ASX Code: VTX

ETHICALLY AND ENVIRONMENTALLY SUSTAINABLE

Advanced Hill End Gold Project (NSW) 34km strike length high grade gold system – to be developed on a large scale - 1.6m ozs historically mined.

Advanced Hargraves Gold Project (NSW) moving to a PFS.

Combined existing 2012 JORC 257K oz @ 2.11 g/t. Significant exploration upside likely to be amenable to gravity recovery, with recoveries potentially as high as 95%.

Highly prospective Pride of Elvire Gold Project (WA) & Taylors Rock Nickel Gold Project (WA).

Hill End is home to the largest gold reef nugget ever found – world record.

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Vertex granted EL within Hargraves Project Area, drilling to commence immediately

ASX ANNOUCEMENT 21 NOVEMBER 2022

KEY HIGHLIGHTS:

- **Vertex was recently granted EL 9485 over an area that previously divided the Hargraves Mineral Resource (see Figure 1 on page 2).**
- **EL 9485 was previously a Mining Licence (ML) owned by others. The Resource Regulator recently cancelled the ML and Vertex immediately pegged the available ground.**
- **Additionally, a surface diamond drilling approval, over the Hargraves Resource, was lodged and recently approved by the Resource Regulator. Drilling for an initial 500m diamond drill program and the associated preparation works has been approved.**
- **A drill rig will be mobilised to Hargraves and commence drilling this week.**
- **The area forms more than 10% of the strike length of the Hargraves Resource (refer to Figure 1). The Company will work with the community and release additional announcements accordingly.**
- **Hargraves 2012 JORC Resource Estimate is 2.3 million tonnes at 2.4 g/t Au for 177,000 ozs Au.**

Ethical and environmental sustainability focused gold explorer Vertex Minerals Limited (ASX: VTX) ("Vertex" or the "Company") is pleased to announce the granting of the tenement EL 9485. The tenement was previously an 'island' ML owned by others that divided the Hargraves Resource. The ML was cancelled by the Department of Regional NSW. Vertex has now been granted a permit to drill this prospective target. The rig will be mobilised this week to Hargraves from Red Hill.

The planned drilling will be the Company's second drill program undertaken at the greater Hill End Project. Hargraves presents great potential for significant resource growth. The area to be drilled is in the middle of the existing resource area (and not included within the existing resource). The Company believes there is evidence the Hargraves deposit is a robust deep plunging deposit, and the gold inventory will benefit from additional drilling.

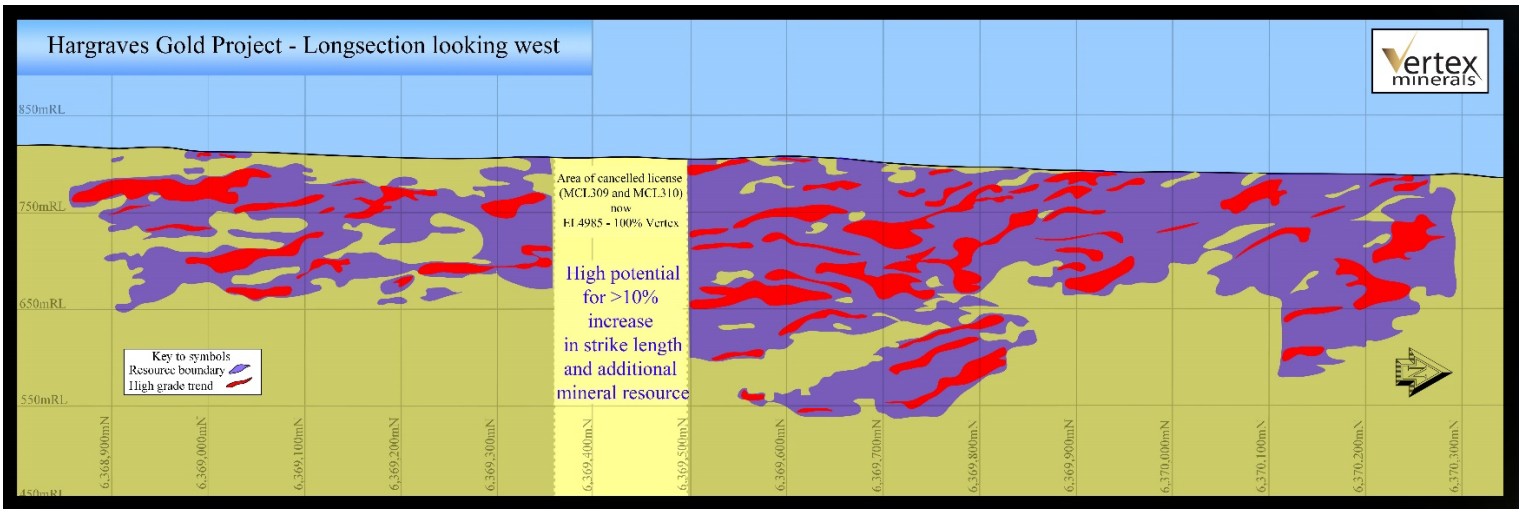

Figure 1 – Long section through the Hargraves Resource showing EL9485 in the middle of the resource.

The Mineral Resource of the Hargraves Project stand at 177,000 ounces and is detailed in Table 1.

Table 1 - Hargraves 2012 JORC Resource

Category (0.8 g/t Cut Off)	Tonnes	Gold Grade (g/t)	Contained Gold (oz)
Indicated	1,108,651	2.7	97,233
Inferred	1,210,335	2.1	80,419
Total Resource	**2,318,986**	**2.4**	**177,652**

Source: PUA ASX Announcement 29 May 2020

Executive Chairman Roger Jackson commented:

"Following on from the successful drilling program at Vertex's Red Hill Project, the newly awarded tenement and permission to drill at this small tenement is very exciting. The drilling is planned to tie together the North and South Hargrave resources. Given the area is more than 10% of the strike length of the Hargraves resource, we have high expectations to add Oz's to the resource. We look forward to working with the community regarding the outcomes of this initial and recently granted drilling campaign"

Table 2 – Hill End Project Mineral Resource Estimate					
		Classification	**Tonnes**	**Grade**	**Contained**
			(t)	Au (g/t)	Au (oz)
Hargraves		Indicated	1,108,651	2.7	97,233
		Inferred	1,210,335	2.1	80,419
	Sub Total		**2,318,986**	**2.4**	**177,652**
Red Hill		Indicated	413,000	1.4	18,600
		Inferred	1,063,000	1.8	61,400
	Sub Total		**1,475,000**	**1.7**	**80,000**
Combined		Indicated	1,521,651	2.35	115,833
		Inferred	2,273,335	1.96	141,819
	Grand Total		**3,793,986**	**2.11**	**257,652**

Hargraves: 0.8 g/t reporting cutoff grade (ASX Announcement 29 May 2020).
Red Hill: 0.5 g/t per block, ordinary kriging grade interpolation, classified mineral Resources Limited to 160mRL below surface. (ASX Announcement November 2015)

Complete details of drill hole coordinates and corresponding assay results are included in Appendix 1,2 and 3.

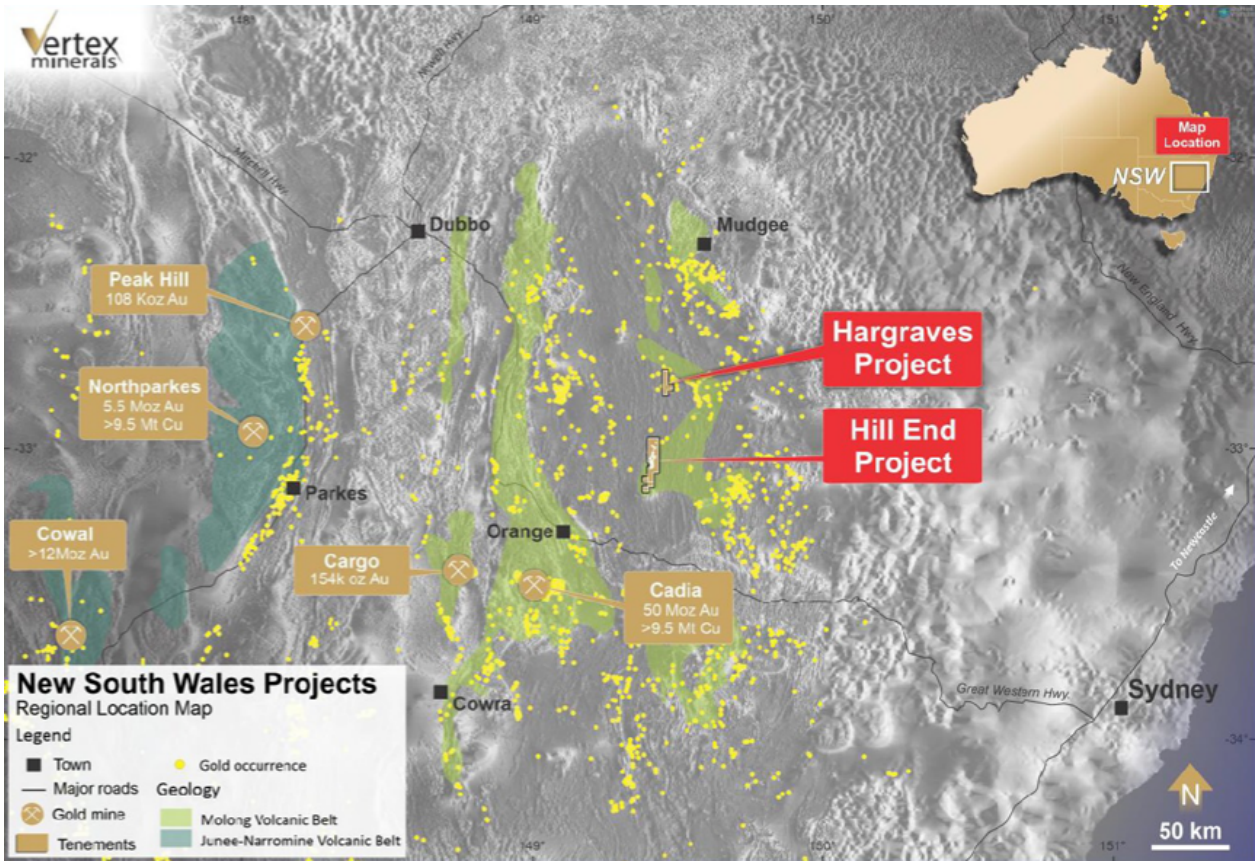

Figure 2: NSW mines and Vertex project locations

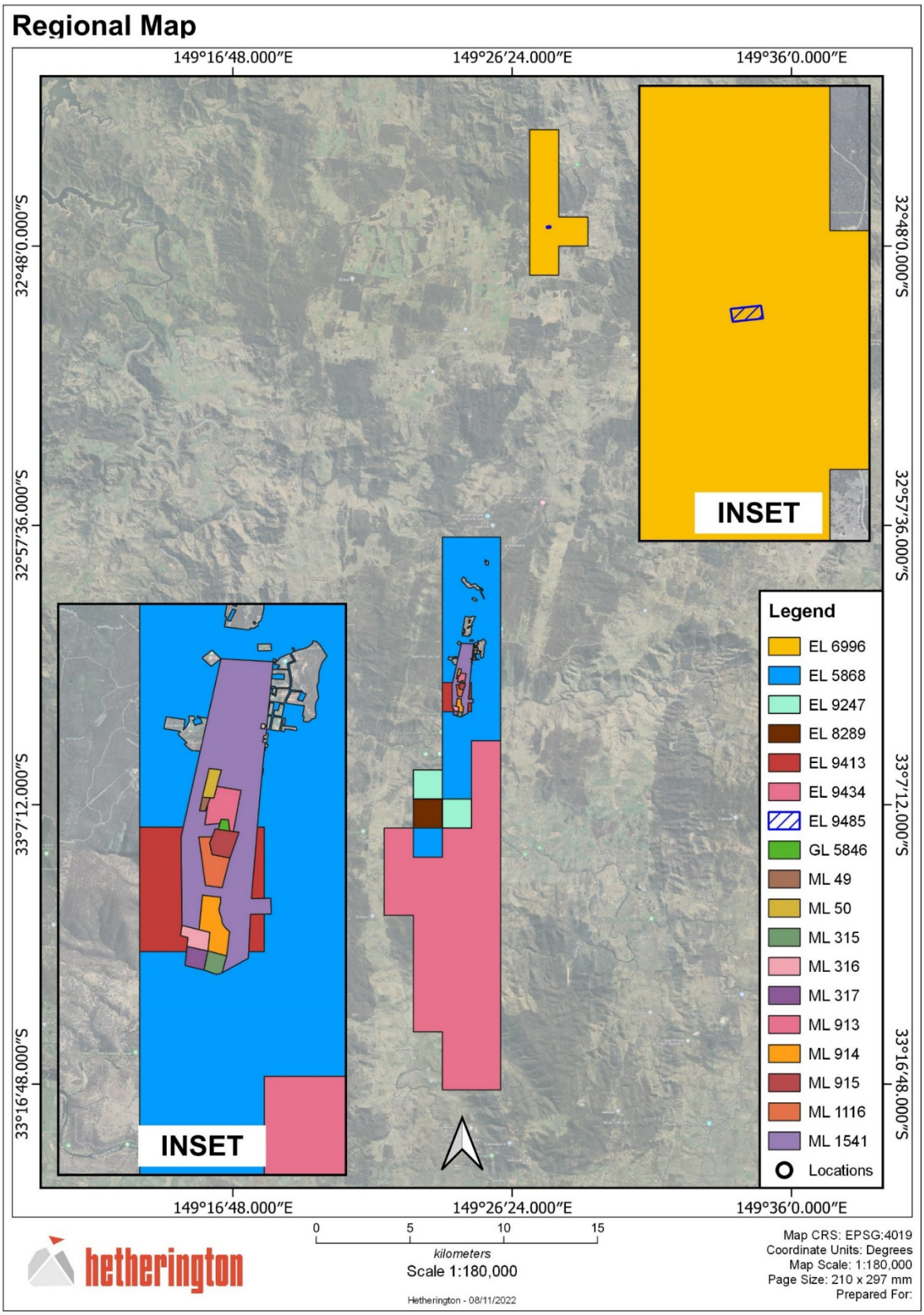

Figure 3 - map showing the Hill End and Hargrave tenements some 30 + kms in strike length.

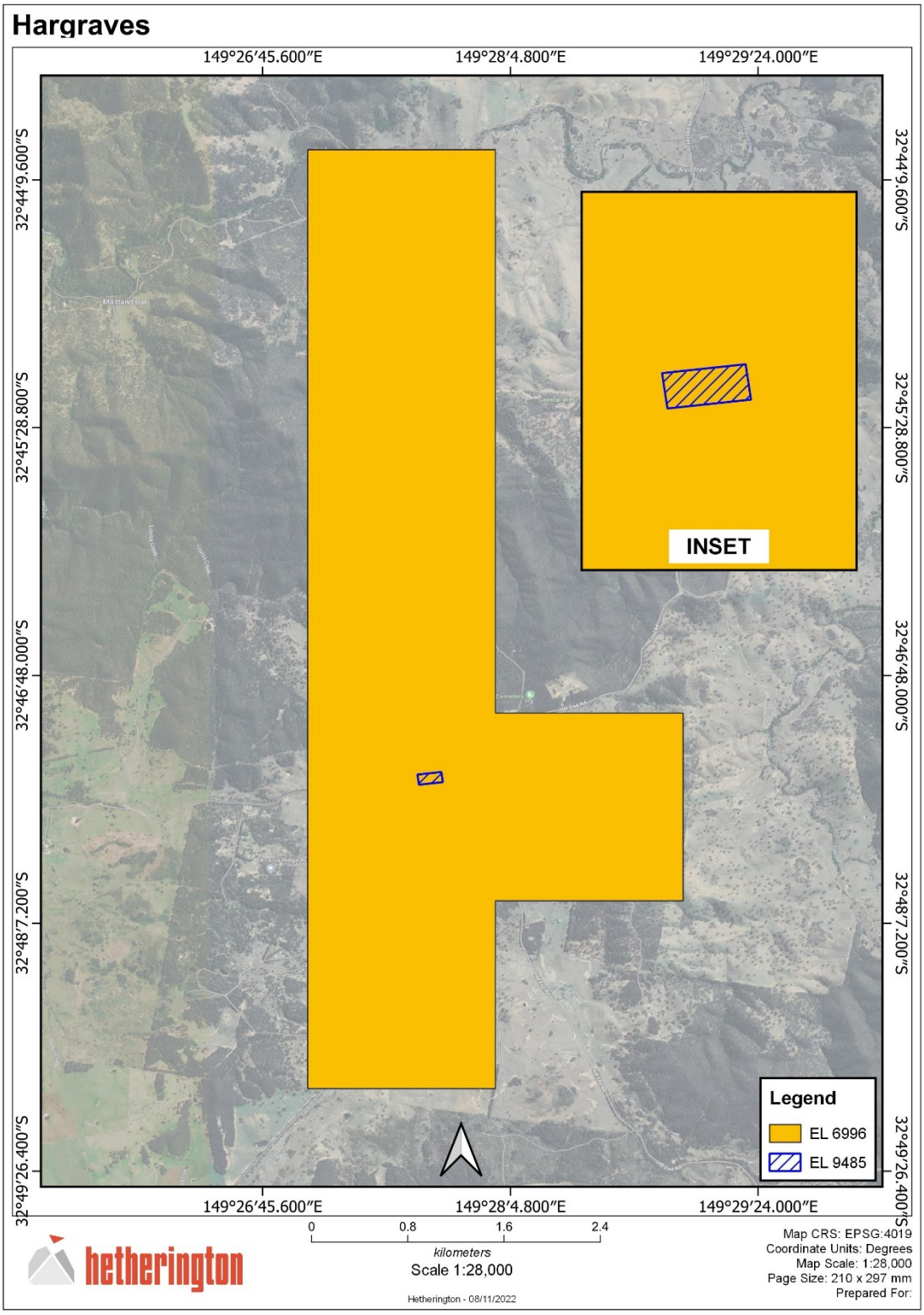

Figure 4 location of the small, but prospective, 1 unit tenement granted to Vertex.

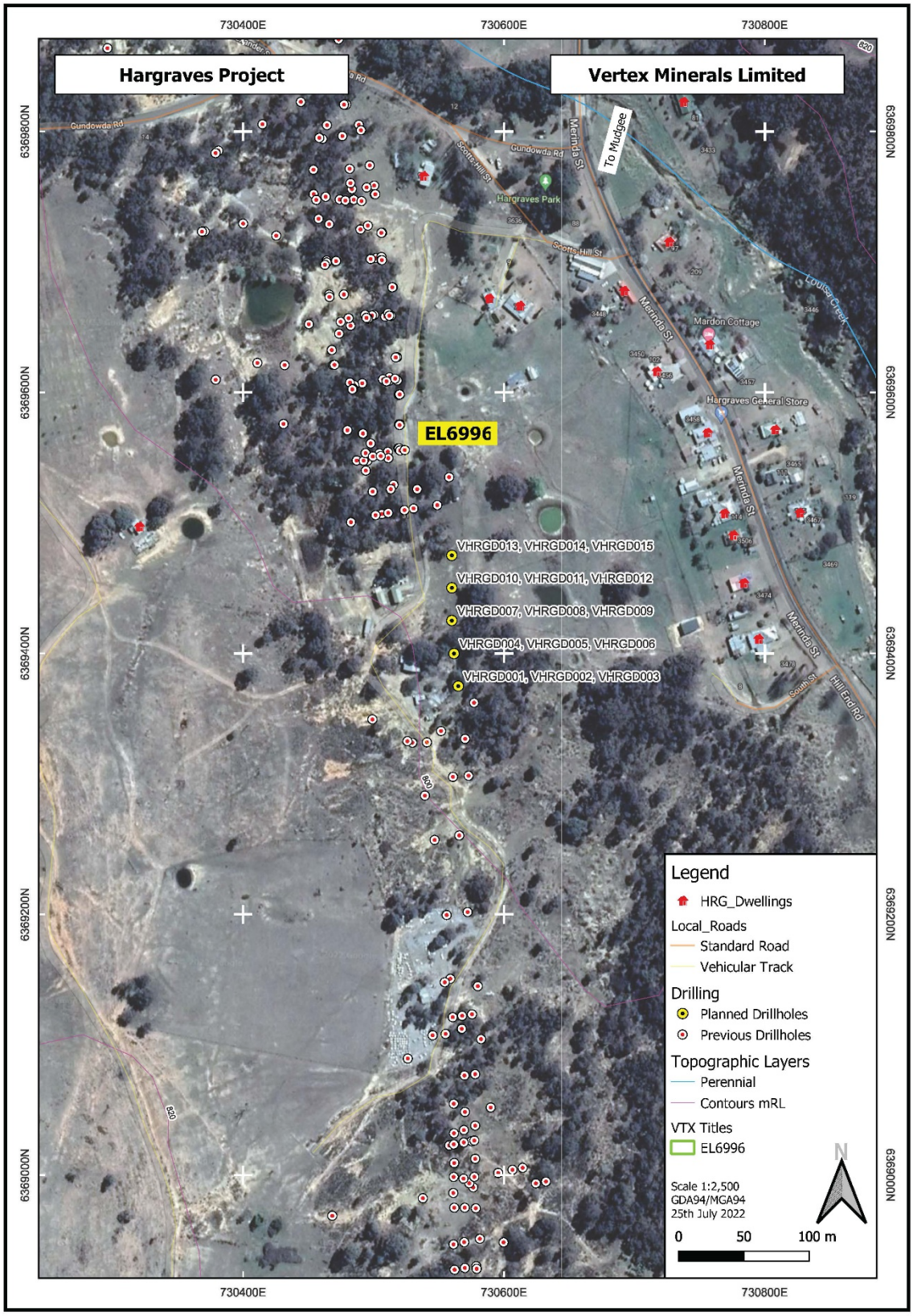

Figure 5 - Location of drill collars at Hargraves

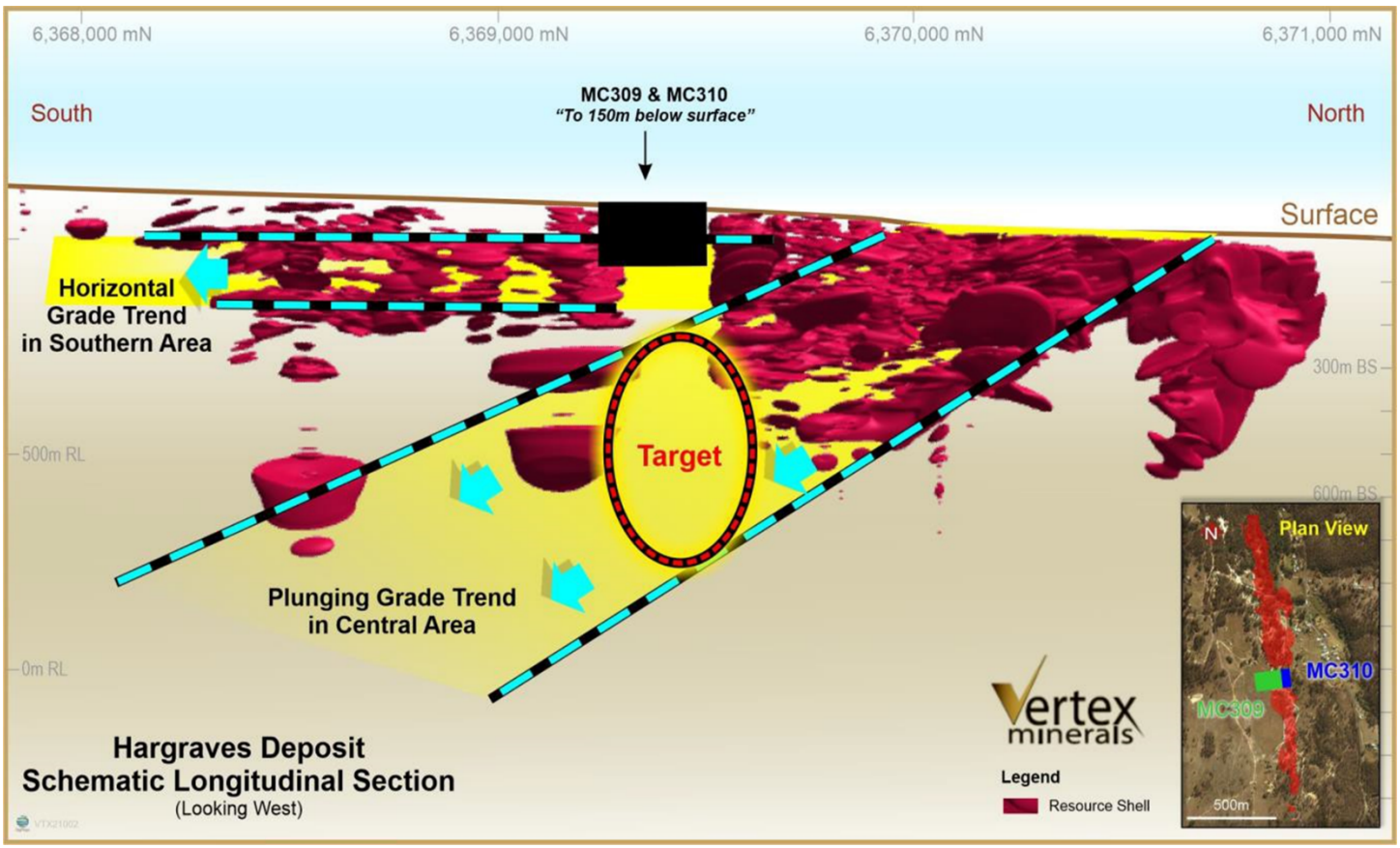

Figure 6 - Plunging deeper targets at Hargraves within the newly acquired area

This announcement has been approved by the Board of Vertex Minerals Limited.

Further Information:

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About Vertex Minerals Limited

Vertex Minerals Limited (ASX: VTX) is an Australian based gold exploration company developing its advanced Hargraves and Hill End gold projects located in the highly prospective Eastern Lachlan Fold Belt of Central West NSW. Other Company assets include the Pride of Elvire gold project and Taylors Rock gold/nickel/lithium project both located in the Eastern Goldfields of WA. The focus of Vertex Minerals is to advance the commercial production of gold from its NSW projects embracing an ethical and environmentally sustainable approach, utilising the below attributes/techniques to uniquely positioning the company as Australia's first truly environmentally sustainable producer of **green gold**:

- **Gravity Separation**: The deportment of gold at the Hill End Project allows high recovery to a concentrate produced using gravity separation techniques.
- **Direct Smelting**: The use of direct smelting of a gold concentrate that eliminates the need to use cyanide as a solvent.
- **Contrast in Density**: These separation techniques take advantage of the contrast in density of gold (ρ=19.3) relative to quartz (ρ=2.65).
- **Renewable Energy**: The unique landscape and infrastructure makes Hill End ideal for the establishment of renewable sources of power. The Crudine Ridge Windfarm is only 30km from the project site and Vertex plans to examine a pumped hydro-electricity scheme as an integral part of any proposed development. The topography and existing mine workings including shafts and adits make the establishment of a pumped hydro scheme achievable at modest expense.
- **Benign Tailings**: The tailings will essentially be quartz with little to no sulphide minerals.

Hargraves Gold Project (NSW)

- Hargraves Gold project is located approximately 2 5 km south of the town of Mudgee.
- The goldfield is 4 x 10 k m with numerous mineralised structures with little modern exploration.
- An updated mineral resource in accordance with JORC 2012 Code was completed by SRK Consulting (Australasia) Pty Ltd (SRK) – total of **2.3Mt at 2.38g/t Au for 177koz Au.**

Hill End Gold Project (NSW)

- Consists of 10 mining leases and three Exploration Licences located in the core of the Hill End Trough on the eastern Lachlan Fold Belt.
- 14km of continuous gold lode with gold recovery rate to gravity at +90% - **green gold.**
- Work undertaken in 2015 by Hill End Gold Limited (HEG) culminated in a JORC 2012 resource estimate of **80,000 oz Au @ 1.7 g/t to 150m** depth.

Pride of Elvire Gold Project (WA)

- Tenements surround the Mt. Elvire homestead approximately 210km north of Southern Cross in Western Australia
- The project has seen historical drilling with encouraging gold results achieved.

Taylor Rock Project (WA)

- Located 80km WSW of Norseman in the Southern Goldfields region of Western Australia.
- The project has both Gold and Nickel potential, interesting historical intercepts have recorded encouraging mineralisation.

JORC Compliance Statements

This website contains references to Mineral Resource estimates, which have been extracted from previous ASX announcements as set out above made by Peak Resources Ltd (ASX:PUA), the parent company of VTX prior to the Company's separate listing in 2022. For full details of Exploration Results in this release that have been previously announced, refer to those announcements.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the said announcements, and in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not materially modified from the original market announcements.

Competent Persons Statement

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr. Roger Jackson, a Director and Shareholder of the Company, who is a 25+ year Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM), Member of the Australasian Institute of Geoscientists and a Member of Australian Institute of Company Directors. Mr. Jackson has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration results, Mineral Resources and Ore Reserves". Mr. Jackson consents to the inclusion of the data contained in relevant resource reports used for this announcement as well as the matters, form and context in which the relevant data appears.

Forward Looking Statements and Important Notice

This report contains forecasts, projections and forward-looking information. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions it can give no assurance that these will be achieved. Expectations and estimates and projections and information provided by the Company are not a guarantee of future performance and involve unknown risks and uncertainties, many of which are out of Vertex Minerals' control.

Actual results and developments will almost certainly differ materially from those expressed or implied. Vertex Minerals has not audited or investigated the accuracy or completeness of the information, statements and opinions contained in this announcement. To the maximum extent permitted by applicable laws, Vertex Minerals makes no representation and can give no assurance, guarantee or warranty, express or implied, as to, and takes no responsibility and assumes no liability for the authenticity, validity, accuracy, suitability or completeness of, or any errors in or omission from, any information, statement or opinion contained in this report and without prejudice, to the generality of the foregoing, the achievement or accuracy of any forecasts, projections or other forward looking information contained or referred to in this report.

Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities.

APPENDIX 1 - HARGRAVES PROJECT – JORC CODE TABLE 1 CHECKLIST OF ASSESSMENT AND REPORTING CRITERIA

Extracted from PUA ASX Announcement dated 29 May 2020

Nature & quality of sampling

Year	Company	Drill type	Interval	Details
1987	Challenger	RC (114mm)	1m (regular)	Cuttings recovered from cyclone (12-25kg sample)
1987-88	Challenger	DD (HQ)	0.1-1m (selective)	Quartz mineralised intervals identified in geological logging; core ½ split longitudinally
1993-94	Geoservices	RC (1993: 138mm; 1994: unknown)	1m (regular)	
2008-11	Hill End Gold	DD (HQ3)	0.05-0.5m (selective)	Quartz mineralised intervals identified in geological logging; core ½ split longitudinally; 0.27 m average sample interval;
2008-11	Hill End Gold	DD (HQ3)	1m (target)	additional sampling of unsampled quartz veined intervals between 2011-13 at regular 1 m intervals
2011	Hill End Gold	RC (108 mm)	1m (regular)	Cuttings bagged at cyclone; quartz-bearing samples were ¼ split by riffle splitter
2011	Hill End Gold	RC (108 mm)	1m (regular)	In 2012, 451 additional RC samples containing quartz were identified; ¼ splits by riffle splitter
2012	Hill End Gold	DD (HQ3)	1m (target)	Quartz mineralised intervals identified in geological logging; core ½ split longitudinally; 0.8-1.2 m intervals geologically sampled; all quartz sampled

Measures taken to ensure sample retrospectivity

- No specific discussion on sample representivity is recorded for the RC drill program operated by Challenger Mining and Geoservices Pty Ltd. The samples from these programs have been discarded by previous explorers and so are no longer available for inspection.
- Core recoveries and RQD are recorded for the diamond drilling programs operated by Challenger Mining and HEG. Drill core recovery is poor for Challenger mining in the upper 10-20 m of the drill hole (oxide) and good for remainder for the hole. HEG drilling used triple tube drilling to obtain good recoveries throughout the drill hole.

Recovery/RQD category	Recovery			RQD		
	Count	% Total	Mean	Count	% Total	Mean
Very Poor	107	0.7%	0.1	1020	6.4%	16.97
Poor	203	1.3%	0.44	2158	13.5%	38.82
Fair	246	1.5%	0.65	3343	20.9%	63.78
Good	601	3.8%	0.86	3855	24.1%	86.04
Excellent	14829	92.8%	1	3959	24.8%	99.65
Total	**15986**			**14335**		

HEG RC drill hole samples were weighed and moisture contents recorded to measure the representativity of the samples. Where samples are recorded as significantly overweight (>33 kg) or underweight (<15 kg) or sample is wet, the interval is considered unrepresentative.

Aspects of the determination of mineralisation that are Material to the Public Report.

- Gold at Hargraves is contained in quartz veins reactivated and re-mineralised by repeated hydraulic fracturing events accompanying deformation and metamorphism. Samples of quartz commonly contain gold but not all quartz contains gold.
- Numerous samples of altered and sulphide mineralised host rock have been collected and analysed for gold by various methods. None of these samples contain gold > 0.1 ppm. Consequently, following geological logging, only RC and DD core samples containing quartz veining were collected and sent for gold assay.
- RC samples collected over 1 m intervals and logged as containing quartz were collected at the drill rig in plastic bags. ¼ sub-samples were riffle split at the drill site and placed in a separate plastic bag in preparation for transport to laboratory.
- DD core samples that are logged as containing quartz veins were sub-sampled over geologically determined intervals. The core interval to be sampled was cut longitudinally with a diamond saw and one half of the core was placed in a calico bag in preparation for transport to the laboratory.

Drill type

- Drilling is a combination of diamond core (HQ and HQ3) and RC (114, 138 and 108mm diameter) techniques.
- HQ (63.5mm diameter) diamond core was collected by Challenger Mining in 1987-88.
- HQ3 (triple tube) drilling (61.1 mm diameter) was done on all HEG drill holes.
- Oriented core was collected using a Reflex Act II HQ3 orientation tool in all the drill holes completed by HEG in 2012, on the North BNH drill program but not prior to that time.

Company		DD		RC		Total	
	Year	#Holes	Meterage	#Holes	Meterage	#Holes	Meterage
Challenger	1987	12	1,560.30	34	2,310.20	46	3,870.50
Geoservices	1993			27	1,900.00	27	1,900.00
Hill End Gold	2008	19	4,230.40			19	4,230.40
	2009	22	3,749.34			22	3,749.34
	2010	50	9,245.50			50	9,245.50
	2011	1	2,11.20	47	2,466.00	48	2,677.20
	2012	23	2,720.00			23	2,720.00
	Total	**115**	**20,156.44**	**47**	**2,466.00**	**162**	**22,622.44**
Grand Total		**127**	**21,716.74**	**108**	**6,676.20**	**235**	**28,392.94**

Method of recording and assessing core and chip sample recoveries and results assessed.

- Core recoveries and RQD are recorded for the diamond drilling programs operated by Challenger Mining and HEG. Drill core recovery is poor for Challenger mining in the upper 10-20 m of the drill hole (oxide) and good for remainder for the hole. HEG drilling used triple tube drilling to obtain good recoveries throughout the drill hole.
- HEG RC drill hole samples were weighed and moisture contents recorded to measure the representivity of the samples. Where samples are recorded as significantly overweight (>33 kg) or underweight (<15 kg) or sample is wet, the interval is considered unrepresentative.

Measures taken to maximise sample recovery and ensure representative nature of the samples

- No sample collection information is available to assess recovery and sample representivity of RC drilling for Challenger Mining (1987) and Geoservices Pty Ltd
- All HEG DD core was recovered in HQ3 (triple tube barrels) to maximize core recovery and enable more precise geotechnical assessment. Holes have been drilled across the hinge of the BNH Anticline and across the limbs of the BNH Anticline in order to obtain representative samples.

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.

- There is no relationship observed between sample recovery and grade in all drilling.
- For RC drilling completed by Challenger Mining (1987) and Geoservices Pty Ltd (1993-94) there is no information recorded on the moisture content of the sample and no mention made of wet samples. The results of the RC drilling have been compared to nearby DD holes to test for bias. The assay results from the RC drilling are comparable to the DD drill assays of nearby holes suggesting there is little bias in the RC drilling.
- For RC drilling completed by HEG there is no correlation between sample weight and gold grade. Samples that were wet when collected were recorded at the time of drilling and were not sampled due to the likelyhood of contamination.
- The large sample size from the RC drilling would theoretically provide for a more accurate sample than the HQ/HQ3 drill core, assuming limited contamination.

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.

- Logged attributes include lithology, weathering (oxidation), mineralisation, alteration, veining, recovery, RQD and structure.

Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc)

- Logging for all programs non-HEG programs is descriptive rather that quantitative and notes on geological observations have been made. No geotechnical logging was possible from RC drill cuttings.
- HEG DD programs (2008 – 2012) – The 2012 DD program collected oriented drill core and core was geotechnically logged and marked up for recovery and RQD. The orientations of geological contacts veins, veins, faults, cleavage and other structures were measured from the oriented core.

  For 2008 – 2011 drill core, core was not oriented. Instead, structures were measured relative to the orientation of the dominant cleavage, which allowed measurement of other geological and structural features of interest.
- HEG RC program (2011) – 100% of the RC drill cuttings were logged for lithology, mineralisation and alteration (2,488.0 m). No geotechnical logging is possible from RC drill cuttings. Logging is descriptive rather that quantitative. Notes on the geological observations have been made.

The total length and percentage of the relevant intersections logged.

- Challenger Mining (1987) –100% of the RC drill cuttings were logged for lithology, mineralisation and alteration (2,310.2 m).
- Challenger Mining (1987-88) – 100% of the DD core was logged following mark-up for core recovery and RQD (1,625.9 m).
- Compass Resources NL in JV with Geoservices Pty Ltd (1993-94) – 100% of the RC drill cuttings were logged for lithology, mineralisation and alteration (1,731.0 m).
- HEG DD programs (2008 – 2012) – 100% of the core was logged following mark-up for core recovery and RQD (19,626.0 m).
- HEG RC program (2011) – 100% of the RC drill cuttings were logged for lithology, mineralisation and alteration (2,488.0 m).

If core, whether cut or sawn and whether quarter, half or all core taken; If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.

- Challenger Mining (1987), CMC-1 – CMC-6 (first 6 RC holes): 1 m interval (12-25 kg) RC chip sample was submitted to AAL in Orange. The entire sample was dried and crushed to 500 microns. 3 kg was split out and ground to 100 microns. Four 50 g sub-samples were then split for fire assay (FA).
- Challenger Mining (1987), CMC-7 – CMC-34: The entire 1 m interval RC sample was sent to at Fox Anamet in Sydney where it was dried and ground to 200 microns. 3 kg of the ground material was then split. 1 kg

sub samples were split for screen fire assay (SFA) using a +80#. Fire assay of both the +80# and -80# (in duplicate) was done and results combined.

  - Challenger Mining (1987-88), DD program: Samples of selected intervals of longitudinally cut ½ drill core were submitted to Comlabs Laboratory in Adelaide for SFA using the same procedure as the RC samples above.

- Compass Resources NL in JV with Geoservices Pty Ltd (1993-94) RC drilling program: 1 m interval RC samples which contained a high percentage of quartz or visible gold were subjected to 250 g screen fire assay without prior primary crushing or milling of the sample. RC samples were sieved at -75# for the 1993 drilling and -80# for the 1994 drilling. 1 m interval RC samples where no quartz or visible gold was observed were assayed using 50 g fire assay.
- Compass Resources NL submitted for analysis selected 1 m intervals of previously un-assayed RC drill samples from the 1987-88 (Challenger Mining) RC drill program. Original samples were re-bagged and a 3 kg sub-sample was split off for analysis. Standard fire assay (50 g) was done on 88 samples and screen fire assay was done on 149 samples.
- Compass Resources NL resubmitted 29 pulps from selected intervals of the Challenger DD program to test the original screen fire assay technique used by Challenger Mining. The repeat assays were analysed by fire assay and the original assays were -80# and -200# screen fire assay. The results correlate well although the Fire assay results averaged approximately 10% lower than the screen fire assay results.
- Compass Resources also re-submitted 71 Challenger Mining 1 m RC samples for check analysis. A split of the original sample was submitted for standard fire assay (50 g charge). An additional 2 kg split which was then pan concentrated before being analysed by fire assay. Of these repeat samples, 58 have been reported and the other 13 samples contained 'spurious results' and so were not reported. There is considerable scatter in the results which correlate poorly, perhaps due to the pan concentration process.

  - Compass Resources NL also submitted an additional 163 samples of 1 m RC chips from the Challenger Mining drilling which, when re-logged were found to contain greater than 10% quartz. 2 kg splits were pan concentrated, and concentrates assayed by 50 g fire assay at 2 separate laboratories. Concentrate rejects were not analysed.

- HEG DD programs (2008 – 2011): selected intervals were longitudinally cut into ½ core. Samples were placed in calico bags and sent to SGS Laboratories in Townsville. The entire sample was pulverized to 75 microns and analysed by Leachwell (bottle roll).
- In 2011 – 2013, selected intervals from 2008-2011 drilling that contain quartz veining but were not previously sampled have been sampled. Longitudinally cut ½ core sample intervals between 0.8 and 1.2 m length (average 1.0 m) were sent to SGS Laboratories in West Wyalong. The entire sample was pulverized to 75 microns and a s-sample was split from the pulp and analysed by FA (50 g).
- HEG RC program (2011): 1 m RC samples were quarter split in a riffle splitter and the sub-sample was transported to SGS laboratories in Townsville where the entire sub-sample was pulverized to 75 micron and analysed for gold by Leachwell (bottle roll).
- In 2012 additional samples containing quartz previously unrecognized were quarter split on site. The subsample was transported to SGS laboratories in West Wyalong where the entire sub-sample was pulverized to 75 microns. A 50 g fraction of the pulverized sample was then split for analysis by fire assay. For 80 samples that returned higher gold grades, the remaining pulp was sent to SGS laboratories in Townsville for gold analysis by Leachwell (bottle roll). The results correlated well for samples containing > 5 ppm gold and moderately well for samples containing 0.5 – 5.0 ppm gold.
- HEG DD program (2012): Longitudinally cut ½ core samples were sent to SGS in West Wyalong or SGS in Townsville. The entire sample was pulverized to 75 microns and a sub-split sample was analysed for gold by fire assay (50 g).
- Pulverized sample from intervals that contained visible gold, or were suspected to contain high gold grades and/or returned higher gold values from the fire assay were sent to SGS laboratories in Townsville where the entire pulverized sample was analysed for gold by Leachwell (bottle roll).

  - 174 samples from SGS in West Wyalong and 30 samples from SGS in Townsville originally analysed by fire assay were check assayed using the Leachwell (bottle roll) technique. The results correlated

moderately well for samples > 5 ppm gold and poorly for samples containing 0.5 – 5.0 ppm gold. On average the Leachwell samples reported 25% lower values than the fire assay. There is no obvious sample technique, or metallurgical reason for the difference in the North BNH drill core samples.

For all sample types, the nature, quality and appropriateness of the sample preparation technique.

- The sample and sub-sample collection, storage, transport and analysis is appropriate for the style of mineralisation at Hargraves.

Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.

- There is little detail from previous explorers to gauge the sampling quality control procedures.
- HEG drill core sample intervals are selected by the geologists that log the core and who have experience in the style of mineralisation being sampled. Cutting of the core, sample numbering and placing the ½ core in

  the bag was undertaken by experienced field assistants under geological supervision. Sample checking and counting before sample dispatch to the laboratory was done by experienced field assistants. HEG RC samples were logged for moisture content and were ¼ riffle split at the drill site before being re-bagged for dispatch to the laboratory. This work was done by experienced field assistants.

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.

- Several close spaced drill holes have been completed in the upper part of the deposit (top 100 metres) which provides a measure of the representivity of the sample. Generally, the geology replicates well across close spaced drill holes, although the gold grades are variable over intervals up to 10 m. Composites greater than 10 m replicate well between drill holes.
- Challenger Mining (1987-88) - duplicate RC samples from drill holes were not possible as the whole sample from 1 m intervals was submitted for assay and pulp rejects were not retrieved. Where Compass Resources NL submitted previously unsampled RC chips from Challenger Mining drilling, a 3 kg subsample was split which did allow for duplicate sampling by different assay methods as described above.
- Compass Resources NL (1993-94) – duplicate RC samples were taken from 3 kg riffle splits for analysis by different methods as described above. No other information is available on duplicate sampling.
- Selected HEG RC sample ¼ split duplicates have been submitted for assay by different assay techniques (FA and Leachwell bottle roll).
- HEG have also duplicate split diamond core pulps in the laboratory for assay by different assay techniques (FA and Leachwell bottle roll). No second ½ core sample duplicates have been taken for analysis by duplicate techniques as this would not increase 50 g FA or Leachwell assay interval precision. Second ½ core composites have been selected for metallurgical testing which provides a composite measure of gold content which compares well to original assay gold content over the same composite interval.

Whether sample sizes are appropriate to the grain size of the material being sampled.

- Sample sizes are appropriate for the style of mineralisation at Hargraves. Hargraves mineralisation contains coarse gold Where high grade gold is found by FA, or coarse visible gold is observed, assay procedures are modified to incorporate larger sub-samples, longer digests and optimal assay techniques.

The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.

- Challenger Mining (1987), CMC-1 – CMC-6 (first 6 RC holes):
- Duplicate 50 g FA for samples from the first 6 RC drill holes using the procedure described above correlated poorly and so the sampling technique was reviewed for subsequent holes. The small (partial) sub-sample size (50 grams) for a FA of the higher-grade Hargraves material will result in loss of precision for these samples.
- Compass Resources NL in JV with Geoservices Pty Ltd (1993-94) RC drilling program. Sub-sample and analysis by SFA improved precision. SFA results did not necessarily correlate well with visible gold

observed in the sample suggesting sub-sampling (partial sample) may have been a problem in these samples.

- 6 samples from 1994 RC drilling that were analysed by screen fire assay (SFA) were submitted for -200# SFA and by cyanide leach (approximately 6 kg). results were within expected error however 6 samples is too small a population to provide any definitive results on the comparison of assay methods.
- 6 samples from the 1993 drilling were submitted for cyanide leach assay. The results correlated well with the original -75# SFA however 6 samples is too small a population to provide any definitive results on the comparison of assay methods.
- A further 6 samples from the 1993 RC drilling were submitted for analysis by SFA (-200#). The SFA returned consistently lower assays that the original fire assay, however 6 samples is too small a population to provide any definitive results on the comparison of assay methods.
- For HEG RC and DD samples FA and Leachwell (bottle roll) techniques have been used. Leachwell of RC samples analyses a pulverised ¼ split of the original sample which provides high precision analysis. Where FA for gold has been used on RC samples, the entire ¼ split has been pulverised, removed from the grinding equipment and split in the laboratory to provide a 50 gram sub-sample. Where gold has been detected, a follow up Leachwell gold analysis of the remaining pulp has been done. This approach provides a high precision analysis. Leachwell of DD samples has been done by pulverising the entire sample and analysing the entire sample. This provides a high precision analysis. Where FA on DD core has been done, the entire sample has been pulverised, removed from the grinding equipment and split in the laboratory to provide a 50 gram sub-sample. Where gold has been detected, a follow up Leachwell gold analysis of the remaining pulp has been done. This approach provides a high precision analysis.

Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.

- Challenger Mining (1987) RC program. No reports of standards, blanks or laboratory checks have been made for the Challenger RC drilling program.
- Challenger Mining (1987-88) DD program. No reports of standards, blanks or laboratory checks have been made for the Challenger RC drilling program.
- Geoservices Pty Ltd (1993-94) RC program.
- HEG (2008 – 2012) DD programs and HEG (2012) RC program. Approximately 1 standard reference sample (standard) and 1 blank were inserted for every 20 samples submitted to the laboratory for analysis. The standards used were commercially prepared pulp samples with gold grades chosen to reflect the expected grade range of the samples being tested. Blank samples used were approximately 2 kilograms of either quartz vein material from Prince Alfred Hill near Hill End which contains no gold or diorite gravel from a Bathurst quarry which contains no gold. HEG Samples were prepared and analysed at SGS Laboratories in Townsville (Leachwell gold, multielement by ICPMS) and/or SGS Laboratories in West Wyalong (FA gold). Documented procedures for the preparation and analysis of samples at both laboratories were prepared and sent to the laboratory managers prior to the laboratories being used. Laboratory visits to inspect equipment and procedures and reinforce documented laboratory procedures were made to both laboratories by HEG exploration management and found to be satisfactory. Laboratory internal standards, analytical duplicates and second split duplicates were reported from both laboratories and checked by HEG geologists. Batch standards and blanks were checked on receipt of final assay results. Where standards and blanks failed to return expected values within acceptable error limits the entire batch was resubmitted to re-assay. QA/QC data is recorded digitally in final laboratory receipts and in the HEG drill hole data base for the Hargraves Project.

The verification of significant intersections by either independent or alternative company personnel.

- Laboratory assay results were received by several people within HEG including the Managing Director, Exploration Manager, project geologists and senior field supervisor. Final assay results were digitally entered into the drill hole database by the Project Geologist and validated. Any significant intersections are checked by the Exploration Manager before public reporting.

The use of twinned holes

- A number of close spaced drill hole pairs (two holes within 10 metres and some as close as 5 metres) are present at Hargraves. Where these holes are present, the geology, alteration, structure and veining duplicate accurately. Individual interval assay values may vary over several metres but compare well over longer intervals.

Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.

- Assay data was received in preliminary and final form via e-mail in PDF and .CSV format from the laboratory. Final assays that pass QA/QC procedures are loaded digitally into the drill database and checked. PDF and CSV files are backed up on the HEG server and the database is also included in a daily back up.

Discuss any adjustment to assay data.

- No adjustments were made to assay data.
- Assay method FAG35V was found to report exceptionally and consistently high assayed grades. This method was removed from the resource estimation following a detailed review. The method appears poorly suited to Hargraves material.

Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.

Year	Company	Drill type	Collar survey	Downhole survey
1987	Challenger	RC (114 mm)	Measured from established 25m grid and converted to MGA zone 55	Collar survey (at 0 m) using compass. No down hole surveys
1987-88	Challenger	DD (HQ)	Measured from established 25m grid and converted to MGA zone 55	Eastman down hole surveys completed, but no data not recorded
1993-94	Geoservices	RC (1993;138 mm,1994; unknown)	Measured from established 25m grid and converted to MGA zone 55	Single survey taken using downhole tool, depths unknown but probably near collar.
2008-10	Hill End Gold	DD (HQ3)	Differential GPS	Reflex digital down hole survey. Typically surveyed at 30-50 m intervals down hole
2010-11	Hill End Gold	DD (HQ3)	Total Station Survey	Reflex digital down hole survey. Typically surveyed at 30-50 m intervals down hole
2011	Hill End Gold	RC (108 mm)	Differential GPS	Collar survey only, no down hole survey
2012	Hill End Gold	DD (HQ3)	Differential GPS	Down hole surveys taken at 30 m intervals and at end of hole using electronic single shot survey tool

- DGPS can be precise to 0.1 m and total field equipment is precise to 0.01 m.
- Downhole surveys were shot every 30-50 m and at the end of the hole using single shot digital survey tools for DD holes.
- RC holes were not surveyed downhole. Surveys were taken from drill rig setup are assumed to be straight.

Specification of the grid system used.

- Prior to HEG, a local grid (50 m × 25 m) was employed on site. This was later converted to GDA94, MGA (zone 55).
- HEG drill collars are surveyed using either DGPS or total field equipment in GDA94 MGA (zone 55).

Quality and adequacy of topographic control.

- A LiDAR survey of the Hargraves area provides topographic control for pre-HEG drill collars.
    - HEG drill collars are surveyed using DGPS or total field equipment and elevations validated against the LiDAR survey.

Data spacing for reporting of Exploration Results.

- Drill spacing averages 25 m spacing to depths of 150 metres in central and southern regions of the deposit.
- Below 150 m, drill spacing averages 50 m.
    - The northern region of the deposit averages 50 m drill spacing.

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.

- Drill hole spacing, density, orientation and directions of drilling are adequate to provide a high-quality geological interpretation.
- The 25 m drill spacing and sampling is of sufficient quality to obtain a good control on the quantity and gold grade of the mineralisation. When combined with the geological control, these areas may be considered part of an Indicated resource but are unlikely to contain sufficient information to warrant a Measured resource classification.
    - The 50 m drill spacing and sampling is of sufficient quality to obtain some control on the quantity and gold grade of the mineralisation. When combined with the geological control, these areas may be considered part of an Inferred resource but are unlikely to contain sufficient information to warrant an Indicated resource classification.

Whether sample compositing has been applied.

- No sample compositing has been done in preparation material sent for analysis

Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.
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.

- Gold mineralisation at Hargraves occurs as:
    1. Bedding parallel veins folded around a tight anticline with a wavelength of 130-150 m and an amplitude of 130-150 m. The veins are clustered around the centre of the Big Nugget Hill Anticline in a zone that is 20 – 40 m wide at surface.
    2. Faults which are parallel to the axial plane of the Anticline and concentrated around the hinge of the Anticline.
    3. Folded veins which have a spread of orientations with an average orientation of 21 degrees to the south-east.
- Drilling targets bedding parallel reefs and faults clustered around the axial plane of the north-south striking Big Nugget Hill anticline. Drill holes either plunge steeply (65-80°) towards the west and are collared near to the axial plane, or they plunge moderately to the east (55-70°) and rake the axial plane. No single drill orientation provides an entirely unbiased sample orientation in the folded mineralisation.

  On most sections the core of the anticline is mostly densely drilled because drilling from both orientations converges. Coverage in the fold limbs typically decreases away from the axial plane.

  The drill pattern is adequate to establish a geological model with a concentration of drilling at the axial plane of the anticline which may introduce a sampling bias towards the centre of the deposit where drill holes are only west plunging and not also east plunging.

The measures taken to ensure sample security.

- No information is available on sample security from exploration prior to HEG. RC samples collected by previous explorers were previously discarded. Drill core from exploration prior to HEG is stored at Hill End Exhibition Flat in metal trays which are stacked and covered to prevent weathering.

- Drill core from HEG drill holes is taken from the drill site to the core preparation area daily. After processing, photographing, logging and sampling the core is stacked on palates and covered to prevent weathering. Hargraves drill core is stored at the Hargraves core preparation facility. Sampled ½ core is placed in calico bags which are checked and are placed into Bulka bags for dispatch to the laboratory.
- RC samples from HEG drill holes are logged and processed at the drill site. Drill intervals that were not sampled were stored on site until final analysis of the drill program. ¼ splits of the sampled intervals are placed in plastic bags which are then checked and placed into Bulka bags for transport to the laboratory. The remaining ¼ splits of the sampled intervals are stored in plastic bags on palates in a storage shed at Hill End for future use. Unsampled intervals from the RC drill program were discarded.
- Samples for dispatch to the SGS Laboratory in West Wyalong are driven directly to the Laboratory by HEG personnel from Hill End and submitted on arrival. Pulps and rejects previously prepared by the laboratory are loaded and returned directly to a Hill End storage shed.
    - Samples for dispatch to the SGS Laboratory in Townsville are driven to a Bathurst courier contractor by HEG personnel from Hill End and submitted to the contractor. Pulps and rejects from SGS Townsville are returned to Hill End for storage by courier and are picked up in Bathurst by HEG personnel. On-line courier tracking of the consignments is available. When a consignment arrives at the laboratory, samples are checked and counted by the Laboratory and advice of submission is sent by e-mail from SGS Townsville Laboratory to HEG.

The results of any audits or reviews of sampling techniques and data.

- Audits and reviews of both the SGS laboratories (West Wyalong and Townsville) have been undertaken by HEG personnel at various times, commonly just prior to a significant sampling program such as drill testing. Particular emphasis is placed on the sample receipt, preparation and storage procedures. HEG have provided written sample preparation and assay procedures for FA at SGS West Wyalong and for FA and Leachwell assay at SGS Townsville which have been adhered to for all HEG samples. Facilities and procedures at both the SGS laboratories were found to be good at the times of the HEG visits.

Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.

- Exploration Licence (EL) 6996 (1992) is 100% operated by Pure Alumina Ltd. The resource is contained entirely within EL 6996.
- M(C)L 309 covers an area of 1.5 ha to a depth of 6 metres below surface immediately south of Big Nugget Hill. This Licence is not held by HEG and so the area is excised from EL 6996.
- M(C)L 310 covers an area of 0.5 ha to a depth of 150 metres below surface immediately south of Big Nugget Hill and adjoining M(C)L 309. This Licence is not held by HEG and so the area is excised from EL 6996.
- There are no joint ventures, partnerships, overriding royalties, native title interests, significant historical sites, wilderness, national parks or environmentally sensitive areas over EL 6996.

The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.

- Pure Alumina expect to be able to renew EL 6996 for a further two years from 21 December 2019 and have applied to renew to the NSW Department of Trade and Investment, Resources & Energy.
- Relinquishment of approximately 50% of the tenement was accepted in May 2020. The reduction in area will not include the area covering the resource at Hargraves.
    - There are no known impediments to obtaining a licence to operate in the area.

Acknowledgment and appraisal of exploration by other parties.

- The relevant exploration completed by previous Licence holders is documented in Section 1 (Sampling Techniques and Data) and the preceding Supporting Information.

Deposit type, geological setting and style of mineralisation.

- Details of the deposit style at Hargraves and the geological setting are provided in the introduction preceding Table 1 (Sampling Techniques and Data).

A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:

- As summary of the drill hole information used in the resource estimate is provided in Table 1 of Appendix C.
- No new drill hole intercepts are presented with the Hargraves resource estimate.
- Significant drill hole intercepts have been published previous in public documents.
    - No new drill hole intercepts are presented with the Hargraves resource estimate.

In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.

- Intersection cut off grades are not relevant to the reporting of the resource estimate. The Hargraves Mineral Resource estimate is reported to 0.8 ppm Au cut-off grade for depths to 175 metres below surface and to 2.0 ppm gold cut-off for depths greater than 175 metres below surface.

Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.

- Not relevant for the Hargraves resource estimate

The assumptions used for any reporting of metal equivalent values should be clearly stated.

- No metal equivalents used in reporting of Hargraves resources (gold only).

Relationship between mineralisation widths and intercept lengths

- Not relevant to the understanding of the Hargraves resource estimate.

Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.

- Diagrams of the Hargraves resource estimate are provided in the public release announced to the ASX.

Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.

- All drill hole intersections have been included in the resource estimate.

Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.

- No other substantive exploration data is relevant to the Hargraves resource estimate.
- Metallurgical test work previously completed has been reported to the ASX previously.
    - There are no potential deleterious elements of compounds in the Hargraves deposit.

Further work

- The nature and scale of planned further work on the Hargraves project will be determined following review of the revised Mineral Resource estimation.

Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.

- HEG recorded geological observations onto paper logs at the core logging facility and transferred to spreadsheet afterwards. Spreadsheets were imported to the centralised database and the paper original archived.
- HEG collar and downhole survey data is received in digital (CSV) format and is digitally loaded into the database.
- Final assay data for all HEG drill holes is received digitally in PDF and CSV format. The data was loaded into the database from the CSV files and validated.
- Previous exploration data (Challenger Mining and Compass Resources NL) was reported in Annual Reports to Government. Reported data was manually transcribed from the paper copies and loaded into the project database. Digital and paper copies of the report are available for future reference.
    - The project database degraded following closure of the site office and the move away from enterprise data management (aQuire) to personal databases (Access). The copies supplied to SRK contained a variety of issues which had to be rectified as part of the Mineral Resource Estimate. SRK created a staging database in Microsoft SQL Server to supply clean data to the model.

Data validation procedures used.

- Historically, the database was used by HEG personnel and independent consultants for analytical work including geological interpretation, construction of 3D geological surfaces, analysis of assay data and resource estimation. Data was repeatedly validated during these tasks and errors were corrected in the original database.
    - Leapfrog modelling software was connected to the SRK staging database and data validation was automatically run over each imported dataset. Errors with the potential to impact modelling were corrected in both the database and Leapfrog project.

Comment on any site visits undertaken by the Competent Person and the outcome of those visits

- A site visit was not conducted as part of the 2020 SRK Resource Estimation. The Hill End field office is currently in shutdown and there is no ongoing exploration work or mining activity, so there was little value in visiting site.
    - Mr Willetts has previously visited the Hill End field office on several occasions between 2010 and 2011 while employed by Geos Mining. During those visits, he witnessed site procedures, engaged with the geological team and assisted with site data management, geological modelling and resource estimation.

Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.

- Geological controls on mineralisation are reasonably understood and can be discerned from the observed data.
    - Fold geometry is well-described by logged structural data, albeit with some uncertainty around the relative dip to cleavage measurement methodology.

Nature of the data used and of any assumptions made.

- Drill hole data, in particular structural observations was used to develop the geological model. Absence of stratigraphic marker horizons within the turbidite host rock required Au grade shells to be used as a proxy for mineralised reef positions. The structural geological model guided the grade shell geometry and ensure conformation with local structural fabric.
- Sub-vertical feeder structures have been assumed barren. They form part of the geological model; however, they were not considered estimation domains.

The effect, if any, of alternative interpretations on Mineral Resource estimation.

- Treating feeder zones as mineralised increases modelled gold inventory by approximately 3000 oz, which is not material to the resource inventory. The domain possesses questionable statistical characteristics, likely because it is poorly defined in drilling and rarely mineralised.

The use of geology in guiding and controlling Mineral Resource estimation.

- Geologically modelling was conducted in Leapfrog Geo software.
- Structural observations were processed into data-driven structural trend models and used to steer grade interpolators around the folded reef geometry.
- Weathering data was modelled into coherent units and used for bulk density assignment.
- Attempts were made to model lithology; however, lack of stratigraphic marker horizons limited the usefulness of the model.
- Feeder fault zones were modelled as veins as a conceptual tool only because the reef modelling process captured almost all economic mineralisation and the typically barren zones were not required in the estimation phase.

The factors affecting continuity both of grade and geology.

- The gross structural continuity of the Big Nugget Hill anticline is consistent along and across strike, and a depth; however, form and local geometry of folding evolves with position. This changing geometry affects the position and form of reefs and associated veins – key sites of mineralisation.
- Economic mineralisation is thought to concentrate close to intersections of feeder structures and quartz reefs. Intersections manifest as stacked high-grade trends, plunging to the south in the central zone and sub-horizontal in southern/south-central regions.

  The change in plunge orientation between south-central and central zone trends currently cannot be attributed to any logged structure.

  - Grade continuity up to 30 ppm Au is geostatistically demonstrable through the Hargraves estimation domain. Extreme grades beyond this point in the distribution are encountered, but uncommonly intersected, likely because continuity is very short-range (<10 m). While the deposit is classified as a nuggety, coarse gold deposit, grade continuity over long distances is observed.

The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.

- Hargraves deposit extends approximately 1,500m along strike, 160m cross strike and up to 300m down dip.

The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.

- Leapfrog Geo software was used for data validation and analysis, geological modelling, estimation domain preparation and sample compositing.

  Leapfrog Edge module within Leapfrog Geo was used for grade interpolation, classification, model validation and reporting.
- A grade indicator shell was created to define anomalous gold mineralisation and serve as the sole estimation domain. An indicator value of 0.1 ppm Au was statistically determined as appropriate for capturing mineralisation and incorporation of sufficient dilution to prevent excessive grade estimation. Assays were composited to 2 m using an economic compositing method for grade shell creation. This bulked mineralisation into economically viable proportions.

  Shell geometry was controlled by the structural trend, constructed during geological modelling. A fine mesh resolution allowed capture of thin intersections.
- The estimation domain boundary was treated as hard, following analysis.
- 0.5 m composites were created within mineralisation domain. The composite length was intended to reconcile with the fine mesh resolution of the estimation domain and parent block dimensions.

- Au grade was estimated using Ordinary Kriging. Variogram models were fit to observed data and used to assign sample weights during interpolation.
- Search orientation was varied on a per block basis according to a structural trend produced during geological modelling. This technique is used to accommodate fold geometry in grade estimation.
- No top cuts are used for the estimation. A grade threshold is applied during estimation which reduces the search range and influence of high-grade samples beyond a statistically determined threshold of 30 ppm Au. The threshold range was varied, and sensitivity assessed on the estimated
- Estimation was performed in a single pass with interpolation and extrapolation limited by data search distances, sample eligibility and ellipsoid search options.
- Maximum extrapolation for Inferred material is 30 m. Indicated material is not extrapolated.
- Resource depletion from historical production has been accommodated through exclusion of stope wireframes supplied by HEG.

The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.

- There are no modern mine production records that can be compared with the resource estimate.
- Production in the late 1800's involved hand-sorting and picking high grade from the ore which resulted in higher than average grades reporting to crushing. No records were kept of the proportion of quartz vein mineralisation was processed and rejected.
- Previously-announced Mineral Resource estimates from 2011 and 2013 were reviewed. The 2013 Mineral Resources totalled 2.85Mt @ 2.7 ppm Au for 165 koz (0.5 ppm cutoff).

  The grade of Mineral Resources declined following the initial 2011 estimate of 1.44Mt @ 5.1 ppm Au for 234 koz, which SRK believes to represent a significant overestimate.

The assumptions made regarding recovery of by-products.

- No by-products are associated with the Hargraves gold deposit.

Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).

- There are no deleterious elements associated with Hargraves mineralisation. Visual estimates of the sulphide content of the Hargraves mineralisation range from 0-3%. Most of the ore has less than 2% sulphide. Sulphides include pyrite, arsenopyrite, galena, sphalerite and chalcopyrite.
- Most of the sulphide is expected to be recovered in gravity concentrates and so will not report to the waste dump or tails. The concentrate is expected to be 6% of the tonnage processed.
- Independent metallurgical test work indicates sulphides do not impede gravitational gold recovery and are not considered deleterious. Unrecovered fine gold from the concentrate is expected to be sent, with the sulphides to an established gold leach processing facility (not at Hargraves).

In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.

Block Model Attribute	Metric
Base point:	730375.574mE, 6368609.279mN, 850mZ
Parent block size:	3 mX × 10 mY × 2 mZ
Number of parent blocks:	122X × 170Y × 228Z = 4,728,720
Sub-blocking:	3 × 5 × 2
Minimum sub-block height:	1 m
Number split:	220,225 (4.7%)
Number of sub-blocks:	6,606,750

Total blocks:	11,115,245
Dip:	0°
Azimuth:	352°
Boundary size:	366 m × 1700 m × 456 m
Bounding box:	
Minimum:	730100mN, 63690000mE, 394mZ
Maximum:	730700mN, 63700000mE, 850mZ

- Drill spacing averages 25 m spacing to depths of 150 metres in central and southern regions of the deposit. Below 150 m, drill spacing averages 50 m. The northern region of the deposit averages 50 m drill spacing
- Parent blocks are sized between 20-40% of the data spacing, depending upon local data density. This block dimension is regarded as geostatistically valid.
- Grades are evaluated onto parent blocks only. Sub-blocking is used to constrain the block model volume to the estimation domain indicator shell.
- Data search orientation is variable, adjusted per-block according to local structural trend model.

Data Attribute	Search Metric
Dimensions:	
Maximum:	60 m
Intermediate:	35 m
Minimum:	12 m
Samples:	
Maximum:	24
Minimum:	4
Sector search	Quadrant
Samples per sector:	
Maximum:	4
Minimum:	2
Samples per drill hole:	
Maximum:	4

Any assumptions behind modelling of selective mining units.

- Estimation block sizes are compatible with underground mining, but in many cases the mineralisation wireframe is thinner than the estimation block size and therefore defines the selectivity. The minimum wireframe width is 2m.

Description of how the geological interpretation was used to control the resource estimates.

- A structural trend model, built from measured and observed structural data defined the geometry of both the estimation domain grade shell and the variable orientation grade search used in Ordinary Kriging.

Discussion of basis for using or not using grade cutting or capping.

- No top cuts are used for the estimation. A grade threshold was used to limit the influence of samples beyond 30 ppm Au

The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.

- Statistical comparison of the de-clustered mean composite grade (0.81 ppm Au) against the block model mean grade at a zero cut off (0.80 ppm) reconciled extremely well. This suggests alignment between composites and modelled grades.
- Visual validation of block grades was conducted on section along the cardinal planes, revealing no inconsistencies with grade geometry or comparison to drilling. The block model was viewed at a range of different grade cut offs to highlight grade trends.
    - Swath plots were produced for easting, northing and elevation. Modelled grades appear to reconcile well against declustered composites in all directions and the degree of grade-smoothing is expected and acceptable

Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content

- Tonnage and assays are on a dry basis

The basis of the adopted cut-off grade(s) or quality parameters applied.

- The Mineral Resource has been reported at a cut-off of 0.8 ppm Au. This value reflects the anticipated underground mining method and mineralisation continuity.

Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made

- Part of the deposit outcrops, so a very small an open pit operation is possible for near-surface material.
    - High grade trends continue to depths of at least 250 m below surface and are focussed in the axial region of the Big Nugget Hill anticline. A focussed underground operation, driving down and along trend plunge is assumed to be a viable strategy.

The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made

- Bench scale test work demonstrated gold is readily gravity recoverable from Hargraves samples. Recoveries above 90% using simple, low-cost gravity recovery process are considered feasible.

Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made

- Any potential mining operations at Hargraves would be located close to the historical village of Hargraves. Additional environmental considerations may be required due to proximity of potential operations to residential property.
- The free, coarse gold component of Hargraves mineralisation is unlikely to present significant mine waste issues. Water may be the main consideration.
    - Most sulphides are expected to be recovered in gravity concentrates and processed off-site, at an established gold leach processing facility (not at Hargraves).

Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.

- 58 relative density measurements from 9 HEG diamond drill holes were available in the database. Density was assessed using the water displacement method and core samples were waxed to exclude pore spaces.

The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.

- Bulk density was assigned by weathering zone (oxidised: OX, partially oxidised: POX, fresh: FR). The population of bulk density measurements was too low to produce a statistically valid block estimate, so a global value was statistically derived for each weathering zone

Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.

- The global density values employ measurements from both inside and outside of the estimation grade shell. Limiting the measurements to those within the grade shell excessively reduced the small initial sample population excessively.
- Previous estimates used a global density of 2.7 to reflect mineralised quartz vein. The current estimation domain comprises a more representative mixture of host rock and mineralised vein material and densities are reduced accordingly.

The basis for the classification of the Mineral Resources into varying confidence categories.

- Classification is based on drill-spacing, quality of local data and QAQC, and estimation parameters, including number of samples and kriging regression slope.
- The estimation domain effectively delineated mineralisation and excluded large volumes of waste from the block model. Mineralisation was well-constrained around samples, which prevented excessive extrapolation and minimised zones of reduced confidence within the estimate before classification.
- Low confidence, isolated blocks were purged from the model at depth by imposing a minimum sample count of 5 samples on each block eligible for classification. In combination with the data search parameters, this ensured all blocks classified as Resources were informed by two or more drill holes.
- Irregular classification envelopes were manually drawn around the block model in long section defining Inferred and Indicated Resources. Blocks within the envelopes were assigned their respective classification.
- Inferred Resources were defined in the southern zone between surface and approximately 650 mRL. The depth limit corresponded to the floor of the majority of diamond drilling.

  In the central zone, Inferred Resources were defined between surface and irregular floor ranging between 530 mRL and 560 mRL. The deeper floor reflects plunging high-grade trends in the southern part of the central zone.
- Indicated resources were defined in the southern zone in the region covered by the 25 m-spaced HGRC drill program. Here, blocks with a kriging slope of regression >0.5 form a coherent body. Resources were classified down to 85 m, corresponding with the topmost reef.
- In the central zone, blocks with a kriging slope of regression >0.5 were concentrated around 25 m spaced diamond drill holes in the southern-central region. The floor of the Indicated resource classification plunges south in long section, paralleling a plunging high-grade trend.

Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).

- The current Mineral Resources use a distance buffer of 10m around historical workings to factor for depletion. Much depletion lies within mining claims in the central region of the deposit, so validation of modelled, extracted material against historical production is not possible.

- Historical production figures do not differentiate between surficial and underground workings, further complicating any comparison.
- There is risk that depletion may be more extensive than the current assessment indicates.

Whether the result appropriately reflects the Competent Person's view of the deposit.

- The classification reflects the Competent Person's view of the deposit.

The results of any audits or reviews of Mineral Resource estimates.

- The current Mineral Resource estimate has not been audited or reviewed.
- Previous estimates have been reviewed internally and by independent consultants in preparing the current Mineral Resource Estimate.

Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.

- Accuracy and confidence in the estimate are expressed by the Indicated and Inferred classification applied.
- No statistical evaluation of confidence or confidence intervals was undertaken.

The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.

- Not applicable – see previous statement.

These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.

- No recent mining or production has taken place. Historical production records from the 1800's do not relate to modern mining practices and are not suitable for comparison.