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MEDCALF PROJECT
PILOT SCALE TESTWORK CONFIRMS HIGH CONCENTRATE QUALITY AND RECOVERY

- **Rigorous pilot scale testwork has validated the developed process flowsheet.**
- **Outstanding results confirm the Project's consistent excellent concentrate qualities with high recovery.**
  - **Iron-vanadium (Fe-V) concentrate contains 61.1% TFe and 1.0%V_2O_5 with recovery of 73.1% Fe and 76.4% V_2O_5.**
  - **Titanium dioxide (TiO_2) concentrate contains 51.1% TiO_2 with recovery of 40.4% TiO_2.**
- **Both concentrate products are market in demand. Fe-V concentrate is suitable for blast furnace and vanadium can be recovered in steelmaking process. TiO2 concentrate is suitable for production of TiO2 pigment by sulphate process.**
- **Successful pilot testwork significantly reduces future risk, by ensuring the process will work as intended at full scale plant, increasing attractiveness to investors.**

Audalia Resources Limited (ASX: **ACP**) is pleased to announce that a pilot scale testwork programme of its 100% owned **Medcalf Vanadium-Titanium-Iron Project** in the Western Australia has been successfully completed by Guangzhou Research Institute of Non-ferrous Metals (GZRINM). The testwork results has validated and confirmed that the developed process flowsheet is capable of producing two market acceptable concentrate products and has delivered excellent results throughout the testwork operations.

GZRINM completed a bench scale metallurgical testwork programme in 2017 for the Medcalf Project (refer to ACP ASX announcement dated 26th October 2017), and developed a technically viable process flowsheet to process the Medcalf ore.

The pilot testwork programme undertaken increases the Company's capabilities in comprehensive recoveries of valuable metals from vanadium titano-magnetite (**VTM)** ore and builds confidence in delivering high metal recoveries when in production.

MEDCALF PROJECT

The Medcalf Project is a vanadium-titanium-iron project located some 470 kilometres south east of Perth near Lake Johnston, Western Australia. The Medcalf Project comprises three granted Exploration Licences E63/1133, E63/1134 and E63/1855 as well as Mining Lease M63/656 and Miscellaneous Licence L63/75. Together these licences cover a total area of 38 km^2.

The Medcalf Project lies in the southern end of the Archaean Lake Johnston greenstone belt. This greenstone belt is a narrow, north-northwest trending belt approximately 110 km in length. It is located near the south margin of the Yilgarn Craton, midway between the southern ends of the Norseman-Wiluna and the Forrestania-Southern Cross greenstone belts.

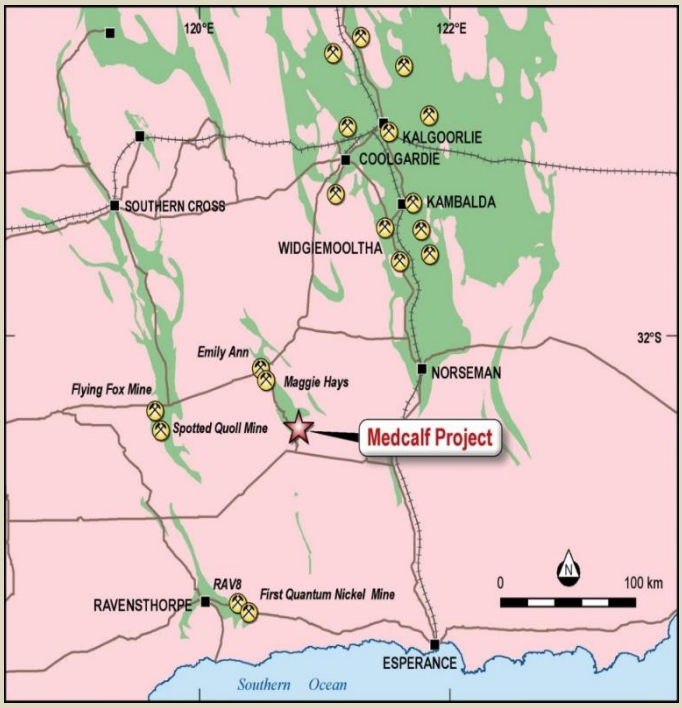

Figure 1: Medcalf Project - Location Map

Overview

The pilot scale testwork was performed at GZRINM piloting facility in Guangzhou, China. Approximately 5.5 tonnes of representative samples were processed in the pilot testwork to validate the optimum process parameters.

The developed process flowsheet consists of comminution circuit, beneficiation circuit, roasting circuit and product separation circuit. The process flowsheet is shown in Figure 2 below.

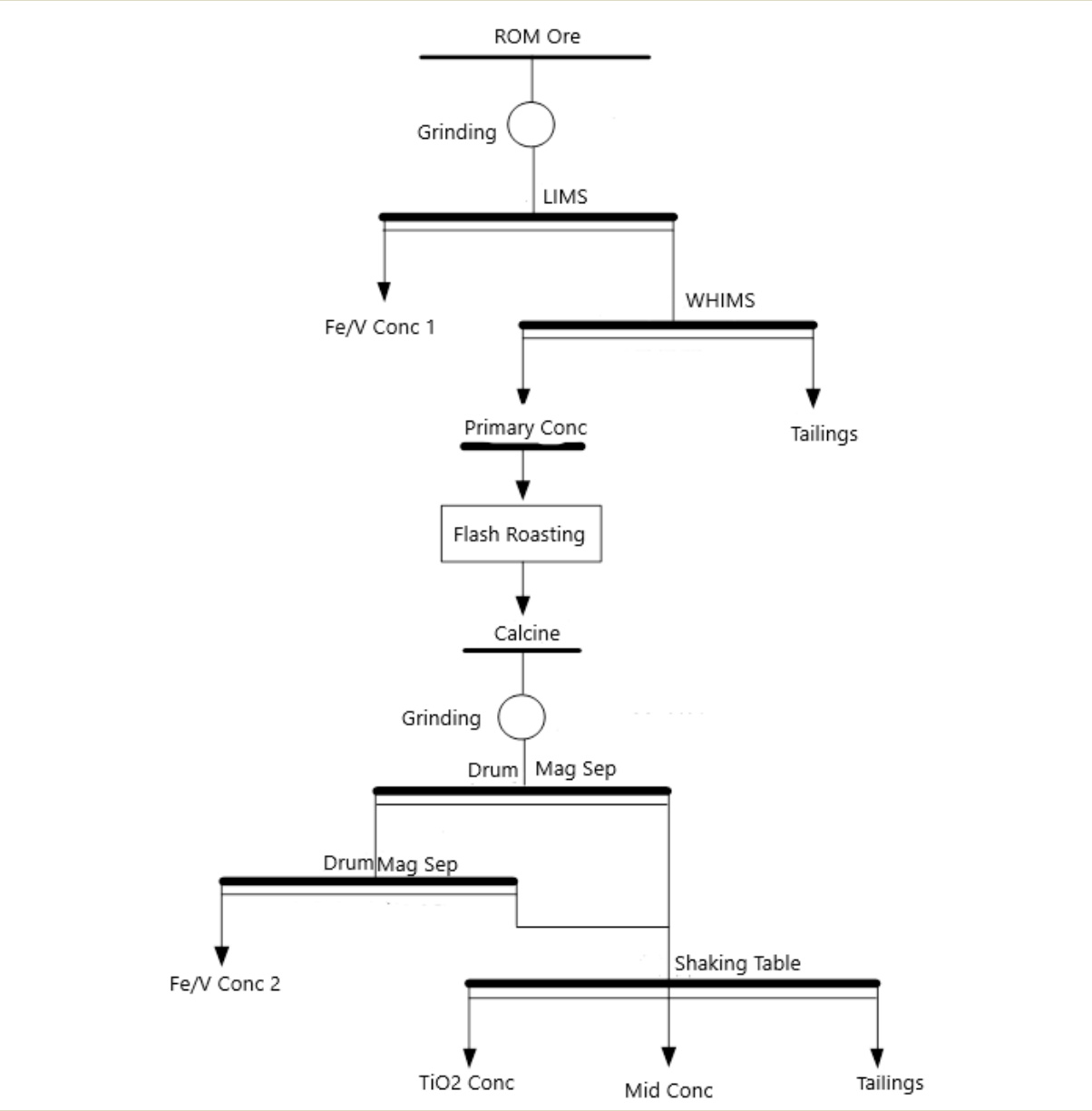

Figure 2: Medcalf Project overall process flowsheet

Process Flow Description

Composite ore is fed to a crushing and milling circuit which grinds material to the optimal size for magnetic separation. A low intensity magnetic separator (LIMS) then produces the first concentrate Fe-V concentrate 1, while the tails proceed to a wet high intensity magnetic separator (WHIMS). Primary concentrate produced by WHIMS is then fed to the flash roasting circuit under reductive environment. The calcine product discharged from the roasting furnace is ground to optimal size before fed to drum magnetic separator. The drum magnetic separator produces the second concentrate Fe-V concentrate 2, which is combined with Fe-V concentrate 1 to form the final Fe-V concentrate product. The tails produced from the drum magnetic separator is fed to the shaking table to produce the TiO2 concentrate. The mid concentrate and tailings generated by shaking table is combined WHIMS tailings, and disposed to a tailings storage facility (TSF).

One of the renovative technologies applied in the process is flash magnetising roasting. As indicated by the mineralogical analysis, the iron minerals contained in Medcalf ore are mainly hematite, limonite and siderite, which are all low magnetic iron minerals. The overall concentrate grade is difficult to improve no matter which separation process is applied, i.e. LIMS, WHIMS or flotation.

During the flash magnetising roasting process, weak magnetic iron minerals are converted to high magnetic Fe_3O_4, while the magnetism of gangue minerals is unchanged. Then the iron minerals can be easily separated from gangue minerals by magnetic separation. It is a breakthrough for the processing of refractory iron ore, such as hematite, limonite and siderite. The materials exhibit fluidised status inside the flash roasting system. The efficiency of heat transfer and mass transfer between materials is very high. Flash roasting is advantageous to conventional rotary kiln and shaft furnace in terms of roasting temperature, roasting time and calcine quality.

Pilot Testwork Results

Pilot scale testwork was carried out under continuous mode to validate the process flowsheet. The process parameters were examined and optimised during the testwork. The overall pilot testwork results are listed in Table 1.

Table 1: Pilot scale testwork overall results

Product	Mass (%)	Grade (%)			Recovery (%)		
		TFe	V_2O_5	TiO_2	TFe	V_2O_5	TiO_2
Fe-V Conc 1	7.47	60.63	1.12	9.37	10.34	11.86	5.20
Fe-V Conc 2	44.95	61.13	1.02	7.34	62.78	64.57	24.49
Fe-V Conc	**52.42**	**61.06**	**1.03**	**7.63**	**73.12**	**76.43**	**29.69**
TiO_2 Conc	**10.67**	**31.71**	**0.33**	**50.96**	**7.74**	**4.90**	**40.40**
Mid Conc	4.94	32.28	0.40	23.46	3.64	2.79	8.61
Shaking Table Tails	5.29	17.19	0.31	17.69	2.08	2.35	6.95
WHIMS Tails	26.68	22.01	0.36	7.24	13.42	13.53	14.35
ROM Ore	100.00	43.77	0.71	13.46	100.00	100.00	100.00

Note: Fe-V Conc = Fe-V Conc 1 + Fe-V Conc 2

The complete pilot testwork has produced:

1) Iron vanadium (Fe-V) concentrate containing 61.06% TFe and 1.03% V_2O_5, with recovery of 73.12% Fe and 76.43% V_2O_5; and
2) Titanium dioxide (TiO_2) concentrate containing 50.96% TiO_2 with recovery of 40.40% TiO_2.

The iron vanadium concentrates and titanium concentrate products have been undergone multi-element analysis subsequently. The iron vanadium concentrates contain TFe>60% with little impurities and meeting standards of blast furnace feedstock. Vanadium can be recovered during the steelmaking process. Titanium concentrate achieves industrial standards for titanium pigment production by sulphate process.

The developed process has been demonstrated simple and reliable by the pilot testwork. The pilot scale testwork is stable in operation, producing high quality concentrates with high recovery of vanadium, iron and titanium. The concentrate samples produced from the pilot testwork are available for potential offtake partners to test.

The process parameters examined in the pilot scale testwork will be used for the engineering design of the entire processing plant. This pilot scale testwork is considered a very important component of the Medcalf Project development by reducing the scalability risk of the process flowsheet, and will support ongoing discussions with potential offtake partners and financiers.

About GZRINM

The interim metallurgical testwork programme was carried out at the reputational Guangzhou Research Institute of Non-ferrous Metals (GZRINM) research facilities in Guangzhou, China. GZRINM is the largest scientific research organisation engaging in research and development of resource comprehensive utilisation and new materials in southern China. GZRINM have been working on many overseas mineral projects, including the Lynas Corp. Mt Weld Rare Earth project and the Syrah Resources Balama Graphite project.

END

Authorised by:

Brent Butler
CEO and Executive Director

28 September 2020

For more information please contact:

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Forward Looking Statements and Cautionary Statements

Some statements in this summary regarding estimates or future events are forward-looking statements. They include indications of and guidance on, future earnings, cash flow, costs and financial performance. Forward-looking statements include, but are not limited to, statements preceded by words such as "planned', "expected", "projected", "estimated", "may", "scheduled", "intends", "anticipates", "believes", "potential", "could", "nominal", "conceptual" and similar expressions. Forward-looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward-looking statements may be affected by a range of variables that could cause actual results to differ from estimated results, and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. These risks and uncertainties include but are not limited to liabilities inherent in mine development and production, geological, mining and processing technical problems, the inability to obtain mine licences, permits and other regulatory approvals required in connection with mining and processing operations, competition for among other things, capital, acquisitions of reserves, undeveloped lands and skilled personnel; incorrect assessments of the value of acquisitions, changes in commodity prices and exchange rates; currency and interest rate fluctuations; various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions; the demand for and availability of transportation services; the ability to secure adequate financing and management's ability to anticipate and manage the foregoing factors and risks. There can be no assurance that forward-looking statements will prove to be correct.

Statements regarding plans with respect to the Company's mineral properties may contain forward-looking statements. Statements in relation to future matters can only be made where the Company has a reasonable basis for making those statements.

Competent Person's Statement

The information in this report that relates to the Exploration Results is based on information compiled by Mr Brent Butler, who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Butler has 36 years' experience as a geologist and is CEO and Executive Director of Audalia. Mr Butler has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC Code). Mr Butler has provided his consent to the inclusion in the report of the matters based on his information in the form and context in which it appears.

JORC Code, 2012 Edition – Table 1 report

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.* • *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.*	• Audalia owns the Medcalf project 100% that comprises of M63/656, E63/1133, E63/1134 and E63/1855. All are in good standing. No security or legal issues have been noted. Rehabilitation work in progress. • No known impediments.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Over the past 40 years, the tenements have been explored for nickel (Ni), copper (Cu) titanium (Ti)/vanadium (V), platinum group metals (PGE) and gold (Au). The Companies are Unmin/Laporte (1972) for Ni & Cu. Amoco (1982) for V & Ti. Cyprus (1986) for PGM and (1989) for Au & PGM. Arimco (1991) for V & Ti and (1996 & 1997) for V, Ti, Au, PGM, Ni & Cu. Lionore (2005) for V, Ti, Au, PGM, Ni & Cu. Lionore (2006) for Ni Cu sulphides, PGE & Au. Norilsk (2010) for Ni sulphides.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Medcalf Project lies in the southern end of the Archaean Lake Johnston greenstone belt. This greenstone belt is a narrow, north-northwest trending belt approximately 110 km in length. It is located near the south margin of the Yilgarn Craton, midway between the southern ends of the Norseman-Wiluna and the Forrestania-Southern Cross greenstone belts. The area of interest is the Medcalf sill located in the hinge zone of a gently north-west plunging regional anticline and is emplaced within a predominately tholeiitic basalt sequence low in the greenstone succession. Rocks in this area belong to the almandine amphibolite facies of regional metamorphism. The primary vanadiferous titanomagnetite mineralisation occurs within the pyroxenite zone between the basal peridotite and upper gabbro zones of the sill. Extensive weathering over time has resulted in removal of much of the silica, calcium and magnesium resulting in residual concentration of iron, titanium and vanadium

Criteria	JORC Code explanation	Commentary
		oxides. It is this secondary enriched material which constitutes potential ore.

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:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
		• Refer to ASX announcement October 14th, 2016.

	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• No exclusion.
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.*	• Samples taken every metre no weighted average required. No cutting of high grades applied.
	• *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.*	• No procedure undertaken.
	• *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No metal equivalent used.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.*	• Mineralisation flat lying, all holes drilled vertical.
	• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	• Mineralisation is perpendicular to the drillhole.
	• *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').*	• Known as described above.
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.*	• Not discovery drilling. Drilling is for metallurgical purposes in known areas of mineralisation previously reported.

Criteria	JORC Code explanation	Commentary
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.*	• Comprehensive reporting of all drillhole data has been provided in ASX announcement October 14th, 2016.
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.*	**Metallurgy testwork completed:** 1. **Pilot Scale testwork summary** • *Ore (5.5t) is fed to a crushing and grinding circuit.* • *Low intensity magnetic separator (LIMS) produces the first concentrate of Fe-V concentrate 1.* • *The tails proceed to a wet high intensity magnetic separator (WHIMS).* • *Primary concentrate produced by WHIMS is then fed to the flash magnetising roasting circuit under reductive environment.* • *The calcine product discharged from the roasting furnace is ground to optimal size before fed to drum magnetic separator.* • *The drum magnetic separator produces the second concentrate Fe-V concentrate 2, which is combined with Fe-V concentrate 1 to form the final Fe-V concentrate product.* • *The tails produced from the drum magnetic separator is fed to the shaking table to produce the TiO2 concentrate.* • *The mid concentrate and tailings generated by shaking table is combined WHIMS tailings and disposed to a tailings storage facility (TSF).* • *Results obtained from this work are summarised below:*

Criteria	JORC Code explanation	Commentary

Product	Mass (%)	Grade (%)			Recovery (%)		
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ROM Ore	100.00	43.77	0.71	13.46	100.00	100.00	100.00

Note: Fe-V Conc = Fe-V Conc 1 + Fe-V Conc 2

Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• No further work planned. • N/A