

# QUARTERLY ACTIVITIES REPORT

*Period ending 31<sup>st</sup> December 2019*

## HIGHLIGHTS

### The Australian Vanadium Project

- Resource infill drilling completed with objective to significantly increase the current 17 year planned mine life and scale of the Project.
- Mineral Resource Estimate update underway to incorporate all recent drilling results including:
  - Reverse Circulation (RC) drilling from late 2018 in fault block 6;
  - RC pre-collar/diamond tail drilling from January - April 2019 in fault blocks 17 and 20;
  - 13 RC holes completed in October 2019; and
  - 30 RC holes completed in December 2019.
- Pilot study work has shown increased vanadium extraction and improvements to process design.
- Option agreement signed over land to locate the processing plant for The Australian Vanadium Project near the city of Geraldton in Western Australia.
- Letter of Intent signed with Hebei Yanshan Vanadium and Titanium Industry Technology Research Co Ltd, a subsidiary of HBIS Group Chengsteel.

### Energy Storage

- Sale reported of an 80kW/320kWh vanadium redox flow battery (VRFB) to a dairy farmer in Meredith, Victoria.
- Western Power Community battery tender response submitted.
- Updated presentation released at the inaugural National Renewables in Agriculture Conference.
- 2020 being touted as the year of energy storage.

### Corporate

- AVL completed \$6.6m capital raising via a strongly supported Share Purchase Plan with a top-up placement to Sophisticated Investors.
- Cash at bank on 31<sup>st</sup> December 2019 was \$6.2 million.
- AMEC Community Contribution Award awarded to the Stephen Michael Foundation in conjunction with AVL, Sandfire Resources Ltd and Westgold Resources Ltd.

## Management Comment

AVL continues to progress its high-grade vanadium deposit south of Meekatharra in Western Australia through to production. The technical team's input is de-risking The Australian Vanadium Project ("the Project") for existing and future investors, building the basis for a production scenario that can be a world leader in low-cost and efficient operation. Positive outcomes from the pilot study work demonstrate the critical importance of a detailed technical approach, allowing us to deeply understand the deposit and how the resource behaves during processing. Our geological team is developing a similar level of understanding of the resource and geometallurgy, which will ensure that mine scheduling is the most effective it can be.

Strong investor support for the September 2019 capital raising (Share Purchase Plan and Sophisticated Placement raising \$6.6m) and a very stable top 50 shareholders, gives the AVL team the support it needs to focus intensely on its goal of technical excellence and financing during the March and June quarters.

We are delighted to have been awarded the AMEC Community Contribution Award with the Stephen Michael Foundation and applaud their work in communities across Western Australia.

Signing of a key Letter of Intent in early January 2020 with a subsidiary of one of the world's largest steel and vanadium producers, HBIS Group Chengsteel (Hebei Yanshan Vanadium and Titanium Industry Technology Research Co Ltd) illustrates the emerging global recognition of The Australian Vanadium Project as a leading contender to provide a vital new primary vanadium production source, located in a stable mining jurisdiction.

Activities for the quarter ended 31<sup>st</sup> December 2019 for Australian Vanadium Limited ("AVL" or "the Company") are as follows:

## THE AUSTRALIAN VANADIUM PROJECT

### Resource Infill Drilling for Project Extension

Feedback from potential investors and offtake partners has demonstrated the importance of maximising The Australian Vanadium Project's life. Due to the extended strike of the deposit that the Company controls tenure, there is potential to significantly increase the current 17 year planned mine life and scale of the Project. During the quarter AVL completed two resource drilling programmes.

First Drilling Programme (Announcement November 28, 2019)

On 10<sup>th</sup> October, AVL announced that it had commenced the first drilling programme, targeting significant mine life extensions at The Australian Vanadium Project and on November 28<sup>th</sup> the results were released. 1,224 metres of Reverse Circulation drilling were completed at the Project and results confirmed the consistency and high-grade of the massive magnetite horizons, improving the resource interpretation to support an updated Mineral Resource Estimate.

Assay results from the thirteen holes were received and the best intersections were as follows:

- 17m at 1.23% V<sub>2</sub>O<sub>5</sub> from 38m in Hole 19RRC002
  - Including 8m at 1.30% V<sub>2</sub>O<sub>5</sub> from 62m
- 12m at 1.21% V<sub>2</sub>O<sub>5</sub> from 22m in Hole 19RRC003
  - Including 8m at 1.28% V<sub>2</sub>O<sub>5</sub> from 24m
- 17m at 1.14% V<sub>2</sub>O<sub>5</sub> from 58m in Hole 19RRC004
  - Including 5m at 1.29% V<sub>2</sub>O<sub>5</sub> from 62m
- 20m at 1.04% V<sub>2</sub>O<sub>5</sub> from 125m in Hole 19RRC012
  - Including 4m at 1.29% V<sub>2</sub>O<sub>5</sub> from 136m

**Table 1 - Significant Intersections**

Hole ID	From (m)	To (m)	Interval	V <sub>2</sub> O <sub>5</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	SiO <sub>2</sub> %	Zone
19RR0001	38	50	12	1.10	63.79	12.61	11.62	HG10
<i>Including</i>	<i>38</i>	<i>41</i>	<i>3</i>	<i>1.39</i>	<i>68.59</i>	<i>17.43</i>	<i>4.06</i>	
19RRC002	57	74	17	1.23	68.42	14.20	5.14	HG10
<i>Including</i>	<i>62</i>	<i>70</i>	<i>8</i>	<i>1.30</i>	<i>72.50</i>	<i>14.93</i>	<i>2.61</i>	
19RRC003	22	34	12	1.21	68.06	13.81	5.47	HG10
<i>Including</i>	<i>24</i>	<i>32</i>	<i>8</i>	<i>1.28</i>	<i>71.00</i>	<i>14.74</i>	<i>3.62</i>	
19RRC004	58	75	17	1.14	65.80	13.14	7.40	HG10
<i>Including</i>	<i>62</i>	<i>67</i>	<i>5</i>	<i>1.29</i>	<i>72.80</i>	<i>15.18</i>	<i>2.58</i>	
19RRC005	No Significant Intersection - Fault Zone							HG10
19RRC006	No Significant Intersection - Fault Zone							HG10
19RRC007	84	94	10	1.10	67.80	12.42	7.43	HG10
19RRC008	124	135	11	1.10	71.30	12.76	5.46	HG10
19RRC009	26	33	7	1.21	70.73	14.39	4.37	HG10
19RRC010	54	68	14	1.05	65.33	12.62	8.09	HG10
<i>Including</i>	<i>61</i>	<i>65</i>	<i>4</i>	<i>1.29</i>	<i>72.72</i>	<i>15.48</i>	<i>1.88</i>	
19RRC011	125	129	4	0.92	55.32	10.85	17.38	HG10
19RRC012	125	145	20	1.04	58.39	12.23	9.48	HG10
<i>Including</i>	<i>136</i>	<i>140</i>	<i>4</i>	<i>1.29</i>	<i>67.64</i>	<i>15.15</i>	<i>3.67</i>	
19RRC013	101	105	4	0.68	51.32	7.85	21.02	HG10

Second Drilling Programme (Announcement December 20, 2019)

On 10<sup>th</sup> December, AVL announced that it had started a second resource infill drilling programme at The Australian Vanadium Project and on 20<sup>th</sup> December it was announced that the programme had been successfully completed.

The programme focused on the southern blocks of AVL's 11.5km strike length. Blocks 16 and 8 were the focus of drilling which was designed to infill existing drill holes to 140m x 30m drill spacing, with a view to increasing the Mineral Resource category from the current Inferred Resources to Indicated Resources.

Figure 1 shows the location of the AVL southern resource blocks and the location of the phase 2 drilling. Results from the second drilling programme are expected to be released in Q1 2020.

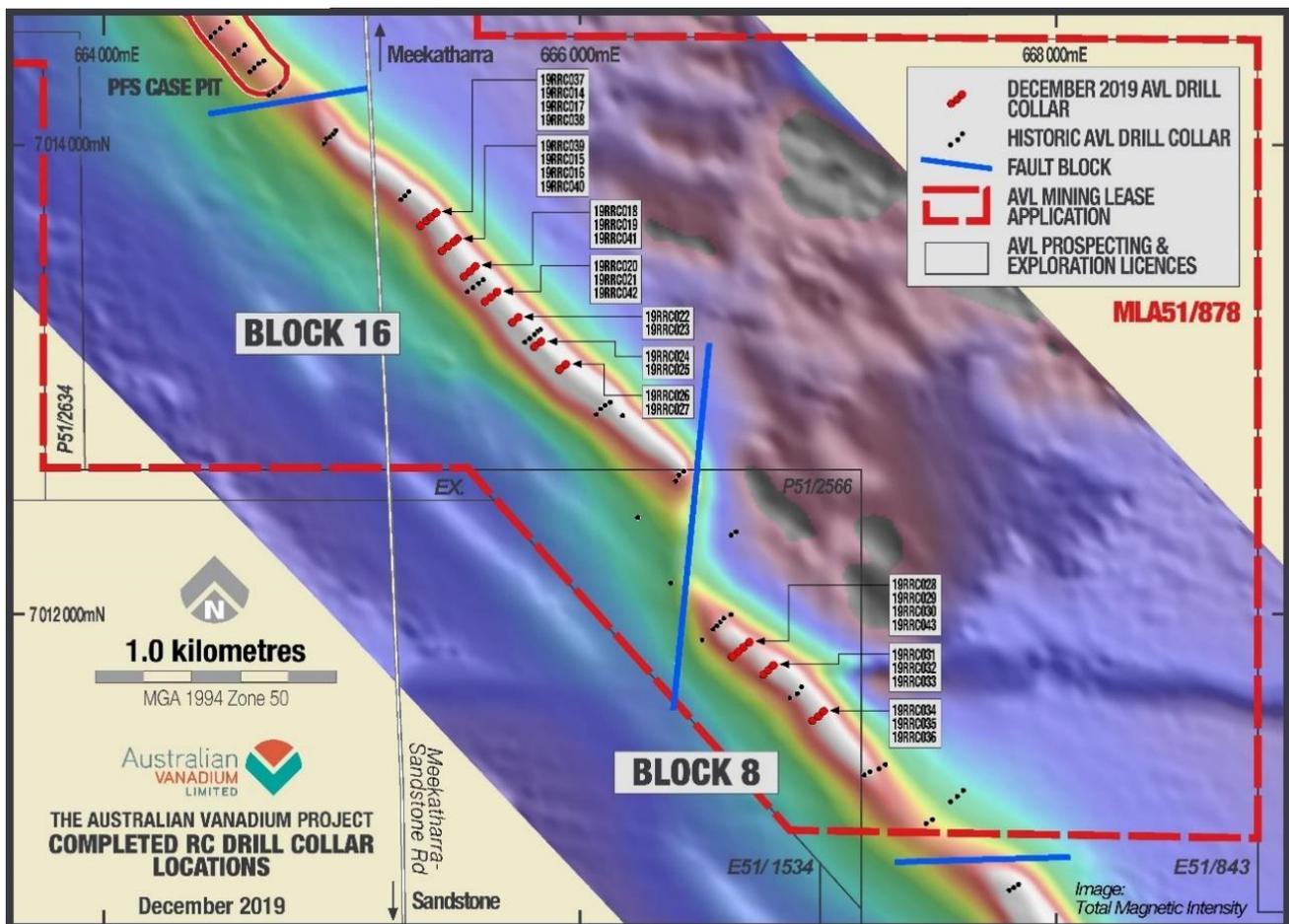


Figure 1 - Completed RC Drill Collar Locations in Southern Blocks

Table 2 includes details of the current Inferred Resources (shown in red) that were targeted through this drilling in Blocks 16 and 8.

**Table 2 - Resource Data**

	Block #	Cat	Mt	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 %
HG 10	20	Measured	9.2	1.11	42.9	12.7	10.2	7.9	3.8
	22		1.0	1.1	41.7	12.5	10.4	9.3	4.9
		<b>Subtotal</b>	<b>10.2</b>	<b>11.1</b>	<b>42.7</b>	<b>12.6</b>	<b>10.2</b>	<b>8.0</b>	<b>3.9</b>
	17	Indicated	5.5	1.01	43.6	11.5	11.4	7.8	3.7
	20		5.9	1.09	44.4	12.1	9.7	7.2	3.1
	22		0.7	1.09	40.8	12.6	11.4	9.6	5.2
		<b>Subtotal</b>	<b>12.1</b>	<b>1.05</b>	<b>43.8</b>	<b>11.9</b>	<b>10.6</b>	<b>7.6</b>	<b>3.5</b>
	6	Inferred	5.2	0.91	40.1	10.4	14.7	8.4	3.3
	<b>8</b>		<b>21.7</b>	<b>0.92</b>	<b>40.5</b>	<b>11.0</b>	<b>12.7</b>	<b>8.4</b>	<b>3.8</b>
	15		13.9	1.00	45.1	11.3	9.1	6.3	3.7
	<b>16</b>		<b>19.7</b>	<b>1.00</b>	<b>42.5</b>	<b>11.0</b>	<b>11.3</b>	<b>7.2</b>	<b>2.3</b>
	17		1.5	0.95	42.7	10.9	12.7	7.9	3.8
	20		4.7	1.08	43.4	12.0	10.6	7.7	3.4
	21		5.1	1.00	41.7	11.4	12.3	7.8	3.9
	22		2.6	1.02	40.0	12.9	12.1	10.4	5.7
			<b>Subtotal</b>	<b>74.5</b>	<b>0.97</b>	<b>42.1</b>	<b>11.2</b>	<b>11.6</b>	<b>7.6</b>
	<b>Sum</b>	<b>HG Total</b>	<b>96.7</b>	<b>1.0</b>	<b>42.4</b>	<b>11.4</b>	<b>11.3</b>	<b>7.7</b>	<b>3.5</b>
LG 2-5	17	Indicated	7.7	0.49	26.1	6.7	26.9	18.0	8.6
	20		18.1	0.51	24.1	7.0	27.8	17.8	8.4
	22		2.9	0.50	23.6	6.8	27.0	17.8	9.9
		<b>Subtotal</b>	<b>28.6</b>	<b>0.5</b>	<b>24.6</b>	<b>6.9</b>	<b>27.5</b>	<b>17.9</b>	<b>8.6</b>
	6	Inferred	4.0	0.46	25.2	6.3	28.1	16.4	7.9
	<b>8</b>		<b>6.4</b>	<b>0.50</b>	<b>23.6</b>	<b>6.6</b>	<b>28.1</b>	<b>18.9</b>	<b>7.9</b>
	15		4.7	0.49	23.5	6.4	29.1	17.1	3.5
	<b>16</b>		<b>18.6</b>	<b>0.52</b>	<b>26.8</b>	<b>6.9</b>	<b>26.5</b>	<b>14.3</b>	<b>5.9</b>
	17		3.0	0.48	25.7	6.7	27.5	17.7	8.5
	20		5.4	0.51	24.7	6.9	27.9	17.4	8.2
	21		5.6	0.45	25.4	6.6	26.7	17.6	9.9
22	6.2		0.43	24.4	6.5	29.0	17.5	9.5	
	<b>Subtotal</b>	<b>53.9</b>	<b>0.49</b>	<b>25.3</b>	<b>6.7</b>	<b>27.5</b>	<b>16.4</b>	<b>7.3</b>	
	<b>Sum</b>	<b>LG Total</b>	<b>82.5</b>	<b>0.49</b>	<b>25.1</b>	<b>6.8</b>	<b>27.5</b>	<b>16.9</b>	<b>7.7</b>
Transported 6-8	<b>8</b>	Inferred	<b>0.9</b>	<b>0.73</b>	<b>33.5</b>	<b>8.4</b>	<b>19.4</b>	<b>12.3</b>	<b>8.2</b>
	15		0.3	0.91	42.9	8.6	13.0	10.1	5.3
	17		0.0	0.53	21.5	7.5	31.7	19.7	8.2
	20		1.1	0.55	16.4	7.4	31.6	24.1	10.9
	21		0.3	0.50	28.3	5.7	24.9	16.6	10.2
	17		0.0	0.59	33.6	6.0	26.6	11.9	5.7
	20		1.6	0.66	29.9	6.6	25.3	15.9	7.4
	22		0.1	0.47	22.6	5.1	27.2	16.6	12.0
	20	0.1	0.50	30.9	5.1	26.3	15.1	7.5	
	<b>Sum</b>	<b>Transported Total</b>	<b>4.4</b>	<b>0.65</b>	<b>28.2</b>	<b>7.2</b>	<b>24.7</b>	<b>16.7</b>	<b>8.5</b>
Total		Measured	10.2	1.1	42.7	12.6	10.2	8.0	3.9
		Indicated	40.7	0.66	30.3	8.3	22.5	14.8	7.1
		Inferred	132.7	0.77	34.8	9.2	18.5	11.5	5.1
		<b>Grand Total</b>	<b>183.6</b>	<b>0.76</b>	<b>34.3</b>	<b>9.2</b>	<b>18.9</b>	<b>12.1</b>	<b>5.5</b>

**Geraldton Option Agreement ([Announcement October 29, 2019](#))**

On 29<sup>th</sup> October, AVL announced that it had signed an option agreement for land to locate the processing plant for The Australian Vanadium Project near the city of Geraldton in Western Australia.

The company's Pre-feasibility Study included a series of trade-off studies, one of which highlighted the potential to locate the processing plant closer to existing gas infrastructure, to take advantage of reduced energy costs. The final site selection process narrowed the preferred location to land which is inland from Geraldton and west of Mullewa, to take full advantage of the available workforce, industry support and existing road, rail water and gas infrastructure. The trade-off study demonstrated that the Geraldton plant location could improve the financial metrics of the Project.



**Figure 2 - Proposed Location of Processing Plant**

Benefits of relocating the processing plant were identified as follows:

- Reduced capital and operating expenditure for gas supply for the Project, as the unit cost of gas is lower at this location and it would be unnecessary to build a new gas pipeline from the existing pipeline infrastructure at Mt Magnet to the minesite location, a distance of approximately 160 kilometres.
- Without the need for natural gas for the roast component of processing at the minesite, the electrical energy requirement onsite can be provided by reliable hybrid power systems, which will include a large component of renewable energy generation. Energy storage as part of the hybrid power system is highly suited to the use of a megawatt-scale vanadium redox flow battery.
- Significantly reduced minesite water requirements by approximately one third of total water used.
- A reduced minesite camp, due to reduced numbers of personnel onsite and workers at the Geraldton location living locally at home.
- Reduced construction costs for the processing plant and cheaper transportation costs of reagents.

Plans are underway for a detailed study of the location. Alongside the savings outlined above, there will be increased costs for transportation of the material from Meekatharra to the processing plant. The potential sale of an iron rich calcine by-product could offset these transportation costs, making the move particularly attractive.

#### **Letter of Intent with Yanshan Vanadium Titanium [\(Announcement January 15, 2020\)](#)**

On 15<sup>th</sup> January, AVL announced that it has signed a Letter of Intent (LOI) with Hebei Yanshan Vanadium and Titanium Industry Technology Research Co Ltd (“Yanshan Vanadium Titanium”) to negotiate and sign a binding technical services and purchase agreement for AVL’s vanadium products.

Yanshan Vanadium Titanium is a subsidiary of HBIS Group Chengsteel based in the Hebei province in China. HBIS Group is one of the world’s largest steelmakers, with approximately 120,000 employees. HBIS Chengsteel is currently the world’s third largest vanadium producer and has been involved in many ground-breaking projects.

The terms of the LOI include AVL providing a product sample to Yanshan Vanadium Titanium for testing. Product specifications, price and volume are to be determined through further discussion. Yanshan Vanadium Titanium is also keen to assist with the processing design for The Australian Vanadium Project.



**Figure 3 - Vincent Algar and Todd Richardson with the Yanshan Vanadium Titanium Technical Research Team at their Head Office in China**

In January 2020, Managing Director Vincent Algar and Chief Operating Officer Todd Richardson visited Chengde to meet with Yanshan Vanadium Titanium at their head office (see Figure 3). Technical discussions were undertaken regarding potential improvements to the Project's process, which Yanshan Vanadium Titanium believes could result in cost improvements.

## **Australian Vanadium Project Path Forward**

### Pilot Study

During the period, the final flowsheet for crushing, milling and beneficiation was defined, as piloting nears completion. The new design is robust and indicates exceptional vanadium recovery and silica rejection, both of which are key to assuring AVL's goal of being a low-cost operation. Both the Year 0-5 and life of mine ("LOM") ore blends were processed at the ALS facility in Balcatta, WA. Final testing is expected to be completed in early February, when the concentrate will be shipped to Metso pyrometallurgical testing facilities for pelletisation and roast testing.



**Figure 4 - Vanadium Rich Iron Concentrate Pellets Produced During Bench-Scale Roast Testing**

Pyrometallurgical bench testwork was completed in early January 2020. The Commonwealth Scientific and Industrial Research Organisation (CSIRO) was commissioned to perform this testing at their Brisbane facilities. Results will define the parameters for the Metso pilot, including reagent usage, operating temperatures, pellet strength and vanadium extraction rates. Final results are expected in quarter 1 of 2020. Preliminary results, reported in the [Corporate Presentation released 4<sup>th</sup> November](#), highlighted improved vanadium extraction yields versus standard roasting and leaching.

### Feasibility Studies

Metallurgical testing and process flow sheet development moved forward in quarter 4 of 2019, allowing for engineering work to begin for the Definitive Feasibility Study. Optimised flowsheet design, material and mass balances, and economic modelling will be incorporated into pilot results in the first quarter of 2020. Other changes will have a significant impact on improving the Pre-Feasibility Study scenario, including results from the successful drilling programme completed in December of 2019, improved vanadium recoveries in roasting, relocation of the processing plant to the Geraldton area and a new staged approach to capital investment which is now being consolidated in the final design.

### Environmental Studies

Environmental work continues to progress well. Follow up work regarding flora and vegetation identification is being undertaken by Biologic, including:

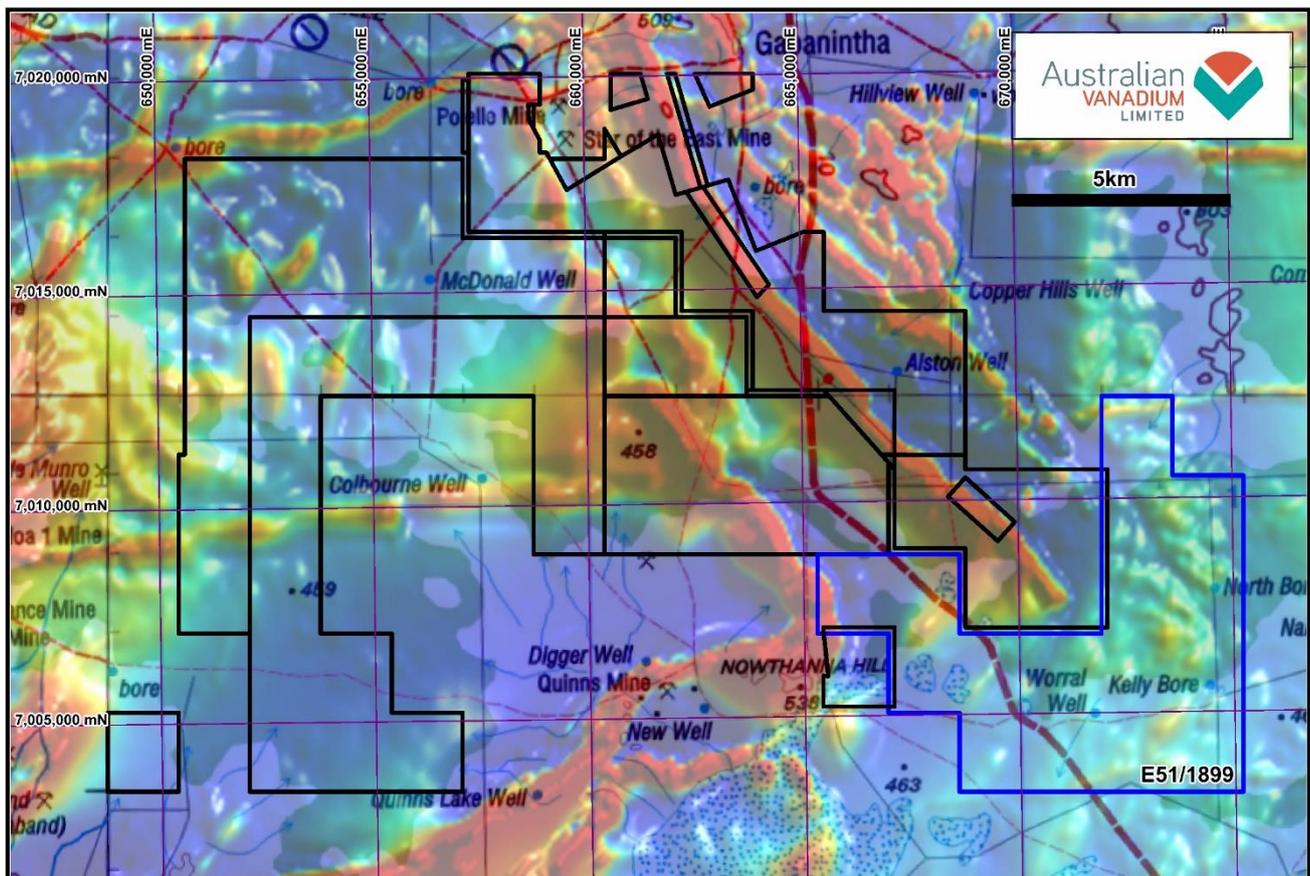
- 3D modelling of habitat for subterranean fauna;
- Taxonomy work to identify oligochaetes; and
- DNS analysis of other taxa.

This work is all being undertaken with the aim of finalising flora and fauna studies by early 2020 for inclusion in the EPA submission

Water modelling is being undertaken based on results of the water drilling programme completed in 2019 and data obtained from the Westgold Resources Limited (“Westgold”) pits. The [announcement released on 25<sup>th</sup> June](#) provides details regarding AVL’s Memorandum of Understanding with Westgold for the delivery of LOM water requirements.

## E51/1899 Tenement Update

During the period, the Company was granted exploration rights over tenement E51/1899 (see Figure 5). This licence covers the southern strike extension of The Australian Vanadium Project and will allow the company to accurately define the exact termination of the deposit strike. Drilling in the southern part of the AVL tenure is sparse and represents potential future resource opportunities.



**Figure 5 - Location of Tenement E51/1899 Over Topography and Regional Aeromagnetics**

In addition to vanadium potential, the tenement has copper-gold potential, hosting the south east (SE) extension of the Gabanintha Gold Mine Shear system, which was recently the focus of encouraging drilling results by Bryah Resources Limited. See the [announcement released 29<sup>th</sup> January](#) by Bryah Resources for details. AVL holds 11.2% of the issued equity in Bryah Resources Limited.

Field reconnaissance in December 2019 found that in the north-eastern portion of E51/1899 a significant regional SE fault presents as a massive multi-event quartz vein that strikes at approximately 145° and rises 10-15 metres above sheetwash plain. Close observation of the quartz shows evidence of veining, with silicification that has then been refractured before being re-healed, with more silica flooding of the original granitic host rock.

White quartz scree dominates the landscape, but minor subcrops of sheared and completely weathered granitic material was observed adjacent to the quartz ridge (slightly downslope).

Late stage crosscutting north-south fault zone was also observed, represented by multiple close spaced fractures overprinting the earlier SE fabric. No geochemical sampling of this fault zone has been undertaken to date.



**Figure 6 - AVL Geologist Examining Faulted Multi-Event Quartz Vein in E51/1899**

The tenement also hosts the eastern extension of the sediments of the Lake Nowthanna system. These sediments host AVL's Uranium-Vanadium Mineral Resource, located on the granted Mining Lease M51/771, and the adjoining licences of Toro Resources Ltd. See the [announcement released 31<sup>st</sup> May](#) for details.

AVL plans to evaluate the potential of the licence for vanadium, copper-gold and uranium and seek appropriate partners for maximising shareholder value of the licence.

**Coates Joint Venture Update** ([Announcement January 2, 2020](#))

The Coates deposit is situated in the Shire of Northam approximately 35km east of Perth (see Figure 7). On 2<sup>nd</sup> January, AVL provided an update on its joint venture agreement with Ultra Power Systems Pty Ltd (UPS). AVL announced that its recent application for a Programme of Works on E70/4924-1 over the Coates vanadium deposit had been approved by the Western Australian Department of Mines, Industry Regulation and Safety. The application is for drilling up to 15 diamond core holes at the Coates deposit, concentrating on the Vacant Crown Land (VCL) portion of the tenement.

The intention is to prepare the diamond drill cores at a laboratory in Perth and then ship the samples to Montreal for metallurgical testing. The drilling programme will be funded and managed by UPS as part of the joint venture agreement.



Figure 7 - Location of Coates Vanadium Tenement

## ENERGY STORAGE

### VSUN Energy Sells VRFB to Victorian Dairy Farmer ([Announcement October 17, 2020](#))

On 17<sup>th</sup> October, AVL announced that its 100% owned subsidiary, VSUN Energy, had sold an 80kW/320kWh vanadium redox flow battery (VRFB) to Meredith Dairy, a well-known goats cheese farm in Victoria. The VRFB will be connected to a 450kW solar array and the system will provide a minimum of four hours of renewable energy storage with its current configuration, allowing the client to increase their onsite renewable generation and consumption, far in excess of what would be capable with a solar array alone. Meredith Dairy's goal is to have a sustainable operation with full power being supplied via onsite renewable generation. Having a battery capable of supplying many hours of power with high cycling capability was crucial in the decision-making process when selecting the energy storage technology. Its non-flammability provides further comfort. Engineering work on the project is progressing well.



*Figure 8 - Goats at Meredith Dairy, Victoria*

### National Renewables in Agriculture Conference and Expo

On 14<sup>th</sup> November, VSUN Energy exhibited at the inaugural National Renewables in Agriculture Conference and Expo in Wagga Wagga, NSW. The one-day event brought together farmers, agriculture and energy consultants, peak bodies and Government representatives to share stories of on-farm renewables. An updated presentation was released to the market and shared at the conference.

### Western Power Community Battery Tender

In December 2019 VSUN Energy submitted a response to Western Power's Community Battery tender. The tender intends to create a panel of providers for Battery Energy Storage Systems. Tenders are currently under review. VSUN Energy is currently finalising an ROI (Request for Information) for a tender for round 2 of Western Power's Stand-alone power systems (SPS).

## Energy Storage in 2020

Many commentators in the renewable energy sector are touting 2020 as the year of energy storage, with vanadium redox flow batteries' strengths becoming more widely understood and the volume of global installations growing. China still leads the way in the utilisation of VRFB technology, with the progression of large projects such as the 200MW/800MWh Rongke Power battery in Dalian and VRB Energy's series of large projects such as the two 200MW/1,000MWh VRFB in Jiangsu, China.

In Australia, in addition to VSUN Energy's projects, there have been a series of installations and announcements utilising redT Energy, UET and CellCube VRFB products. With news of lithium batteries needing to be replaced due to over cycling and lithium battery fires occurring across the world, the VRFB is proving its ability to provide the safe and reliable power supply that its supporters have understood for years. VSUN Energy continues to promote VRFB technology to potential customers from mining, agricultural, commercial and industrial backgrounds, working with clients to progress projects through to development.

## CORPORATE

### Capital Raising and Cash Position

In September 2019, AVL successfully raised \$6.6 million via a Share Purchase Plan which was strongly supported by existing shareholders, with a top-up placement to new sophisticated investors.

The cash position of AVL at 31st December 2019 was \$6.2 million.

### Annual General Meeting ([Corporate Presentation November 22, 2019](#))

On 22<sup>nd</sup> November, AVL held its 2019 Annual General Meeting (AGM). All resolutions were accepted and Managing Director, Vincent Algar, provided attendees with an update on the Project and the Company.

### Marketing

In November 2019, AVL presented to institutions in the UK and Germany. In both countries meetings were set up as part of a targeted roadshow, with positive receptions resulting.

## AMEC Awards

In December 2019, the AVL-sponsored Stephen Michael Foundation received the AMEC (Association of Mining and Exploration Companies) inaugural Community Contribution Award in conjunction with AVL, Sandfire Resources and Westgold. The award celebrates the achievement of the foundation and the work it has undertaken in the Meekatharra community to engage children in school through sport. The foundation has also played a key role in bringing together community and business organisations to play a more cohesive role in the town's development.



**Figure 9 - The Stephen Michael Foundation, in conjunction with AVL, Sandfire Resources Ltd and Westgold Resources Ltd, receiving the Community Contribution Award**

## Vanadium Price

The Company maintains active contact with market participants in the vanadium sector, in both China and the rest of the world. The AVL team has an extensive network of contacts and relationships in vanadium, giving us a unique perspective on market developments.

Our team's current view of the vanadium market and pricing is supported by observation and discussion with our networks, but the market remains opaque and long-term price predictions can be risky.

Combining the ongoing demand for Australian Iron Ore in China, and the Chinese steel industry's increasing use of vanadium to improve its steel quality, it is management's view that demand for traditional vanadium products will continue to grow over coming years. Chinese vanadium producers are close to full capacity, necessitating the development of new, low-cost vanadium sources such as The Australian Vanadium Project.

After a period of significant instability, vanadium product prices look to be settling into a range of US\$6-8/lb V<sub>2</sub>O<sub>5</sub> for the coming year, notwithstanding possible short-term disruptions caused by the coronavirus in China.

New markets such as high purity feeds for vanadium-aluminium alloys and vanadium electrolyte for VRFB have the potential to upwardly disrupt both demand and pricing.

AVL is focused on delivering The Australian Vanadium Project as a lowest cost quartile producer, able to withstand significant price volatility and provide a range of diversified products to reduce income volatility.

For further information, please contact:

**Vincent Algar, Managing Director** +61 8 9321 5594

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*This announcement has been approved in accordance with the Company's published continuous disclosure policy and has been approved by the Board.*

## MINERAL RESOURCE AND ORE RESERVE

**Table 3 - The Australian Vanadium Project Mineral Resource Estimate at November 2018 by Domain and Resource Classification<sup>1</sup>**

Zone	Classification	MT	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%
HG 10	Measured	10.2	1.11	42.7	12.6	10.2	8.0	3.9
	Indicated	12.1	1.05	43.8	11.9	10.6	7.6	3.5
	Inferred	74.5	0.97	42.1	11.2	11.6	7.6	3.4
	<b>Subtotal</b>	<b>96.7</b>	<b>1.00</b>	<b>42.4</b>	<b>11.4</b>	<b>11.3</b>	<b>7.7</b>	<b>3.5</b>
LG 2-5	Measured	-	-	-	-	-	-	-
	Indicated	28.6	0.50	24.6	6.9	27.5	17.9	8.6
	Inferred	53.9	0.49	25.3	6.7	27.5	16.4	7.3
	<b>Subtotal</b>	<b>82.5</b>	<b>0.49</b>	<b>25.1</b>	<b>6.8</b>	<b>27.5</b>	<b>16.9</b>	<b>7.7</b>
Transported 6-8	Measured	-	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-	-
	Inferred	4.4	0.65	28.2	7.2	24.7	16.7	8.5
	<b>Subtotal</b>	<b>4.4</b>	<b>0.65</b>	<b>28.2</b>	<b>7.2</b>	<b>24.7</b>	<b>16.7</b>	<b>8.5</b>
Total	Measured	10.2	1.11	42.7	12.6	10.2	8.0	3.9
	Indicated	40.7	0.66	30.3	8.3	22.5	14.8	7.1
	Inferred	132.7	0.77	34.8	9.2	18.5	11.5	5.1
	<b>Subtotal</b>	<b>183.6</b>	<b>0.76</b>	<b>34.3</b>	<b>9.2</b>	<b>18.9</b>	<b>12.1</b>	<b>5.5</b>

**Table 4 The Australian Vanadium Project Ore Reserve Statement as at December 2018<sup>2</sup>**

Reserve Classification	Tonnes	V <sub>2</sub> O <sub>5</sub> %	Co ppm	Ni ppm	Cu ppm	S%	SiO <sub>2</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	V <sub>2</sub> O <sub>5</sub> (t)
Proved	9,820,000	1.07	172	571	230	0.06	9.47	58.7	65,000
Probable	8,420,000	1.01	175	628	212	0.08	10.07	59.5	56,000
<b>Total</b>	<b>18,240,000</b>	<b>1.04</b>	<b>173</b>	<b>597</b>	<b>222</b>	<b>0.07</b>	<b>9.75</b>	<b>59.1</b>	<b>121,000</b>

<sup>1</sup> Using a nominal 0.4% V<sub>2</sub>O<sub>5</sub> wireframed cut-off for low grade and nominal 0.7% V<sub>2</sub>O<sub>5</sub> wireframed cut-off for high grade (total numbers may not add up due to rounding)

<sup>2</sup> At a cut-off grade of 0.8% V<sub>2</sub>O<sub>5</sub>

**Table 5 - Tenement Schedule**

Tenement information as required by Listing Rule 5.3.3 for the quarter ended 31 December 2019.

Project	Location	Tenements	Economic Interest	Notes	Change in Quarter %	
Western Australia	The Australian Vanadium Project	E51/843	100% Granted <sup>1</sup>		Nil	
		E51/1396	100% Granted <sup>1</sup>		Nil	
		E51/1534	100% Granted <sup>1</sup>		Nil	
		E51/1685	100% Granted <sup>1</sup>		Nil	
		E51/1694	100% Granted <sup>1</sup>		Nil	
		E51/1695	100% Granted <sup>1</sup>		Nil	
		E51/1899	100% Granted <sup>1</sup>		100%	
		ELA51/1943			100% on application	Nil
		ELA51/1944			100% on application	Nil
		P51/2566	100% Granted <sup>1</sup>		Nil	
		P51/2567	100% Granted <sup>1</sup>		Nil	
		P51/2634	100% Granted <sup>1</sup>		Nil	
		MLA51/878			100% <sup>1</sup> on Application	Nil
		Western Australia	Nowthanna	M51/771	100% Granted	
Western Australia	Peak Hill	E52/3349	0.75% NSR Production Royalty		Nil	
Western Australia	Coates	E70-4924-I	100% Granted		Nil	
South Africa	Blesberg	(NC) 940 PR	5%	Earning up to 26%	5%	

Note 1: Australian Vanadium Limited retains 100% rights in V/U/Co/Cr/Ti/Li/Ta/Mn & iron ore on The Australian Vanadium Project. Bryah Resources Limited holds the Mineral Rights for all minerals except V/U/Co/Cr/Ti/Li/Ta/Mn & iron ore only

## FORWARD LOOKING STATEMENTS

Some of the statements contained in this report are forward looking statements. Forward looking statements include, but are not limited to, statements concerning estimates of tonnages, expected costs, statements relating to the continued advancement of Australian Vanadium Limited's projects and other statements that are not historical facts. When used in this report, and on other published information of Australian Vanadium Limited, the words such as 'aim', 'could', 'estimate', 'expect', 'intend', 'may', 'potential', 'should' and similar expressions are forward looking statements.

Although Australian Vanadium Limited believes that the expectations reflected in the forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that the actual results will be consistent with these forward-looking statements. Various factors could cause actual results to differ from these forward-looking statements including the potential that Australian Vanadium Limited's project may experience technical, geological, metallurgical and mechanical problems, changes in vanadium price and other risks not anticipated by Australian Vanadium Limited.

Australian Vanadium Limited is pleased to report this information in a fair and balanced way and believes that it has a reasonable basis for making the forward-looking statements in this report, including with respect to any mining of mineralised material, modifying factors, production targets and operating cost estimates.

## COMPETENT PERSON STATEMENT – EXPLORATION RESULTS AND TARGETS

The information in this report that relates to Exploration Results and Exploration Targets is based on and fairly represents information and supporting documentation prepared by Mr Brian Davis (Consultant with Geologica Pty Ltd). Mr Davis is a shareholder of Australian Vanadium Limited. Mr Davis is a member of the Australasian Institute of Mining and Metallurgy and has sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Davis consents to the inclusion in this report of the matters based on his information in the form and context in which they appear.

## **COMPETENT PERSON STATEMENT — MINERAL RESOURCE ESTIMATION**

The information in this announcement that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Brian Davis (Consultant with Geologica Pty Ltd). Mr Davis is a shareholder of Australian Vanadium Limited. Mr Barnes and Mr Davis are members of the Australasian Institute of Mining and Metallurgy (AusIMM) and Mr Davis is a member of the Australian Institute of Geoscientists, both have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Barnes is the Competent Person for the estimation and Mr Davis is the Competent Person for the database, geological model and site visits. Mr Barnes and Mr Davis consent to the inclusion in this announcement of the matters based on their information in the form and context in which they appear.

## **COMPETENT PERSON STATEMENT — ORE RESERVES**

The scientific and technical information in this announcement that relates to ore reserves estimates for the Project is based on information compiled by Mr Roselt Croeser, an independent consultant to AVL. Mr Croeser is a member of AusIMM. Mr Croeser 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 JORC 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Croeser consents to the inclusion in the announcement of the matters related to the ore reserve estimate in the form and context in which it appears.

## **COMPETENT PERSON STATEMENT – METALLURGICAL RESULTS**

The information in this announcement that relates to Metallurgical Results is based on information compiled by independent consulting metallurgist Brian McNab (CP. B.Sc Extractive Metallurgy), Mr McNab is a Member of AusIMM. Brian McNab is employed by Wood Mining and Metals. Mr McNab 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 JORC 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr McNab consents to the inclusion in the announcement of the matters based on the information made available to him, in the form and context in which it appears.