

20 March 2023

## ASX RELEASE

### Amended Announcement - Engineering Scoping Study Update

As requested by the ASX, Reward Minerals Limited (**ASX: RWD, “Reward” or the “Company”**) attaches an amended version of its announcement of 16 March 2023, titled “Engineering Scoping Study Update” which now includes a JORC Table 1 as per Listing Rule 5.7.1.

Authorised for release by the Board.

On behalf of the Board.



**Bianca Taveira**  
**Company Secretary**

20 MARCH 2023

ASX CODE: RWD

**DIRECTORS**Colin McCavana  
ChairmanMichael Ruane  
ExecutiveRod Della Vedova  
Non-Executive**MANAGEMENT**Lorry Hughes  
CEOBianca Taveira  
Company Secretary**HEAD OFFICE**Reward Minerals Ltd  
159 Stirling Highway  
Nedlands WA 6009PO Box 1104  
Nedlands WA 6909ACN 009 173 602  
ABN 50 009 173 602

T: 08 9386 4699

E: [admin@rewardminerals.com](mailto:admin@rewardminerals.com)W: [www.rewardminerals.com](http://www.rewardminerals.com)

## ENGINEERING SCOPING STUDY UPDATE

### Highlights

- Preliminary laboratory work program recently completed has confirmed the efficacy of Reward's new processing technology for recovery of Potassium Sulphate ("SOP") from seawater and other high sulphate brines
- A follow-up program has commenced, aimed to optimise reaction times of specific technical stages in order to reliably produce high-grade SOP (>52% K<sub>2</sub>O)
- Ongoing testwork supports the robustness and reproducibility of the new process, providing critical data for Reward's Australian Patent Application and for inclusion in the current engineering scoping study

**PERTH, Western Australia (March 16, 2023) - Reward Minerals Limited (ASX: RWD) ("Reward" or the "Company")** is pleased to provide an Engineering Scoping Study ("ESS") progress update.

Recent in-house laboratory evaporation, chemical analyses and Syngenite [K<sub>2</sub>Ca(SO<sub>4</sub>)<sub>2</sub>.H<sub>2</sub>O] recovery work programs to support the ESS for SOP recovery using Reward's new brine processing technology ("Reward Process") continue to return encouraging results.

The Company submitted an Australian Provisional Patent Application (Application Number - 2022902277) for the Reward Process on 11 August 2022 and intends to submit additional technical information prior to 11 August 2023 to complete the International application<sup>1</sup>.

Recent testwork programs provided additional data for the first order SysCAD, Flowsheet and Mass Balance Model completed in the December Quarter 2022 by an independent global engineering firm<sup>2</sup>.

**Figure 1 – Syngenite precipitation, part of recent in-house laboratory testing to confirm and optimise specific steps of the Reward Process.**



<sup>1</sup> Refer ASX announcement dated 23 August 2022.

<sup>2</sup> Refer ASX announcement dated 31 January 2023 (Specific results, details and participants in the laboratory work programs for the ESS have been omitted in order to protect Reward's Intellectual Property).

Initial testwork involved evaporation of seawater derived brine (“bitterns”) emanating from a solar salt operation in Western Australia (11.5g/l K, 350g/l TDS, 1.26 SG)<sup>1</sup> to a Magnesium (“Mg”) content of ca. 110g/l followed by draining of the residual high Mg supernatant liquor.

The remaining crystallised salts were redissolved in water to provide a new process brine (ca. 50g/l K) suitable for reacting with Gypsum [CaSO<sub>4</sub>.2H<sub>2</sub>O] to form Syngenite [K<sub>2</sub>Ca(SO<sub>4</sub>)<sub>2</sub>.H<sub>2</sub>O] (Figure 1). The reaction at ambient temperature provided +50% first pass extraction of K to the solid Syngenite salt. In operations the residual Syngenite Reactor liquor will be recycled to the brine evaporation ponds for further SOP recovery.

Testwork conducted on Reward’s Kumpupintil Lake (“KP Lake”) Resource<sup>2</sup> brine indicated that following evaporation of Resource brine to K saturation point of (ca. 45g/l K) treatment with Gypsum via the Reward Process method provided a first pass K recovery to Syngenite product of around 40%.

Importantly, the 40% recovery figure for brines of composition similar to that of the KP Lake Resource brine, is possible without redissolution of precrystallised salts.

The next part of the program involved treatment of Syngenite with water to produce a SOP solution with very low contaminants (Na, Mg, Cl) plus high purity Gypsum which is recycled to the Syngenite reaction step.

The SOP solution is evaporated to provide high purity SOP crystal product (+52% K<sub>2</sub>O) by conventional technology.

The key benefits of the Reward Process compared to commonly used SOP brine recovery processes are;

- it does not require mechanical harvesting of mixed potash salts;
- it does not require the conventional Schoenite or Kainite flotation steps;
- it may significantly reduce capital and operating costs per unit of SOP.

The follow-up programs will be along similar lines but use slightly different Reward Process thresholds to optimise the final flowsheet. In addition upcoming testwork will include final crystallisation of SOP from Syngenite leach liquor to confirm the SOP quality parameters. Once this program is completed the ESS battery limits will be finalised so it can be advanced in the June Quarter 2023.

## Next Steps

Over the next two quarters the Company will focus of the following key activities;

- Advancement of the Reward Process, international patent finalisation and licensing to third parties
- Completion of an ESS for the KP Lake Project and typical seawater derived brines utilising the Reward Process
- Engagement with chemical, seawater solar salt, fertilizer and seawater desalination companies worldwide to discuss the application of its technology within proposed SOP developments and production joint ventures
- Receipt of results from Fortescue’s RC drilling program at the McKay Range Joint Venture.

*Authorised by the Board of Reward.*

For further information please contact:

**Michael Ruane**  
Executive Director

**Lorry Hughes**  
CEO

[michael.ruane@rewardminerals.com](mailto:michael.ruane@rewardminerals.com)

[lorry.hughes@rewardminerals.com](mailto:lorry.hughes@rewardminerals.com)

<sup>1</sup> g/l = grams/litre, K = Potassium, Na = Sodium, Cl = Chloride, TDS = Total Dissolved Salts, SG = Specific Gravity.

<sup>2</sup> See ASX announcement released 7 February 2017, titled “Lake Disappointment (LD) Project Confirmed as a Globally Significant Tier 1 Sulphate of Potash Deposit”.

## Appendix 1 JORC Table

The following Table and Sections are provided to ensure compliance with JORC Code (2012 Edition).

JORC (2012) Table 1 – Section 1: Sampling Techniques and Data for Metallurgical Testwork.

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i>	Results reported in this announcement relate to chemical testwork conducted by Reward Minerals Ltd (“RWD”) to advance its new process for recovery of Potassium Sulphate (“SOP”) from resource brines containing threshold levels of Potassium and Sulphate ions – eg. concentrated seawater.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	The testwork was conducted in-house utilising the Company’s laboratory facilities by Mr W. Hinchliffe a Chemist/Metallurgist with over 30 years’ experience in the resources industry. Mr Hinchliffe is a member of the AusIMM.  Brine samples, evaporite solids and intermediate products derived from the trials were sampled by the chemist and prepared for analysis by an independent analytical laboratory (ALS Balcatta, W.A.).  Samples were analysed by ALS for Ca, K, Mg, Na and S using the ICP Mass Spectrometry technique. Chloride analyses were conducted in-house by standard titration technique vs silver nitrate.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report.</i>	N/A
	<i>In cases where ‘industry standard’ work has been done this would be relatively simple (e.g. ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay’). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i>	N/A
<b>Drilling techniques</b>	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</i>	N/A
<b>Drill sample recovery</b>	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	N/A
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	N/A
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	N/A
<b>Logging</b>	<i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i>	N/A
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i>	N/A
	<i>The total length and percentage of the relevant intersections logged.</i>	N/A
<b>Sub-sampling techniques and sample</b>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	See Sampling Techniques above.

Criteria	JORC Code explanation	Commentary
<b>preparation</b>	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	See Sampling Techniques above.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	See Sampling Techniques above.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	See Sampling Techniques above.
	<i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i>	See Sampling Techniques above.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	See Sampling Techniques above.
<b>Quality of assay data and laboratory tests</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	Initial laboratory trials involved evaporation of high TDS brines emanating from a solar salt operation which utilises seawater as its raw material. The concentrated brine or “Bittern” discard from the salt works was further evaporated to crystallise halite (“NaCl”) and Potassium rich (“Mixed Salts”) which were utilised in the RWD proprietary process to recover pure Potassium Sulphate fertilizer product.  The brines treated included those derived directly from seawater Bitterns, from the Company’s Kumpupintil Lake SOP Resource and from liquors generated during the Reward Process.  Again, the physical testwork was conducted in-house with Company owned facilities and analyses of feed and process products undertaken by an independent commercial laboratory (ALS Balcatta, W.A.).
	<i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i>	N/A
	<i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i>	Standard QA/QC procedures are applied at ALS, a NATA Registered laboratory.
<b>Verification of sampling and assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	The results presented were not verified by any alternative analytical entity. However, analytical results from ALS were examined by Dr Michael Ruane for consistency and ionic balance when received. On this basis the accuracy is regarded as adequate for the current status of the process development.
	<i>The use of twinned holes.</i>	N/A
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Data storage as PDF/Excel files on Company PCs in Perth.
	<i>Discuss any adjustment to assay data.</i>	N/A
<b>Location of data points</b>	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	N/A
	<i>Specification of the grid system used.</i>	N/A

Criteria	JORC Code explanation	Commentary
	<i>Quality and adequacy of topographic control.</i>	N/A
<b>Data spacing and distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	N/A
	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	N/A
	<i>Whether sample compositing has been applied.</i>	N/A
<b>Orientation of data in relation to geological structure</b>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	N/A
	<i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	N/A
<b>Sample security</b>	<i>The measures taken to ensure sample security.</i>	Samples for analyses are hand delivered to the independent laboratory by Company staff. Samples are discarded immediately upon advice from the Company that the data has been received. Reserve samples are held at the Company's laboratory for an adequate back-up period.
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No external audits or reviews of sampling techniques or analytical data have been undertaken to date. A metallurgical balance model (SysCAD) has been undertaken by an independent engineering firm to examine the Company's conceptual flowsheet/mass balance based on analytical results obtained and presented by the Company. Results are preliminary and being subjected to further laboratory testwork for consistency.

#### JORC (2012) Table 1 – Section 2: Reporting of Exploration Results.

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<i>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.</i>	N/A
	<i>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.</i>	N/A
<b>Exploration done by other parties</b>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	N/A
<b>Geology</b>	<i>Deposit type, geological setting and style of mineralisation.</i>	N/A
<b>Drill hole Information</b>	<i>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:</i> <ul style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level – elevation above</i></li> </ul>	N/A

Criteria	JORC Code explanation	Commentary
	<p>sea level in metres) of the drill hole collar</p> <ul style="list-style-type: none"> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> <p>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.</p>	
<b>Data aggregation methods</b>	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	N/A
	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.	N/A
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	N/A
<b>Relationship between mineralisation widths and intercept lengths</b>	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	N/A
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	N/A
<b>Diagrams</b>	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.	See Company ASX presentation 31/10/22 providing conceptual process diagram. Data reported in this announcement provide further data on the process unit operations.
<b>Balanced reporting</b>	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.	N/A
<b>Other substantive exploration data</b>	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.	N/A
<b>Further work</b>	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	RWD is continuing its testwork and development of its new Syngenite process for SOP recovery. Additional data will be reported as it comes to hand.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	N/A

### ***About Reward***

Reward is an ASX-listed advanced-stage sulphate of potash exploration and development company. Reward's flagship is its 100%-owned Kumpupintil Lake Potash Project, located east of Newman in north-western Western Australia. The Project hosts Australia's largest high-grade brine SOP deposit in a region with the highest evaporation rate.

Reward completed a detailed, conservative Pre-Feasibility Study which was updated with improved logistics in July 2018. An Indigenous Land Use Agreement ("ILUA") is in place with JYAC, the prescribed body corporate for Martu, the traditional owners of the land upon which Kumpupintil Lake is situated.

Key environmental approvals are in place and development can commence on completion of final feasibility studies and secondary regulatory approvals. The Company is currently progressing a Cultural Heritage Management Plan required by the ILUA to manage considerations related to cultural landscape characteristics in the project area.

### ***Forward-Looking Statements***

This document may contain certain "forward-looking statements". When used in this document, the words such as "could", "plan", "estimate", "expect", "intend", "may", "potential", "should", and similar expressions are forward-looking statements. Although Reward believes that the expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties, and no assurance can be given that actual results will be consistent with these forward-looking statements.

For a more detailed discussion of such risks and uncertainties, see Reward's other ASX Releases, Presentations and Annual Reports. Readers should not place undue reliance on forward-looking statements. Reward does not undertake any obligation to release publicly any revisions to any forward-looking statement to reflect events or circumstances after the date of this ASX Release, or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws.

### ***Metallurgical Results – Competent Persons Statement***

The information in this report that relates to Brine metallurgical testwork and Analyses is based on information compiled by Mr Warren Hinchliffe who is a Member of The Australian Institute of Mining and Metallurgy. Mr Hinchliffe is a consultant to Reward Minerals Ltd. Mr Hinchliffe has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Mr Hinchliffe consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

### ***About the FJV***

The FJV tenements include Holocene's E45/3285 and E45/4090 located in the northern part of Reward's Kumpupintil Lake Potash Project and Reward retains 100% of the potash rights including on FMG tenements E45/5360 and E45/5361.

FMG is the operator of the FJV and has the right to earn an 80% interest in E45/3285 and E45/4090 by spending \$2 million within four years on exploration. If the \$2 million expenditure threshold is met, a Joint Venture will be established after which both parties will either contribute to expenditure in accordance with their respective FJV interests or dilute. If a party's JV interest falls below 5%, that party's JV interest will be converted to a 1% net smelter return royalty to be paid over the first five years of commercial production.