SUREFIRE DEVELOPS A BREAKTHROUGH PROCESS FOR VANADIUM EXTRACTION

Key Points:

- **Laboratory test work has developed a breakthrough pre-treatment and leach process achieving a remarkable extraction of 91% of vanadium and 88% of titanium directly from Victory Bore magnetite concentrate.**
- **This new metallurgical application alleviates the requirement for standard pre-treatment processes currently used in the vanadium extraction industry.**
- **The process is expected to be more environmentally acceptable with low emissions and reduced carbon footprint.**
- **This process will be applied to Surefire's planned development of its Victory Bore Project and the impact on capital cost and operating cost benefits will be assessed.**
- **The process will be protected by a provisional patent application, wholly owned by Surefire.**

Surefire Resources NL ("**Surefire**" or "the **Company**") is pleased to announce it has achieved a breakthrough process of extracting Vanadium directly from magnetite concentrate out of its 100% owned flagship Victory Bore Vanadium project in Western Australia.

The test work process achieved a remarkable extraction for Vanadium of 91% after a 96-hour leach directly from magnetite concentrate. Additionally, an unexpected extraction of 88% Titanium was also recovered. The leach process was applied to pre-treated concentrate allowing the leach process to effectively scavenge vanadium. This pre-leach treatment is Surefire's Intellectual Property.

In May 2023 the Company appointed METS Engineering ("**METS**") to undertake an assessment of potential for recovery of a high purity vanadium oxide in liquid form, from which a clean high purity vanadium electrolyte could be produced for use in the emerging vanadium battery sector in Australasia, (see ASX announcement 1 May 2023).

Following a detailed literature search and a review of all existing extraction processes, a direct leaching test work programme was designed and established by the METS team. Supervision and reporting was carried out under the direction of METS and all test work undertaken at Western Australian laboratories.

A total of 4 separate hydro-chemical tests were carried out on pre-treated magnetite concentrate ("PTMC"). The successful process is an adaptation of several commercially scalable processes used within the mineral resource industry and involves leaching under certain conditions of the PTMC.

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Laboratory testwork involved batches of PTMC from the Victory Bore deposit subjected to 4 separate leachants with catalysts, under various novel conditions.

The total process is a combination of the proprietary PTMC, leachant and novel conditions. The process details are commercial in confidence and remain the IP of Surefire Resources and subject to a Provisional Patent protection.

Sample

A 500 Kilogram (Kg) composite sample was made up from 20 x 1m Reverse Circulation samples selected from drill hole VBRC026.

Id	North	East	Rl	Depth	Dip	Azimuth	From	To	V2O5%	TiO2%	Fe%
VBRC0026	**6872252**	**695124**	**466**	**126**	**-60**	**115**	**94**	**114**	**0.60**	**8.8**	**43.9**

Table 1 : VBRC026 94 to 114m Drilling Interval used for Hydro-Metallurgy test work.

Drill hole VBRC026 was selected as it is located in the centre of the Victory Bore deposit, see Figure 4.

Sample Preparation

The samples were prepared using standard beneficiation processes to produce a clean magnetic concentrate for characterisation and laboratory testwork. In February 2023 the company carried out a petrographic study which showed that the Victory Bore magnetite contains most of the vanadium and hosts relatively clean intrinsic vanadium which should enable a simpler and cleaner separation in processing (see ASX announcement 13 February 2023).

Approximately 500 kg of a composite feed sample was stage crushed and rotary split for the characterisation, pre-treatment and testwork. 250kg was used for the testwork with the remaining composite material (of approximately 250 kg) stored as reserve for further work.

Head Assay

A full assay suite was requested for the head assay on the composite feed sample: SiO_2, Al_2O_3, V_2O_5, TiO_2, CaO, MgO, MnO, K_2O, Na_2O, Cr_2O_3, Fe, P, S, Ag, Al, B, Ba, Be, Ca, Ce, Cd, Co, Cr, Cu, Ga, Ge, Hf, ln, K, Li, La, Mg, Mn, Mo, Na, Nb, Ni, Pb, Pd, Pt, Rb, Sb, Sc, Si, Sr, Ti, Th, Tl, V, W, Zn, Zr and LOI.

Particle Size Distribution and Size by Assay

The particle size distribution of the composite feed material was analysed for different particle size fractions: +3.35 mm, 2.36 mm, +1 mm, +0.5 mm, +0.15 mm, and +0.075 mm. A size by assay was conducted for each particle size fraction to determine the distribution of key minerals and elements found in each particle size fraction.

Bulk Medium Intensity Magnetic Separation (MIMS)

Wet MIMS was carried out on 250 kg of the composite sample. The recovered mags from the MIMS were ground and then passed through Sighter and Bulk LIMS.

Low Intensity Magnetic Separation (LIMS)

Sighter LIMS was conducted at three different gauss intensities 2000, 1200 and 900 to determine the optimum gauss to run the Bulk LIMS.

Bulk LIMS

Bulk LIMS was conducted at 900 Gauss on the composite feed material.

Figure 1 : Bulk MIMS photos showing magnetite concentrate.

SIGHTER LIMS

Sighter LIMS was conducted at three different gauss intensities 2000, 1200 and 900 to determine the optimum gauss to run the Bulk LIMS.

Bulk LIMS

Bulk LIMS was conducted at 1200 gauss on the composite feed material. The recovered mags were then subjected to different leach tests to extract vanadium.

Figure 2 : Bulk LIMS photo showing magnetite concentrate.

ANALYSIS and TESTWORK

Laboratory assaying of the samples was carried using X-ray Fluorescence (XRF) on the leach solution using a Panalytical Axial Wavelength Dispersive XRF. 4 separate tests (labelled A, B, C, D) were carried

on separate PTMC samples. These involved 4 separate leachates tests, under different conditions to assess recovery principally of vanadium. Each leachate was novel. Recovery results are shown in Table 2 below:

TEST	LEACHANT	Time (Hours)	Recovery Vanadium %	Recovery Titanium %
A	Mixed	2	18.4	1.3
B	Mixed	2	11.5	0.0
C	Mixed	4	22.0	7.0
D	Mixed	4	14.53	0.02

Table 2: Recovery results from Leachate.

Test C was then repeated (C 2) and subjected to extended leach time as it had the initial highest result. The result after 96 hours is shown below on Figure 3. From the graph it would also appear that further leaching of vanadium would continue with time.

TEST	LEACHANT	Time (Hours)	Vanadium Recovery %	Titanium Recovery %
C 2	Mixed	96	91	88

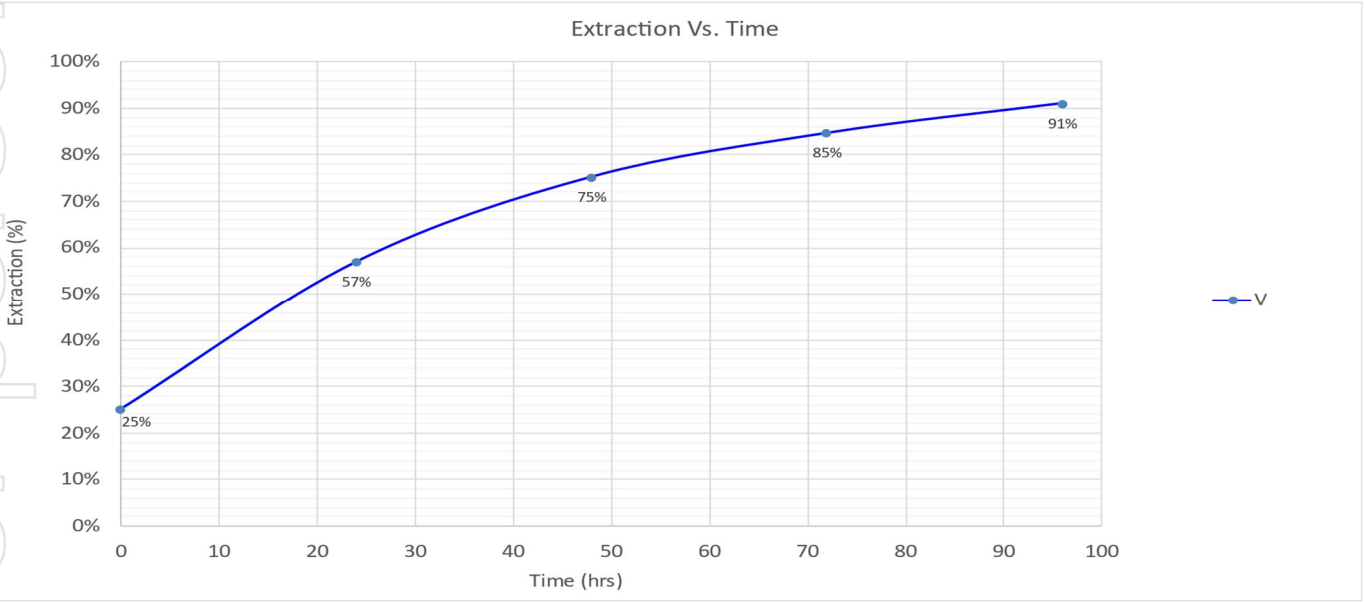

Figure 3: Vanadium extraction from Magnetite concentrate over leachate time.

The subsequent production of vanadium pentoxide directly from the leach solution is a well-established scalable commercial process, producing a high purity product.

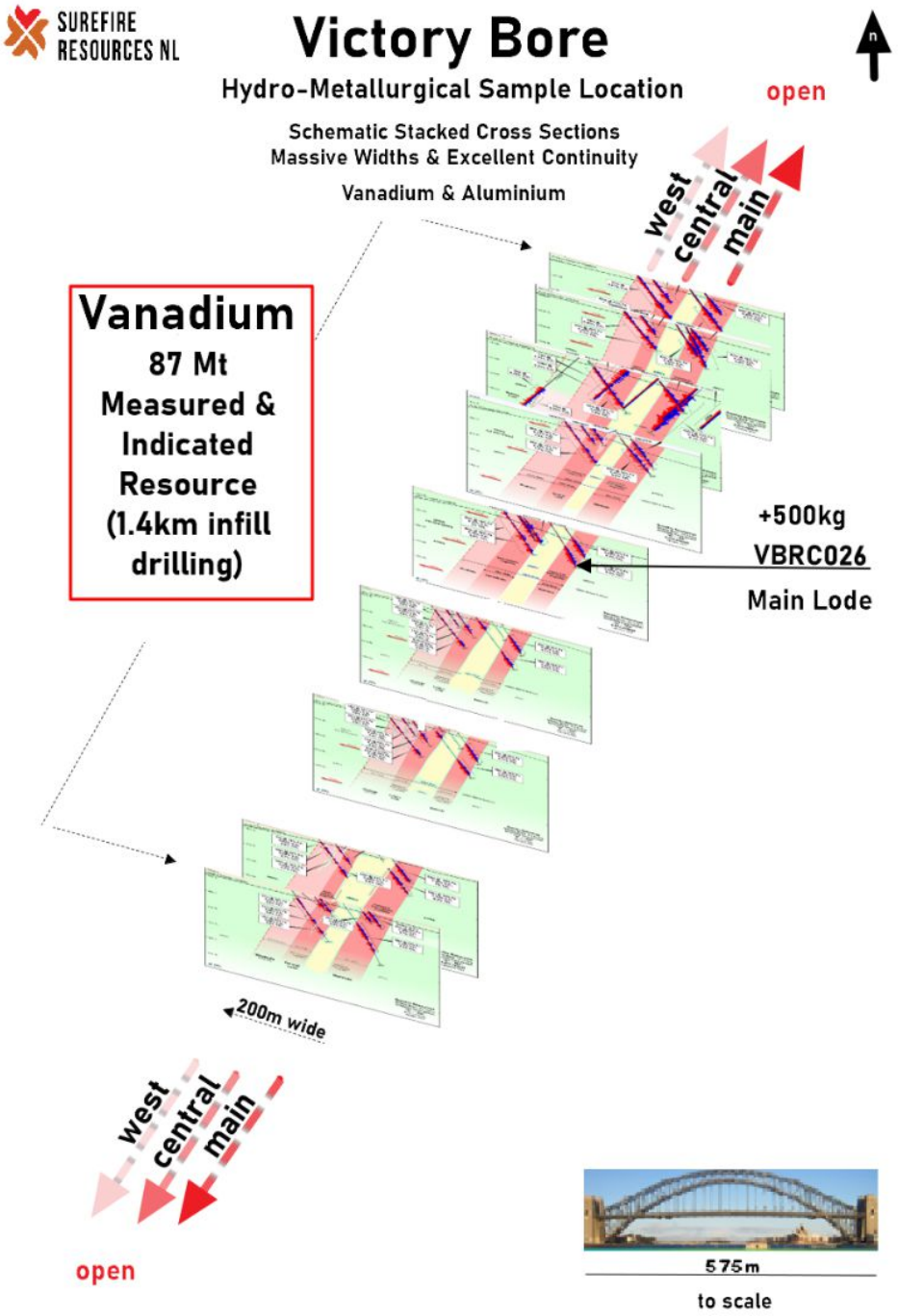

Figure 4: VBRC026 Drill hole location. Refer ASX release 16 January 2023.

While additional test work will be required in the next stages leading to a pilot plant testing the Company will assess the benefits in using this process for the downstream process flow sheet with possible reductions in capital and operating costs, and also assess the potential to licence the process for use on other vanadium resources.

This exciting development follows the Company's completion of a Pre-Feasibility Study on the Victory Bore deposit which showed a remarkable financial outcome with an NPV_{10} AUD$1.7B, IRR 42%, Pay Back 2.4years, and initial mine life of 24 years (see ASX announcement 5 December 2023), and the recent signing of a MOU with Saudi Arabian based Ajlan & Bros Mining and Metal group for downstream processing of magnetite concentrate in Saudi Arabia (see ASX announcement 15 January 2024), which forms part of the Companies development plan for the project.

Authorised for release to ASX by Paul Burton, Managing Director.

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Competent Person Statements:

The information in this report that relates to exploration results has been reviewed, compiled, and fairly represented by Mr Horst Prumm, a Member of the Australian Institute of Mining and Metallurgy ('AusIMM') and the Australian Institute of Geoscience ('AIG') and a fulltime employee of Prumm Corporation Pty Ltd. Mr Prumm has sufficient experience relevant to the style of mineralisation and type of deposits under consideration to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee ('JORC') Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves. Mr Prumm consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to metallurgical results has been reviewed, compiled, and fairly represented by Mr Damian Connelly, a Member of the Australian Institute of Mining and Metallurgy ('AusIMM') and the Australian Institute of Geoscience ('AIG') and a fulltime employee of METS engineers. Mr Connelly has sufficient experience in the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee ('JORC') Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves. Mr Connelly consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to the Victory Bore Vanadium mineral resource estimation is based on work completed by Mr. Stephen Hyland, a Competent Person and Fellow of the AusIMM. Mr. Hyland is Principal Consultant Geologist with Hyland Geological and Mining Consultants (HGMC), who is a Fellow of the Australian Institute of Mining and Metallurgy and holds relevant qualifications and experience as a qualified person for public reporting according to the JORC Code in Australia. Mr Hyland is also a Qualified Person under the rules and requirements of the Canadian Reporting Instrument NI43-101. Mr Hyland consents to the inclusion in this report of the information in the form and context in which it appears.

Forward Looking Statements:

This announcement contains 'forward-looking information' that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance, or achievements to be materially different from those expressed or implied by such forward-looking information.

JORC Code, 2012 Edition:
Section 1: Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
Sampling Techniques	Reverse Circulation ("RC") drilling was carried out with an RCD250 drilling rig with a Deck mounted Sullair 1150/350 compressor coupled to a Sullair 1350/500 Auxiliary compressor and 2400cfm/950psi Air Research booster. Rig mounted sampling system with twin sample collection chambers and a Sandvik cone splitter. 4 ½ inch drill pipe with 5-inch face sampling hammer. The holes were drilled to 140mm diameter. Standard rig mounted sampling system was employed. Samples were taken from the collar (0m). Sampling was continuous to the end of hole depth. Each metre was geologically logged and assayed by hand-held XRF, assayed for mag sus. and recorded. Each metre was chip trayed and kept in storage. Drill collar positions were captured using a DGPS to 10mm accuracy. Each metre of samples was split with a three-tier rifle splitter mounted beneath the cyclone on the drill rig. Metre samples were collected in green mining bags and calico bags. Each metre was also sieved and collected in a chip tray for geological logging. Samples were composited to 2m manually using a 50% riffle splitter. The 2m composite samples were delivered to Nagrom Laboratories in Kelmscott by Surefire staff for assay of vanadium and multi-element assay.
Drilling techniques	62 X 140mm RC holes were drilled for a total of 5,189 metres. The Reverse circulation rig used a downhole hammer and face sampling button bit. Sample piles were recorded for each 6m rod. Rods were counted when pulled at the end of each hole. Given the relatively short hole length, no down hole surveying instruments were used.
Drill sample recovery	Geologist supervising the drilling program recorded each metre as it was drilled. Geological logs, samples logs, daily drill logs, and sample piles all recorded hole depths. No aberrations were found. All logs of sampling and drilling lengths matched. Each metre was recovered. No redrilling was necessary. No biases were recorded.
Logging	Drill cuttings were geologically logged to the level of detail deemed appropriate for mineral exploration, with details entered into a geological database. Drilling logs record weathering, oxidation, mineralogy, colour, texture, structure accessory minerals sulphides and mineralisation. All logging is quantitative. The drill holes reported were logged in full.
Sub-sampling techniques and sample preparation	No core drilling carried out. Three tier riffle splitters were used to take one metre samples. Samples were combined to form 2m composites using a 50% riffle splitter. All samples were transported to the Nagrom sample preparation/assay laboratory Kelmscott. The sample preparation followed industry best practise. All samples pulverised to 75um passing 85%. The external laboratory's QA/QC procedures involved the use of appropriate standards, duplicates and blanks which are inserted into sample batches at a frequency deemed appropriate for the exploration results.
Quality of assay data and laboratory tests	The analytical technique utilised the Nagrom Panalytical Axial Wavelength Dispersive XRF The Laboratory has provided standards and QA/QC additional to that of Surefire. The external laboratory used maintains their own process of QA/QC using standards, and blanks. Review of the external laboratory quality QA/QC reports and Surefire external laboratory quality QA/QC reports has shown no sample preparation issues with acceptable levels of accuracy and precision and no bias in the analytical datasets.

Verification of sampling and assaying	The sampling techniques were reviewed in the field by an external consultant. No twinned holes were drilled. All data is recorded in specifically designed templates. Assay data was received in spreadsheets and downloaded into geological database. The analysis of Vanadium was provided by the laboratory as V and V2O5. No other adjustments were made to the data on receipt from the assay laboratory.
Location of Data Points	Initial drill hole collars were located with a Garman GPS. Final collar locations were located using a digital GPS, accuracy +/- 10mm. Drill hole location is reported using the GDA94_MGAz50 grid system. Drill hole collar was located by GPS. Elevation value is in AHD.
Data spacing and distribution	RC holes were drilled at approximately 25m across strike and 100m line spacings. The data spacing is considered sufficient to assume geological and grade continuity. It is expected that this drilling will allow the estimation of Inferred and Measured Mineral Resources. Samples were composited from 2m according to supervising geologist.
Orientation of data in relation to geological structure	The drill hole was angled perpendicular to the strike of the target horizon to achieve unbiased sampling of the target horizon. Drill intersections are not true widths.
Sample security	Chain of custody of samples was managed by the company and the laboratory. Logging and sampling were carried out in the field at the time of drilling.
Audits or reviews	Sample preparation followed industry best practice at the commercial laboratory facility. QA/QC of assay analyses shows there are no issues with sampling, analytical techniques, or results.

Section 2: Reporting of Exploration Results

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
Mineral tenement and land tenure status	The exploration results in this report relate to Exploration Licence E57/1036. This EL is 100% owned by Surefire Resources NL and is currently a M in application - M57/656. Tenure in the form of Exploration Licences with standard 5-year expiry dates which may be renewed. There are no known impediments to obtaining a licence to operate in this area.
Exploration done by other parties	Previous regional exploration on the project was undertaken by the company and included, geophysical surveys, geochemical surveys, rock sampling and RC drilling. Historical geophysical surveys included an airborne (helicopter) magnetic survey. Geochemical surveys included soil sampling. A detailed assessment of the historic data is in progress. No significant issues with the data have been detected to-date.
Geology	The Project occurs within the Atley Igneous Complex in the East Murchison Mineral field of Western Australia. The Atley Intrusion is an Anorthosite body that is elongate in an NNE/SSW orientation and runs along the axis of the regional scale Youanmi Fault, a regionally dominant geological feature. Further drilling and assaying is required to fully assess the geology and style of mineralisation. Mineralogy and petrology studies completed suggest that host rocks at Unaly Hill are historical magnetite layers within intrusive Anorthosite, gabbro and ultra mafics. The targeted deposit type and style of mineralisation is a Fe-Ti-V magnetite system.
Data aggregation methods	Where assays were composited for summary purposes, all assays were weighted by drill interval. No high-grade cuts have been applied to the sample data reported. Where assays were composited for summary purposes, all assays were weighted by drill interval. No metal equivalent values are used
Relationship between mineralisation widths and intercept lengths	All drill hole results reported are downhole length, true widths are approximately 82.6% of the down hole widths.
Balanced Reporting	Reporting of the drill results is considered balanced.
Other substantive exploration data	No additional meaningful and material exploration data has been excluded from this report.
Further work	Resource estimation and a prefeasibility work is planned for the Project which may require additional RC percussion and/or diamond drilling to be undertaken.
Bulk density	Dry Bulk Density (DBD) has been determined from a very large number of down-hole densitometer measurements taken as part of the recent Surefire drilling program. The bulk densities measured appear sufficiently variable considering the distribution of the mineralization zones and are deemed representative for the rock material and mineralization types described for the Victory Bore deposit. The density measurements have been averaged in deposit areas according to the geologically logged material type characterization where densitometer readings are not available. Locally where measurement data is available these have been interpolated locally into the block model. The bulk density values applied in the deposit are: Highly weathered zone = 2.22 – 2.34 t/m3, Transitional Zone = 2.57 -2.74 t/m3 and Fresh / Sulphide Zone = 2.98 -3.42 t/m3. Locally the nearest neighbour assigned values can be both slightly higher and lower than the averages shown here.
Metallurgical factors or assumptions	Reasonable mineral recovery levels are expected for the V_2O_5 components through magnetic media separation based on previous work and understanding of the metallurgical characteristics of the known mineral species observed. This assessment has been made by using available drill samples and laboratory bench scale concentrate recovery tests as well as Davis Tube Recovery Tests showing good Vanadium concentrate recoveries.