

ASX ANNOUNCEMENT

10 October 2024

SUVO TURNS NICKEL SLAG INTO HIGH STRENGTH, LOW CARBON CEMENT

HIGHLIGHTS

- Laboratory trials conducted in collaboration with Makassar State University (UNM), in Indonesia, have successfully produced a high strength, low carbon cement using a zero-carbon nickel slag.
- The three samples tested showed exceptional results, with the highest strength reaching 37.5 Megapascals (MPa) after only 7 days.
- The worldwide production of cement, the single largest industrial polluter, equates to ~4.0 billion tonnes and results in ~3.2 billion tonnes of CO₂ per year, representing ~8% of global greenhouse gas emissions and a significant market opportunity for Suvo.
- Nickel slag is the by-product generated from nickel production and is commonly stockpiled or otherwise committed to landfill. More importantly, nickel slag comes with a zero-carbon footprint.
- The nickel slag used in this test program was provided by PT Huadi Nickel-Alloy Indonesia (PT HNI), a nickel pig iron (NPI) operation located in South Sulawesi, Indonesia. PT HNI produces and stockpiles significant quantities of nickel slag as part of its operations.
- Suvo recently entered into a Co-operation Agreement with PT HNI for the purpose of the parties considering whether to enter into a potential commercial arrangement, including with respect to a partnership and or the ongoing offtake of the nickel slag from PT HNI (ASX Announcement 10 September 2024). These negotiations are on-going.
- Using standard apparatus, the testing of slump, initial and final setting time and dry shrinkage will be performed in the second laboratory trial by UNM.

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EXECUTIVE CHAIRMAN

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ASX: SUV

Suvo Strategic Minerals Limited (ASX: SUV) (“Suvo” or “the Company”) is pleased to provide results from its recently completed laboratory trials completed by Professor Subaer at Makassar State University (**UNM**), in Indonesia, targeting a reduction in the carbon footprint of cement production, the world’s single largest industrial emitter of greenhouse gas emissions.

The trials, using nickel slag, comprised of three samples which returned an average strength test of 29.9Megapascals (**MPa**) after only 7 days, with the highest strength reaching 37.5MPa.

Nickel slag, the by-product generated from nickel production, is commonly stockpiled or otherwise committed to landfill. More importantly, nickel slag as a by-product comes with a zero-carbon footprint as the carbon has been accounted for and attributed to the nickel producer.

The nickel slag used by UNM was provided by PT Huadi Nickel-Alloy Indonesia (**PT HNI**), a nickel pig iron (**NPI**) operation in Indonesia. PT HNI, being one of the Country’s largest nickel producers, stockpiles significant quantities of nickel slag as part of its operations.

In September 2024, Suvo entered into a Co-operation Agreement with PT HNI for the purpose of the parties considering whether to enter into a potential commercial arrangement, including with respect to a partnership and or the ongoing offtake of the nickel slag from PT HNI (ASX Announcement 10 September 2024). These test results are a positive step forward towards advancing negotiations with PT HNI and the commercialisation of a low-carbon cement by the Company.

UNM will now commence a second laboratory trial using standard apparatus, testing slump, initial and final setting time and dry shrinkage of the low carbon cement. The results of both trials will be provided to PT HNI.

Executive Chairman Aaron Banks commented:

“We are excited to have commenced this workstream in Indonesia testing the by-product of one of the Country’s largest miners, with our ultimate goal being to manufacture an environmentally friendly and low carbon alternative to Portland cement.

Achieving up to 37.5Mpa after only 7 days is an outstanding first round trial result for the Company and could provide an entry into a large industry.

If the cement industry were a country, it would only be behind China and the United States of America in CO₂ emissions. The world use of cement is equivalent to building New York City every 40 days.

The nickel slag used in this round of testing comes with a zero-carbon footprint and the opportunity to play a part in reducing emissions in the cement industry is analogous to the role of electric vehicles in replacing internal combustion engines in the global passenger car fleet.

We will now commence the next round of testing with UNM and will provide the results of both trials to PT Huadi which will allow us to advance negotiations with respect to a potential partnership and or the ongoing offtake of the nickel slag and commercialisation of a low carbon cement by the Company.”

Approved for release by the Board

–ENDS–

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Test Results after 7-days

Identifier	Height (mm)	Diameter (mm)	Cross Section (m ²)	Force (N)	Comp Strength (MPa)
OPG A	200	99.3	0.0077404	290	37.47
OPG B	200	99.9	0.0078343	227	28.98
OPG C	198	99.0	0.0076937	256	33.27

Company Profile

Suvo Strategic Minerals Limited is an Australian hydrous kaolin producer listed on the Australian Securities Exchange (ASX:SUV). Suvo is focused on expanding sales of hydrous kaolin produced at its 100% owned Pittong operation located 40km west of Ballarat in Victoria. Suvo is also progressing commercialisation of the 'Murdoch Technology', namely Intellectual Property for a geopolymer concrete batching plant a low carbon geopolymer concrete formulation known as 'Collicrete', which it licenses under a worldwide and exclusive Intellectual Property License Agreement.

Pittong Operations

The 100% owned Pittong Operations, located in Victoria 40km west of Ballarat, is the sole wet kaolin mine and processing plant in Australia and has been in operation since 1972. Pittong comprises the Pittong, Trawalla and Lal Lal deposits located on approved Mining Licences MIN5408, MIN5365 and MIN5409 respectively. The Pittong processing plant has a name-plate capacity of 60,000 tonnes per annum.

At Pittong mining contractors deliver crude kaolin ore to stockpiles from the two currently operating mines, Pittong and Lal Lal. The plant takes its feedstock from the ROM and it is processed into four separate product forms for end users. These product forms are 10% moisture lump, high solids slurry, 1% moisture powder and 1% moisture pulverised powder. The solids slurry is used in paper and board manufacturing. The other products are used in paper, coatings, paint and specialist industries including rubber and pharmaceutical applications.

Geopolymer Concrete IP and Commercialisation

Suvo licenses the 'Murdoch Technology' from Murdoch University under a worldwide and exclusive Intellectual Property License Agreement. The Murdoch Technology is namely Intellectual Property for a geopolymer concrete batching plant a low carbon geopolymer concrete formulation known as 'Collicrete'.

Geopolymer concrete is a low carbon concrete that is made by reacting aluminate and silicate bearing materials with a caustic activator, such as metakaolin, flyash, ground blast furnace slag and other waste derived materials. Geopolymer concrete is a suitable replacement for concrete made using the traditional binder known as Ordinary Portland Cement (OPC). The manufacture of OPC is a highly emitting process representing 8% of global CO₂ emissions which is equivalent to the entire global car fleet.

Utilising the licensed IP, in a laboratory setting, Suvo has successfully produced three new geopolymer concrete formulations using caustic activators, metakaolin and flyash. The laboratory trials ran tests comprising five samples in each test returning an average compressive strength of 27 megapascal (MPa) up to 52MPa. The trials indicated the geopolymer concrete formulations using metakaolin and flyash showed a potential greenhouse gas emission reduction of up to ~70% compared to concrete made using OPC.

Suvo has entered into a binding Joint Development Agreement (JDA) with PERMAcast and is now in the process of incorporating a joint venture entity (SPV Entity) to develop and commercialise low-carbon geopolymer concrete (GPC) products. Under the binding JDA, Suvo and PERMAcast will prepare and test various formulations, assess their suitability for different applications, and determine the best route for commercialisation through the jointly-owned special purpose vehicle.

Forward Looking Statements

This announcement contains forward looking statements. Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward looking statements as a result of a variety of risks, uncertainties and other factors. Forward looking statements are based on management's beliefs, opinions and estimates as of the dates the forward looking statements are made and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.