ASX Announcement

Vanadium Drilling Results Support DFS

Positive results from the pilot collection drilling demonstrate further consistency of width, grade and depth extent of The Australian Vanadium Project

Key Points:

- **30 large diameter diamond core holes were completed at The Australian Vanadium Project in April 2019 for use in ongoing pilot scale test work**
- **Material from 14 of the holes was used primarily for high-priority DFS pilot scale processing**
- **Assay results from 16 successful depth-extension holes targeting mineralisation below the base of the PFS life of mine pit have been received**
- **A high-grade vanadium-rich zone grading over 1.2% V_2O_5 is identified consistently at depths below previous drilling, supporting previous work**
- **Best intersections include;**
  - **18m at 1.17% V_2O_5 and 73.4% Fe_2O_3 from 109m in 19MTDT004**
  - **11.67m at 1.20% V_2O_5 and 75.5% Fe_2O_3 from 129.65m in 19MTDT011**
  - **15m at 1.23% V_2O_5 and 61.2% Fe_2O_3 from 101m in 19MTDT015**
  - **17m at 1.17% V_2O_5 and 61.3% Fe_2O_3 from 20.2m in 19MTDT016**
- **Results will be included in a resource upgrade planned for the 4th quarter**
- **Program focused on development area in northern 2km of total 11.5km of AVL held deposit strike**
- **Pilot scale metallurgical test program underway to confirm details of processing circuit for final DFS design**
- **Hydrology drilling, DFS engineering and environmental approval support work ongoing**

18 July 2019

ASX ANNOUNCEMENT

Australian Vanadium Limited

ASX: AVL
FRA: JT7.F
ABN: 90 116 221 740
T: +61 8 9321 5594
F: +61 8 6268 2699
E: info@australianvanadium.com.au
W: australianvanadium.com.au

Street Address:

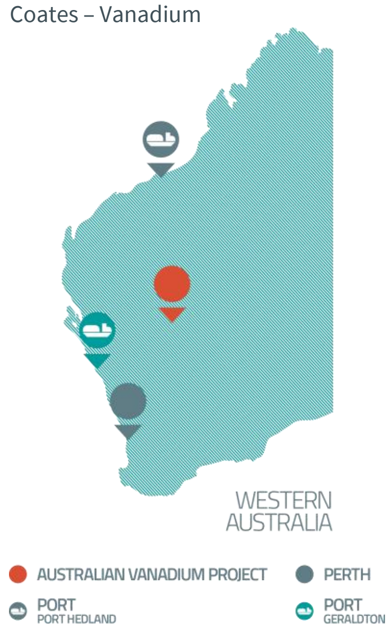
Level 1, 85 Havelock Street
West Perth WA 6005

Postal Address:

Level 1, 85 Havelock Street
West Perth WA 6005

Projects:

The Australian Vanadium Project – Vanadium
Blesberg, South Africa – Feldspar
Nowthanna Hill – Uranium/Vanadium
Coates – Vanadium



Australian Vanadium Limited (ASX: AVL, "the Company" or AVL") is pleased to report on assays received from resource drilling conducted in April 2019 at the Australian Vanadium Project ("the Project"), near Meekatharra in Western Australia (see **Figure 5**).

As reported in April, (see ASX announcement dated 4 April 2019 *'Highly Successful Drilling Program Completed'*), the metallurgical drill program of 30 holes included 14 diamond core drillholes used for the collection of material for the Company's ongoing pilot-scale metallurgical test program, which forms a critical part of the ongoing Definitive Feasibility Study at the Project. The pilot sample collection, characterisation and processing were prioritised. An additional 16 deep diamond drill intersections were completed for additional sample collection and resource extensions. Assays have been received for 14 of the 18 vertical diamond tails and will be used to complete a revised Mineral Resource Estimate. The drill holes targeted extensions to the resources at the bottom of and below the current pit design, where the deposit remains open at depth.

Managing Director Vincent Algar comments, "The massive magnetite intersections show consistent high grades in this program, which are hallmarks of AVL's project and are further supported by this drilling. The deeper holes reported will now be integrated into the resource and mine planning. The pit depths in the PFS were often constrained by the drilling depth and the subsequent resource model. These drill holes will support new de-risked resources that can feed the DFS mine schedule."

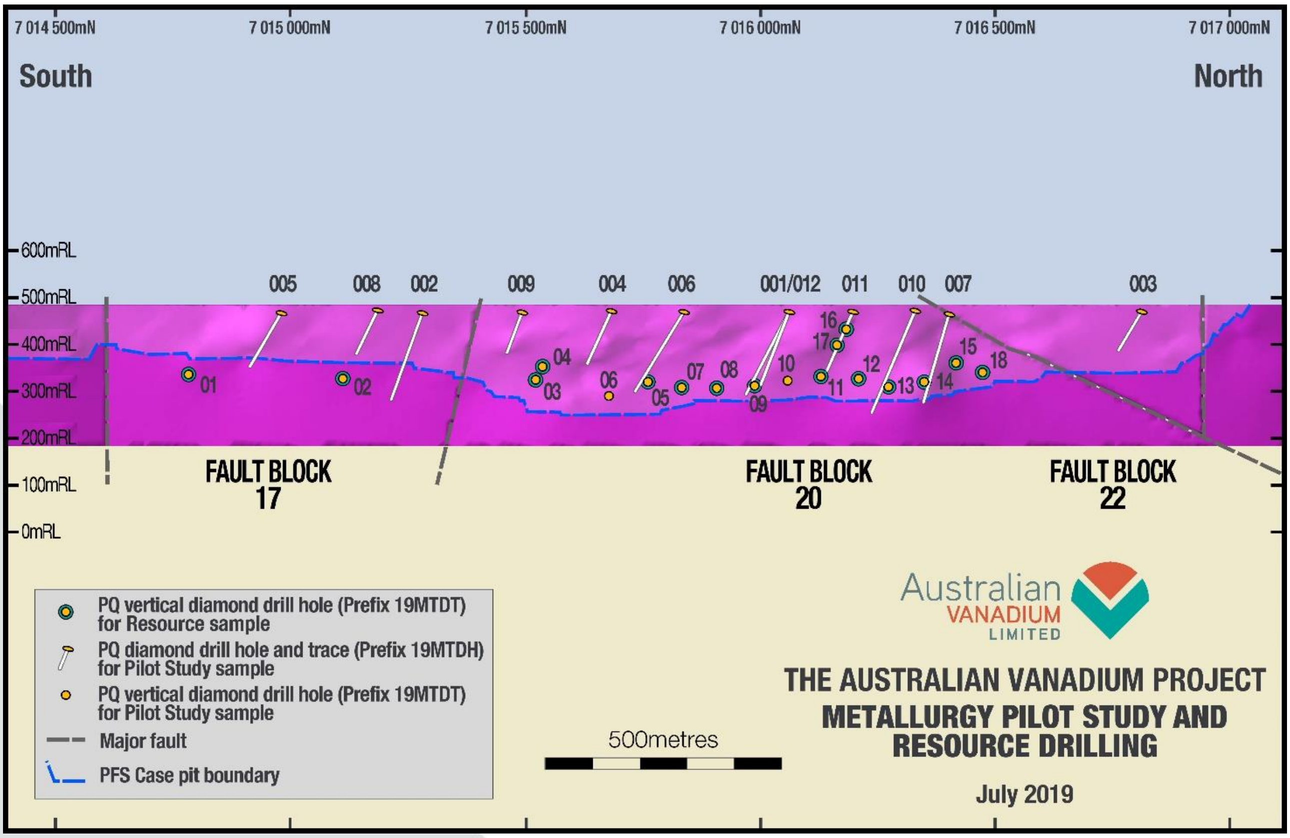


Figure 1 Schematic Long Section of the 2019 metallurgical diamond drilling program

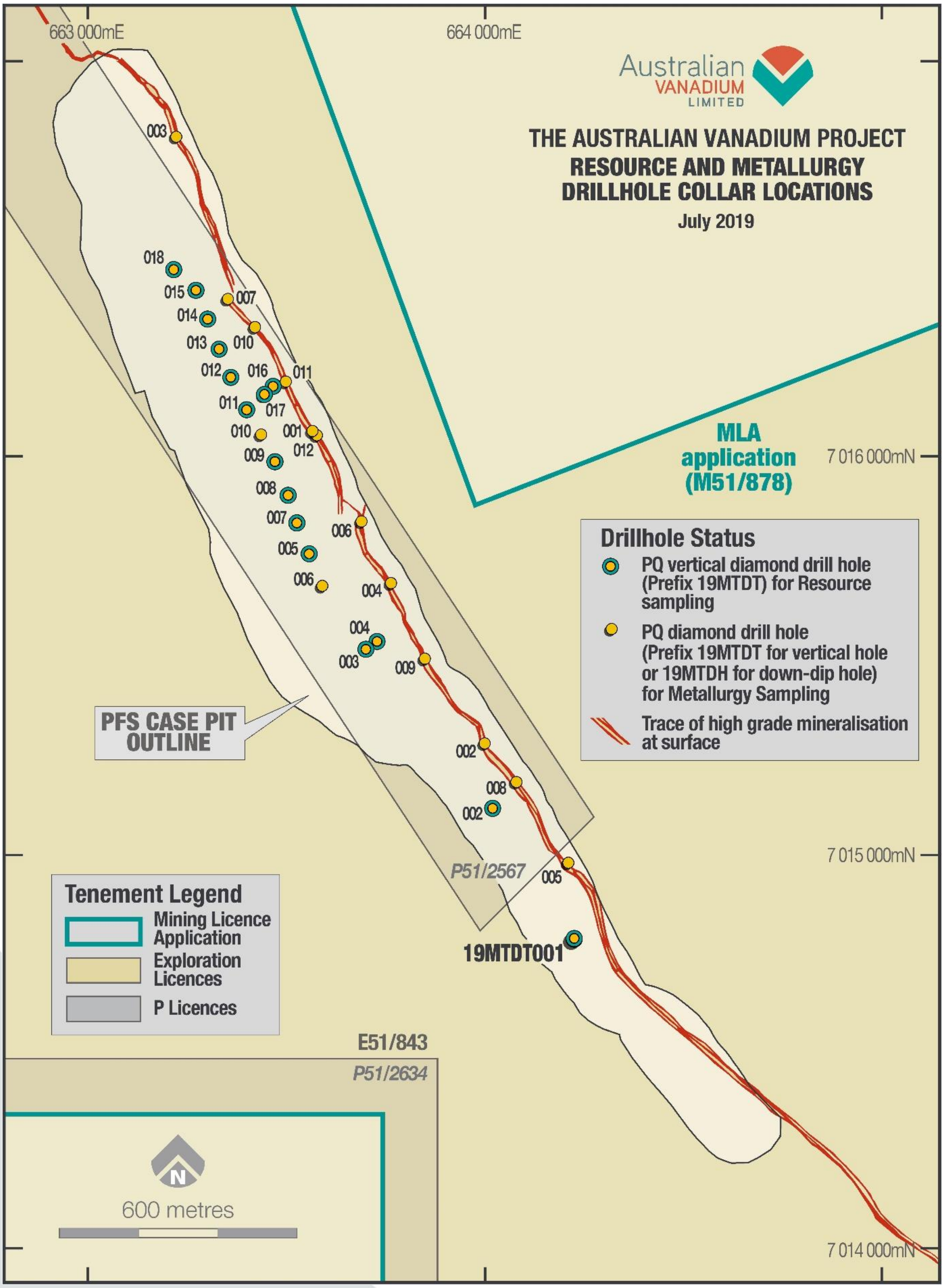


Figure 2 Plan View of Long Section of the 2019 metallurgical diamond drilling program

The drill program comprised large diameter diamond (PQ size) core which was drilled from the base of vertical RC drill holes by extending diamond core tails. The drill target was to confirm and if possible extend the base of the Life of Mine pit (LoM) as defined in the PFS. The material intersected was typical of material to be mined from the high-grade massive magnetite layer within the proposed open pit at the Australian Vanadium Project. (See ASX announcement dated 19 December 2018 '*Gabanintha Pre-Feasibility Study and Maiden Ore Reserve*').

Figure 3 Diamond drill rig on site at the Australian Vanadium Project

2019 Drill Results

Diamond core of all material types in the high-grade massive magnetite layer was drilled using downdip and vertical diamond drill holes, (see ASX announcement dated 4 April 2019 *'Highly Successful Drilling Program Completed'*).

The deeper core holes were able to be logged and sampled, with a ¼ core taken for assay whilst the upper RC pre-collars were sampled at 1 metre intervals. Most of the remainder of the core samples will be used in the ongoing detailed pilot scale test work. The hanging-wall Low-Grade zones were intersected and have been reported in **Table 3**. The Low-Grade zones have not been included in the reserve estimation in the PFS, however results do show an opportunity for some material to be considered in future optimisations. The holes were drilled vertically rather than perpendicular to the dip of the strata, maximising the amount of mineralised material obtainable from the hole, whilst still drilling the entirety of the mineralised units from top to bottom.

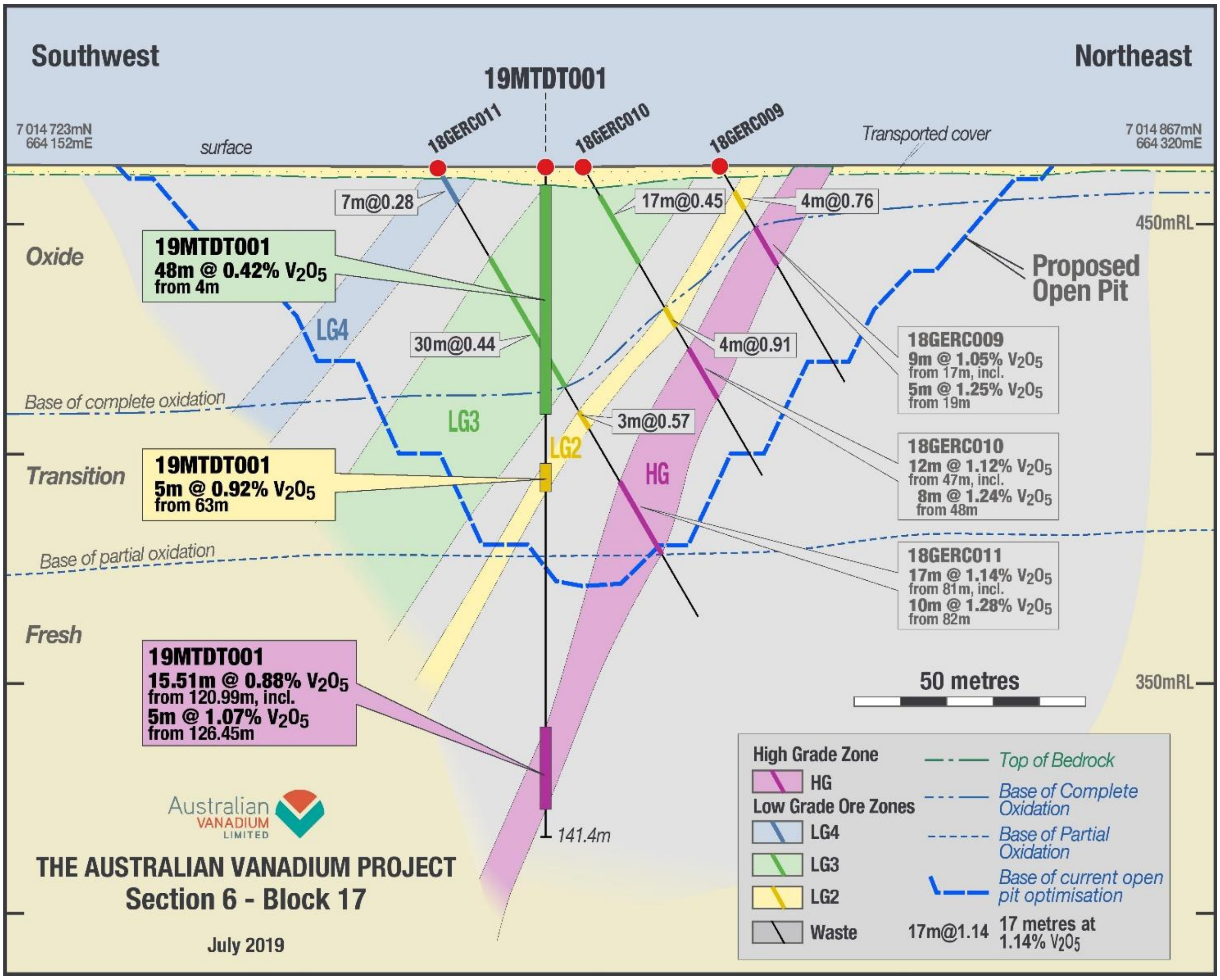


Figure 4 Section through block 17 with drill intersection under the PFS pit

The results in **Table 1** below show the consistency of grade already associated with the deposit from previous work by AVL. Encouragingly, grade regions consistently over 1.2% V_2O_5 were encountered, with the majority of holes intersecting an interval between 1% and 1.25% V_2O_5. Details of the work conducted in the program and previously are included in Appendix 1, which contains the JORC Table 1 disclosures.

Zone 10 High-Grade zones were intersected in the majority of holes. Best intersections include;

- 5m at 1.07 V_2O_5 in 19MTDT001
- 12.05m at 1.09 V_2O_5 in 19MTDT003
- 20m at 1.25 V_2O_5 in 19MTDT005
- 4.02m at 1.23 V_2O_5 in 19MTDT009
- 5.66m at 1.02 V_2O_5 in 19MTDT009
- 11.67m at 1.20 V_2O_5 in 19MTDT011
- 8.22m at 1.13 V_2O_5 in 19MTDT012

- 16.83m at 1.09 V_2O_5 in 19MTDT013
- 17m at 1.17 V_2O_5 in 19MTDT016
- 17m at 1.15 V_2O_5 in 19MTDT017
- 14.4m at 1.21 V_2O_5 in 19MTDT018

Table 1 Intercepts from Diamond Drilling in HG Zone 10

HoleID	From (m)	To (m)	Interval	V_2O_5%	Fe_2O_3%	TiO_2%	SiO_2%
19MTDT001	120.99	136.5	15.51	0.88	58.5	10.8	13.9
Including	126.45	131.45	5	*1.07*	*68.5*	*12.7*	*7.3*
19MTDT002	137.5	144	6.5	0.57	39.4	6.2	27.5
19MTDT003	140.35	153.94	13.59	1.03	64.1	11.9	11.0
Including	141.89	153.94	12.05	*1.09*	*67.1*	*12.5*	*8.5*
19MTDT004	109	126	17	1.17	73.4	13.6	3.2
19MTDT005	146	171	25	1.15	66.1	13.1	7.6
Including	147	167	20	*1.25*	*70.1*	*14.2*	*4.7*
19MTDT008	137	142	5	1.08	65.3	12.9	6.6
19MTDT009	144	164.99	20.99	0.96	62.6	10.9	12.0
Including	144	147.2	3.2	*1.01*	*66.2*	*11.8*	*8.8*
Including	148.98	153	4.02	*1.23*	*78.2*	*14.0*	*1.3*
Including	159.33	164.99	5.66	*1.02*	*64.1*	*11.2*	*9.7*
19MTDT011	129.65	141.32	11.67	1.20	75.5	13.4	3.0
19MTDT012	127.19	144.62	17.43	0.90	58.5	10.4	12.6
Including	136.4	144.62	8.22	*1.13*	*70.6*	*12.8*	*3.1*
19MTDT013	142.95	170.6	27.65	0.91	58.2	10.1	11.4
Including	149.6	166.43	16.83	*1.09*	*67.9*	*12.1*	*4.7*
19MTDT014	132.88	158.87	25.99	1.01	61.3	11.5	11.4
Including	138.85	155.8	16.95	*1.22*	*70.5*	*13.7*	*4.4*
19MTDT015	101	116	15	1.23	61.2	13.5	10.8
19MTDT016	21	38	17	1.17	61.3	13.6	6.3
19MTDT017	61	83	22	1.04	65.4	11.9	7.9
Including	65	82	17	*1.15*	*71.2*	*12.9*	*4.5*
19MTDT018	116	135.4	19.4	1.03	55.5	11.5	12.9
Including	121	135.5	14.4	1.21	63.6	13.6	8.1

19MTDT012 had core loss from 142.9m to 143.3m. This interval was included as waste at a grade of 0.00 for all elements
19MTDT013 had core loss from 149m to 149.6m, 151m to 151.4m, 159.5m to 160m . These intervals were included as waste at a grade of 0.00 for all elements
19MTDT016 had core loss from 29.5m to 30.7m. This interval was included as waste at a grade of 0.00 for all elements

**All reported drill holes are vertical, so will not represent the true width. The true width of the high-grade zone-10 averages 14 metres wide.*
***Intercepts are reported at a 0.5% V_2O_5 cut off allowing 2m of internal dilution. Higher assays are reported at 1% V_2O_5 cut off*

Focused campaign

The completed drilling campaign focused only on the northern 2km of AVL's 11.5km held deposit strike length with drill core collected along the length and depth of the current pit defined by the PFS (see **Figure 2**). AVL can significantly increase the resource base at the Project by further drilling southwards and below the relatively shallow level of current drilling along its 100% owned large, dominant ground position in the area. The Company currently has declared Mineral Resources of 96.7 Million tonnes at 1.0% V_2O_5 in a geologically distinct high grade mineralised horizon, with a Mineral Reserve of 18 Million tonnes at 1.04% V_2O_5, (see **Table 4** and **Table 5**). The overall resource base for the Project is 184 Million tonnes at 0.76% V_2O_5.

The program's primary aim was the collection and analysis of meaningful volumes of representative material (mine feed) from within the existing Ore Reserve. This robust approach to optimise the process design aims to distinguish AVL as the leading vanadium project of choice globally.

Ongoing Project Progress

The Pilot Study is advancing to plan, with the plant setup and trial runs utilising 4 tonnes allowing optimisation for larger pilot batches (2 x 10 tonne). Findings will be used in completing the design of the full scale crushing, milling and beneficiation (CMB) plant. Samples for pelletisation and roast-leach benchtesting have been prepared and despatched for testing. Roast leach pilot test work will commence on completion of the CMB pilot, using magnetic concentrate generated from that process.

In early July AVL reported that it had made significant breakthroughs in the recovery of high purity V_2O_5 and improved recovery of vanadium by the trial of pelletising, a technology well known and understood in iron ore processing, (see ASX announcement dated 28 May 2019, *'High Purity Vanadium Pentoxide Produced'*).

Discussions are progressing with Westgold Resources regarding sourcing water for the project, (see ASX announcement dated 25 June 2019 *'AVL Secures Key Project Water Supply Opportunity'),* with a complementary hydrology drilling program underway.

A full and robust environmental impact report is being prepared for submission. Work programs are underway to ensure that all areas have been fully appraised, prior to submission for approval by environmental authorities.

The Company is actively presenting to, and in confidential discussions with potential financial partners, corporate investors and potential offtake partners.

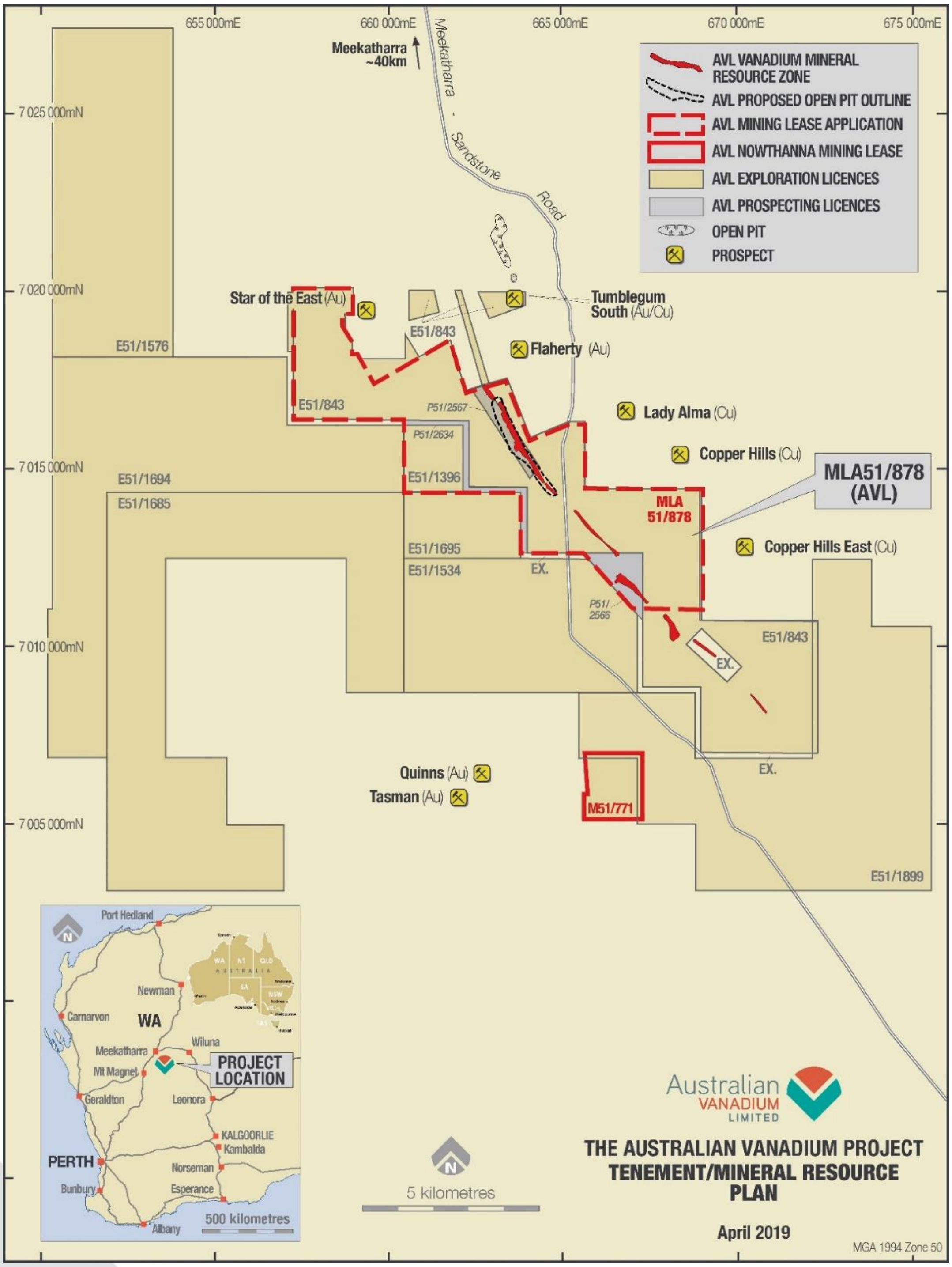


Figure 5 Location Diagram of the Australian Vanadium Project

For further information, please contact:

Vincent Algar, Managing Director +61 8 9321 5594

Table 2 Drill hole Collar Table

Hole ID	MGA94 East	MGA94 North	RL(m)	Pre-collar Depth (m)	Depth (m)	Dip	Azimuth
19MTDT001	664219.1	7014782.2	462.8	102	141.4	-90°	0°
19MTDT002	664011.5	7015111.5	465.8	124	170	-90°	0°
19MTDT003	663706.4	7015517.8	470.7	101	157.8	-90°	0°
19MTDT004	663728.7	7015536.3	468.9	94	171.3	-90°	0°
19MTDT005	663556	7015755	469.0	140	181.9	-90°	0°
19MTDT006	663587.3	7015677.3	467.4	166	195.5	-90°	0°
19MTDT007	663527.2	7015832.7	467.8	154	182	-90°	0°
19MTDT008	663502.5	7015908.9	468.4	142	211.2	-90°	0°
19MTDT009	663467.2	7015987.1	468.0	128	181.8	-90°	0°
19MTDT010	663438	7016059	467.0	117	155.1	-90°	0°
19MTDT011	663394	7016126	466.0	114	145.9	-90°	0°
19MTDT012	663360.4	7016202.8	466.0	118	148.4	-90°	0°
19MTDT013	663331	7016272	467.0	106	175.9	-90°	0°
19MTDT014	663301.4	7016349.6	466.4	120	165.7	-90°	0°
19MTDT015	663264.4	7016416.9	465.8	85	115.9	-90°	0°
19MTDT016	663464	7016181.7	465.6	20	54.8	-90°	0°
19MTDT017	663441.1	7016162.4	465.6	60	81.1	-90°	0°
19MTDT018	663211.2	7016472.3	467.6	70	139.6	-90°	0°

Table 3 Intersections High Grade (HG Zone 10) and hanging-wall Low-Grade zones

HoleID	From (m)	To (m)	Interval	Zone	North	East	RL	V2O5%	Fe2O3%	TiO2%	SiO2%
19MTDT001	**120.99**	**136.5**	**15.51**	**HG**	**7,014,782**	**664,219**	**334**	**0.88**	**58.5**	**10.8**	**13.9**
19MTDT001	63	68	5	LG2	7,014,782	664,219	397	0.92	60.4	11.2	12.4
19MTDT001	4	52	48	LG3	7,014,782	664,219	435	0.42	31.1	6.1	28.3
19MTDT002	**137.5**	**144**	**6.5**	**HG**	**7,015,111**	**664,010**	**325**	**0.57**	**39.4**	**6.2**	**27.5**
19MTDT002	122	124.8	2.8	LG2	7,015,111	664,010	343	1.19	68.8	13.4	5.6
19MTDT002	46	60	14	LG3	7,015,111	664,011	413	0.45	35.0	6.2	37.8
19MTDT002	0	21	21	LG4	7,015,112	664,011	456	0.47	42.5	7.0	23.3
19MTDT003	**140.35**	**153.94**	**13.59**	**HG**	**7,015,522**	**663,705**	**322**	**1.03**	**64.1**	**11.9**	**11.0**
19MTDT003	125.25	138.75	13.5	LG2	7,015,521	663,706	337	0.59	39.5	7.7	23.0
19MTDT003	82	94	12	LG3	7,015,520	663,706	381	0.47	37.6	6.5	28.0
19MTDT003	10	66	56	LG4	7,015,518	663,706	431	0.41	34.8	6.0	29.5
19MTDT004	**109**	**126**	**17**	**HG**	**7,015,535**	**663,725**	**351**	**1.17**	**73.4**	**13.6**	**3.2**
19MTDT004	87	104	17	LG2	7,015,536	663,726	373	0.52	39.0	6.9	25.3
19MTDT004	49	61	12	LG3	7,015,536	663,727	414	0.46	39.0	6.3	26.9
19MTDT004	0	21	21	LG4	7,015,536	663,728	458	0.48	32.5	7.8	28.8
19MTDT005	**146**	**171**	**25**	**HG**	**7,015,756**	**663,557**	**310**	**1.15**	**66.1**	**13.1**	**7.6**

HoleID	From (m)	To (m)	Interval	Zone	North	East	RL	V2O5%	Fe2O3%	TiO2%	SiO2%
19MTDT005	133	144	11	LG2	7,015,755	663,556	330	0.63	42.1	8.2	21.9
19MTDT005	99	104	5	LG3	7,015,755	663,555	367	0.46	36.6	6.2	29.3
19MTDT005	55	76	21	LG4	7,015,754	663,555	403	0.41	33.5	5.7	31.2
19MTDT005	20	31	11	LG5	7,015,755	663,555	443	0.51	32.4	7.9	25.6
19MTDT005	0	3	3	LG7	7,015,754	663,555	467	0.50	25.8	5.3	40.9
19MTDT007	133	142	9	LG2	7,015,834	663,526	329	0.70	43.3	8.6	22.1
19MTDT007	85	121	36	LG3	7,015,833	663,526	364	0.36	30.3	4.9	31.8
19MTDT007	29	62	33	LG4	7,015,834	663,528	421	0.55	30.5	7.8	30.3
19MTDT007	9	17	8	LG5	7,015,834	663,528	454	0.54	33.8	8.8	24.3
19MTDT008	**137**	**142**	**5**	**HG**	**7,015,907**	**663,503**	**327**	**1.08**	**65.3**	**12.9**	**6.6**
19MTDT008	129	135	6	LG2	7,015,907	663,503	335	0.52	37.3	7.1	23.0
19MTDT008	76	86	10	LG3	7,015,908	663,502	386	0.57	35.8	7.9	26.5
19MTDT008	21	59	38	LG4	7,015,909	663,502	427	0.44	26.1	6.6	34.7
19MTDT008	0	9	9	LG7	7,015,910	663,503	462	0.57	44.6	7.7	23.0
19MTDT009	**144**	**164.99**	**20.99**	**HG**	**7,015,988**	**663,470**	**312**	**0.96**	**62.6**	**10.9**	**12.0**
19MTDT009	127	133.43	6.43	LG2	7,015,988	663,469	337	0.47	34.4	6.3	29.2
19MTDT009	82	86	4	LG3	7,015,988	663,468	383	0.53	39.1	7.5	26.9
19MTDT009	19	56	37	LG4	7,015,988	663,467	429	0.45	35.5	6.6	27.5
19MTDT010	80	86	6	LG3	7,016,060	663,436	383	0.47	40.8	6.5	26.1
19MTDT010	25	55	30	LG4	7,016,060	663,436	426	0.48	36.8	7.2	23.7
19MTDT010	5	14	9	LG5	7,016,060	663,436	456	0.61	46.4	6.9	20.3
19MTDT010	0	5	5	LG7	7,016,060	663,436	463	0.50	43.8	3.2	32.2
19MTDT011	**129.65**	**141.32**	**11.67**	**HG**	**7,016,127**	**663,393**	**330**	**1.20**	**75.5**	**13.4**	**3.0**
19MTDT011	113	126.8	13.8	LG2	7,016,127	663,393	345	0.62	43.3	7.7	22.6
19MTDT011	91	101	10	LG3	7,016,126	663,394	369	0.47	34.5	6.1	27.2
19MTDT011	62	72	10	LG4	7,016,126	663,394	398	0.46	37.6	7.1	29.7
19MTDT011	31	44	13	LG7	7,016,126	663,395	428	0.52	42.0	8.8	22.1
19MTDT011	9	11	2	LG8	7,016,126	663,395	455	0.45	42.8	4.9	26.5
19MTDT011	22	25	3	LG8	7,016,126	663,395	442	0.44	36.2	7.2	25.1
19MTDT012	**127.19**	**144.62**	**17.43**	**HG**	**7,016,208**	**663,363**	**329**	**0.90**	**58.5**	**10.4**	**12.6**
19MTDT012	106	119.4	13.4	LG2	7,016,207	663,363	353	0.49	36.7	6.7	24.3
19MTDT012	70	83	13	LG3	7,016,206	663,362	389	0.43	34.8	5.9	29.1
19MTDT012	25	55	30	LG4	7,016,204	663,362	425	0.43	34.1	6.4	28.0
19MTDT012	4	22	18	LG7	7,016,204	663,361	452	0.39	33.5	4.3	28.3
19MTDT013	**142.95**	**170.6**	**27.65**	**HG**	**7,016,275**	**663,326**	**309**	**0.91**	**58.2**	**10.1**	**11.4**
19MTDT013	111.78	124.12	12.34	LG2	7,016,275	663,326	347	0.52	36.4	6.7	26.9
19MTDT013	82	90	8	LG3	7,016,275	663,326	379	0.48	41.3	6.7	25.5
19MTDT013	24	60	36	LG4	7,016,275	663,326	423	0.45	34.3	6.3	30.8
19MTDT013	5	9	4	LG7	7,016,275	663,326	458	0.44	20.2	6.1	38.9
19MTDT014	**132.88**	**158.87**	**25.99**	**HG**	**7,016,350**	**663,302**	**320**	**1.01**	**61.3**	**11.5**	**11.4**
19MTDT014	106	123.72	17.72	LG2	7,016,350	663,302	351	0.49	35.8	6.5	26.5

HoleID	From (m)	To (m)	Interval	Zone	North	East	RL	V2O5%	Fe2O3%	TiO2%	SiO2%
19MTDT014	59	68	9	LG3	7,016,350	663,302	402	0.50	31.6	6.8	33.8
19MTDT014	23	45	22	LG4	7,016,350	663,302	432	0.45	22.4	6.8	35.3
19MTDT014	11	18	7	LG5	7,016,350	663,302	451	0.48	30.4	8.7	23.6
19MTDT015	**101**	**116**	**15**	**HG**	**7,016,420**	**663,266**	**357**	**1.23**	**61.2**	**13.5**	**10.8**
19MTDT015	55	68	13	LG2	7,016,420	663,266	404	0.56	34.8	7.3	26.3
19MTDT015	37	51	14	LG3	7,016,420	663,266	422	0.40	35.5	5.0	29.3
19MTDT015	5	33	28	LG4	7,016,420	663,266	447	0.53	34.3	7.5	25.1
19MTDT015	3	5	2	LG7	7,016,420	663,266	462	0.53	34.2	5.8	31.9
19MTDT016	**21**	**38**	**17**	**HG**	**7,016,181**	**663,465**	**436**	**1.17**	**61.3**	**13.6**	**6.3**
19MTDT016	17	21	4	LG2	7,016,181	663,465	447	0.91	51.5	10.6	14.0
19MTDT016	9	17	8	LG7	7,016,181	663,465	453	0.61	43.4	6.7	24.5
19MTDT016	0	7	7	LG8	7,016,181	663,465	462	0.51	44.7	5.3	30.5
19MTDT017	**61**	**83**	**22**	**HG**	**7,016,161**	**663,442**	**393**	**1.04**	**65.4**	**11.9**	**7.9**
19MTDT017	43	57	14	LG2	7,016,161	663,442	415	0.53	34.5	6.9	28.2
19MTDT017	22	36	14	LG3	7,016,161	663,442	436	0.70	45.3	9.5	20.2
19MTDT017	17	22	5	LG7	7,016,161	663,442	446	0.61	45.8	6.0	20.8
19MTDT017	1	6	5	LG8	7,016,161	663,442	462	0.51	40.8	5.5	32.9
19MTDT017	9	11	2	LG8	7,016,161	663,442	455	0.44	35.6	5.2	30.4
19MTDT018	**116**	**135.4**	**19.4**	**HG**	**7,016,473**	**663,213**	**340**	**1.03**	**55.5**	**11.5**	**12.9**
19MTDT018	106	110	4	LG2	7,016,473	663,213	358	0.46	30.3	6.9	29.0
19MTDT018	74	82	8	LG3	7,016,473	663,213	388	0.44	33.3	6.1	28.8
19MTDT018	18	56	38	LG4	7,016,473	663,213	429	0.53	34.3	7.5	28.1

Table 4 – The Australian Vanadium Project – Mineral Resource estimate at November 2018 by domain and resource classification using a nominal 0.4% V_2O_5 wireframed cut-off for low grade and nominal 0.7% V_2O_5 wireframed cut-off for high grade (total numbers may not add up due to rounding)

Zone	Classification	Mt	V_2O_5 %	Fe %	TiO_2 %	SiO_2 %	Al_2O_3 %	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
	Sub-total	**96.7**	**1.00**	**42.4**	**11.4**	**11.3**	**7.7**	**3.5**
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
	Sub-total	**82.5**	**0.49**	**25.1**	**6.8**	**27.5**	**16.9**	**7.7**
Transported 6-8	Measured	-	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-	-
	Inferred	4.4	0.65	28.2	7.2	24.7	16.7	8.5
	Sub-total	**4.4**	**0.65**	**28.2**	**7.2**	**24.7**	**16.7**	**8.5**
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
	Sub-total	**183.6**	**0.76**	**34.3**	**9.2**	**18.9**	**12.1**	**5.5**

Table 5 - Ore Reserve Statement as at November 2018, at a cut-off grade of 0.8% V_2O_5

Reserve classification	t	V_2O_5 %	Co ppm	Ni ppm	Cu ppm	S %	SiO_2 %	Fe_2O_3 %	V_2O_5 produced 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
Total	**18, 240, 000**	**1.04**	**173**	**597**	**222**	**0.07**	**9.75**	**59.1**	**121,000**

Competent Person Statement – Exploration Results and Exploration 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.

Appendix 1 – JORC Code Table 1

2019 Drilling Progress Update with latest Mineral Resource Estimate dated November 2018 (2012 JORC Code – Table 1)

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	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.	The Australian Vanadium Project deposit was sampled using diamond core and reverse circulation (RC) percussion drilling from surface. During 2019 a further 30 PQ diamond drill holes have been completed to collect metallurgy sample for a plant pilot study. 12 are drilled down-dip into the high-grade zone. These were complimented by an additional 18 PQ diamond drill tails on RC pre-collars, drilling vertically. The down dip holes are measured by hand-held XRF at 50 cm intervals to inform metallurgy characterisation but will not form part of any resource estimation update unless certified laboratory analysis is completed on a cut portion of the drill core. The 18 diamond tails were cut and a ¼ of the PQ sized core was sent for analysis. At the time of the latest Mineral Resource estimation (November 2018), a total of 250 RC holes and 20 diamond holes (6 of which are diamond tails) were drilled into the deposit. 59 of the 251 holes were either too far north or east of the main mineralisation trend or excised due to being on another tenancy. One section in the southern part of the deposit (holes GRC0156, GRC0074, GRC0037 and GRC0038) was blocked out and excluded from the resource due to what appeared to be an intrusion which affected the mineralised zones in this area. Of the remaining 191 drillholes, one had geological logging, but no assays and one was excluded due to poor sample return causing poor representation of the mineralised zones. Two diamond holes drilled during 2018 were not part of the resource estimate, as they were drilled into the western wall for geotechnical purposes. The total metres of drilling available for use in the interpretation and grade estimation was 17,530m at the date of the most recent resource estimate. The initial 17 RC drillholes were drilled by Intermin Resources NL (IRC) in 1998. These holes were not used in the 2015 and 2017 estimates due to very long unequal sample lengths and a different grade profile from subsequent drilling. 31 RC drillholes were drilled by Greater Pacific NL in 2000 and the remaining holes for the project were drilled by Australian Vanadium Ltd (Previously Yellow Rock Resources Ltd) between 2007 and 2018. This drilling includes 20 diamond holes (6 of which are diamond tails) and 76 RC holes, for a total of 20,974m drilled. All of the drilling sampled both high and low-grade material and were sampled for assaying of a typical iron ore suite, including vanadium and titanium plus base metals and sulphur.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	PQ core from diamond tails was ¼ cored and sent for assay. The remaining core went to make up the pilot plant metallurgical sample. The Down Dip 2019 PQ core has not been sampled. Handheld XRF machines being used to take ½ metre measurements on the core have been calibrated using pulps from previous drilling by the Company, for which there are known head assays. 2018 HQ diamond core was half-core sampled at regular intervals (usually one metre) with smaller sample intervals at geological boundaries. 2015 diamond core was quarter-core sampled at regular intervals (usually one metre) and constrained to geological boundaries where appropriate. 2009 HQ diamond core was half-core sampled at regular intervals (one metre) or to geological boundaries. Most of the RC drilling was sampled at one metre intervals, apart from the very earliest programme in 1998. RC samples have been split from the rig for all programs with a cone splitter to obtain 2.5 – 3.5 kg of sample from each metre. Field duplicates were collected for every 40th drill metre to check sample representativity

Criteria	JORC Code Explanation	Commentary
		from the drill rig splitter.
	Aspects of the determination of mineralisation that are Material to the Public Report.	RC drilling samples were collected at one metre intervals and passed through a cone splitter to obtain a nominal 2-5kg sample at an approximate 10% split ratio. These split samples were collected in pre-numbered calico sample bags. The sample was dried, crushed and pulverised to produce a sub sample (~200g) for laboratory analysis using XRF and total LOI by thermo-gravimetric analysis. Diamond core was drilled predominantly at HQ size for the earlier drilling (2009) and entirely HQ for the 2018 program, with the 2015 and 2019 drilling at PQ3 size. Field duplicates, standards and blanks have been inserted into the sampling stream at a rate of nominally 1:20 for blanks, 1:20 for standards (including internal laboratory), 1:40 for field duplicates, 1:20 for laboratory checks and 1:74 for umpire assays.
Drilling techniques	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.).	Diamond drillholes account for 14% of the drill metres used in the Resource Estimate and comprises HQ and PQ3 sized core. RC drilling (generally 135 mm to 140 mm face-sampling hammer) accounts for the remaining 86% of the drilled metres. Six of the diamond holes have RC pre-collars (GDH911, GDH913 & GDH916, 18GEDH001, 002 and 003), otherwise all holes are drilled from surface. No core orientation data has been recorded in the database. 17 RC holes were drilled during the 2018 program and three HQ diamond tails were drilled on RC pre-collars for resource and geotechnical purposes. The core was not orientated but all diamond holes were logged by OTV and ATV televiewer. Six RC holes from the 2018 campaign are not used in the resource estimate due to results pending at the time of the latest update, and two diamond holes drilled during 2018 were not used as they are for geotechnical purposes and do not intersect the mineralised zones. During 2019 a further 12 PQ diamond holes have been drilled down-dip on the high-grade zone for metallurgical sample, but have not been sampled for assay analysis, and do not form part of any resource estimation. An addition 18 PQ diamond tails on RC pre-collars have been drilled vertically and are expected to contribute to the resource.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Diamond core recovery is measured when the core is recovered from the drill string. The length of core in the tray is compared with the expected drilled length and is recorded in the database. For the 2019, 2018 and 2015 drilling, RC chip sample recovery was gauged by how much of the sample was returned from the cone splitter. This was recorded as good, fair, poor or no sample. The older drilling programmes used a different splitter, but still compared and recorded how much sample was returned for the drilled intervals. All of the RC sample bags (non-split portion) from the 2018 programme were weighed as an additional check on recovery. An experienced AVL geologist was present during drilling and any issues noticed were immediately rectified. No significant sample recovery issues were encountered in the RC or PQ drilling in 2019. No significant sample recovery issues were encountered in the RC or PQ drilling in 2019 except where core loss occurred in three holes intersecting high grade ore. This involved holes 19MTDT012 between 142.9m and 143.3m; 19MTDT013 from 149m to 149.6m, 151m to 151.4m and 159.5m to 160m; as well as 19MTDT016 between 29.5m and 30.7m down hole. In each case the interval lost was included as zero grade for all elements for the estimation of the total mineralised intercept.

Criteria	JORC Code Explanation	Commentary
	Measures taken to maximize sample recovery and ensure representative nature of the samples.	Core depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers. Recovered core was measured and compared against driller's blocks. RC chip samples were actively monitored by the geologist whilst drilling. All drillholes are collared with PVC pipe for the first metres, to ensure the hole stays open and clean from debris.
	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.	No relationship between sample recovery and grade has been demonstrated. Two shallow diamond drillholes drilled to twin RC holes have been completed to assess sample bias due to preferential loss/gain of fine/coarse material. Geologica Pty Ltd 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.
Logging	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.	All diamond core and RC chips from holes included in the latest resource estimate were geologically logged. Diamond core was geologically logged using predefined lithological, mineralogical and physical characteristics (such as colour, weathering, fabric, texture) logging codes and the logged intervals were based on lithological intervals. RQD and recoveries were also recorded. Minimal structural measurements were recorded (bedding to core angle measurements) but have not yet been saved to the database. The logging was completed on site by the responsible geologist. All of the drilling was logged onto paper and was transferred to a SQL Server drillhole database using DataShedTM database management software. The database is managed by Mitchell River Group (MRG). The data was checked for accuracy when transferred to ensure that correct information was recorded. Any discrepancies were referred back to field personnel for checking and editing. All core trays were photographed wet and dry. RC chips were logged generally on metre intervals, with the abundance/proportions of specific minerals, material types, lithologies, weathering and colour recorded. Physical hardness for RC holes is estimated by chip recovery and properties (friability, angularity) and in diamond holes by scratch testing. From 2015, drilling also had magnetic susceptibility recorded, with the first nine diamond holes (GDH901-GDH909) having readings taken on the core every 30 cm or so downhole. Holes GDH910 to GDH917 had readings every 50 cm and RC holes GRC0159 to GRC0221 had readings for every one metre green sample bag. 2018 RC drill holes also have magnetic susceptibility data for each one metre of drilling. All resource (vs geotechnical) diamond core and RC samples have been logged to a level of detail to support Mineral Resource estimation to and classification to Measured Mineral Resource at best. Geotechnical logging and OTV/ATV data was collected on three diamond drillholes from the 2018 campaign, by consultant company Dempers and Seymour, adding to an existing dataset of geotechnical logging on 8 of the 2015 diamond drillholes and televiewer data for four of the same drillholes. In addition, during 2018 televiewer data was collected on a further 15 RC drillholes from various drill campaigns at the project. PQ diamond drill holes completed during 2019 have handheld XRF readings per half metre, in addition to KT-10 magnetic susceptibility readings at the same core locations. They are being geologically and geotechnically logged in detail by the site geologists.

Criteria	JORC Code Explanation	Commentary
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging was both qualitative and quantitative in nature, with general lithology information recorded as qualitative and most mineralisation records and geotechnical records being quantitative. Core photos were collected for all diamond drilling.
	The total length and percentage of the relevant intersections logged.	All recovered intervals were geologically logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	The 2018 and 2009 HQ diamond core was cut in half and the half core samples were sent to the laboratories for assaying. Sample intervals were marked on the core by the responsible geologist considering lithological and structural features. No core was selected for duplicate analysis. The 2015 PQ diamond core was cut in half and then the right-hand side of the core (facing downhole) was halved again using a powered core saw. Quarter core samples were sent to the laboratories for assaying. Sample intervals were marked on the core by the responsible geologist considering lithological and structural features. No core was selected for duplicate analysis. 20-30% of the total PQ diamond drill holes from 2019 will be sampled, through cutting a wedge from the core. This sample will be available for assay analysis. The portions of core to be sampled are still to be selected.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC drilling was sampled by use of an automatic cone splitter for the 2018 and 2015 drilling programmes; drilling was generally dry with a few damp samples. Older drilling programmes employed riffle splitters to produce the required sample splits for assaying. One in 40 to 50 RC samples was resampled as field duplicates for QAQC assaying.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation techniques employed for the diamond core samples follow standard industry best practice. All samples were crushed by jaw and Boyd crushers and split if required to produce a standardised ~3kg sample for pulverising. The 2015 programme RC chips were split to produce the same sized sample. All samples were pulverised to a nominal 90% passing 75 micron sizing and sub sampled for assaying and LOI determination tests. The remaining pulps are stored at an AVL facility. The sample preparation techniques are of industry standard and are appropriate for the sample types and proposed assaying methods.
	Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples.	Field duplicates, standards and blanks have been inserted into the sampling stream at a rate of nominally 1:20 for blanks, 1:20 for standards (including internal laboratory), 1:40 for field duplicates, 1:20 for laboratory checks and 1:74 for umpire assays. Also, for the recent sampling at BV, 1 in 20 samples were tested to check for pulp grind size.
	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.	To ensure the samples collected are representative of the in-situ material, a 140mm diameter RC hammer was used to collect one metre samples and either HQ or PQ3 sized core was taken from the diamond holes. Given that the mineralisation at the Australian Vanadium Project is either massive or disseminated magnetite/martite hosted vanadium, which shows good consistency in interpretation between sections and occurs as percentage values in the samples, Geologica Pty Ltd considers the sample sizes to be representative. Core is not split for duplicates, but RC samples are split at the collection stage to get representative (2-3kg) duplicate samples. The entire core sample and all the RC chips are crushed and /or mixed before splitting to smaller sub-samples for assaying.

Criteria	JORC Code Explanation	Commentary
	Whether sample sizes are appropriate to the grain size of the material being sampled.	As all of the variables being tested occur as moderate to high percentage values and generally have very low variances (apart from Cr_2O_3), the chosen sample sizes are deemed appropriate.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	All samples for the Australian Vanadium Project were assayed for the full iron ore suite by XRF (24 elements) and for total LOI by thermo-gravimetric technique. The method used is designed to measure the total amount of each element in the sample. Some 2015 RC samples in the oxide profile were also selected for SATMAGAN analysis that is a measure of the amount of total iron that is present as magnetite (or other magnetic iron spinel phases, such as maghemite or kenomagnetite). SATMAGAN analysis was conducted at Bureau Veritas (BV) Laboratory in early 2018. Analysis results of the relevant portions of the RC holes by Satmagan are pending, but underway. Although the laboratories changed over time for different drilling programmes, the laboratory procedures all appear to be in line with industry standards and appropriate for iron ore deposits, and the commercial laboratories have been industry recognized and certified Samples are dried at 105°C in gas fired ovens for 18-24 hours before RC samples being split 50:50. One portion is retained for future testing, while the other is then crushed and pulverised. Sub-samples are collected to produce a 66g sample that is used to produce a fused bead for XRF based analysing and reporting. Certified and non-certified Reference Material standards, field duplicates and umpire laboratory analysis are used for quality control. The standards inserted by AVL during the 2015 drill campaign were designed to test the V_2O_5 grades around 1.94%, 0.95% and 0.47%. The internal laboratory standards used have varied grade ranges but do cover these three grades as well. During 2018, three Certified Reference Materials (CRMs) were used by AVL as field standards. These covered the V_2O_5 grade ranges around 0.327%, 0.790% and 1.233%. These CRMs are also certified for other relevant major element and oxide values, including Fe, TiO_2, Al_2O_3, SiO_2, Co, Ni and Cu (amongst others). Most of the laboratory standards used show an apparent underestimation of V_2O_5, with the results plotting below the expected value lines, however the results generally fall within ± 5-10% ranges of the expected values. The other elements show no obvious material bias. Standards used by AVL generally showed good precision, falling within 3-5% of the mean value in any batch. The standards were not certified but compared with the internal laboratory standards (certified) they appear to show good accuracy as well. Field duplicate results from the 2015 drilling all fall within 10% of their original values. The BV laboratory XRF machine calibrations are checked once per shift using calibration beads made using exact weights and they performed repeat analyses of sample pulps at a rate of 1:20 (5% of all samples). The lab repeats compare very closely with the original analysis for all elements. 2019 PQ diamond core is not yet sampled, but any core sampled will be subject to the same process outlined above for previous drill campaigns.

Criteria	JORC Code Explanation	Commentary
	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.	The geophysical readings taken for the Australian Vanadium Project core and RC samples and recorded in the database were magnetic susceptibility. For the 2009 diamond and 2015 RC and diamond drill campaigns this was undertaken using an RT1 hand magnetic susceptibility meter (CorMaGeo/Fugro) with a sensitivity of 1×10^{-5} (dimensionless units). The first nine diamond holes (GDH901 – GDH909) were sampled at approximately 0.3m intervals, the last eight (GDH910 – GDH917) at 0.5m intervals and the RC chip bags for every green bagged sample (one metre). During 2018 and 2019 RC and diamond core has been measured using a KT-10 magnetic susceptibility metre, at 1×10^{-3} ssi unit. In addition to the handhold magnetic susceptibility described above the 2019 drilling included downhole magnetic susceptibility. This was taken using a Century Geophysical 9622 Magnetic Susceptibility tool. The 9622 downhole tool sensitivity is 20×10^{-5} with a resolution of 10cm 2019 diamond core is being analysed using an Olympus Vanta pXRF with a 20 second read time. The unit has been calibrated using pulp samples with known head assays from previous drill campaigns by the Company. Standard deviations for each element analysed are being recorded and retained. Elements being analysed are: Mg, Al, Si, P, S, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Ag, Cd, Sn, Sb, W, Hg, Pb, Bi, Th, and U. Four completed diamond drillholes were down hole surveyed by acoustic televiewer (GDH911, 912, 914 and 915) as a prequel to geotechnical logging during the 2015 drill campaign. A further six holes from the 2018 campaign have been down hole surveyed using acoustic televiewer and optical televiewer (18GEDH001, 002 and 003 and partial surveys of 18GERC005, 008 and 011) for 627 metres of data. Televiewer data was also collected during 2018 on some of the holes drilled in 2015 and prior. The holes surveyed were GRC0019, 0024, 0168, 0169, 0173, 0178, 0180, 0183, 0200 and Na253, Na258 and Na376 for a further 286.75 m of data. All 12 of the 2019 down dip PQ holes have been televiewer surveyed.
	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.	QAQC results from both the primary and secondary assay laboratories show no material issues with the main variables of interest for the recent assaying programmes.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Diamond drill core photographs have been reviewed for the recorded sample intervals. Geologica Pty Ltd Consultant, Brian Davis, visited the Australian Vanadium Project site on multiple occasions and the BV core shed and assay laboratories in 2015 and 2018. Whilst on site, the drillhole collars and remaining RC chip samples were inspected. All of the core was inspected in the BV facilities in Perth and selected sections of drillholes were examined in detail in conjunction with the geological logging and assaying. Resource consultants from Trepanier have visited the company core storage facility in Bayswater and reviewed the core trays for select diamond holes.
	The use of twinned holes.	Two diamond drillholes (GDH915 and GDH917) were drilled to twin the RC drillholes GRC0105 and GRC0162 respectively. The results show excellent reproducibility in both geology and assayed grade for each pair.

Criteria	JORC Code Explanation	Commentary
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All primary geological data has been collected using paper logs and transferred into Excel spreadsheets and ultimately a SQL Server Database. The data were checked on import. Assay results were returned from the laboratories as electronic data which were imported directly into the SQL Server database. Survey and collar location data were received as electronic data and imported directly to the SQL database. All of the primary data have been collated and imported into a Microsoft SQL Server relational database, keyed on borehole identifiers and assay sample numbers. The database is managed using DataShed™ database management software. The data was verified as it was entered and checked by the database administrator (MRG) and AVL personnel
	Discuss any adjustment to assay data.	No adjustments or calibrations were made to any assay data, apart from resetting below detection limit values to half positive detection values.
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	The 2019 drill holes have been set out using a real-time Kinematic (RTK) GPS system. At completion of drilling the collar positions were picked up by a professional surveyor with an RTK system. For the 2018 drilling, all collars were set out using a handheld GPS. After drilling they were surveyed using a Trimble RTK GPS system. The base station accuracy on site was improved during the 2015 survey campaign and a global accuracy improvement was applied to all drillholes in the Company database. For the 2015 drilling, all of the collars were set out using a Trimble RTK GPS system. After completion of drilling all new collars were re- surveyed using the same tool. Historical drill holes were surveyed with RTK GPS and DGPS from 2008 to 2015, using the remaining visible collar location positions where necessary. Only five of the early drillholes, drilled prior to 2000 by Intermin, had no obvious collar position when surveyed and a best estimate of their position was used based on planned position data. Downhole surveys were completed for all diamond holes, using gyro surveying equipment, as well as the RC holes drilled in 2015 (from GRC0159). Some RC drillholes from the 2018 campaign do not have gyro survey as the hole closed before the survey could be done. These holes have single shot camera surveys, from which the dip readings were used with an interpreted azimuth (nominal hole setup azimuth). The holes with interpreted azimuth are all less than 120m depth. All other RC holes were given a nominal -60º dip measurement. These older RC holes were almost all 120m or less in depth.
	Specification of the grid system used.	The grid projection used for the Australian Vanadium Project is MGA_GDA94, Zone 50. All reported coordinates are referenced to this grid.

Criteria	JORC Code Explanation	Commentary
	Quality and adequacy of topographic control.	High resolution Digital Elevation Data was captured by Arvista for the Company in June 2018 over the MLA51/878 tenement area using fixed wing aircraft, with survey captured at 12 cm GSD using an UltraCam camera system operated by Aerometrex. The data has been used to create a high-resolution Digital Elevation Model on a grid spacing of 5m x 5m, which is within 20 cm of all surveyed drill collar heights, once the database collar positions were corrected for the improved ground control survey, that was also used in this topography survey. The vertical accuracy that could be achieved with the 12 cm GSD is +/- 0.10 m and the horizontal accuracy is +/- 0.24m. 0.5m contour data has also been generated over the mining lease application. High quality orthophotography was also acquired during the survey at 12cm per pixel for the full lease area, and visual examination of the imagery shows excellent alignment with the drill collar positions. The November 2018 Mineral Resource used this surface for topographic control within the Mining Lease Application area (MLA51/878). For the entire 2017 and July 2018 Mineral Resource estimates, and the November 2018 Mineral Resource estimate outside the MLA area, high resolution Digital Elevation Data was supplied by Landgate. The northern two thirds of the elevation data is derived from ADS80 imagery flown September 2014. The data has a spacing of 5M and is the most accurate available. The southern third is film camera derived 2005 10M grid, resampled to match it with the 2014 DEM. Filtering was applied and height changes are generally within 0.5M. Some height errors in the 2005 data may be +/- 1.5M when measured against AHD but within the whole area of interest any relative errors will mostly be no more than +/- 1M. In 2015 a DGPS survey of hole collars and additional points was taken at conclusion of the drill program. Trepanier compared the elevations the drillholes with the supplied DEM surface and found them to be within 1m accuracy. An improved ground control point has been established at the Australian Vanadium Project by professional surveyors. This accurate ground control point was used during the acquisition of high quality elevation data. As such, a correction to align previous surveys with the improved ground control was applied to all drill collars from pre-2018 in the Company drill database. Collars that were picked up during 2018 were already calibrated against the new ground control. 2019 drill collar locations have been verified with a DGPS in the field (accuracy about 20 cm on the horizontal) with final RTK pick up complete.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	The 2018 RC drilling in Fault Block 17 has infilled areas of 260 m spaced drill lines to about 130m spaced drill lines, with holes on 30 m centres on each line. The closer spaced drilled areas of the deposit now have approximately 80m to 100m spacing by northing and 25m to 30m spacing by easting. Occasionally these spacings are closer for some pairs of drillholes. Outside of the main area of relatively close spaced drilling (approximately 7015400mN to 7016600mN), the drillhole spacing increases to several hundred metres in the northing direction but maintains roughly the same easting separation as the closer spaced drilled area.
	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.	The degree of geological and grade continuity demonstrated by the data density is sufficient to support the definition of Mineral Resources and the associated classifications applied to the Mineral Resource estimate as defined under the 2012 JORC Code. Variography studies have shown very little variance in the data for most of the estimated variables and primary ranges in the order of several hundred metres.
	Whether sample compositing has been applied.	All assay results have been composited to one metre lengths before being used in the Mineral Resource estimate. This was by far the most common sample interval for the diamond drillhole and RC drillhole data.

Criteria	JORC Code Explanation	Commentary
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The grid rotation is approximately 45º to 50º magnetic to the west, with the holes dipping approximately 60º to the east. The drill fences are arranged along the average strike of the high-grade mineralised horizon, which strikes approximately 310º to 315º magnetic south of a line at 7015000mN and approximately 330º magnetic north of that line. The mineralisation is interpreted to be moderate to steeply dipping, approximately tabular, with stratiform bedding striking approximately north-south and dipping to the west. The drilling is exclusively conducted perpendicular to the strike of the main mineralisation trend and dipping approximately 60º to the east, producing approximate true thickness sample intervals through the mineralisation.
	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.	The orientation of drilling with respect to mineralisation is not expected to introduce any sampling bias. Drillholes intersect the mineralisation at an angle of approximately 90 degrees. The 2019 PQ diamond holes are deliberately drilled down dip to maximise the amount of metallurgy sample collected for the pilot study. They are not intended to add material to the resource estimation, or to define geological boundaries, though where further control on geological contacts is intercepted, this will be used to add more resolution to the geological model.
Sample security	The measures taken to ensure sample security.	Samples were collected onsite under supervision of a responsible geologist. The samples were then stored in lidded core trays and closed with straps before being transported by road to the BV core shed in Perth (or other laboratories for the historical data). RC chip samples were transported in bulk bags to the assay laboratory and the remaining green bags are either still at site or stored in Perth. RC and core samples were transported using only registered public transport companies. Sample dispatch sheets were compared against received samples and any discrepancies reported and corrected.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	A review of the sampling techniques and data was completed by Mining Assets Pty Ltd (MASS) and Schwann Consulting Pty Ltd (Schwann) in 2008 and by CSA in 2011. Neither found any material error. AMC also reviewed the data in the course of preparing a Mineral Resource estimate in 2015. The database has been audited and rebuilt by AVL and MRG in 2015. In 2017 geological data was revised after missing lithological data was sourced. Geologica Pty Ltd concludes that the data integrity and consistency of the drillhole database shows sufficient quality to support resource estimation.