

ASX ANNOUNCEMENT

16 December 2019

Heap leach grab samples return high-grade gold assays, Golden Ant Projects, North Queensland

Great Northern Minerals Limited (“Great Northern Minerals” or the “Company”) (ASX: GNM) is pleased to announce the receipt of assay results from grab sampling of heap leach dumps at the Company’s Golden Ant Projects in Northern Queensland (Figure 1).

Highlights:

- The Golden Ant Projects include separate heap leach dumps at the Big Rush, Golden Cup and Camel Creek Gold Mines;
- Fifteen grab samples taken across the 3 heap leach dumps have returned assay results which include 11.35 g/t, 4.43 g/t, 3.69 g/t & 3.59 g/t Au;
- Combined the Big Rush, Golden Cup and Camel Creek heap leach dumps contain approximately 2.5 million tonnes of material.

Heap Leach Dump Sampling

Fifteen grab samples were taken from the heap leach dumps at the Company’s Big Rush (6 samples), Camel Creek (5 samples) and Golden Cup (4 samples) Gold Mines (Table 1). Thirteen of the grab samples were of hand picked quartz vein material taken from the surface of the heap leach dumps whilst two samples (BRLPR003 & BRLPR006 from Big Rush) were non-selective samples which included siltstone and shale fragments as well as quartz vein material. The grab samples taken ranged between 2 – 3 kg and were analysed at ALS Laboratories in Townsville by Fire Assay. Photos 1 & 2 provide a close up view of the heap leach dump materials sampled.

The three heap leach dumps formed part of open pit gold mining operations in the late 1980’s through to the mid 1990’s with gold recovered from the heap leach dumps by cyanidation of oxide ore. The Golden Cup (Photo 3; Figure 2) and Camel Creek (Photo 4; Figure 3) heap leach dumps consist of uncrushed oxide ore material whilst the Big Rush (Photo 5; Figure 4) heap leach dump material was crushed prior to being stacked on the heap. The heap leach dumps contain approximately 2.5 million tonnes of material combined (Camel Creek – 1.2 Mt; Big Rush – 1 Mt; Golden Cup – 0.3 Mt).

The grab samples taken are not considered to be representative of the larger volume of the heap leach dump material present and were taken as a first pass measure to assess if any gold remains in the material on the heap leach dumps. The gold assays from the heap leach grab samples range from 0.16g/t – 11.35 g/t Au with 7 out of the 15 samples taken returning grades of > 1 g/t Au.

These grab sample assay results are considered encouraging and the Company is now considering options to effectively test the gold grades throughout the heap leach dumps which will likely involve a close spaced reverse circulation drilling program. The Company is also investigating the use of ore sorting technologies.

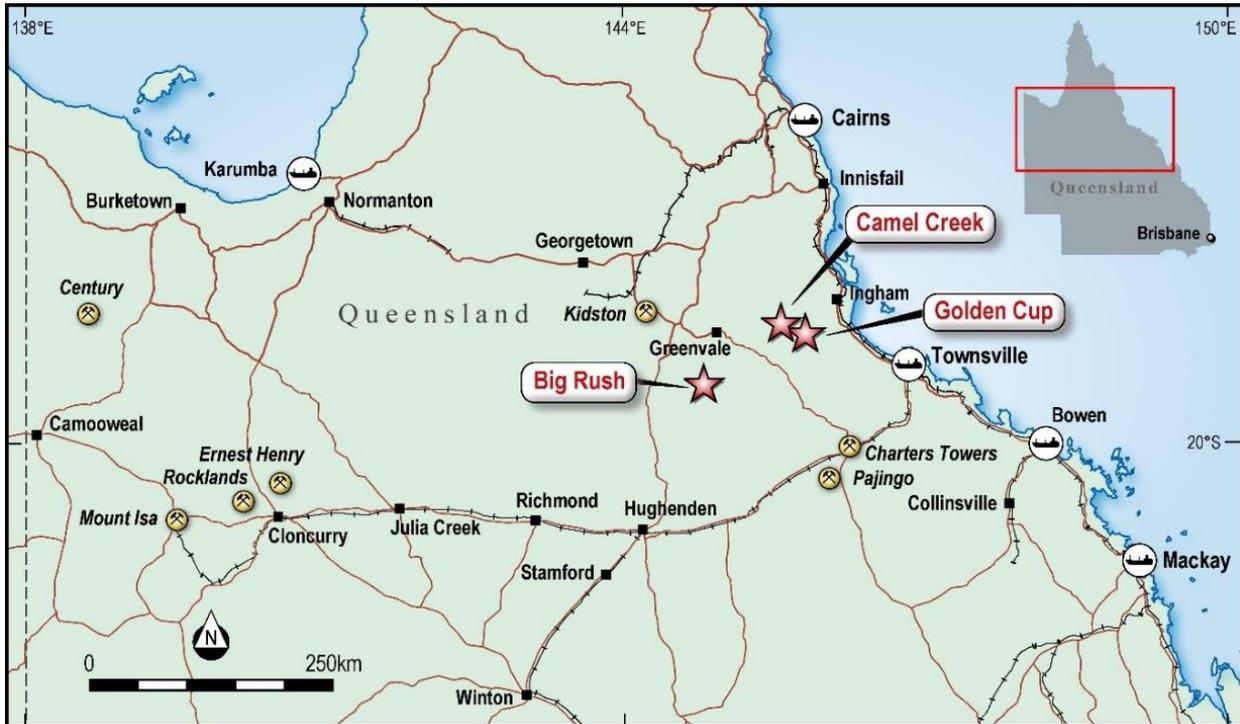


Figure 1: Location of the Company’s gold projects in Northern Queensland

Table 1: Assay results from selective grab sampling of heap leach dumps, Golden Ant Projects

Leach Dump Location	Sample ID	Easting	Northing	Map Grid	Au g/t
Big Rush	BRLPR001	264958	7851930	GDA94 Zone 55	2.04
Big Rush	BRLPR002	264870	7851813	GDA94 Zone 55	0.81
Big Rush	BRLPR003	264875	7851818	GDA94 Zone 55	0.2
Big Rush	BRLPR004	265000	7851757	GDA94 Zone 55	0.16
Big Rush	BRLPR005	265053	7852009	GDA94 Zone 55	0.48
Big Rush	BRLPR006	265058	7852014	GDA94 Zone 55	0.2
Golden Cup	GCLPR001	358580	7909440	GDA94 Zone 55	3.59
Golden Cup	GCLPR002	358586	7909446	GDA94 Zone 55	0.92
Golden Cup	GCLPR003	358589	7909449	GDA94 Zone 55	4.43
Golden Cup	GCLPR004	358525	7909329	GDA94 Zone 55	11.35
Camel Creek	CCLPR001	347826	7918085	GDA94 Zone 55	1.43
Camel Creek	CCLPR002	347957	7918350	GDA94 Zone 55	3.69
Camel Creek	CCLPR003	347911	7918336	GDA94 Zone 55	0.59
Camel Creek	CCLPR004	347835	7918367	GDA94 Zone 55	0.39
Camel Creek	CCLPR005	347794	7918423	GDA94 Zone 55	1.45

Nb. All gold assays by Fire Assay. All samples shown.



Photo 1: Rock and quartz vein fragments on the surface of the heap leach dump at Big Rush



Photo 2: Grab sample of selected quartz vein fragments from the surface of the heap leach dump, Big Rush



Photo 3: Heap leach dump, Golden Cup

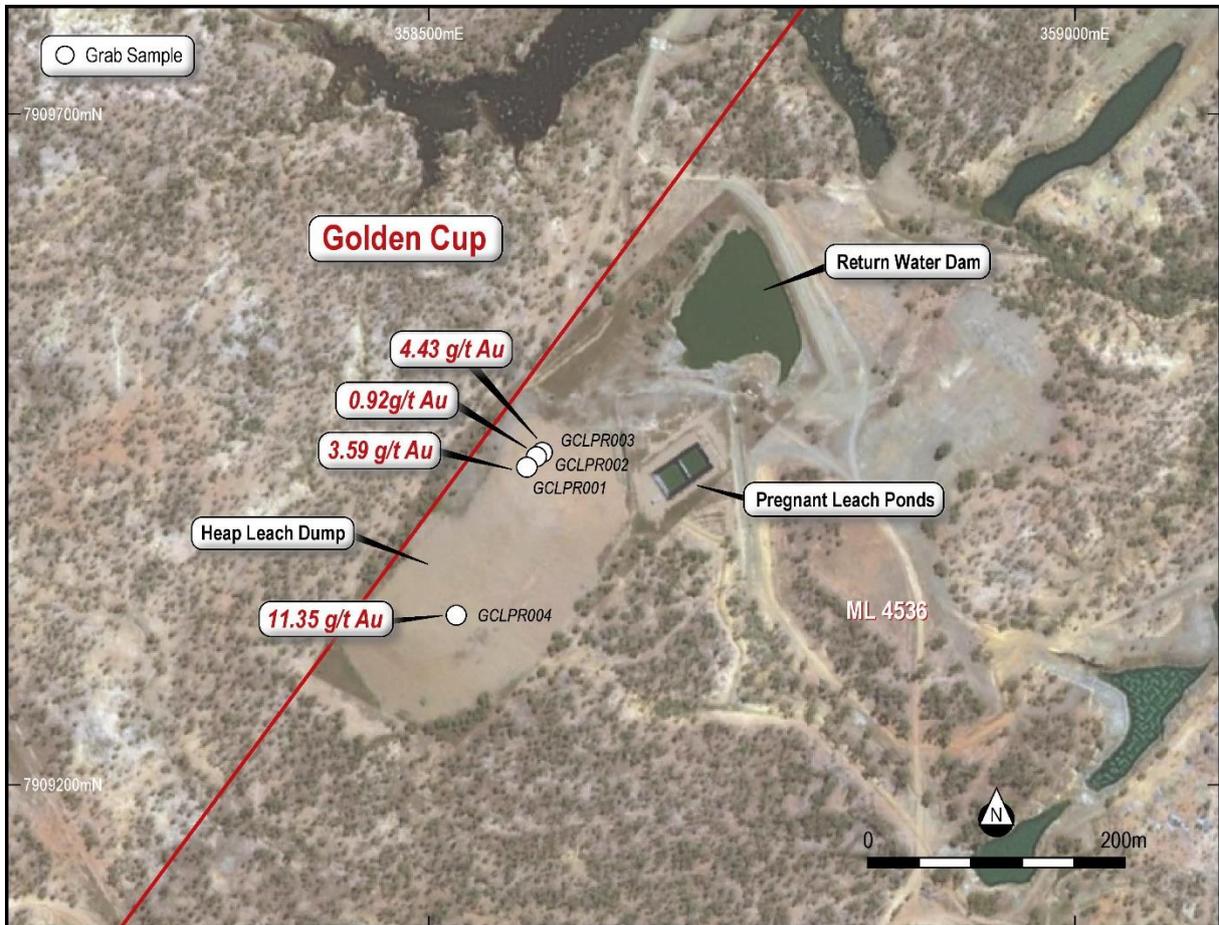


Figure 2: Location of grab samples from heap leach dump, Golden Cup



Photo 4: One of three separate heap leach dumps, Camel Creek

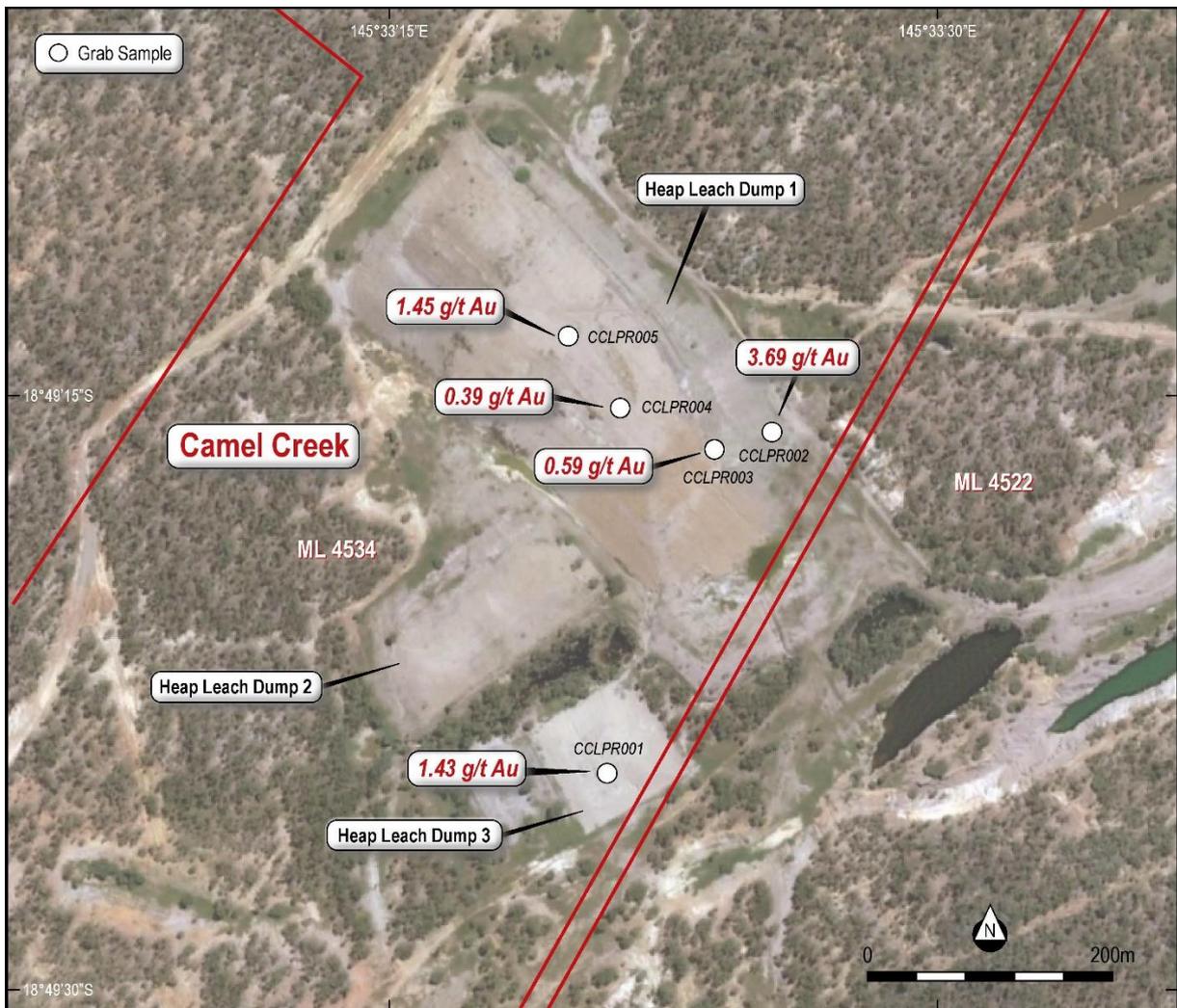


Figure 3: Location of grab samples from heap leach dump, Camel Creek



Photo 5: Heap leach dump located behind the return water dam, Big Rush

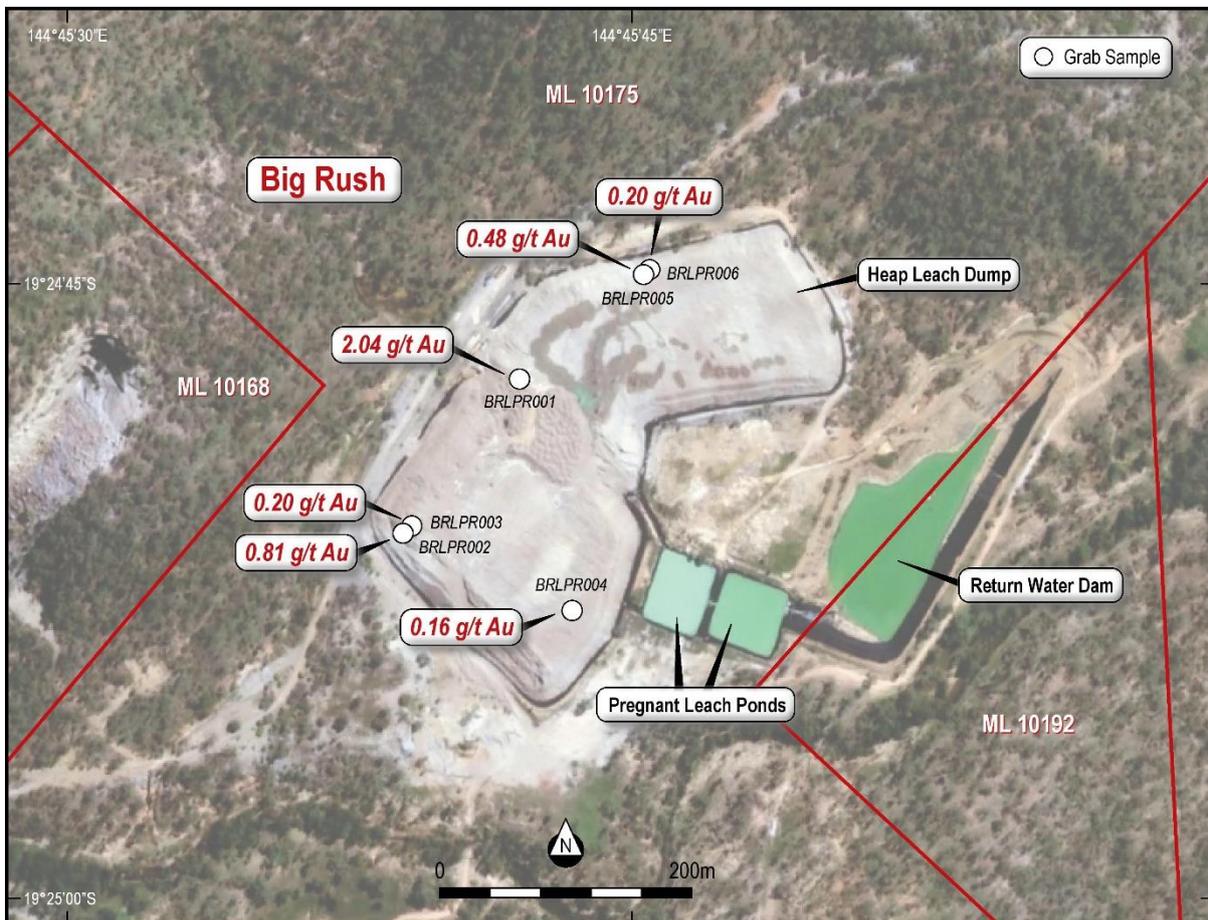


Figure 4: Location of grab samples from heap leach dump, Big Rush

About Great Northern Minerals Limited

Great Northern Minerals Limited is an ASX-listed gold focussed explorer. The Company's projects include the Golden Cup, Camel Creek and Big Rush Gold Mines in Queensland.

*****ENDS*****

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Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled under the supervision of Andrew Jones, an employee of Great Northern Minerals Limited. Mr Jones is a member of the Australasian Institute of Mining and Metallurgy and has sufficient experience of relevance to the styles of mineralisation and type of deposit 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 Jones consents to the inclusion in this report of the matters based on his information in the form and context in which they appear.

Section 1 JORC Code, 2012 Edition - Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> Nature and quality of sampling (eg 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. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. 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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information. 	<ul style="list-style-type: none"> Sampling was grab sampling of rock fragments from the surface of the Big Rush, Camel Creek and Golden Cup heap leach dumps. Samples BRLPR001, BRLPR002, BRLPR004, BRLPR005 and all Golden Cup and Camel Creek samples were selective sampling of quartz vein rock fragments (refer to Photo 2). Samples BRLPR003 and BRLPR006 were non selective samples which included siltstone, shale and quartz vein fragments (refer to Photo 1). Sample weights were between 2 - 3kg of material. The full sample was pulverised. Fire Assaying was completed using a 30 g charge. Assaying was completed at ALS Laboratories in Townsville.
Drilling techniques	<ul style="list-style-type: none"> Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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). 	<ul style="list-style-type: none"> No drilling reported.
Drill sample recovery	<ul style="list-style-type: none"> Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the 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. 	<ul style="list-style-type: none"> No drilling reported. No drilling reported. No drilling reported.
Logging	<ul style="list-style-type: none"> 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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	<ul style="list-style-type: none"> No drilling reported. No drilling reported. No drilling reported.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> • 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. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • 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. • Whether sample sizes are appropriate to the grain size of the material being sampled. 	<ul style="list-style-type: none"> • Samples were grab samples no drilling reported. • Samples were grab samples. • Sampling was undertaken as a first pass measure to assess if any gold remains in the material on the heap leach dumps. The samples taken are not considered to be representative of the full heap leach dumps and more work would be needed to assess the heap leach dumps. • Internal laboratory standards used. • No duplicates taken at this stage. • 2 - 3kg sample size considered appropriate for the grain size of the sedimentary rock and quartz vein units sampled.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> • The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • 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. • 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. 	<ul style="list-style-type: none"> • The assaying work was Fire Assay (30g) which is industry standard assay technique for gold mineralisation. Considered a total technique. • No instruments reported. • Laboratory standards utilised.
Verification of sampling and assaying	<ul style="list-style-type: none"> • The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> • No drilling or intersections reported. • No drilling reported. • Data was collected on paper and entered into an Excel Worksheet. • No adjustments to assay results.
Location of data points	<ul style="list-style-type: none"> • 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. • Specification of the grid system used. • Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> • Coordinates located by hand held Garmin GPS. • Co-ordinates are recorded in GDA94 zone 55. • Control considered to be good.
Data spacing and distribution	<ul style="list-style-type: none"> • Data spacing for reporting of Exploration Results. • 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. • Whether sample compositing has been 	<ul style="list-style-type: none"> • Sampling was reconnaissance in nature with 6 grab samples taken at Big Rush, 5 grab samples taken at Camel Creek and 4 samples taken at Golden Cup. Data spacing varies and was not done on any pattern. • No drilling reported. • No sample compositing applied.

Criteria	JORC Code explanation	Commentary
	<i>applied.</i>	
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> • <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • The grab samples were taken from heap leach dumps which consist of material that has been mined and then transported and stacked on the heap leach dump. • No drilling reported.
<i>Sample security</i>	<ul style="list-style-type: none"> • <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> • Samples taken by qualified staff and delivered to assay laboratory by company representatives.
<i>Audits or reviews</i>	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> • No audits or reviews completed.

Section 2 JORC Code, 2012 Edition - Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> • <i>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.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • At Golden Cup Mining Lease ML 4536 is held by Golden Ant Mining Pty Ltd. • At Big Rush Mining Leases MLs 10168, 10175 & 10192 are held by Alphadale Pty Ltd. • At Camel Creek Mining Leases MLs 4522-4525, 4534, 4540 & 6952 are held by Golden Ant Mining Pty Ltd. • Great Northern Minerals Limited has exercised an option agreement to purchase up to 100% of the Mining Leases listed above from Q-Generate Pty Ltd the owner of Golden Ant Mining Pty Ltd and Alphadale Pty Ltd. • The Mining Leases are granted.
<i>Exploration by other parties</i>	<ul style="list-style-type: none"> • <i>Acknowledgment and appraisal of exploration by other parties.</i> 	<ul style="list-style-type: none"> • The Big Rush, Camel Creek and Golden Cup Gold Mines have been the subject of substantial previous exploration, resource definition drilling and open pit mining operations. • Great Northern Minerals Ltd (previously Greenpower Energy Ltd purchased the projects in August 2019.
<i>Geology</i>	<ul style="list-style-type: none"> • <i>Deposit type, geological setting and style of mineralisation.</i> 	<ul style="list-style-type: none"> • The gold mineralisation at Camel Creek and Golden Cup is located within the generally tightly folded sediments of the early Devonian age Kangaroo Hills Formation which is characterised by a varying assemblage comprising sandstone, mudstone and lesser tuff. <p>Gold is strongly associated with quartz veining. Historical mining has removed the auriferous oxide ore that was amenable to extraction by cyanide leaching. The primary mineralisation that remains is refractory with</p>

Criteria	JORC Code explanation	Commentary
		<p>gold associated with arsenopyrite and antimony.</p> <ul style="list-style-type: none"> The Big Rush Gold Mine is located in the Broken River Mineral Field. <p>Quartz vein hosted gold mineralization within sedimentary rock units occurs within the project area and has been mined previously.</p>
Drill hole Information	<ul style="list-style-type: none"> A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> 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. 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. 	<ul style="list-style-type: none"> No drilling reported. Refer to Table 1 of this ASX Announcement which provides easting and northing co-ordinates of the grab samples.
Data aggregation methods	<ul style="list-style-type: none"> 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. 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. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	<ul style="list-style-type: none"> The grab sample assays are as reported by the assay laboratory. No weighting or averaging has been applied. No drilling reported. No metal equivalents are used or presented.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known'). 	<ul style="list-style-type: none"> The grab samples reported were taken from heap leach dumps which consist of material that has been mined and then transported and stacked on the heap leach dump. No drilling reported. No drilling reported.
Diagrams	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Maps and photos showing the location of samples are presented in the announcement.
Balanced reporting	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> The accompanying document is considered to represent a balanced report on the grab sampling undertaken.

Criteria	JORC Code explanation	Commentary
	<i>Results.</i>	
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> The Big Rush, Camel Creek and Golden Cup Gold Projects have been the subject of substantial previous exploration, resource definition drilling and mining operations.
<i>Further work</i>	<ul style="list-style-type: none"> <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> Further work is being considered to evaluate the grade throughout the Big Rush, Golden Cup and camel Creek heap leach dumps. This work is likely to involve a close spaced Reverse Circulation drilling program at each locality.