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 484K oz @ 3.28 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 is stitching the two halves of the Hargraves resource together

ASX ANNOUCEMENT 1 DECEMBER 2022

KEY HIGHLIGHTS:

- Vertex was recently granted EL 9485 over an area that divided the Hargraves Mineral Resource (see Figure 1 on page 2).
- EL 9485 was previously a Mining Licence owned by others. The Regulator had recently cancelled this lease and it was immediately pegged by Vertex.
- A surface drilling permit over the Hargraves Gold project area at Hill End has been granted by the NSW Department of Mines. Drilling for an initial 500m diamond drill program and the associated preparation works has been approved.
- Diamond Drilling is underway with 120m drilled to date.
- The area forms more than 10% of the strike length of the Hargraves Mineral Resource. The Company anticipates to quickly add to the mineral inventory and is confident of joining the two resources previously considered two separate mines.
- Hargraves 2012 JORC Resource Estimate today stands at 2.3 million tonnes at 2.4 g/t Au for 177,000 ozs Au.
- The drill intercepts and structures immediately adjacent to the drill target show spectacular intercepts shown in Figure 2 including;
  - 6m at 60.45 g/t Au (hole H17)
  - 2m at 27.65 g/t Au (hole H6)
  - 2m at 10.45 g/t Au (hole H6)
  - 2m at 14.29 g/t Au (hole H17).

Ethical and environmental sustainability focused gold explorer Vertex Minerals Limited (ASX: VTX) ("Vertex" or the "Company") is pleased to announce a diamond drill rig is now on site and drilling at the recently granted EL at Hargraves and the company expects completion of the first hole this week.

The rig is drilling on EL9485, a newly granted exploration license that divided the Hargraves Mineral Resource. Figure 1 shows the location of EL9485, which is an island within the Company's larger EL6996.

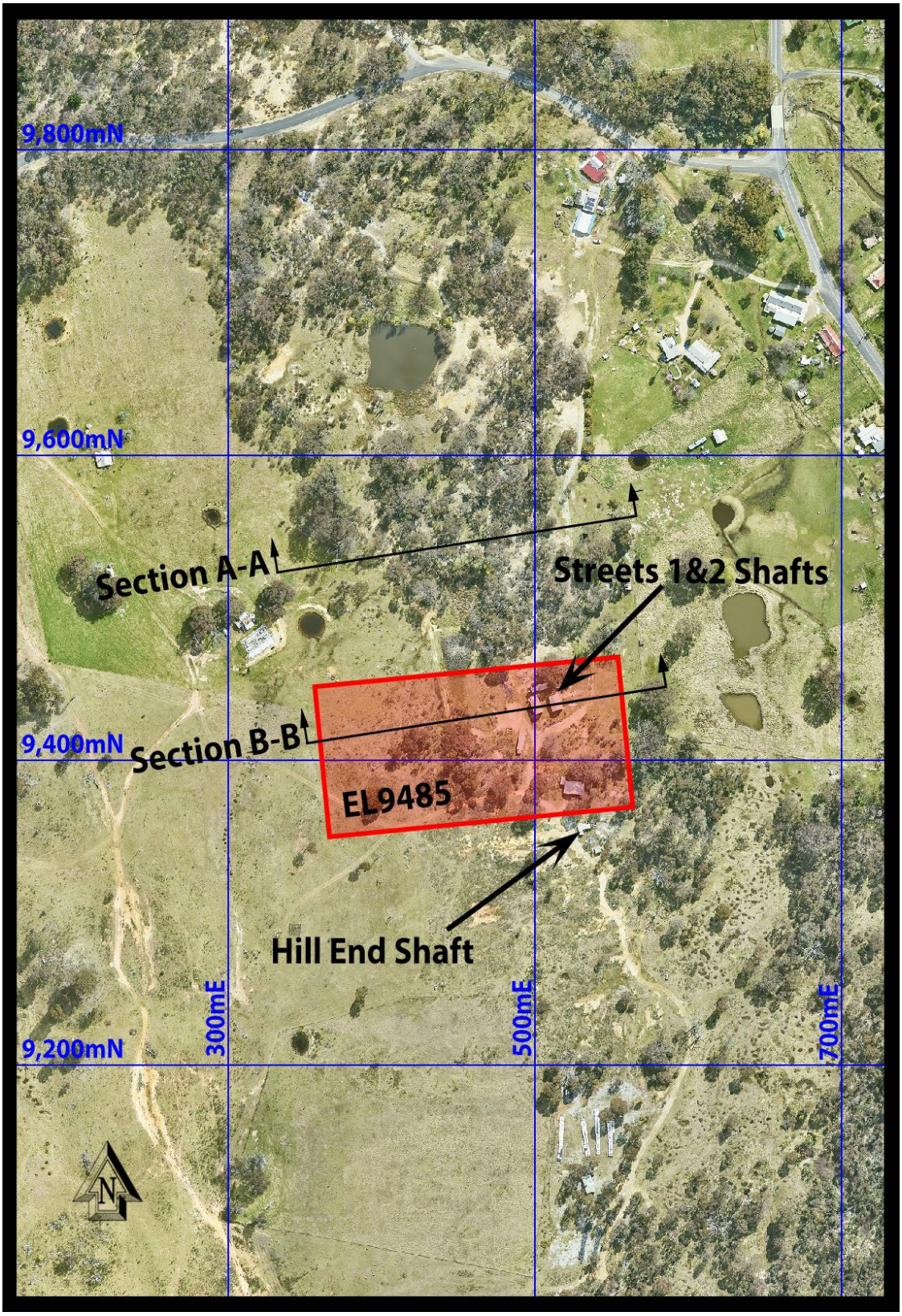

Figure 1 – Plan view of EL9485

There has been no systematic exploration on EL9485 for many decades. It is considered highly prospective for continuation of quartz veins containing very high grades of gold. Figure 2 illustrates Section A-A, which is on the Company's EL6996 and is adjacent to the new exploration license.

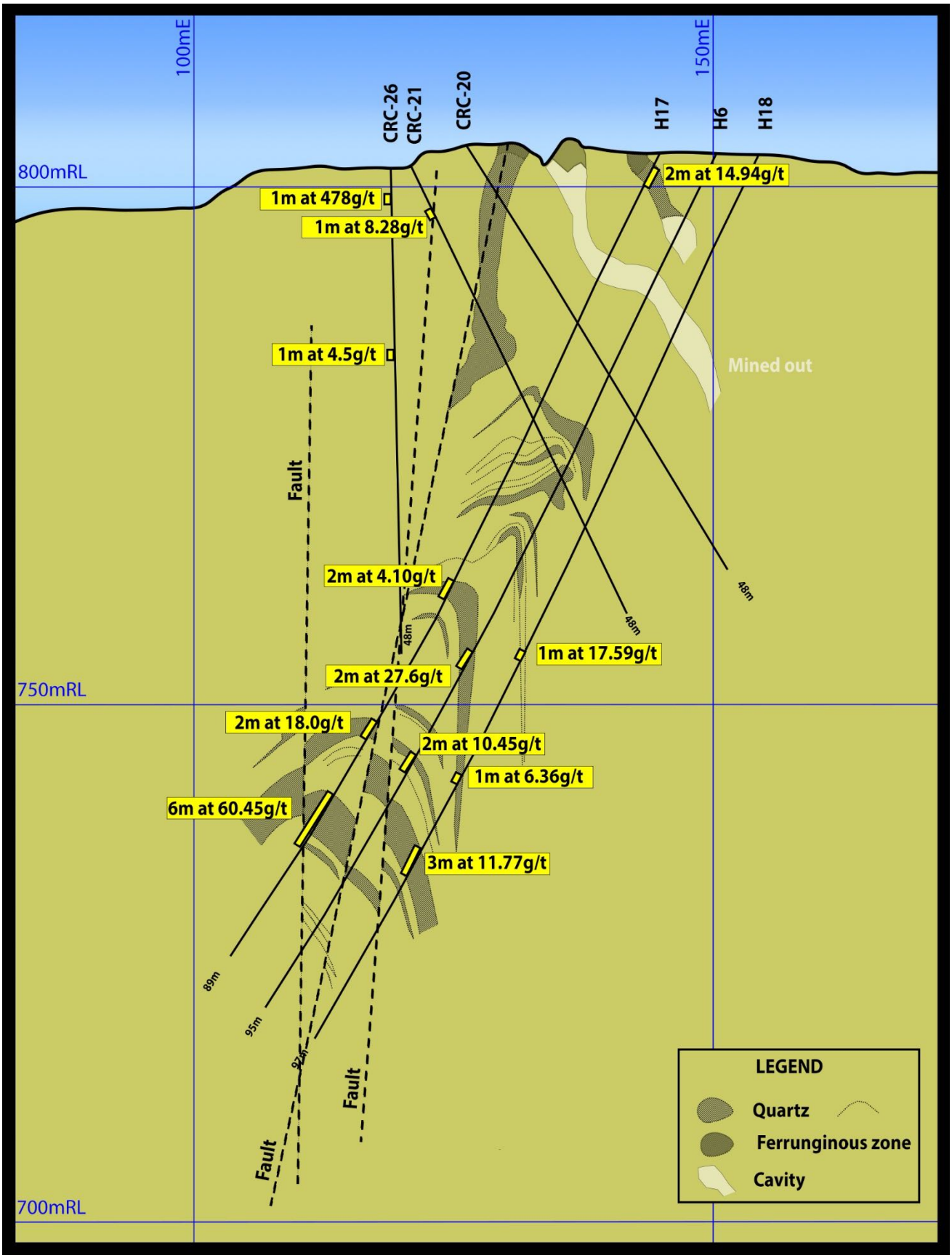

Figure 2 - Section A-A showing geology and drilling

The Section A-A shows a geological interpretation and the assay results from past drilling programs. Figure 3 illustrates Section B-B, which is a cross section through the new EL9485 with the down plunge continuation of quartz veining that represents the exploration target on EL9485.

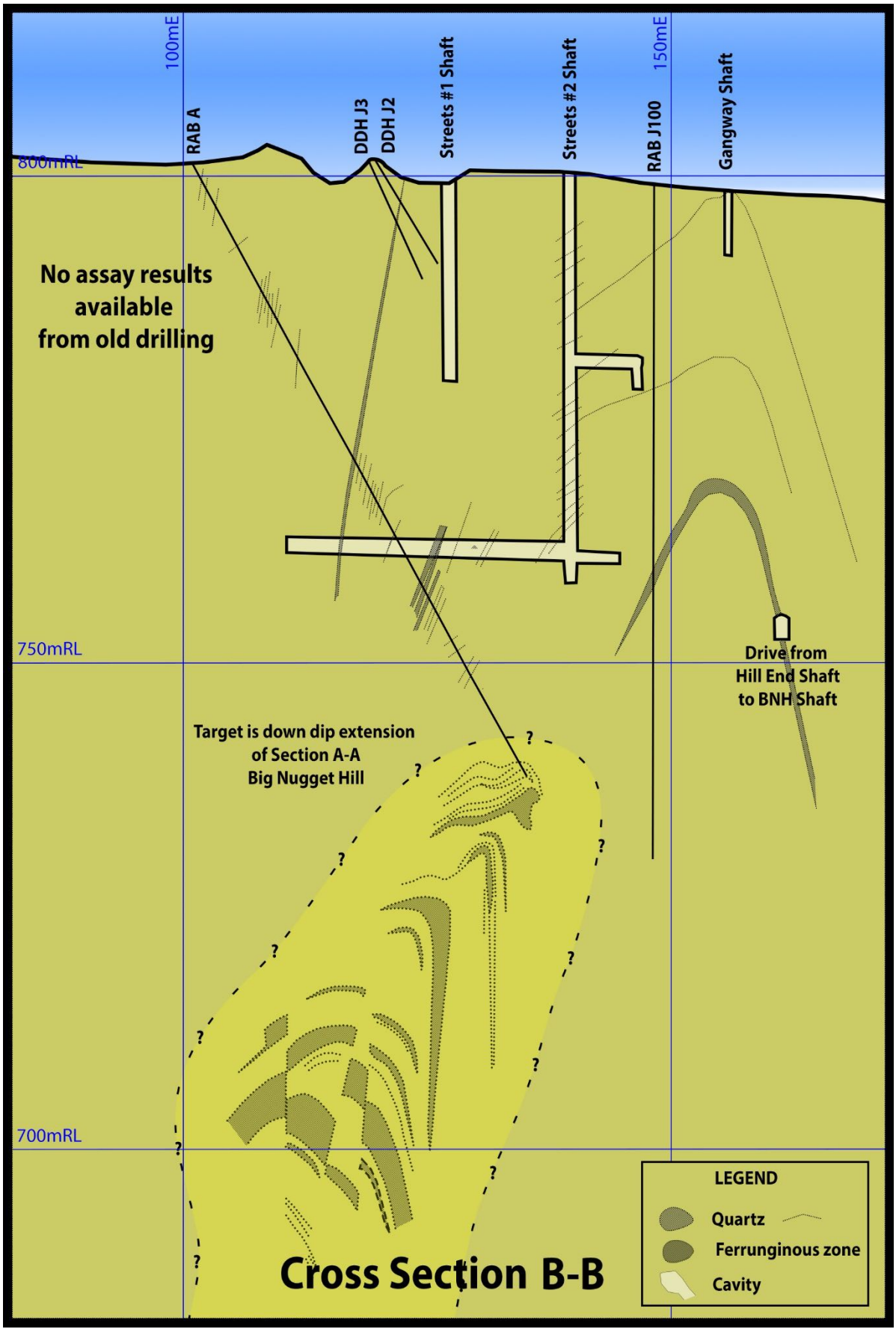

Figure 3 - Section B-B showing geology and historic mining

This down plunge extension of quartz veins is well founded at Hargraves, with en extensive drill database that supports the southerly plunge of the vein system. This trend is illustrated in Figure 4, and shows the upper exploration target where some depletion from historic mining is to be expected, plus two deeper exploration targets. The middle target is supported by drill data on either side of EL9485.

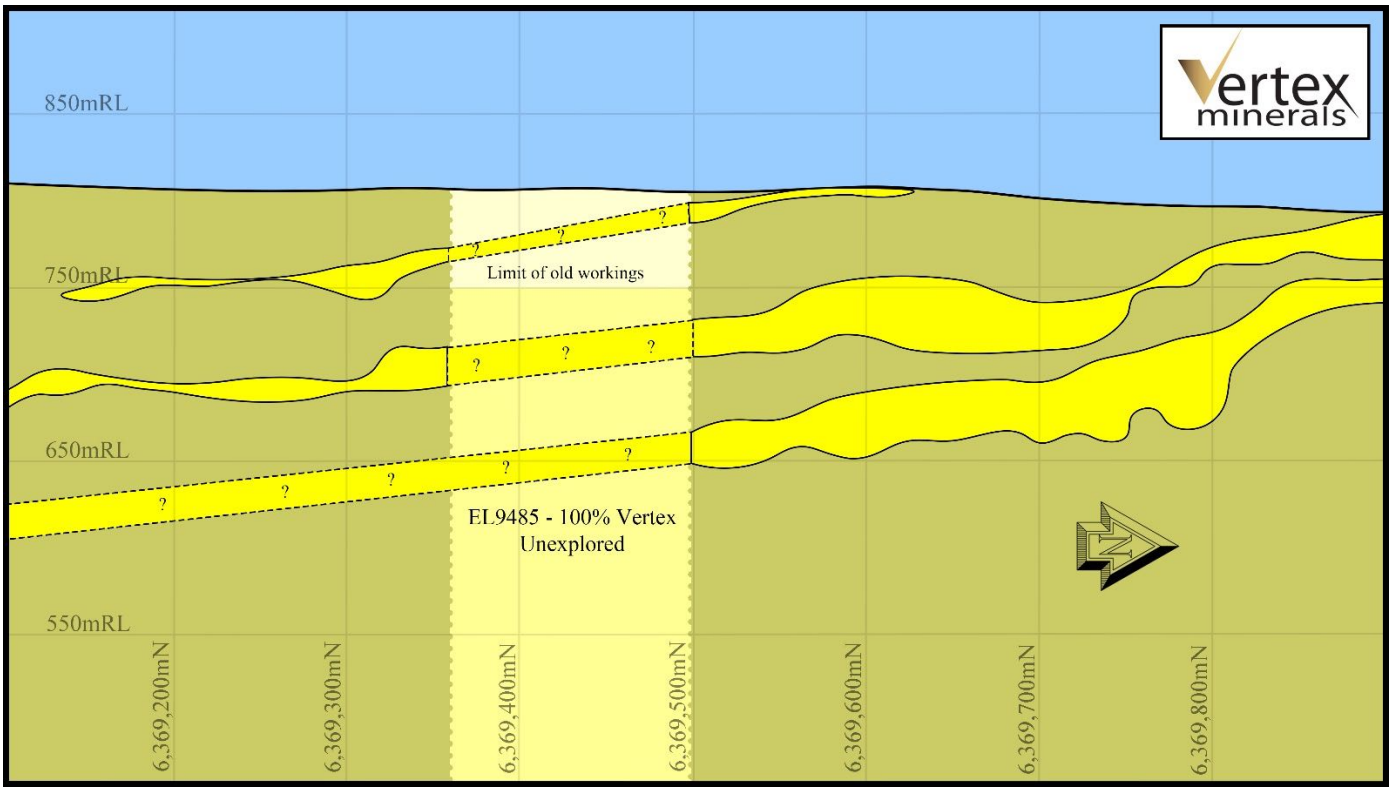

Figure 4 – Long section looking west of Hargraves Resource showing exploration potential.

The Hargraves drilling program is the Company's second drill program undertaken at the Hill End Project. Hargraves presents great potential for significant resource growth. The Company believes that there is compelling evidence that the Hargraves deposit is a robust deep plunging deposit, and the gold inventory will benefit from additional drilling.

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:

"The results expected from this drilling program are aimed to link the two separated resources together. Ultimately adding strike to the resource. Further to this we believe we will add ozs to the existing 177koz resource. There is also the added benefit that there is an existing shaft and access development in place. "

Table 2 – Hill End Project Mineral Resource Estimate

Deposit	Classification	Tonnes (kt)	Grade Au (g/t)	Contained Au (koz)
Reward Gold Mine				
	Indicated	55	12.4	22
	Inferred	782	8.1	205
Sub Total		837	**8.5**	227
Hargraves Project				
	Indicated	1,109	2.7	97
	Inferred	1,210	2.1	80
Sub Total		**2,319**	**2.4**	**178**
Red Hill Project				
	Indicated	413	1.4	19
	Inferred	1,063	1.8	61
Sub Total		**1,476**	**1.7**	**80**
Project Total				
	Indicated	1,577	2.7	138
	Inferred	3,055	3.5	347
Grand Total		**4,632**	**3.3**	**485**

Reward Gold Mine: 2g/t reporting cutoff grade
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 2

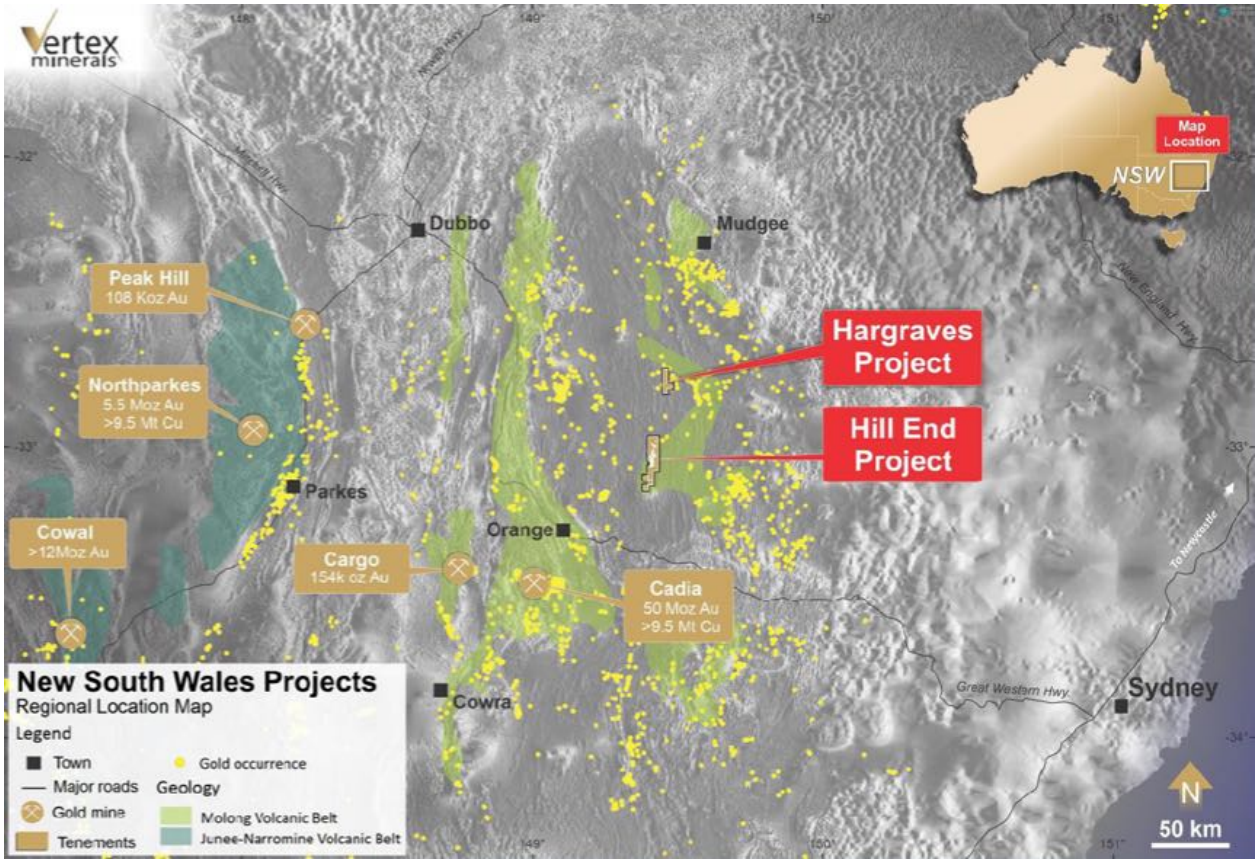

Figure 5- NSW mines and Vertex project locations

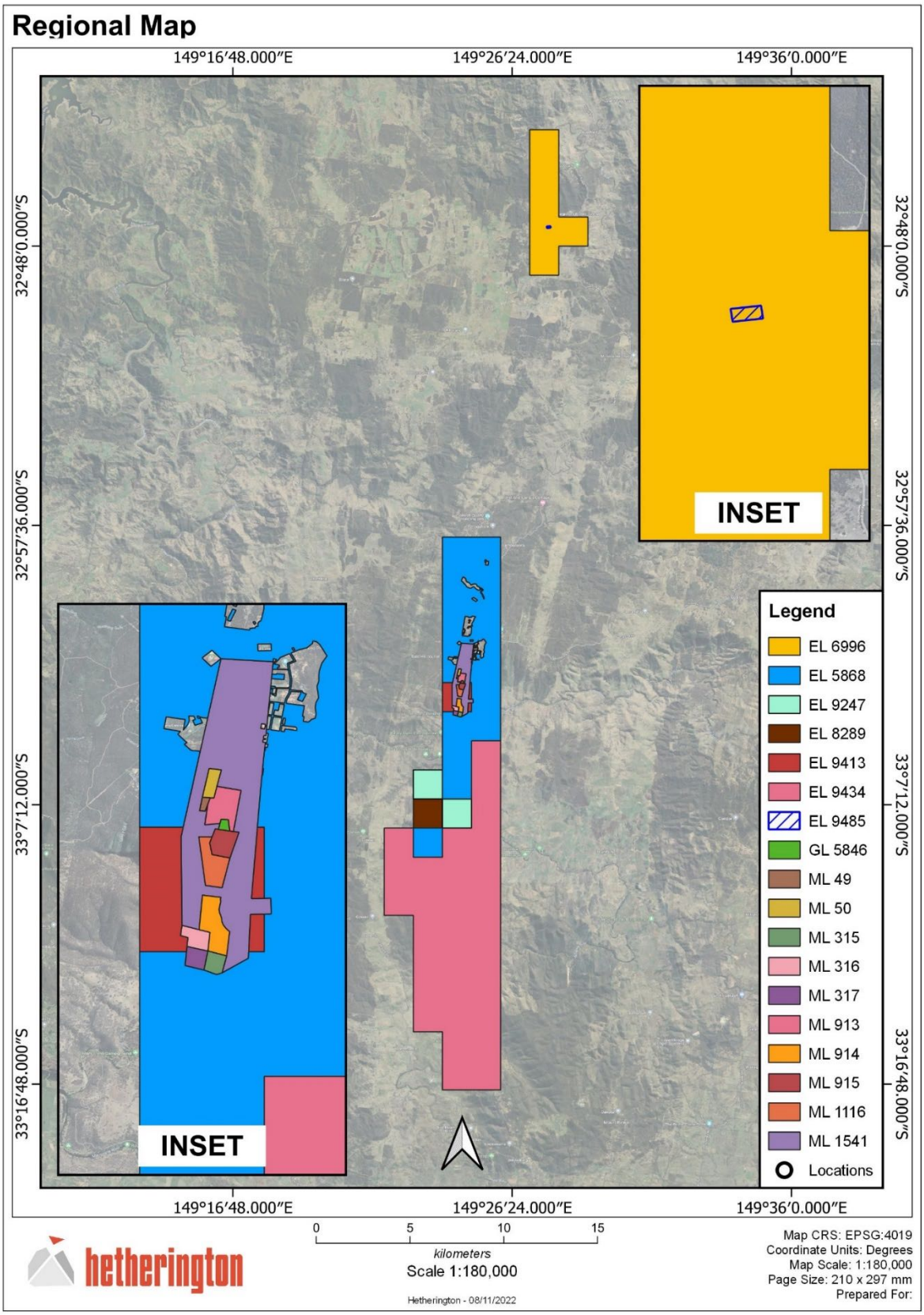

Figure 6 - map showing the Hill End and Hargrave tenements some 30 + kms in strike length.

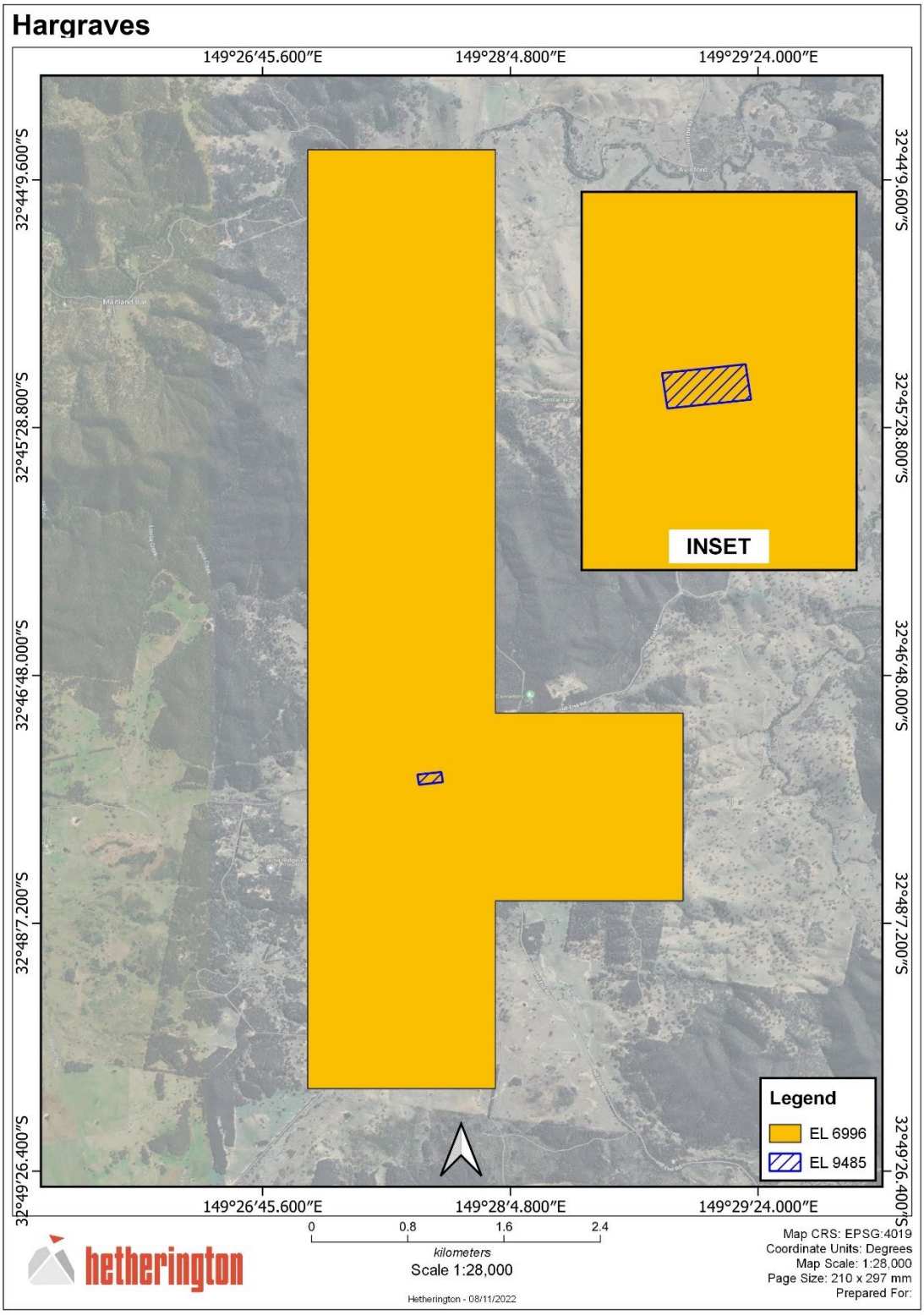

Figure 7 - Location of the small, but prospective, 1 unit tenement granted to Vertex.

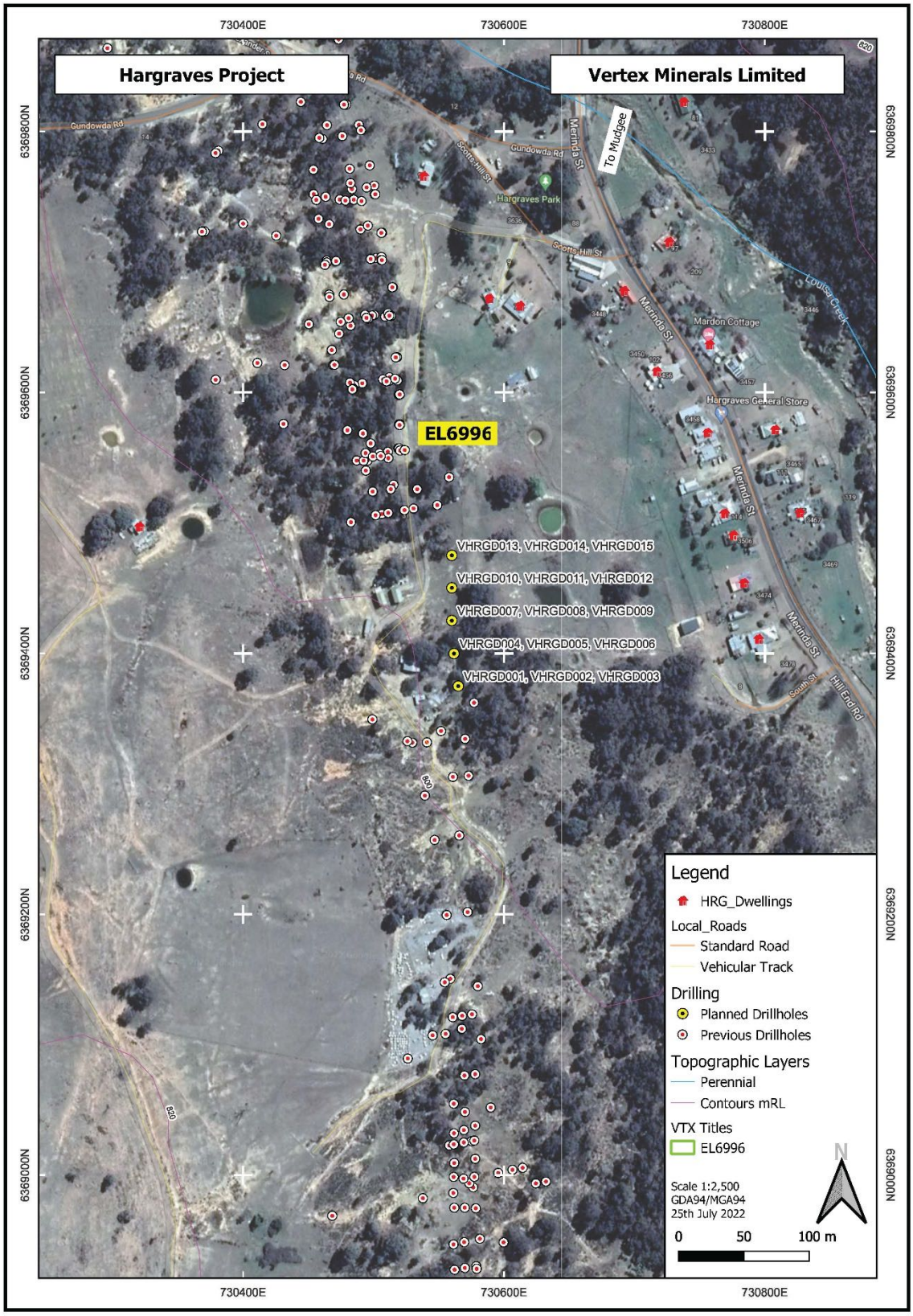

Figure 8 - Location of drill collars at Hargraves

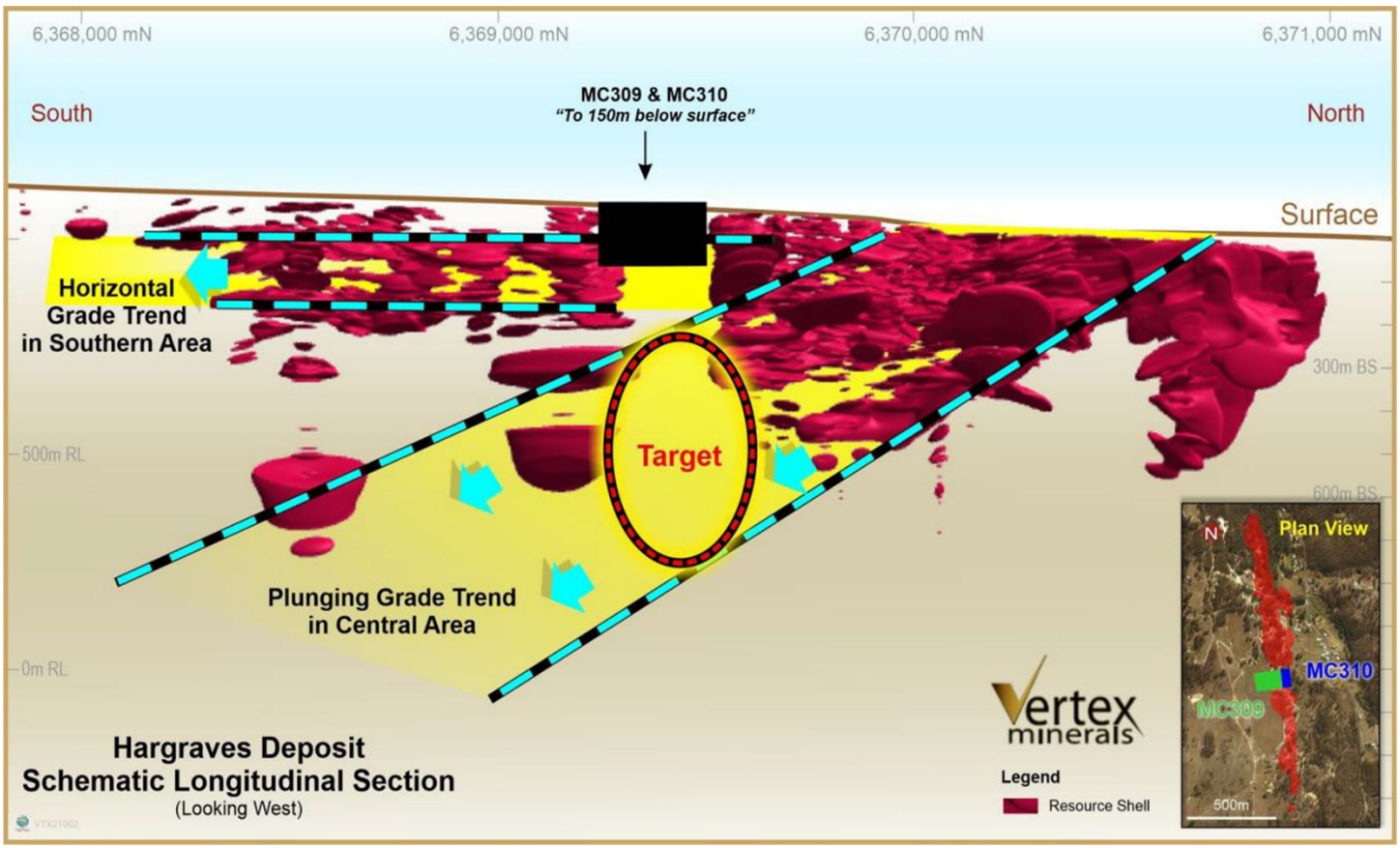

Figure 9 - Plunging deeper targets at Hargraves within the newly acquired area

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

Further Information:

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Tully Richards
Technical Director
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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.

Taylors 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 announcement contains references to Mineral Resource estimates, which have been extracted from previous ASX announcements. These include announcements made by Peak Resources Ltd (ASX:PUA), the parent company of VTX prior to the Company's separate listing in 2022. The Resource estimate for the Reward deposit was announced by Vertex on 23 November 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

Section 1: Sampling Techniques and Data

<table>
<tr><th>CRITERIA</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td>SAMPLING TECHNIQUES</td><td>• 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.</td><td>• The quality of diamond coring is generally medium – high because the method is designed to sample the rock mass effectively in most conditions. Consequently, these samples can be representative of the interval drilled and can be used for Mineral Resource estimation.
<table>
<tr><th>Year</th><th>Company</th><th>Drill type</th><th>Interval</th><th>Details</th></tr>
<tr><td>1987</td><td>Challenger</td><td>RC (114 mm)</td><td>1 m (regular)</td><td>Cuttings recovered from cyclone (12-25kg sample)</td></tr>
<tr><td>1987-88</td><td>Challenger</td><td>DD (HQ)</td><td>0.1-1 m (selective)</td><td>Quartz mineralised intervals identified in geological logging; core ½ split longitudinally</td></tr>
<tr><td>1993-94</td><td>Geoservices</td><td>RC (1993: 138 mm; 1994: unknown)</td><td>1 m (regular)</td><td>Unknown</td></tr>
<tr><td>2008-11</td><td>Hill End Gold</td><td>DD (HQ3)</td><td>0.05-0.5 m (selective)</td><td>Quartz mineralised intervals identified in geological logging; core ½ split longitudinally; 0.27 m average sample interval;</td></tr>
<tr><td>2008-11</td><td>Hill End Gold</td><td>DD (HQ3)</td><td>1 m (target)</td><td>Additional sampling of previously unsampled quartz veined intervals between 2011-13 at regular 1 m intervals</td></tr>
<tr><td>2011</td><td>Hill End Gold</td><td>RC (108 mm)</td><td>1 m (regular)</td><td>Cuttings bagged at cyclone; quartz-bearing samples were quarter split by riffle splitter</td></tr>
<tr><td>2011</td><td>Hill End Gold</td><td>RC (108 mm)</td><td>1 m (regular)</td><td>In 2012, 451 additional RC samples containing quartz were identified; quarter splits by riffle splitter</td></tr>
<tr><td>2012</td><td>Hill End Gold</td><td>DD (HQ3)</td><td>1 m (target)</td><td>Quartz mineralised intervals identified in geological logging; core ½ split longitudinally; 0.8-1.2 m intervals geologically sampled; all quartz sampled</td></tr>
</table></td></tr>
<tr><td></td><td>• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</td><td>• Diamond drilling is also an established method aimed at collecting representative samples of the interval being drilled.
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 the remainder for the hole. HEG drilling used triple tube drilling to obtain good recoveries throughout the drill hole.
<table>
<tr><th rowspan="2">Recovery/RQD category</th><th colspan="3">Recovery</th><th colspan="3">RQD</th></tr>
<tr><th>Count</th><th>%Total</th><th>Mean</th><th>Count</th><th>%Total</th><th>Mean</th></tr>
<tr><td>Very Poor</td><td>107</td><td>0.7%</td><td>0.10</td><td>1020</td><td>6.4%</td><td>16.97</td></tr>
<tr><td>Poor</td><td>203</td><td>1.3%</td><td>0.44</td><td>2158</td><td>13.5%</td><td>38.82</td></tr>
<tr><td>Fair</td><td>246</td><td>1.5%</td><td>0.65</td><td>3343</td><td>20.9%</td><td>63.78</td></tr>
<tr><td>Good</td><td>601</td><td>3.8%</td><td>0.86</td><td>3855</td><td>24.1%</td><td>86.04</td></tr>
<tr><td>Excellent</td><td>14829</td><td>92.8%</td><td>1.00</td><td>3959</td><td>24.8%</td><td>99.65</td></tr>
<tr><td>Total</td><td>15986</td><td></td><td></td><td>14335</td><td></td><td></td></tr>
</table>
• 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 the sample is wet, the interval is considered unrepresentative</td></tr>
<tr><td></td><td>• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.</td><td>• 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.</td></tr>
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<tr><td></td><td></td><td>

RC samples collected over 1 m intervals and logged as containing quartz were collected at the drill rig in plastic bags. Quarter sub-samples were riffle split at the drill site and placed in a separate plastic bag in preparation for transport to the 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.

</td></tr>
<tr><td>DRILLING TECHNIQUES</td><td>

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).

</td><td>

Drilling is a combination of diamond core (HQ and HQ3) and RC (114, 138 and 108 mm diameter) techniques.
HQ (63.5 mm diameter) diamond core was collected by Challenger Mining in 1987-88.
HQ3 (triple tube) drilling (61.1 mm diameter) was collected from 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, over the North BNH drill program.

<table>
<tr><th></th><th></th><th colspan="2">DD</th><th colspan="2">RC</th><th colspan="2">Total</th></tr>
<tr><th>Company</th><th>Year</th><th>#Holes</th><th>Meterage</th><th>#Holes</th><th>Meterage</th><th>#Holes</th><th>Meterage</th></tr>
<tr><td>Challenger</td><td>1987</td><td>12</td><td>1560.3</td><td>34</td><td>2310.2</td><td>46</td><td>3870.5</td></tr>
<tr><td>Geoservices</td><td>1993</td><td></td><td></td><td>27</td><td>1900</td><td>27</td><td>1900</td></tr>
<tr><td>Hill End Gold</td><td>2008</td><td>19</td><td>4230.4</td><td></td><td></td><td>19</td><td>4230.4</td></tr>
<tr><td></td><td>2009</td><td>22</td><td>3749.34</td><td></td><td></td><td>22</td><td>3749.34</td></tr>
<tr><td></td><td>2010</td><td>50</td><td>9245.5</td><td></td><td></td><td>50</td><td>9245.5</td></tr>
<tr><td></td><td>2011</td><td>1</td><td>211.2</td><td>47</td><td>2466</td><td>48</td><td>2677.2</td></tr>
<tr><td></td><td>2012</td><td>23</td><td>2720</td><td></td><td></td><td>23</td><td>2720</td></tr>
<tr><td></td><td>Total</td><td>115</td><td>20156.44</td><td>47</td><td>2466</td><td>162</td><td>22622.44</td></tr>
<tr><td>Grand Total</td><td></td><td>127</td><td>21716.74</td><td>108</td><td>6676.2</td><td>235</td><td>28392.94</td></tr>
</table>
</td></tr>
<tr><td>DRILL SAMPLE RECOVERY</td><td>

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

</td><td>

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 the remainder of the 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 the sample is wet, the interval is considered unrepresentative.

</td></tr>
<tr><td></td><td>

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

</td><td>

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 and limbs of the BNH Anticline to obtain representative samples.

</td></tr>
<tr><td></td><td>

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.

</td><td>

No assessment has been completed to determine if there is a relationship between sample recovery and grade, and whether there is any potential for sample bias associated with the drilling methods used to date.

</td></tr>
</table>

CRITERIA	JORC Code Explanation	Commentary
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.	• Logged attributes include lithology, weathering (oxidation), mineralisation, alteration, veining, recovery, RQD and structure. • Logging is fit for Mineral Resource estimation purposes.
	• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	• Logging for all programs non-HEG programs is descriptive rather than 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. • Between 2008 2011 the 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 than 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 (1,560.3 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 (1,900.0 m).
SUB-SAMPLING TECHNIQUES AND SAMPLE PREPARATION	• If core, whether cut or sawn and whether quarter, half or all core taken.	• Sawn and halved for sampling
	• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	• No non-core drilling has been undertaken. RC drilling was suspended.
	• For all sample types, the nature, quality, and appropriateness of the sample preparation technique.	• Half core and quarter were submitted for assaying • The sample and sub-sample collection, storage, transport and analysis is appropriate for the style of mineralisation at Hargraves.

CRITERIA	JORC Code Explanation	Commentary
	• 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 quarter riffle-split at the drill site before being re- bagged for dispatch to the laboratory.
	• 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 m) 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 sub- sample 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 quarter split duplicates were submitted for assay by different assay techniques (FA and LeachWell bottle roll). HEG 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.

CRITERIA	JORC Code Explanation	Commentary
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.	• 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 previously unrecognized quartz were quarter split on site. The sub- sample 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. • 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, definitive comparison of assay methods cannot be determined from 6 samples. • 6 samples from the 1993 drilling were submitted for cyanide leach assay. The results correlated well with the original -75# SFA; however, definitive comparison of assay methods cannot be determined from 6 samples.

CRITERIA	JORC Code Explanation	Commentary
		• 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, definitive comparison of assay methods cannot be determined from 6 samples. • HEG RC and DD samples used FA and LeachWell (bottle roll) methods. LeachWell of RC samples analysed a pulverised quarter-split of the original sample which provided high precision analysis. For FA of RC samples, the entire quarter-split was pulverised, removed from the grinding equipment and split in the laboratory to provide a 50 gram sub-sample. Where gold was detected, a follow-up LeachWell gold analysis of the remaining pulp was performed for a high precision analysis. For FA of diamond core the entire sample was pulverised and split to a 50 gram sub-sample. Gold detection triggered a follow-up LeachWell gold analysis of the remaining pulp.

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.	• No geophysical tools, spectrometers, or handheld XRF instruments have been used to date to determine chemical composition at a semi-quantitative level of accuracy.
	• 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.	• Challenger Mining (1987) RC program. No reports of standards, blanks or laboratory checks. Challenger Mining (1987-88) DD program. No reports of standards, blanks or laboratory checks. Geoservices Pty Ltd (1993-94) RC program. No reports of standards, blanks or laboratory checks • 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 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).

CRITERIA	JORC Code Explanation	Commentary
		• Documented procedures for the preparation and analysis of samples were prepared and sent to the laboratory managers before the laboratories were 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.
VERIFICATION OF SAMPLING AND ASSAYING	• 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 were checked by the Exploration Manager before public reporting.
	• The use of twinned holes.	• Several close-spaced drill hole pairs (two holes within 10 m and some as close as 5 m) 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 QAQC 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. This gravimetric assay method appears poorly suited to low-grade samples.
LOCATION OF DATA POINTS	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	

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

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	• Specification of the grid system used.	• The co-ordinate system used is MGA94 Zone 55 Datum.
	• 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 AND DISTRIBUTION	• Data spacing for reporting of Exploration Results.	• Drill spacing averages 25 m spacing to depths of 150 m 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, 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.	• Samples were not composited.
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.	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. 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

CRITERIA	JORC Code Explanation	Commentary
		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.
	● 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.	● No sampling bias is considered to have been introduced in drilling completed.
SAMPLE SECURITY	● The measures taken to ensure sample security.	● No information is available on sample security from exploration before HEG. RC samples collected by previous explorers were previously discarded. Drill core from exploration before 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 was taken from the drill site to the core preparation area daily. After processing, photographing, logging and sampling the core was stacked on palates and covered to prevent weathering. Hargraves drill core was stored at the Hargraves core preparation facility. Sampled ½ core was placed in calico bags which were checked and placed into Bulka bags for dispatch to the laboratory. ● RC samples from HEG drill holes were logged and processed at the drill site. Drill intervals that were not sampled were stored on-site until final analysis of the drill program. Quarter splits of the sampled intervals were packaged into plastic bags, checked and collected in Bulka bags for transport to the laboratory. The remaining quarter splits of the sampled intervals were 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 were driven directly to the Laboratory by HEG personnel from Hill End and submitted upon arrival. Pulps and rejects previously prepared by the laboratory were loaded and returned directly to a Hill End storage shed. ● Samples for dispatch to the SGS Laboratory in Townsville were driven to a Bathurst courier contractor by HEG personnel from Hill End and submitted to the contractor. Pulps and rejects from SGS Townsville were returned to Hill End for storage by courier and were picked up in Bathurst by HEG personnel. Online courier tracking of the consignments was available. When a consignment arrived at the laboratory, samples were checked and counted by the Laboratory and advice of submission sent by e- mail to HEG.

CRITERIA	JORC Code Explanation	Commentary

AUDITS OR REVIEWS	• The results of any audits or reviews of sampling techniques and data.	• Audits and reviews of both the SGS laboratories (West Wyalong and Townsville) were undertaken by HEG personnel at various times, often before a significant sampling program. Particular emphasis was placed on the sample receipt, preparation and storage procedures. • HEG has 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.

Section 2: Reporting of Exploration Results

CRITERIA	JORC Code explanation	Commentary
MINERAL TENEMENT AND LAND TENURE STATUS	• 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 and owned by Vertex Resources Ltd. The resource is contained entirely within EL 6996. • Former M(C)L 309 and M(C)L 310 covers an area of 1.5 ha to a depth of 6 m below surface immediately south of Big Nugget Hill. These Licences were cancelled by the NSW Department of Mines. Vertex has subsequently applied and has been granted an EL (EL 9485) over the area • 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.	• All tenements are in good standing.
EXPLORATION DONE BY OTHER PARTIES	• 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.
GEOLOGY	• Deposit type, geological setting, and style of mineralisation.	Quartz vein formation and gold deposition occurred synchronously with Early Carboniferous metamorphism, formation of chlorite and folding. The gold is possibly sourced from the metamorphosed Siluro-Devonian trough sequence and basement (Ordovician volcanic rocks, sandstone and shale). Gold mineralisation at Hargraves is best developed at the intersections ofthe bedding parallel quartz veins with steeply west-dipping fault-hosted quartz veins and cleavage-hosted quartz veins. Pyrite and arsenopyrite occur in the veins with rare chalcopyrite, galena and sphalerite, and pyrite and arsenopyrite also occur with carbonate alteration in the host fine grained sandstone and siltstone. There is no gold within the alteration around the quartz veins.
DRILL HOLE INFORMATION	• 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: – Easting and northing of the drill hole collar. – Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar. – Dip and azimuth of the hole. – Down hole length and interception depth. – Hole length.	• Refer to Appendix 2.
	• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• Refer to Appendix 2.
DATA AGGREGATION METHODS	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.	• The Hargraves Mineral Resource estimate is reported to an 0.8 ppm Au cut-off grade. Intersection cut-off grades are not relevant to the reporting of the resource estimate.

CRITERIA	JORC Code explanation	Commentary
	• 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 Mineral Resource estimate
	• The assumptions used for any reporting of metal equivalent values should be clearly stated.	• No metal equivalents are reported.
RELATIONSHIP BETWEEN MINERALISATIO N WIDTHS AND INTERCEPT LENGTHS	• These relationships are particularly important in the reporting of Exploration Results.	• Not relevant to the understanding of the Hargraves Mineral Resource estimate.
	• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	• Drillholes were oriented perpendicular to the strike of the shear zone and angled in order to intersect the moderately dipping mineralised zones at a high angle.
	• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').	• The mineralised intercepts generally intersect the interpreted dip of the mineralisation at a high angle but are not true widths.
DIAGRAMS	• 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.	• Refer to figures contained within this report.
BALANCED REPORTING	• 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.	• Balanced reporting of Exploration Results is presented within this report.
OTHER SUBSTANTIVE EXPLORATION DATA	• 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.	• The Project includes a large amount of exploration data collected by previous companies, including regional stream sediment geochemical data, soil sample and rock chip data, geological mapping data, drilling data, geophysical survey data, and costean data. Much of this data has been captured and validated into a GIS database. • Previous mining has been limited and involved very selective mining and hand sorting. No systematic data has been collected to date to assess metallurgy and mining parameters relevant to a modern operation.
FURTHER WORK	• The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).	• Vertex plans to conduct further drilling followed by Resourcing, met work, tailings characterization, waste characterization to then undertake a scoping study
	• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Refer to figures contained within this report.