

# Gabanintha Vanadium Project Update

## Activity stepping up at Gabanintha

### Highlights:

- Flora and vegetation field study part one completed
- Subterranean fauna study desktop analysis completed and initial field sampling underway
- Water level and quality sampling conducted to assist with hydrology study parameters
- New metallurgical test work underway;
  - Focus on improving magnetic concentrate recovery
  - Previous work identified concentrate grades up to 1.54% V<sub>2</sub>O<sub>5</sub> with 80% mass yield from Gabanintha high grade horizon
  - Concentration of Cobalt in non-magnetics offers by-product opportunity – preliminary leach test program underway
- Updated resource modelling in progress, including cobalt resource estimate and revision of density and oxidation parameters.
- Near surface, transported high V, low Ti horizon being evaluated as part of further drilling and resource expansion, test work.

Australian Vanadium Limited (ASX:AVL, “the Company” or AVL”) provides this update on ongoing activities to progress the development of its flagship vanadium project at Gabanintha in Western Australia.

The first of a two-season subterranean fauna study is now complete. This is a level 2 baseline study as a result of a desktop study performed by Biologic Environmental Pty Ltd earlier in the year. The goal of the survey

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### ASX ANNOUNCEMENT

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is to establish whether or not there is a stygofauna and/or troglifauna community present. Pastoral bores and wells will also be investigated. The second part of this survey is planned for the end of the southern wet season in September 2017.

The Company recently finalised the first part of a two-season level 2 flora and vegetation field study at Gabanintha. The results of these studies will provide important baseline data and determine the need for further studies.

Water quality samples and water level data are being collected. New locations for suitable water monitoring holes are being located.

The ongoing environmental and water studies are helping the company prepare for more detailed environmental impact assessments as the project advances to feasibility. Environmental base line information and conclusive studies are often the most time-critical steps in achieving project approval. AVL is working to be ahead of schedule on this assessment.

Managing Director Vincent Algar commented on the importance of the work being conducted, “Gabanintha is a significant global vanadium resource with growth potential. The timing of environmental and development work becomes more urgent as the vanadium price enters a new upward phase. We are very excited to be entering this phase of the project.”



Figures 1a & 1b. Sampling for stygofauna by either lowering fine nets down drill holes, or pumping and filtering the water from the hole.

## New Metallurgical Test Work

In December 2015 (See ASX Announcement 7.12.2015), following completion of resource drilling at Gabanintha, a round of beneficiation test work conducted at Bureau Veritas Laboratories in Perth and identified the following highlights;

- Results showed high recovery rates from all the ore types, including oxidised high-grade material, at Gabanintha
- Strong recoveries were achieved using relatively coarse grind sizes, highlighting further scope to keep operating costs low
- Silica content removed easily, benefiting both capex and recovery
- Strong recoveries of titanium demonstrate potential to generate additional revenue

The key technical findings included;

- Magnetic separation tests indicated that both Low Grade (LG) and High Grade (HG) partly oxidised and fresh samples can be effectively upgraded to concentrates up to 1.5%  $V_2O_5$ .
- Totally oxidised samples yielded a high-quality iron-vanadium-titanium concentrate when using high intensity magnetic separation (mass recovery ranges between 30% and 85%, vanadium recovery 30 to 90%)
- Magnetic recovery of LG samples was impressive, with 32 to 62% of mass recovered and 70% to 85% of the  $V_2O_5$  reporting to concentrate at a coarse grind size.
- Magnetic recovery from HG samples was excellent at 75% to 82% of mass recovered and 82% to 95% of the  $V_2O_5$  at a coarse grind using low intensity magnetic separation.

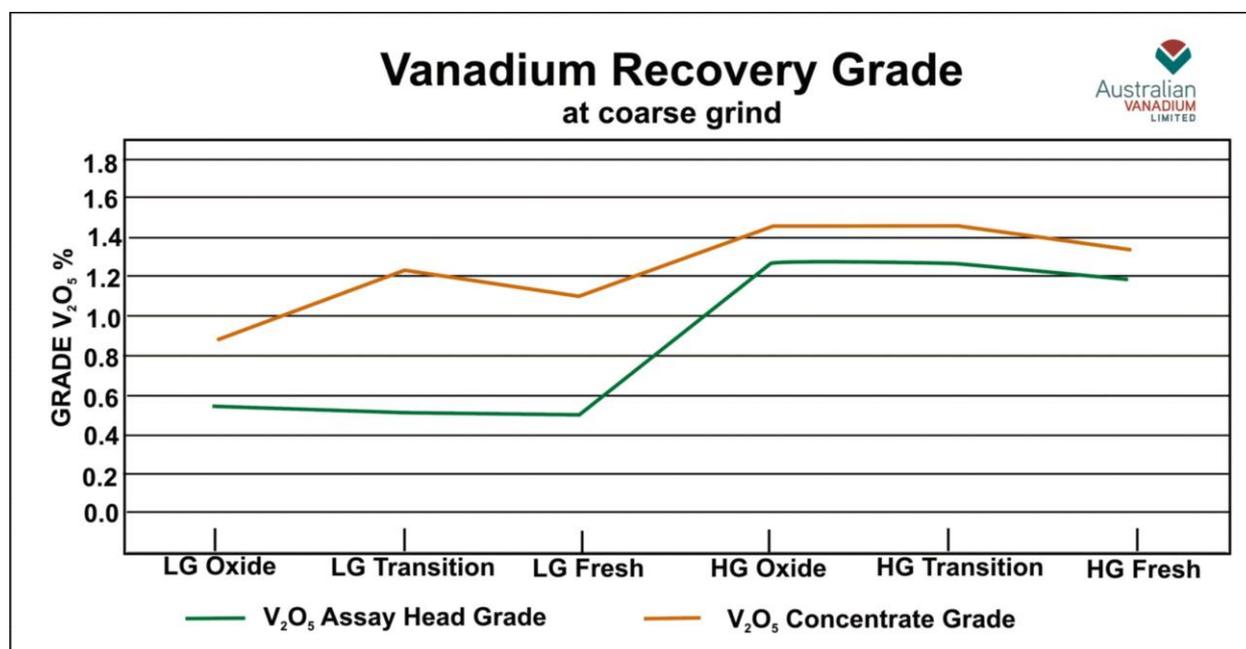


Figure 2: Expected vanadium grade of the ore sub-types. All sample recoveries are DTR at 3000G except LG Oxide and HG Oxide Samples which are WHIMS at 7000G

The consultant recommended that a number of additional tests are carried out as part of a detailed feasibility study to determine the ultimate processing route and ideal blending strategy to follow during operations. These tests are now being prepared for execution:

- Additional tests using core samples (already drilled) to assess variability of ore types, gravity upgrade techniques, de-sliming characteristics
- Detailed evaluation of Fe:V and other metal ratios across the resource, to identify the maximum upgradability potential of the ore types.
- Test work on the available drill core to determine optimal grind recovery and fines minimisation, as well as maximisation of silica removal during beneficiation.
- Optimise magnetic recovery circuits
- Consider TiO<sub>2</sub> recovery processing options given the good TiO<sub>2</sub> recovery and grade achieved during the current round of tests.

The Company is preparing a test program with the assistance of an external metallurgical consultant. Selection of materials will occur from existing sample material including available diamond core. New sample material will be collected if required from planned new drilling programs at Gabanintha. These programs are planned to commence and be completed in the second half of 2017.

### **Revised resource estimate underway, new drilling for resource expansion in planning.**

An experienced resource consultancy has been appointed to conduct a resource update. This will include;

- Estimation of vanadium and the inclusion of cobalt resource estimate,
- New interpretation of oxidation boundaries
- Improved density distribution and revised mineral categories.
- The addition of proximal alluvial resources and;
- Remodelling of the lithologic and ore type boundaries

These will provide a clearer definition and is expected to lead to a larger and more robust total resource at Gabanintha. Further drilling is planned for the resource expansion program and will provide further geotechnical, hydrological and metallurgical data for the ongoing feasibility studies.

### **Extensive Alluvial Horizon**

During the 2015 drilling, the Company noted the existence of an upper transported zone (proximal alluvium). This transported material has been formed by combined weathering and concentration of the high-grade and low-grade magnetite rich layers as they were exposed at surface over the eons. The drilling intersected the material in 36 holes including 3 diamond drill holes.

The horizon is located above the main resource horizons and would form part of any pre-stripping to access the principal ore horizons in an open cut operation (see Figure 8). Its potential extent and metallurgical properties are therefore of importance in any mining study.



Figure 3. Proximal alluvium horizon at Gabanintha in diamond core. Black fragments are near fresh, highly magnetic, vanadium ore material.

The proximal alluvium has unique characteristics and contains fine iron rich matrix material and large clasts of angular-subrounded fresh massive magnetite. Consequently, the average vanadium content of these horizons is often over 0.5%  $V_2O_5$ .

Table 3 below shows significant proximal alluvium drill intercepts. A full table of intercepts is included in Appendix 2 of this release.

Hole_ID	From (m)	To (m)	Metres x $V_2O_5$ %	$TiO_2$ %	$Fe_2O_3$ %
GRC0212	5	16	11m @ 0.79%	8.6	45.7
GRC0106	15	24	9m @ 0.67%	7.6	42.6
GRC0105	1	16	15m @ 0.61%	6.1	44.50
GRC0206	0	16	16m @ 0.66%	5.4	51.8
GRC0195	0	15	15m @ 0.64%	5.1	48.8
GRC0194	0	10	10m @ 0.64%	4.4	47.5
GRC0193	0	9	9m @ 0.98%	6.9	51.6
GRC0192	0	9	9m @ 0.96%	9.5	51.4
GRC0179	0	10	10m @ 0.67%	5.4	39.6
GRC0178	0	7	7m @ 0.84%	6.7	49.6
GRC0177	0	7	7m @ 0.91%	8.3	58.3
GDH903	0	11	11m @ 0.81%	7.3	44.5
GRC0168	0	11	11m @ 0.86%	8.0	49.2
GRC0167	0	8	8m @ 0.94%	8.7	56.0

Table 3 Significant intersections\* of proximal alluvium at Gabanintha.

\*Intercepts based on a 0.4%  $V_2O_5$  lower cut, with minimum 2m internal dilution and minimum 2m intercept.

AVL has reviewed the potential extent of this horizon and considers that its presence is more extensive than is currently drilled, extending further to the west and north in “palaeochannels “ similar in style to those seen in Pilbara iron ore deposits (Figures 5 and 6).

The material itself has some unique characteristics such as a high content of large magnetic fragments of massive magnetite ore material contained in an oxide iron rich matrix. The material also contains relatively much lower titanium than the primary deposit.

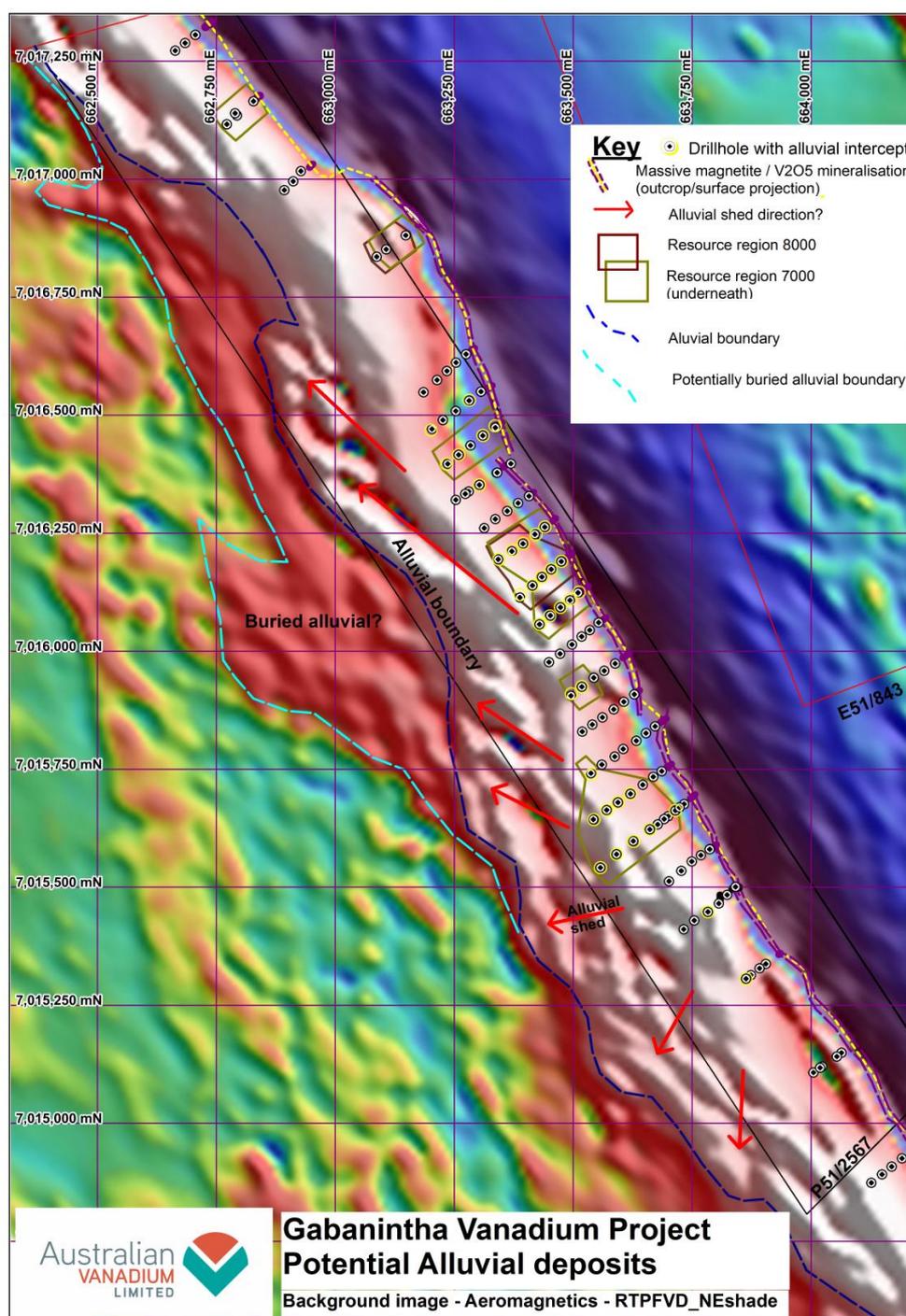


Figure 5 Existing drill collars and Ore Outlines displayed over first vertical derivative aeromagnetic image at Gabanintha Project. Dashed boundaries, show areas of interest for the presence of alluvial channels containing proximal alluvium vanadium rich material identified in drilling

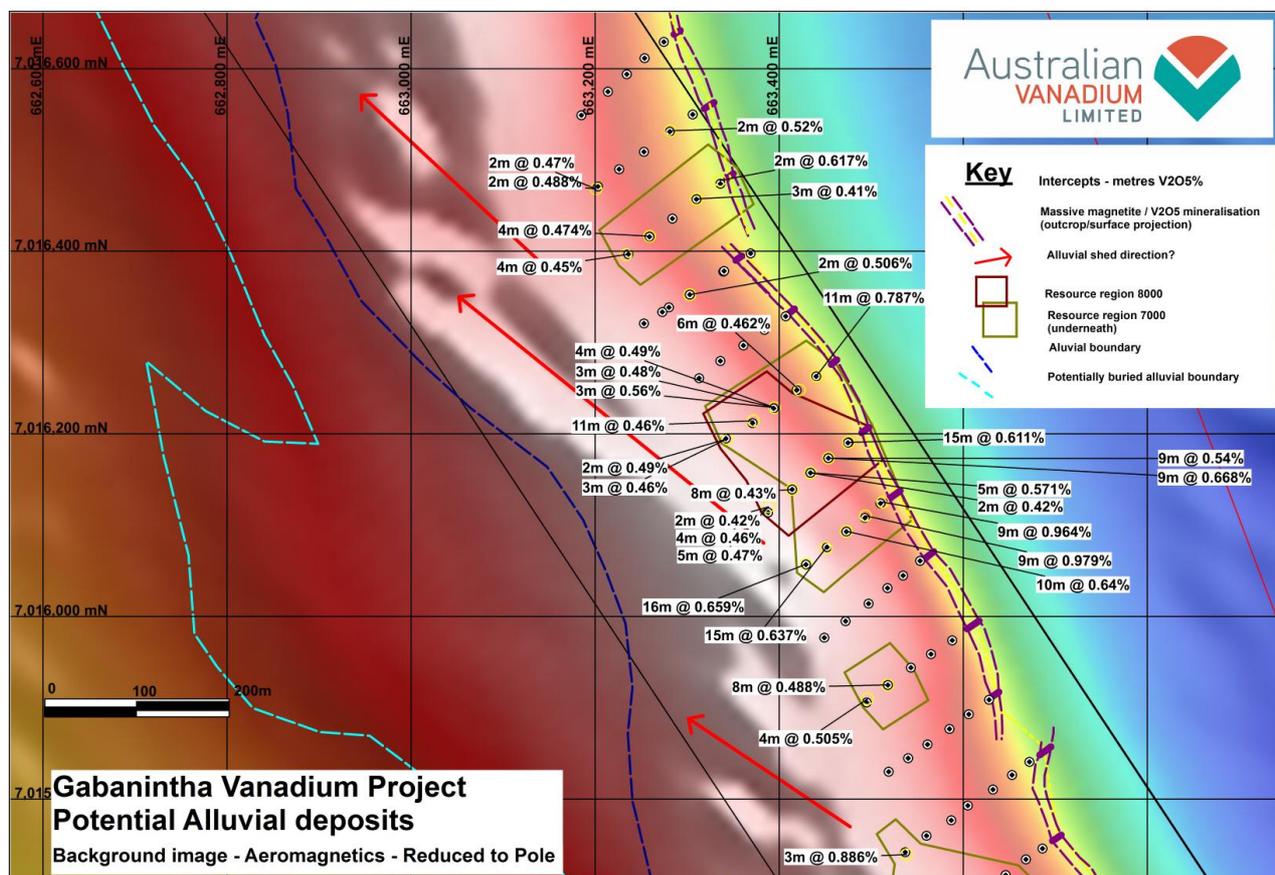


Figure 6 showing an expanded view of the middle of figure 5 with  $V_2O_5\%$  intercepts for the drill holes with proximal alluvium.

Further analysis is warranted and 2 samples have been selected from the historical RC material and submitted for size fraction analysis, DTR, LIMS-WHIMS and Wilfley table tests. These tests will be undertaken in coming weeks.

If recovery parameters return an attractive result, a drilling program will be planned over the target palaeochannel areas, shown in the Figure 5.

### Gabanintha Vanadium Deposit

The Gabanintha Project is located 40km south of Meekatharra in Western Australia. The vanadium resource is hosted in a gabbroic layered igneous complex containing bands of massive and disseminated titanomagnetite in a sequence over 200m in thickness. The style of mineralisation is similar to a number of deposit types around the world with the most similarity to vanadium deposits of the Bushveld Complex of South Africa.

The Gabanintha Vanadium Project is currently one of the highest-grade vanadium projects being advanced globally with existing Measured Resources of 7.0Mt at 1.09% grade  $V_2O_5$ , Indicated Resources of 17.8Mt at 0.68% grade  $V_2O_5$  and Inferred Resources of 66.7Mt at 0.83% grade  $V_2O_5$ , a total of 91.4Mt, grading 0.82%  $V_2O_5$  and containing a discrete high-grade zone of 56.8Mt, grading 1.0%  $V_2O_5$  reported in compliance with the JORC Code 2012 (see YRR ASX Announcement 10 November 2015).

The updated Mineral Resource estimate incorporated 97% of the historical drilling data including data from the Company's 2009 and 2015 RC and diamond drilling programs. This included 233 RC and 17 Diamond Core holes for 20,086 metres over a 12 kilometre strike length. Of these holes 19,431metres were used in the grade estimate (see Figure7).

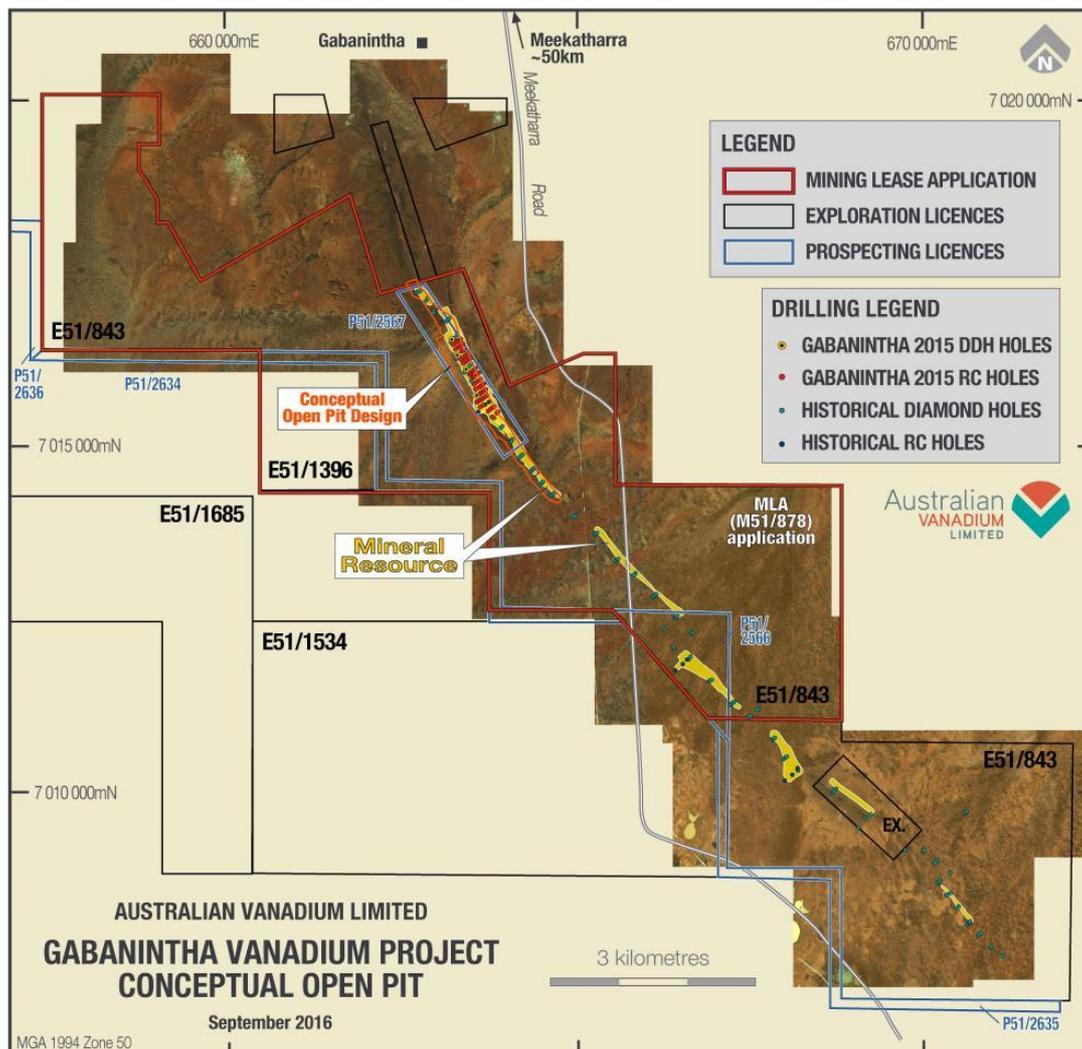


Figure 7 - Resource location and Pit Optimisation Model Pit Shell Outline

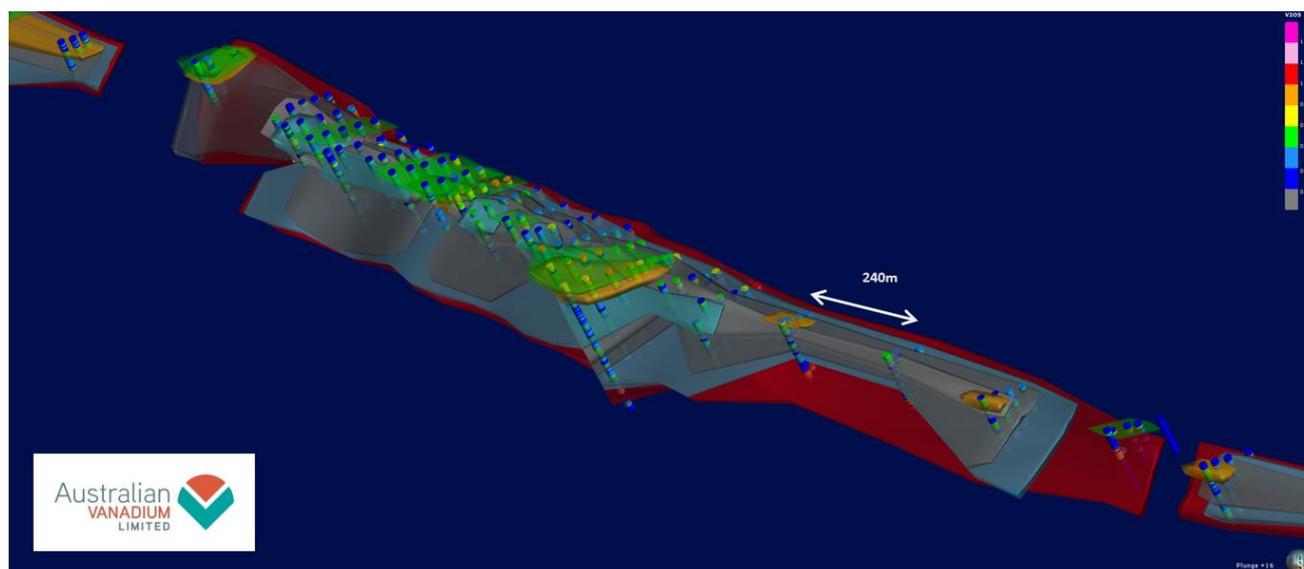


Figure 8 - Leapfrog view of northern portion of Gabanintha Mineralisation. High-grade zone defined in red. Note stacked low grade in hanging wall. Green and orange zone are previously identified alluvium zones

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### **Competent Person Statement – Mineral Resource Estimation**

*The information relating to the Gabanintha Project 2015 Mineral Resource estimate reported in this announcement is based on information compiled by Mr John Tyrrell. Mr Tyrrell is a Member of The Australian Institute of Mining and Metallurgy (AusIMM) and a full-time employee of AMC (AMC Consultants Pty Ltd). Mr Tyrrell has more than 25 years' experience in the field of Mineral Resource Estimation. He has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and in resource model development 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. Tyrrell consents to the inclusion in the report of the matters based on the information made available to him, in the form and context in which it appears.*

*The information is extracted from the report entitled "Substantial high-grade vanadium resource highlights Gabanintha's world-class potential" released to ASX on 10 November 2015 and is available on the company website at [australianvanadium.com.au](http://australianvanadium.com.au).*

*The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resource or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the competent person's findings are presented has not been materially modified from the original market announcement*

### **Competent Person Statement – Exploration Results**

*The information in this statement that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by independent consulting geologist Brian Davis B.Sc (Hons), Dip.Ed. Mr Davis is a Member of The Australian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Brian Davis is employed by Geologica Pty Ltd. Mr Davis has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is 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. Davis consents to the inclusion in the report of the matters based on the information made available to him, in the form and context in which it appears.*

**Appendix 1 - Gabanintha Project – Mineral Resource estimate using a 0.3% V<sub>2</sub>O<sub>5</sub> cutoff for low grade and 0.7% V<sub>2</sub>O<sub>5</sub> cutoff for high grade**

(total numbers may not add up due to rounding)

Material	JORC Resource Class	Million Tonnes	In situ bulk density	V <sub>2</sub> O <sub>5</sub> %	Fe%	TiO <sub>2</sub> %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	LOI%
High grade	Measured	7.0	3.73	1.09	43	12	10	8	3.4
	Indicated	4.3	3.29	1.07	41	12	12	9	4.6
	Inferred	45.5	3.67	0.97	42	11	12	8	2.8
<b>Subtotal</b>		<b>56.8</b>	<b>3.65</b>	<b>1.00</b>	<b>42</b>	<b>11</b>	<b>12</b>	<b>8</b>	<b>3.0</b>
Low grade	Indicated	13.4	2.39	0.55	24	7	27	19	8.7
	Inferred	21.1	2.48	0.53	25	7	27	17	7.0
<b>Subtotal</b>		<b>34.6</b>	<b>2.45</b>	<b>0.53</b>	<b>25</b>	<b>7</b>	<b>27</b>	<b>18</b>	<b>7.6</b>
<b>Subtotal</b>	<b>Measured</b>	7.0	3.73	1.09	43	12	10	8	3.4
<b>Subtotal</b>	<b>Indicated</b>	17.8	2.61	0.68	28	8	23	16	7.7
<b>Subtotal</b>	<b>Inferred</b>	66.7	3.29	0.83	37	10	17	11	4.1
	<b>TOTAL</b>	<b>91.4</b>	<b>3.19</b>	<b>0.82</b>	<b>35</b>	<b>10</b>	<b>18</b>	<b>11</b>	<b>4.8</b>

Appendix 2 Complete Listing of Proximal Alluvial Intersections from Gabanintha Drilling

Hole ID	East	North	From (m)	To (m)	Interval Width	V <sub>2</sub> O <sub>5</sub> %	TiO <sub>2</sub> %	Fe <sub>2</sub> O <sub>3</sub> %
GRC0197	663281.8	7016532	4	6	2	0.52	5.58	21.7
GRC0205	663200.8	7016468	3	5	2	0.47	3.18	43
GRC0205	663200.8	7016468	9	11	2	0.49	10.21	23.9
GRC0200	663335.6	7016478	6	8	2	0.62	6.37	34.5
GRC0201	663310.1	7016457	6	9	3	0.41	3.15	24.1
GRC0203	663259.2	7016417	4	8	4	0.47	4.66	33.55
GRC0204	663233.4	7016397	3	7	4	0.45	6.17	45.3
GRC0088	663302.7	7016353	5	7	2	0.51	8.17	40.6
GRC0212	663440.6	7016264	5	16	11	0.79	8.59	45.66
GRC0213	663421.9	7016248	12	18	6	0.46	4.76	30.93
GRC0214	663395	7016229	4	7	3	0.48	3.9	42.33
GRC0214	663395	7016229	11	15	4	0.49	5.44	41.7
GRC0214	663395	7016229	18	21	3	0.56	6.71	38.9
GRC0215	663372	7016214	14	25	11	0.46	5.17	33.45
GRC0216	663343.8	7016195	5	8	3	0.46	3.53	46.93
GRC0216	663343.8	7016195	17	19	2	0.49	6.29	41.1
GRC0105	663475.2	7016191	1	16	15	0.61	6.14	44.5
GRC0106	663453.5	7016174	2	11	9	0.54	5.62	46.38
GRC0106	663453.5	7016174	15	24	9	0.67	7.68	42.59
GRC0107	663434	7016158	10	12	2	0.42	4.51	39.92
GRC0107	663434	7016158	20	25	5	0.57	6.06	42.33
GRC0108	663414	7016139	10	18	8	0.43	4.65	37.41
GRC0221	663388.4	7016120	8	13	5	0.47	4.48	48.86
GRC0221	663388.4	7016120	17	19	2	0.42	5.5	30.5
GRC0221	663388.4	7016120	25	29	4	0.46	5.43	37
GRC0192	663512.4	7016126	0	9	9	0.96	9.54	51.41
GRC0193	663493.7	7016110	0	9	9	0.98	6.91	51.56
GRC0194	663472.9	7016093	0	10	10	0.64	4.41	47.51
GRC0195	663450.6	7016075	0	15	15	0.64	5.06	48.83
GRC0206	663429.3	7016057	0	16	16	0.66	5.44	51.78
GRC0186	663517.9	7015925	1	9	8	0.49	4.93	43.6
GRC0219	663496	7015910	3	7	4	0.51	7.13	42.1
GRC0220	663538.2	7015739	0	3	3	0.89	4.6	55.6
GRC0176	663619.8	7015698	0	4	4	0.83	6.19	43.7
GRC0177	663594.5	7015680	0	7	7	0.91	8.3	58.33
GRC0178	663570.8	7015663	0	7	7	0.84	6.74	49.59
GRC0179	663543.3	7015643	0	10	10	0.67	5.44	39.59
GRC0167	663627.1	7015597	0	8	8	0.94	8.66	56
GRC0168	663590.9	7015570	0	11	11	0.86	7.96	49.15
GDH901	663714.6	7015663	0	2	2	0.49	3.06	49.49
GDH902	663660.8	7015623	0	5	5	0.70	7.79	31.97
GDH903	663557.1	7015542	0	11	11	0.81	7.25	44.51
GRC0097	663783.1	7015448	0	4	4	0.37	4.85	29.84
GRC0152	663863.2	7015306	1	6	5	0.57	6.83	46.88

### Appendix 3 JORC 2012 Table 1 Exploration Results – 2015 Drilling program

#### JORC 2012 TABLE 1 – CHECKLIST OF ASSESSMENT AND REPORTING CRITERIA

GABANINTHA VANADIUM PROSPECT – MAY 2015

CRITERIA		EXPLANATION
SECTION 1 - SAMPLING TECHNIQUES AND DATA		
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1m 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.</li> </ul>	<ul style="list-style-type: none"> <li>Reverse Circulation (RC) drilling was used to obtain 1.0m downhole interval chip samples.</li> <li>The samples were collected through a cone splitter to obtain a nominal 2.0-5.0kg sample at an approximate 10% split ratio.</li> <li>One 2-5kg (average) sample taken for each one metre sample length and collected in pre-numbered calico sample bags.</li> <li>Sample was dried, crushed and pulverised (total prep) to produce a sub sample for laboratory analysis using XRF and total LOI by TGA.</li> <li>Quality of sampling continuously monitored by field geologist during drilling.</li> <li>To monitor the representivity of the sample, 5 duplicates are taken for every 200 samples (1:40).</li> <li>Sampling carried out under Company protocols and QAQC procedures as per industry best practice.</li> <li>Sampling of core is conducted by detailed logging on log sheets and first pass geotechnical logging and photography of each core tray. The digital photos are retained in the database. Core is then marked up and cut as half core with sample intervals identified based on geological boundaries. Submission of samples to the laboratory for XRF analysis for the iron ore suite of minerals.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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.).</li> </ul>	<ul style="list-style-type: none"> <li>Reverse Circulation (RC) drilling employing a 140mm diameter face sampling hammer.</li> <li>A nominal drill spacing of 75mN by 25mE has been completed.</li> <li>Diamond drilling was completed at PQ size and x holes were completed</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>RC sample recovery is recorded by the geologist and is based on how much of the sample is returned from the cone splitter. This is recorded as good, fair, poor or no sample.</li> <li>To ensure maximum sample recovery and the representivity of the samples, an experienced Company geologist is present during drilling and monitors the sampling process. Any issues are immediately rectified.</li> <li>No significant sample recovery issues were encountered in the RC drilling.</li> </ul>

		<ul style="list-style-type: none"> <li>No twin RC or diamond drill holes have been completed to assess sample bias due to preferential loss/gain of fine/coarse material or due to wet drilling.</li> <li>AVL is satisfied that the RC holes have taken a sufficiently representative sample of the mineralisation and minimal loss of fines has occurred in the RC drilling resulting in minimal sample bias.</li> <li>No relationship between sample recovery and grade has been demonstrated.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Logging of lithological intervals by collecting chips or clay sample every 1m corresponding with 1m sampled interval. This level of detail supports appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>RC logging is both qualitative and quantitative in nature.</li> <li>RC logging records the abundance/proportions of specific minerals and material types, lithologies, weathering, colour and physical hardness is estimated by chip recovery and properties (friability, angularity).</li> <li>The entire length of RC holes were logged on lithological intervals, 100% of the drilling was logged. Where no sample was returned due to cavities/voids it is recorded as such.</li> <li>Geophysical data collected from available RC holes only magnetic susceptibility collected by RT1 hand magnetic susceptibility metre on the outsides of the green bags. Results are recorded and downloaded onto the computer at the end of the day.</li> </ul>
Sub-sample techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling technique:             <ul style="list-style-type: none"> <li>RC Chip Samples:                 <ul style="list-style-type: none"> <li>~4kg RC chip samples are collected via cone splitter for each 1m interval drilled in a prenumbered calico bag. Samples are kept dry where possible.</li> <li>The sample sizes are considered to be appropriate to correctly represent the mineralisation based on the style of mineralisation (massive magnetite/martite), the thickness and consistency of intersections, the sampling methodology and percent value assay ranges for the primary elements.</li> </ul> </li> </ul> </li> <li>Quality Control Procedures             <ul style="list-style-type: none"> <li>Duplicated sample: 5 every 200 samples (1:40).</li> <li>Certified Reference Material were prepared for Yellow Rock by Quantum Analytical Services in Perth containing a range of vanadium values . The assay standards were inserted: 5 in every 100 samples (1:20).</li> <li>Blank washed sand material: 5 every 200 samples (1:40).</li> <li>Overall QAQC insertion rate of 1:10.</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>▪ Sample weights recorded for all samples. The recorded weight included the entire sample (large green bag ~20kg) and the ~4kg calico bag</li> <li>▪ Lab duplicates taken where large samples required splitting down by the lab.</li> <li>▪ Lab repeats taken and standards inserted at predetermined level specified by the lab.</li> </ul> <p>Sample preparation in the laboratory:</p> <ul style="list-style-type: none"> <li>▪ Sample dried at 105°C for 18-24 hrs.</li> <li>▪ <i>Sample split</i> 50:50. One portion retained for future testing (metallurgical)</li> <li>▪ Second portion crushed to nominal -3mm by Boyd crusher.</li> <li>▪ Pulverised to 90% passing at 75µm using a LM2 mill.</li> <li>▪ Sub-sample pulp to produce a 66 gram sample for analysis</li> </ul>
<p>Quality of assay data and laboratory tests</p>	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• All samples reported from the 2015 drilling program were submitted to Quantum Analytical Services in Perth and Bureau Veritas in Perth and assayed for the full iron ore suite by XRF (24 elements) and for total LOI by thermogravimetric technique. The method used is designed to measure the total amount of each element in the sample.</li> <li>• Laboratory procedures are in line with industry standards and appropriate for iron ore deposits.</li> <li>• Samples are dried at 105°C in gas fired ovens for 18-24 hours before being split 50:50. One portion is retained for future testing, while the other is then crushed to a nominal -3mm size by Boyd crusher, then pulverised to 90% passing 75 micron using a LM2 mill. Sub-samples are collected to produce a 0.66g sample that is dried further, fused at 1100C for 10 minutes poured into a platinum mould and placed in the XRF machine for analysing and reporting.</li> <li>• A total LOI is measured by Thermogravimetric methods (TGA).</li> <li>• Certified Reference Material assay standards, field duplicates and umpire laboratory analysis are used for quality control.</li> <li>• There were no discernable issues with sample representivity and all duplicate samples were within 10% of the original sample value.</li> <li>• Acceptable levels of precision have been achieved with all standard assays reporting within 2 standard deviations of the certified mean grade for the 12 main elements of interest.</li> <li>• Certified Reference Material assay standards having a good range of values were inserted at predefined intervals by Yellow Rock and randomly by the lab at set levels. Results highlight that sample assay values are accurate and precise.</li> <li>• Analysis of field duplicate and lab pulp repeat samples reveals that greater than 90% of pairs have less than 10% difference and the precision of samples is within acceptable limits, which concurs with industry best practice. The lab also inserts its own standards at set frequencies and monitors the precision of the XRF analysis. These results also reported well</li> </ul>

		<p>within the specified 2 standard deviations of the mean grades for all 12 main elements of interest.</p> <ul style="list-style-type: none"> <li>• XRF calibrations are checked once per shift using calibration beads made using exact weights.</li> <li>• The Laboratory performs repeat analyses of sample pulps at a rate of 1:20 (5% of all samples) these compare very closely with the original analysis for all elements.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• Significant intersections have been independently verified by alternative company personnel.</li> <li>• The Competent Person has visited site and inspected the sampling process in the field and also inspected the Laboratory.</li> <li>• All primary data are captured on paper logs and entered into excel templates.</li> <li>• All paper copies have been scanned and both digital and paper copies stored.</li> <li>• All data is sent to Perth and stored in the secure, centralised Datashed SQL database which is managed by a database administrator.</li> <li>• Documentation related to data custody, validation and storage are maintained on the company's server.</li> <li>• No adjustments or calibrations were made to any assay data, apart from resetting below detection values to half positive detection.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• All Collars were initially surveyed by MHR Surveyors, Surveyed using Trimble RTK GPS then Company personnel shifted pegs into straight lines by sight as a variation on planned drill hole location.</li> <li>• MHR Surveyors then picked up final hole coordinates using Trimble RTK GPS with expected relative accuracy of 0.03m E,N and 0.05m RL</li> <li>• The grid system for Gabanintha Vanadium prospect is MGA_GDA94 Zone 50.</li> <li>• Topographic data collected by Fugro Airborne Surveys Pty Ltd based on 2m vertical contour interval resolution derived from 5m DTM. Aerial survey flown in September 2011. Data supplied in projection MGA_GDA94 Zone 50.</li> <li>• Downhole gyroscopic surveys are attempted on all RC and diamond holes by McKay Drilling or their subcontractors. Readings are taken at 10 m intervals downhole using a Reflex Gyro E723 survey tool with a stated accuracy of +/-1° in azimuth and +/-0.1° in inclination. QC of the gyro tool involved calibration testing by on the 27/04/2014 by Reflex Technology International.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• Data spacing for reporting of Exploration Results.</li> <li>• 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.</li> <li>• Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>• Drill spacing on an approximate 75m by 25m grid, however due to variable previous drilling this is sometimes not achievable.</li> <li>• Pre-2015 drillhole spacing of 200m-500m along strike and 100m across strike</li> <li>• This drill spacing is sufficient to establish the degree of geological and grade continuity applied under the 2012 JORC code and is suitable for this style of deposit.</li> </ul>

		<ul style="list-style-type: none"> <li>Sample compositing has not been applied to the RC samples; all RC samples are collected at 1m intervals.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The attitude of the lithological units is dominantly west-south-westerly dipping from 40-80 degrees and is drilled to the northwest with drill holes inclined at -60 degrees to the orientation of the lithological units. Due to locally varying intersection angles between drill holes and lithological units all results are defined as downhole widths.</li> <li>No drilling orientation and sampling bias has been recognized at this time and is not considered to have introduced a sampling bias.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Samples are packed into polyweave bags and then placed inside sealed Bulka bags. Samples are delivered to a 3rd party despatch point in Meekathara by Company staff.</li> <li>Chain of custody is managed by AVL.</li> <li>Samples are transported to the relevant Perth laboratory by courier (TOLL).</li> <li>Once received at the laboratory, samples are stored in a secure yard until analysis.</li> <li>The lab receipts received samples against the sample dispatch documents and issues a reconciliation report for every sample batch.</li> <li>Sample security was not considered a significant risk to the project.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>The AVL database has been compiled from primary data by independent database consultants Mitchell River Group based on original assay data and historical database compilations.</li> <li>The Company Datashed database, managed by Mitchell River Group is considered to be of sufficient quality for use in reporting of assay results, QA/QC results and for use in Mineral Resource estimation.</li> <li>A regular review of the data and sampling techniques is carried out internally.</li> <li>Mitchell River Group (completed an audit of the existing database prior to the new compilation into a Datashed SQL database in April 2015. Following the construction of a new database, a QA/QC audit was completed on all historical data and the current drilling results reported in this release procedures in March/April 2014.</li> </ul>

## SECTION 2 - REPORTING OF EXPLORATION RESULTS

<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership include 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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Exploration Prospects are located wholly within Exploration Lease P51/2567 and E51/1843. The tenement is 100% owned by Yellow Rock.</li> <li>The tenements lie within the Yugunga Nya Native Title Claim (WC1999/046). A Heritage survey was undertaken prior to commencing drilling which only located isolated artefacts but no archaeological sites <i>per se</i>.</li> </ul>
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		<ul style="list-style-type: none"> <li>At the time of reporting, there are no known impediments to obtaining a licence to operate in the area and the tenement is in good standing.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>The Gabanintha deposit was identified in the 1960's by Mangore P/L and investigated with shallow drilling, surface sampling and mapping. In 1998, Drilling by Intermin Resources confirmed the down dip extent and strike continuation under cover between outcrops of the vanadium rich horizons.</li> <li>Additional RC and initial diamond drilling was conducted by Greater Pacific NL and then Yellow Rock Resources up until 2011.</li> <li>Mineral Resource estimates have been conducted on the deposit</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The vanadium resource is located in a massive to disseminated ad cumulate titaniferous magnetite layer as part of a differentiated gabbroic sill.</li> </ul>
<b>Drill hole information</b>	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to Table 1 above.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>A nominal 0.5% lower V2O5 cut is applied with 2m internal dilution and 4m minimum width for significant intercepts. These criteria have been selected to most appropriately represent the mineralisation, taking into account overall deposit grade and geological continuity.</li> <li>Zones containing &gt;1% V2O5 (minimum 2m internal dilution and 4m minimum width) are reported and mostly represent zones of massive magnetite mineralisation, mostly belonging to the MMZ (Main Magnetite Zone, which forms a ~10m thick (drilled length) horizon located at the base of the intrusion.</li> <li>Intercepts are length weighted averages.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul style="list-style-type: none"> <li>The attitude of the lithological units is dominantly west-south-westerly dipping from 40-70 degrees and is drilled to the northeast with drillholes inclined at -60 degrees toward the orientation of the lithological units. Due to locally varying intersection angles between drill holes and lithological units all results are defined as downhole widths.</li> <li>The drilled downhole depths are taken to be well correlated to the true width due to the relative orientations.</li> </ul>

<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Collar plan and sections through the deposit with stratigraphic and mineralisation interpretations are available.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All results are reported above a cutoff of 0.5% V<sub>2</sub>O<sub>5</sub>.</li> </ul>
<b>Other exploration data</b> <b>substantive</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Surface Geological (simple regolith, lithological and structural) mapping of the Gabanintha Vanadium prospect where possible has been completed by AVL geologists.</li> <li>Routine multi-element analysis of potential deleterious or contaminating substances such as Arsenic, Lead, Phosphorus and Sulphur is completed for all samples.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> </ul>	<ul style="list-style-type: none"> <li>Compile database and recalculate the resource model.</li> <li>Undertake metallurgical test work to incorporate into the feasibility study</li> <li>Additional drilling will be conducted as required by feasibility study investigations</li> </ul>