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CONFIRMATORY TESTWORK STAGE UNDERWAY AT ALPHA TORBANITE PROJECT AS RESOURCE UPGRADE DRILL PROGRAM NEARS COMPLETION

Monash University appointed to complete the final Liquefaction Test Program Four.

Highlights:

- **HQ core drilling program at Alpha nearing completion.**
- **All elements of Liquefaction Test Program Four underway.**
- **Monash University in Melbourne to scale up the lab program.**
- **First bulk product samples to be sent to Technix for bituminous product delineation and verification in the coming weeks.**
- **Licella Holding Ltd engaged to investigate the potential to use supercritical water in processing Alpha ores.**

Greenvale Energy Limited (ASX: **GRV**, "**Greenvale**" or "**the Company**") is pleased to advise that the fourth and confirmatory phase of test work for its flagship Alpha Torbanite Project in Queensland is now underway, marking a key step in its development pathway.

The pivotal fourth-round tests will deliver the processing pathway and potential product suite that will feed into the Project's maiden Pre-Feasibility Study (PFS).

Supporting rounds of Parr Reactor test work is being undertaken both in Brisbane and Melbourne jointly by Greenvale's technical consultants, PROCOM, and Monash University ("Monash"),

Monash's appointment is as a result of the evolving requirements of the Alpha Project work program and the need for sample production at a larger scale, coupled with the University of Jordan's academic calendar constraints, Greenvale and PROCOM have decided to transition the final phase of the program to Monash University. Conversely, the University of Jordan was limited by the size of its equipment. Greenvale and PROCOM would like to extend their sincere thanks to the University of Jordan for their invaluable contributions during the initial phases of Alpha's liquefaction test program. Their dedication and the availability of equipment have been instrumental in driving the test program forward this year.

The Company is delighted to welcome Monash University, a renowned institution recognised globally for its School of Chemistry, Monash lab capacity aligned favourably with the Company's requirement. Prepared shale samples have already been sent and

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received by Monash, with preparation of the test program and the bulk sample preparation work underway.

Monash University's scope of work encompasses several key milestones:

- Firstly, Monash will initiate the test program utilising core samples to confirm the results in earlier programs which has been utilising outcrop material. Monash will analyse three samples from a single drill hole, each seam and a proportionate blend using oil as a carrier, to quantify and verify the conversion extent and characterise products by subjecting the samples to a series of solvent washes to separate out usable products. This process will then be replicated with supercritical water as the carrier.
- Monash University will also produce a substantial one-litre bulk sample of oils using water as the carrier, which will then be sent for final product analysis. This bulk sample will undergo a standard test regime, and the corresponding data will be provided to Greenvale.
- Additionally, Monash University will comprehensively conduct the full suite of tests on the original 16 core samples. The subsequent analytical work on the resultant product samples will be conducted progressively, with periodic data updates to be provided to Greenvale throughout the course of the test program.

Ultimately, Monash University will deliver detailed reports, encapsulating all findings and outcomes from their extensive testing and analyses for Greenvale.

This comprehensive program will build on the positive results received previously from Test Programs 1,2 & 3, which utilised outcrop material, establishing a definitive processing pathway for the Alpha Project. This processing pathway will then underpin the delivery of the Pre-Feasibility Study (PFS).

Greenvale is pleased to advise that the product analysis program is already underway with the team at PROCOM undertaking several preliminary rounds of test work to produce samples for assessment by Technix, the Company's bituminous product advisor.

Technix are based in New Zealand and supply a large range of bitumen products to various world standards. These include roading and paving bitumen with varying viscosity, penetration, performance, polymer-modified and multi-grade properties.

Aligned with Monash University's work program, Technix will play a vital role moving forward by offering additional expert guidance. Leveraging the insights derived from samples produced by PROCOM, Technix will also provide informed recommendations for refining the final process design based on their recommended optimal product suite.

This collaborative approach will ensure that the process to yield quality bitumen and bitumen binding products from Alpha can be fine-tuned, thereby maximizing the potential value of the project.

The data generated from Monash University's comprehensive testing will serve as a foundational basis for the Technix strategic guidance, establishing a seamless integration between the analytical work conducted and the commercial decision-making process.

This partnership underscores Greenvale commitment to harnessing both technical rigor and practical industry knowledge to optimise the potential output of the Alpha Torbanite Project.

Licella Supercritical Water Testing Program:

In addition to advancing the final liquefaction test program, Greenvale has engaged Licella Holding Ltd ("Licella") to undertake a scoping study at batch level to better define the yield and structure of products under PROCOM direction utilising variations of supercritical water processing conditions that could potentially simplify the processing of the Alpha Torbanite deposit.

Licella is the global leader in hydrothermal liquefaction and is committed to pioneering solutions for a lower-carbon future.

Licella's equipment is well suited to the further investigation of applying supercritical water to the processing of the Alpha Project shales and is an extension of the work initiated in the University of Jordan program. This technique has the potential to optimize the conversion process by leveraging the unique properties of supercritical water.

Supercritical water is a state where water is heated and pressurized beyond its critical point, where the material exhibits the properties of both liquid and gas simultaneously. Supercritical water has properties which can efficiently support the break down complex organic materials into valuable products. In the context of cannelite and torbanite conversion, applying supercritical water could significantly simplify the liquefaction process.

As shown in literature, the unique properties of supercritical water can expedite the breakdown of complex hydrocarbons to bituminous products, and so enhancing the current test programs.

Alpha Drilling Program Update:

Greenvale Energy has now completed 60% of its proposed HQ core drilling program as part of a program designed to upgrade the Mineral Resource at the Alpha Torbanite Project (refer GRV ASX announcement, 29 June 2023). The remaining core drilling program will be completed over the next two weeks.

Currently the planned chip holes are scheduled to be completed later this year with the potential for the program to be expanded once the core results have been analysed. Visual interpretation of the drill core is consistent with the existing Mineral Resource model, with all Lower seam intersections containing some Torbanite.

Down-hole geophysics has been completed on half of the drilled holes, with the results to be compiled and checked, before being incorporated in the geological model.

A total of 25 individual samples have already been sent to ALS for laboratory analysis, with the remaining samples to be sent once drilling has been completed.



Figure 1: Drilling on location at Alpha

Management Comment

Greenvale's CEO, Mark Turner, commented: *"These important developments signify substantial progress at Greenvale's Alpha Torbanite Project. The initiation of varied elements of Test Program Four in collaboration with Monash University, Licella and PROCOM is a significant step towards the delivery of Alpha's Pre-Feasibility Study."*

"As previously advised, the delays have reflected limitations in availability and the technical capabilities of the test and analytical laboratories, however we have a first-rate team on the case to help us complete the all-important Test Program Four."

"Throughout, our field team has diligently maintained the on-ground drilling program within the designated timeframe and budget, and I look forward to sharing the campaign's outcomes with the market in the upcoming weeks."

"Collectively, the ongoing programs form a complex matrix of work – work that is highly technical and unique. Given this technical and unique nature, we will wait until we have further data from Test Program Four before we provide updated guidance on the delivery date for the PFS. The delays we have experienced reflects the fact that the scope of the project has evolved considerably since we started our assessment of Alpha, and we want to make sure that we develop an executable strategy for the Project that maximises its considerable value for shareholders."

"With that said, we will provide more frequent updates to the market as we draw closer to the delivery of the PFS."

AUTHORISED FOR RELEASE:

The Board of Greenvale has approved this announcement for release.

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