Allup prepares for drilling at McLaren Mineral Sands Project, WA

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Summary

- IHC Mining Consultants (IHC) has commenced initial stages of McLaren Mineral Sands Pre-Feasibility Study (PFS) engineering design
- Initial design Scope based on 10Mtpa throughput to produce up to 400,000tpa ilmenite product
- Previous metallurgical test work completed by IHC Competent Persons in 2018 demonstrates good ilmenite recoveries from a conventional mineral sands flowsheet
- Allup plans to commence infill drilling program at McLaren in Q4, 2024
- Environmental Resources Management (ERM) appointed to plan infill drilling program and update Mineral Resource Estimate (MRE) once drilling results are received.
- PFS expected to be completed during Q2 2025

Allup Silica Limited (ASX: **APS**) ("Allup" or "**Company**") is pleased to provide an update on works to progress development of its 100%-owned McLaren Valuable Heavy Mineral Sands (VHMS) Project near Balledonia, WA.

Allup is able to leverage extensive previous work to accelerate completion of the PFS for the project which is being completed by IHC Mining Consultants (**IHC**) (see ASX Announcement dated 26 August 2024).

Allup is also preparing a drilling program for the project in Q4 CY24 to enable an update of the existing Mineral Resource Estimate (MRE) in early 2025, and to investigate potential to increase the known resource.

Previous IHC Metallurgical Testwork Results

In 2018, IHC completed a metallurgical testwork program on a representative sample derived from a 14-tonne bulk sample from the McLaren deposit. The sample assayed approximately 7.2% heavy mineral. Mineralogical analyses of the heavy mineral indicate it to contain 56.3% ilmenites and higher grade titanium minerals such as Leucoxene.

The IHC metallurgical test work program confirmed the material to be amenable to standard mineral sands processing methodologies, utilising typical mineral sands equipment.

Table 1: Results from IHC testwork completed in 2018

Process Stage	Recovery of Species (%)	
	TiO_2	ZrO_2
Feed preparation (assumed)	100	100
Wet Concentration Plant to HMC	93.8	91.3
Concentrate Upgrade Plant – Mags (Ilmenite Species)	74.3	9.62
Concentrate Upgrade Plant – Non-Magnetic	1.82	77.1

Ilmenite recovery from WCP feed into the CUP Magnetic stream was ~75% of ilmenite, Altered Ilmenite and HiTi minerals. Overall recovery of rutile/anatase from the WCP feed into the non-magnetic concentrate was ~57% Overall recovery of zircon from the WCP feed into the CUP non-magnetic concentrate was ~70%.

Slimes settling was achieved using addition of 3% gypsum, resulting in significant improvement in flocculant dosing rates, down to 150-200g/t.

The test work produced final products of:

- Ilmenite of a suitable grade to be classified as sulphate ilmenite
- Rutile of a typical quality with 95.7% TiO_2, 1.49% Fe_2O_3,
- Zircon of a typical standard zircon quality, noting levels of U + Th at 265ppm were considered very low.

Flowsheet Development

The IHC 2018 test work resulted in the development of a conceptual flowsheet using traditional mineral sands separation techniques. It consisted of three circuits, comprising:

- **Feed Preparation** - made up of hydrocyclones and a thickener used to settle and separate the slimes. The slimes fraction would be returned to the mining void along with the tails stream. The non-slimes portion would be fed to the WCP.
- **Wet Concentration Plant (WCP)** - made up of several spiral stages (gravity separation) – the WCP process produced a Heavy Mineral Concentrate (**HMC**) containing 89.1% heavy mineral, 25.9% TiO_2 and 0.37% ZrO_2.
- **Concentrate Upgrade Plant (CUP)** - screening to remove +425 µm material (determined by test work to be barren), then several stages, primarily of magnetic separation.

The HMC produced in the WCP was processed through the CUP to produce a magnetic concentrate suitable for an ilmenite process circuit and a non-magnetic concentrate containing 90-95% Heavy Mineral.

Scope of Pre-Feasibility Study (PFS)

Allup has appointed IHC to undertake the engineering for the PFS for the McLaren Project. Scope and requirements of the study are as follows:

- Mining rate of 10Mtpa utilising dry mining unit technology; a technique commonly used in the mineral sands industry to enable bulk mining by bulldozing the sand into a hopper, slurrying that sand, and then transferring the ore by pumping to the wet concentrator plant.
- Target a Resource of 200Mt in the JORC Indicated category
- Target a 20-year mine life at 10Mtpa with planned annual production up to 400,000tpa ilmenite product
- Preliminary mass balance
- Slimes management system
- Capital cost estimate for processing
- Operating strategy and costs for processing.

PFS is expected to be complete during Q2 2025.

Ilmenite Market

There has been a rising demand for titanium dioxide (TiO_2) and the global ilmenite market exceeded US$8.8 billion in revenue in 2023. The market is further estimated to register a CAGR of more than 8% to 2032,[1]. Titanium dioxide, also known as pigment, is widely used in paints, coatings, plastics, and paper because of its excellent bleaching and opacity properties. Increasingly innovation within the energy sector is increasing the use of TiO_2 in batteries and for hydrogen production.

Rapid growth of the construction and automotive sectors requires large quantities of paints and coatings for buildings and vehicles. The push towards urbanisation and industrialisation in emerging economies means the demand for ilmenite is growing.[1].

The closing price for ilmenite sand IP3 grade ex Moma (Mozambique), as at 31 March 2024, settled at $US300/MT[2].

This Announcement has been approved for release by the Board of Directors.

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[1] Global Market Insights website, www.gminsights.com/industry-analysis/ilmenite-market
[2] https://www.chemanalyst.com/Pricing-data/ilmenite-1582

Competent Person Statements

The information in this report that relates to Mineral Resources is based on, and fairly reflects, information compiled by Mr David Williams, a Competent Person, who is an employee of ERM and a Member of the Australian Institute of Geoscientists (RPGeo). Mr Williams has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr Williams consents to the disclosure of information in this announcement in the form and context in which it appears.

The information in this report that relates to Metallurgical results is based on, and fairly reflects, information compiled by Mr Mitch Ryan, a Competent Person, who is an employee of IHC Mining. Mr Ryan has sufficient experience relevant to the Metallurgical test work that was undertaken to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr Ryan consents to the disclosure of information in this announcement in the form and context in which it appears.

ABOUT ALLUP SILICA LIMITED

Allup Silica is an exploration company focused on the future development of our heavy mineral sands and silica sand tenements located in Western Australia. The Company's plan is to aggressively advance the McLaren Project towards development while continuing to progress our existing silica sand opportunities.