne

5. Explosive Ancillaries $300/explosive tonne

6. Multi-skilled Operator $186,000/year

7. Skilled Operator $138,000/year

8. Mechanical Maintainer $192,000/year

9. Electrical Maintainer $204,000/year

10. All labour rates are fully costed including wages, superannuation, bonuses, on-costs, etc.

11. A labour factor of 1.2 (for coverage, training, leave, etc.) was applied

12. Each employee works 1,500 hours annually

Conclusions of Bushranger Study

The key conclusions from the Bushranger Study of the Racecourse and Ascot Mineral Resources on the Bushranger Copper-Gold Porphyry Project are as follows:

1. The Racecourse deposit contains significant low-grade tonnes of copper, gold and silver which may be economically recoverable at copper sale prices above US$10,000/t.

2. An annual production rate of 20mtpa is required to generate a positive post tax NPV8.

3. The highest post tax NPV8 of AU$363m (NPV10 - AU$265m) (Detailed schedule option 5) processes ore above 0.10% CuEq at 20mtpa with a sale price of US$11,000/t.

4. The highest post tax NPV8 option provides a return on investment of 7.1% with a payback period of 6 years.

5. Due to its large size and grade, conditions are expected to be excellent for the efficient and productive mining of the deposit.

6. The economic recovery of all metals (copper, gold, silver) from low grade ores (<0.2% Cu) is pivotal for the economic viability of the project.

7. Optimisation of the processing plant capacity, capital cost, metallurgical recoveries and operating cost has the potential to greatly improve the economic viability of the project and further work is warranted in all of these areas.

8. A higher grade, lower volume, 5mpta mining practical mining option does not appear to be economic.

9. Addition of an ore sorter does not add value at this stage.

10. The current Ascot Mineral Resource is not of sufficient size, or close enough to the surface, to warrant mining.

The Company believes that additional tonnes of shallow higher-grade copper-gold mineralisation has the potential to significantly positively impact the economics of the overall Bushranger Copper-Gold Porphyry Project and porphyry targets remain untested in close proximity to the Racecourse Mineral Resource.

Further information is available from the Company's website which details the company's project portfolio as well as a copy of this announcement: www.xtractresources.com

The information contained within this announcement is deemed by the Company to constitute inside information as stipulated under the Market Abuse Regulations (EU) No. 596/2014 as it forms part of UK Domestic Law by virtue of the European Union (Withdrawal) Act 2018 ("UK MAR").

The person who arranged for the release of this announcement on behalf of the Company was Colin Bird, Executive Chairman and Director.

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Qualified Person

Information in this announcement relating to the exploration works has been reviewed by Edward (Ed) Slowey, BSc, PGeo, a consultant to Xtract. Mr Slowey is a graduate geologist with more than 40 years' relevant experience in mineral exploration and mining, a founder member of the Institute of Geologists of Ireland and is a Qualified Person under the AIM rules. Mr Slowey has reviewed and approved the geological content of this announcement.

Qualified Person

In accordance with AIM Note for Mining and Oil & Gas Companies, June 2009 ("Guidance Note"), Colin Bird, CC.ENG, FIMMM, South African and UK Certified Mine Manager and Director of Xtract Resources plc, with more than 40 years' experience mainly in hard rock mining, is the qualified person as defined in the Guidance Note of the London Stock Exchange, who has reviewed the technical information contained in this press release.

Optimal Mining Solutions (Pty) Ltd of Australia

Optimal Mining Solutions (Pty) Ltd of Australia has reviewed the information in this announcement which has been derived from the Pit Optimisation & Financial Modelling Study and has confirmed that the information so presented is balanced and complete and not inconsistent with the Pit Optimisation & Financial Modelling Study.

Mineral Reserves and Resources

The Company estimates and discloses mineral reserves and resources using the definitions adopted by JORC. Further details are available at www.jorc.org. See the "Glossary of Geological and Mining Terms" for complete definitions of mineral reserves and mineral resources.

About Mineral Resources

Mineral resources are not mineral reserves and do not have demonstrated economic viability but do have reasonable prospect for economic extraction. They fall into three categories: measured, indicated, and inferred. The reported mineral resources are stated inclusive of mineral reserves. Measured and indicated mineral resources are sufficiently well-defined to allow geological and grade continuity to be reasonably assumed and permit the application of technical and economic parameters in assessing the economic viability of the mineral resource. Inferred mineral resources are estimated on limited information not sufficient to verify geological and grade continuity or to allow technical and economic parameters to be applied. Inferred mineral resources are too speculative geologically to have economic considerations applied to them. There is no certainty that mineral resources of any category will be upgraded to mineral reserves.

Important Information about Mineral Reserve and Resource Estimates

Whilst the Company takes all reasonable care in the preparation and verification of the mineral reserve and resource figures. the figures are estimates based in part on forward-looking information. Estimates are based on management's knowledge, mining experience, analysis of drilling results, the quality of available

data and management's best judgment. They are, however, imprecise by nature, may change over time, and include many variables and assumptions including geological interpretation, commodity prices and currency exchange rates, recovery rates, and operating and capital costs. There is no assurance that the indicated levels of metal will be produced, and the Company may have to re-estimate the mineral reserves based on actual production experience. Changes in the metal price, production costs or recovery rates could make it unprofitable to operate or develop a particular deposit for a period of time.

Forward Looking Statements

Certain statements in this announcement, are, or may be deemed to be, forward looking statements. Forward looking statements are identified by their use of terms and phrases such as ''believe'', ''could'', "should" ''envisage'', ''estimate'', ''intend'', ''may'', ''plan'', ''will'' or the negative of those, variations or comparable expressions, including references to assumptions. These forward-looking statements are not based on historical facts but rather on the Directors' current expectations and assumptions regarding the Company's future growth, results of operations, performance, future capital and other expenditures (including the amount, nature and sources of funding thereof), competitive advantages, business prospects and opportunities. Such forward looking statements reflect the Directors' current beliefs and assumptions and are based on information currently available to the Directors. A number of factors could cause actual results to differ materially from the results discussed in the forward-looking statements including risks associated with vulnerability to general economic and business conditions, competition, environmental and other regulatory changes, actions by governmental authorities, the availability of capital markets, reliance on key personnel, uninsured and underinsured losses and other factors, many of which are beyond the control of the Company. Although any forward-looking statements contained in this announcement are based upon what the Directors believe to be reasonable assumptions, the Company cannot assure investors that actual results will be consistent with such forward looking statements.

TECHNICAL GLOSSARY

The following is a summary of technical terms:

"Ag"	Silver
"Au"	Gold
"Cu"	Copper
"CuEq"	Copper equivalent grade, calculated using assumed metal prices for copper, gold and other metals
"Indicated Mineral Resource"	That part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered. (JORC 2012)
"Inferred Mineral Resource"	That part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. (JORC 2012)

"mineralisation"	Process of formation and concentration of elements and their chemical compounds within a mass or body of rock
"NPV"	Post-tax net present value
"porphyry"	A deposit of disseminated copper minerals in or around a large body of intrusive rock
"Pseudoflow"	The Pseudoflow algorithm is used to outline the ultimate pit limit by finding the maximum net value of the blocks extracted.
"Mtpa"	Million tonnes per annum

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