

## First drilling results indicate potential for Mineral Resource growth at Browns Range

- Northern Minerals successfully completed 8,500 metres of exploration and resource definition drilling at Browns Range in late 2020;
- First batch of assay results received from 2020 drilling demonstrate prospectivity at new greenfield targets;
- Best assay results from new greenfield target “Toad” of 9m @ 0.54% TREO and 11m @ 0.37% TREO; and
- Initial results at new prospects warrant further investigation and follow-up in second phase drilling in 2021.

Heavy rare earths producer, Northern Minerals Limited (ASX: NTU) (**Company**) is pleased to advise it has returned encouraging assay results across several targets from the first phase of its latest exploration drilling program at the Browns Range Project.

Northern Minerals completed 8,500 metres of reverse circulation (RC) drilling at Browns Range in late 2020, following the Company’s announcement on the 2 November that it had commenced a \$5 million exploration program that would include up to 16,500 metres of drilling before the end of June 2021.

The first batch of assay results have been received from 45 drill holes at Dazzler Northwest (7 holes), Dazzler North/Ripcord (16 holes), Dazzler (6 holes), Gambit West (7 holes), Wolverine West (4 holes) and a new prospect named Toad (5 holes).

The assay results from the remaining 71 drill holes in the 2020 program are expected to be returned over the course of the next few weeks.

Encouraging drill results were received from first-pass drilling at the Toad and Dazzler North prospects, in particular. Best results from Toad were 9m @ 0.54% TREO from 53m in BRR0541 and 11m @ 0.37% from 52m, while at Dazzler North an intercept of 3m @ 0.74% TREO from 8m was returned.

Northern Minerals will follow-up these initial results in the second phase of drilling being planned at Browns Range in 2021, following the end of the wet season in the Kimberley region.



### Powering Technology.

**Northern Minerals**  
Ground Floor  
34 Colin Street  
West Perth WA 6005

PO Box 669  
West Perth WA 6872  
northernminerals.com.au  
info@northernminerals.com.au

**ASX: NTU**  
T: +61 8 9481 2344  
ABN: 61 119 966 353

**Table 1 – Exploration RC drilling– Significant intercepts ( $\geq 2\text{m}$  @ 0.15% TREO or equivalent, with a maximum of 2m continuous internal dilution. No top-cut has been applied all widths are downhole lengths.)**

Hole ID	Prospect	Width (m)	From (m)	To (m)	Dy <sub>2</sub> O <sub>3</sub> ppm	TREO (%)
BRR0530	Gambit West	3	18	21	108	0.2
BRR0532	Gambit West	6	25	31	264	0.38
BRR0537	Toad	3	1	4	238	0.26
BRR0538	Toad	2	15	17	144	0.17
		11	52	63	243	0.37
		12	67	79	247	0.3
BRR0539	Toad	2	23	25	131	0.18
BRR0540	Toad	3	34	37	181	0.2
BRR0541	Toad	1	37	38	451	0.55
		5	45	50	190	0.22
		9	53	62	516	0.54
BRDR0102	Dazzler Northwest	2	17	19	136	0.17
BRDR0103	Dazzler Northwest	3	24	27	221	0.31
BRDR0107	Dazzler North	3	8	11	54	0.74
		4	42	46	248	0.32
BRDR0123	Dazzler	6	36	42	292	0.34

(TREO – Total Rare Earth Oxides = Sum of La<sub>2</sub>O<sub>3</sub>, CeO<sub>2</sub>, Pr<sub>6</sub>O<sub>11</sub>, Nd<sub>2</sub>O<sub>3</sub>, Sm<sub>2</sub>O<sub>3</sub>, Eu<sub>2</sub>O<sub>3</sub>, Gd<sub>2</sub>O<sub>3</sub>, Tb<sub>4</sub>O<sub>7</sub>, Dy<sub>2</sub>O<sub>3</sub>, Ho<sub>2</sub>O<sub>3</sub>, Er<sub>2</sub>O<sub>3</sub>, Tm<sub>2</sub>O<sub>3</sub>, Yb<sub>2</sub>O<sub>3</sub>, Lu<sub>2</sub>O<sub>3</sub>, Y<sub>2</sub>O<sub>3</sub>)

Assay results from the remaining 34 drill holes not listed in the table above returned no significant intercepts ( $\geq 2\text{m}$  @ 0.15% TREO).

### Toad prospect

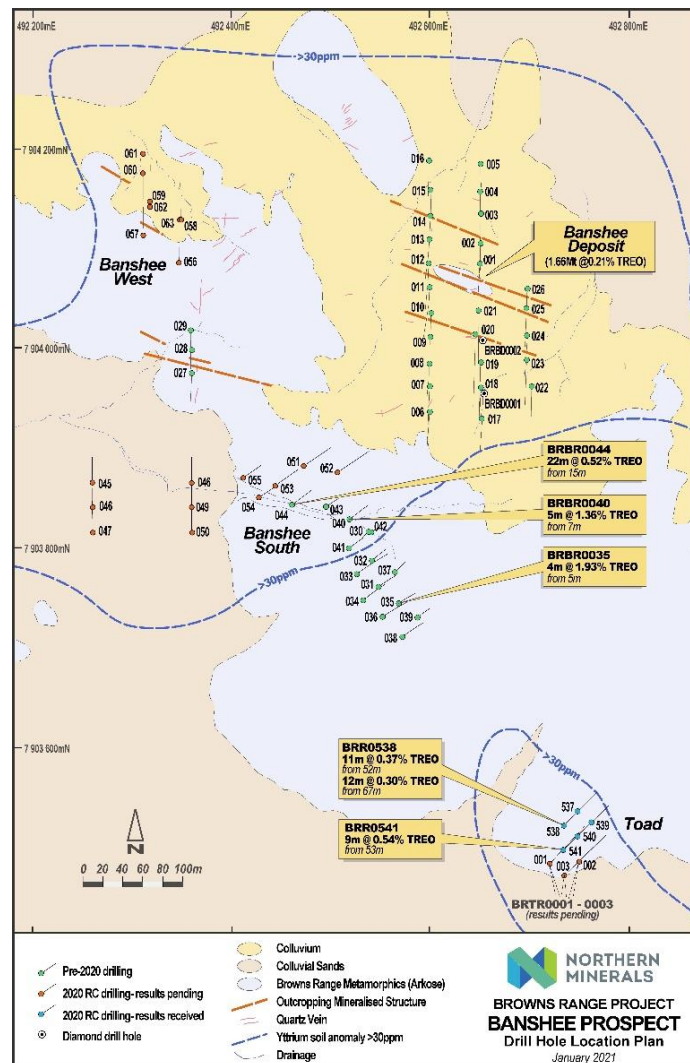
Eight RC holes for 580m were completed at the Toad prospect, of which the first five holes (BRR0537 – 0541) have returned assay results. The target, which is located approximately 250m southeast of the Banshee South prospect (see Figure 1 below), was identified as an area of anomalous surface portable XRF yttrium readings and a uranium radiometric anomaly. The target is adjacent to a north-south trending quartz vein/breccia and an interpreted northwest-southeast trending regional

structure. The initial drilling comprised five drill holes on two fences, drilled at an inclination of 60 degrees towards the northeast. A further three holes were drilled to follow-up on the anomalous portable XRF readings in the first five holes, for which the assay results are currently still pending.

The significant intercepts are summarised in Table 1 above, with the best results being 9m @ 0.54% TREO from 53m in BRR0541 and 11m @ 0.37% from 52m in BRR0538. Mineralisation occurs within altered arkosic sandstones similar to the Banshee deposit. Follow-up drilling is being planned to commence at the end of the northern wet season.



**Figure 1 – Drilling at the Toad prospect in late 2020**



**Figure 2 – Toad and Banshee drill hole location plan**

## Dazzler North/Northwest and Ripcord

At the Dazzler North/Northwest and Ripcord prospects multiple targets were drill tested (see Figure 3 below).

At Dazzler Northwest a small program was completed to follow up on mineralisation intersected during 2019 in hole BRDR0093 located 350m along trend to the northwest from the main Dazzler deposit. Seven holes (BRDR0100-0106) for 700m were drilled, with drill holes 20m apart and drilled at an inclination of 60 degrees towards the northeast. Two drill holes returned significant intercepts with a best result of 3m @ 0.31% TREO from 24m in BRDR0103, which was drilled 20m behind BRDR0093.

A total of 12 holes (BRDR0110–0121) for 634m were drilled in an area between the Ripcord and Dazzler North prospects targeting a conceptual regional structure. All holes were spaced between 20-40m along two fences 100m apart. No significant results were returned for any of these holes.

An additional four holes (BRDR0107-0109, 0122) for 366m were drilled at the Dazzler North Prospect as a first pass program targeting portable XRF yttrium and uranium radiometric surface anomalies,



as well as outcropping narrow mineralised east-west trending structures. All holes were drilled at a spacing of 25m towards the south. Narrow low-grade mineralisation was intersected in several holes and mineralisation is currently open at depth, and to the north and south. The orientation of this mineralised structure is currently unclear. A best result of 3m @ 0.74% TREO from 8m was received from BRDR0107. Further follow-up drilling is being considered for this target.

Three holes (BRDR0123-0125) were drilled on the slopes directly north of Dazzler, targeting a series of mineralised east-west trending vein-breccias. The westernmost hole, BRDR0123 returned an intercept of 6m @ 0.34% TREO from 36m, which is believed to be associated with the outcropping vein-breccias. This mineralisation remains open at depth and to the west.

Three vertical holes (BRDR0126-0128) for 222m were drilled on the scarp to the northeast of Dazzler, targeting an anomalous response in the aeromagnetics and weakly mineralised argillite exposed by a recent gravel borrow pit. No significant results were received from these drill holes.

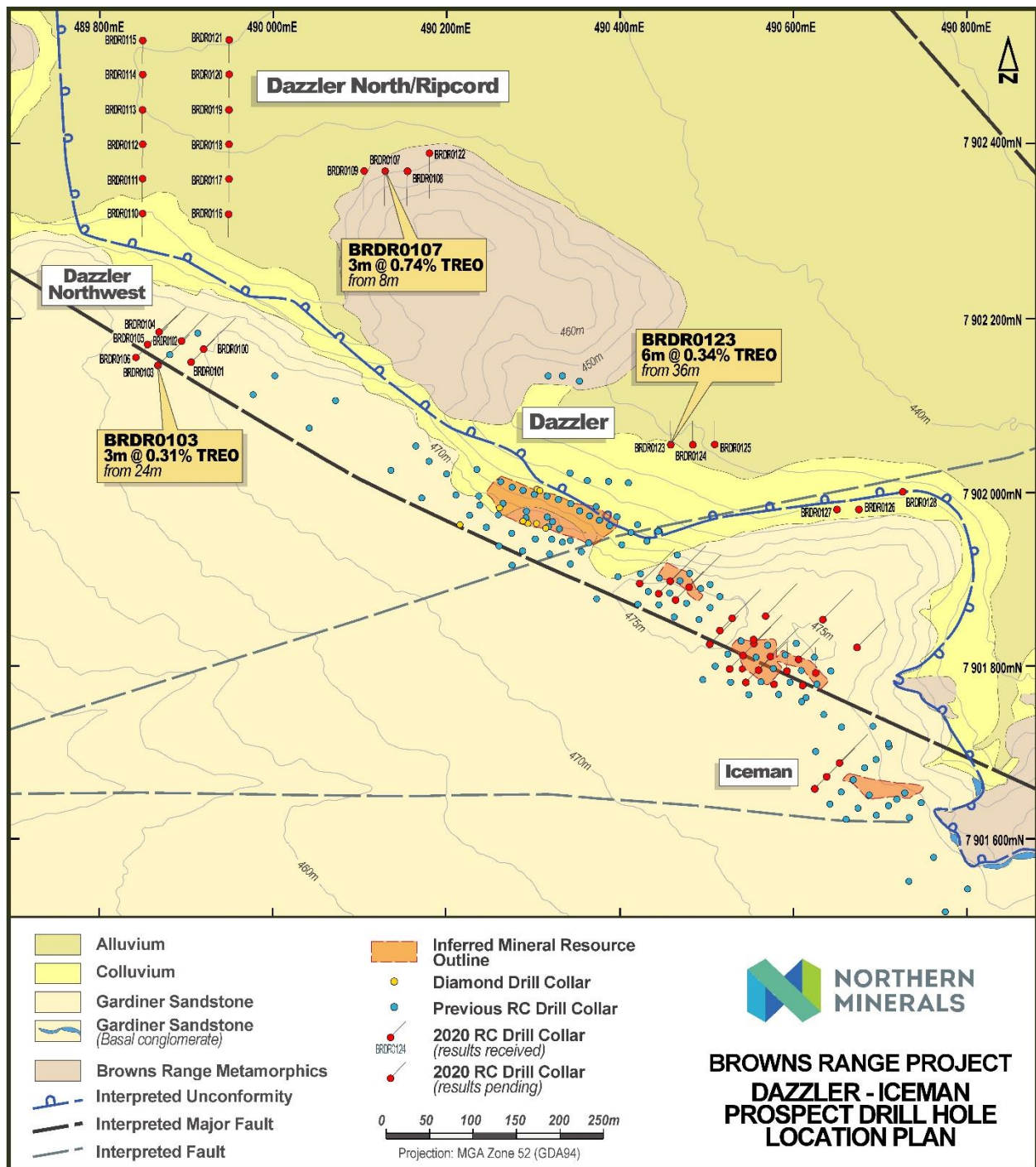


Figure 3 – Dazzler area drill hole location plan

## Gambit West and Wolverine West

Seven RC drill holes for 582m were completed to the west of the Gambit West deposit and were designed to follow-up on anomalous results from the 2018 drill program. Holes were drilled towards the south at 60 degrees on three traverses spaced 50m apart. Two of the three drill holes on the



easternmost drill fence returned significant results, with a best result of 6m @ 0.38% from 25m in BRR0532. These holes are located over 300m west of the Gambit West pit. No immediate follow-up on these drill results is planned.

Drilling at Wolverine West was designed to follow-up on anomalous intersections from drilling in 2018, which are along strike to the west of the Wolverine deposit. Four RC drill holes were completed for 366m with no significant intersections.

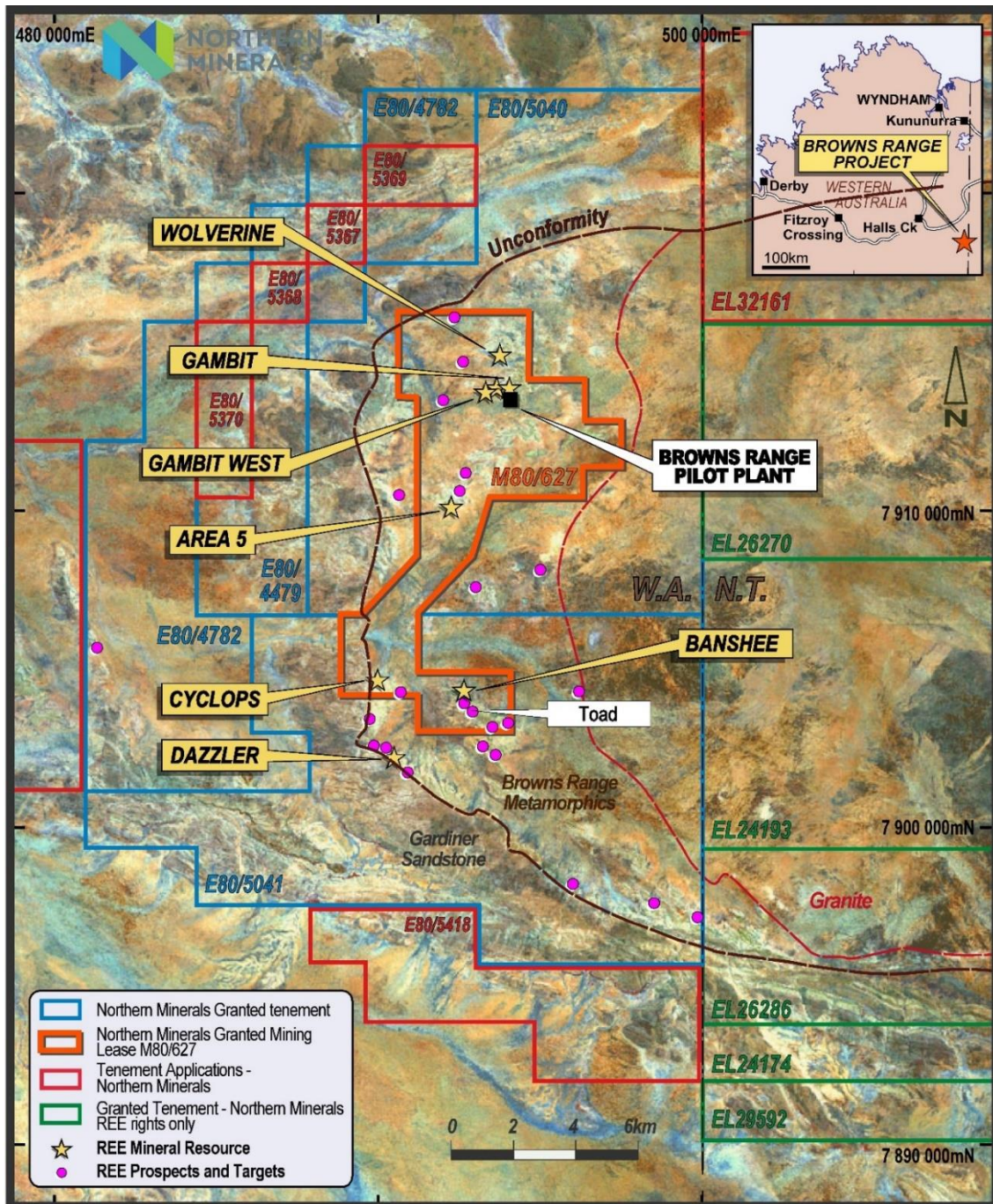


Figure 4 – Northern Minerals has more than 2,300 square kilometres of tenure to evaluate at Browns Range.

**Northern Minerals CEO Mark Tory said:** *"We are very pleased to have exceeded our target of getting at least 8,000 metres of drilling completed before Christmas as well as post some very encouraging early results.*

*"Following up on these results will be one component of the second phase of our exploration drilling campaign, which we will be back on the ground to complete before the end of June."*

*"The relatively shallow depth as well as the grade and widths of some of these intersections give us plenty to work with, however much of the drilling in the first half of 2021 will be at new greenfields targets."*

*"Our overall strategy remains to increase the Mineral Resource and the life-of-mine potential at Browns Range to more than 20 years. This will feed into a future feasibility study for a potential commercial scale heavy rare earths operation at Browns Range."*

**For further information:**

Mark Tory  
Chief Executive Officer  
Northern Mineral  
+61 8 9481 2344

**For media and broker enquiries:**

Michael Cairnduff  
Cannings Purple  
0406 775 241  
mcairnduff@canningspurple.com.au

**About Northern Minerals:**

Northern Minerals Limited (ASX: NTU) (Northern Minerals or the Company) is one of a few producers of heavy rare earth element Dysprosium outside of China via production from the Browns Range Heavy Rare Earth Project in northern Western Australia.

The Company commenced the production of heavy rare earth carbonate in late 2018 as part of a three-year pilot assessment of economic and temporarily technical feasibility of a larger scale development at Browns Range. In March 2020, the operation was placed into care & maintenance as a result of COVID-19 and has partially restarted operations in August 2020.

The work program provides the opportunity to gain production experience and surety of supply for our offtake partner, Thyssenkrupp, as well as allowing the assessment of various project enhancement initiatives including ore sorting and the separation of the product into individual rare earth oxides.

Through the development of its flagship project, the Browns Range Project (the Project), Northern Minerals aims to build the Western Australian operation into a significant world producer of dysprosium outside of China.

The Project is 100% owned by Northern Minerals and has several deposits and prospects containing high value dysprosium and other HREs, hosted in xenotime mineralisation.

Dysprosium is an essential ingredient in the production of DyNdFeB (dysprosium neodymium iron-boron) magnets used in clean energy, military and high technology solutions.

For more information: [northernminerals.com.au](http://northernminerals.com.au).





ASX Code:	NTU	Market Capitalisation:	A\$204.1m
Issued Shares:	4,437m	Cash (as at 1 December 2020):	A\$14m

### Compliance Statement

The information in this report relating to Exploration Results was compiled by Mr Robin Wilson who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Wilson is a full time employee of Northern Minerals Limited and has sufficient experience relevant to the style 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' (the JORC Code). Mr Wilson consents to the inclusion of this information in the form and context in which it appears.

## Appendix 1

Wolverine West RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRR0526	493046.79	7914810.18	443.37	-61.4	181.6	54
BRR0527	493097.38	7914829.43	443.72	-59.7	181.42	102
BRR0528	493148.31	7914801.12	444.34	-61.4	185.2	54
BRR0529	493195.02	7914825.9	444.75	-60	180	156

Gambit West RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRR0530	492797.02	7913602.16	441.08	-60	180	54
BRR0531	492797.03	7913621.79	441.05	-60	180	72
BRR0532	492797.39	7913645.37	441.13	-60	180	120
BRR0533	492747.8	7913648.66	440.48	-60	180	114
BRR0534	492697.77	7913599.63	439.95	-60	180	54
BRR0535	492697.33	7913623.44	439.9	-60	180	72
BRR0536	492697.91	7913650.38	439.82	-60	180	96

Dazzler North/Ripcord RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRDR0100	489922.06	7902164.43	468.32	-59.1	41.79	106
BRDR0101	489907.13	7902148.27	467.77	-59.5	46.14	106
BRDR0102	489894.84	7902174.13	467.54	-60	45	88
BRDR0103	489865.28	7902144.34	466.46	-60	45	114
BRDR0104	489870.38	7902184.45	466.22	-60	45	82
BRDR0105	489854.2	7902166.72	465.55	-60.6	42.89	96
BRDR0106	489841.85	7902154.32	465.12	-60	45	108
BRDR0107	490152.16	7902368.48	446.13	-60	45	84
BRDR0108	490128.11	7902367	445.58	-60.3	177.7	84
BRDR0109	490105.12	7902367.49	443.94	-60.4	175.49	92
BRDR0110	489850.93	7902340.01	445.56	-59.1	181.09	52
BRDR0111	489849.75	7902359.74	445.11	-60.3	181.57	52
BRDR0112	489848.62	7902399.45	444.81	-59.4	178.73	52
BRDR0113	489848.57	7902436.39	444.45	-59.1	180.87	52
BRDR0114	489849.78	7902479.24	444.29	-60.5	178.01	52
BRDR0115	489849.72	7902520.62	444.74	-61.5	179.81	52
BRDR0116	489946.93	7902320.85	444.49	-60.6	180.4	50
BRDR0117	489948.68	7902364.9	443.96	-59.5	182.11	52
BRDR0118	489949.12	7902399.07	443.61	-59.9	179.22	52
BRDR0119	489949.5	7902440.74	443.29	-60.4	180.88	58
BRDR0120	489950.06	7902482.32	443.31	-59.9	177.49	52
BRDR0121	489949.21	7902508.18	443.96	-57.7	180.15	58
BRDR0122	490178.95	7902388.66	444.08	-59.5	183.14	106
BRDR0123	490455.17	7902054.61	443.65	-59	356.23	53
BRDR0124	490481.87	7902053.13	443.26	-59.8	3.15	52
BRDR0125	490505.27	7902054.07	442.66	-60.7	358.3	46
BRDR0126	490671.19	7901978.27	449.63	-90	360	82
BRDR0127	490649.43	7901978.37	449.51	-90	360	70
BRDR0128	490725.12	7901998.27	445.62	-90	360	70



Toad RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRR0537	492749.79	7903535.08	442.15	-60.81	50.27	28
BRR0538	492735.69	7903523.05	441.11	-59.75	48.4	94
BRR0539	492764.15	7903525.59	441.09	-58.17	46.17	52
BRR0540	492749.15	7903510.71	440.25	-59.62	45.27	46
BRR0541	492735.17	7903498.07	439.22	-56.27	47.75	76

Table 1: JORC code, 2012 Edition

## Section 1 - Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<i>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.</i>	<p>At the Wolverine West prospect four Reverse Circulation (RC) drill holes were completed. A total of 366m of drilling was completed, with hole depths between 54m and 156m. At the Gambit West prospect 7 RC drill holes have been completed for 582m with hole depths between 54m and 120m. At the Dazzler Northwest prospect 7 RC drill holes have been completed for 700m with hole depths between 82m and 114m. At the Ripcord and Dazzler North prospects 16 RC drill holes have been completed for 1000m with hole depths between 52m and 102m. At the Dazzler prospect assay results have been received for 6 of the RC drill holes completed for 373m with hole depths between 52m and 82m. At the Toad prospect assay results have been received for the first 5 RC drill holes which were completed for 296m with hole depths between 28m and 94m.</p> <p>Drill collar locations have been surveyed using high accuracy KGPS. Down hole surveys were completed using a gyroscope where possible. RC samples were collected at one metre intervals and subsampled via a rig mounted static cone splitter.</p> <p>Reverse Circulation (RC) drill samples were analysed using Niton XRF XLt3-950 GOLDD+ portable XRF analyser (pXRF). The pXRF was placed on the primary split sample taken off the drilling rig's static cone splitter. One measurement was completed for each drill metre sample, through the calico bag. The results from the initial pXRF readings formed the basis for sample selection for additional geochemical analysis.</p>
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	<p>The pXRF instrument is calibrated and serviced annually or more frequently, with daily instrument calibration completed as a minimum. Additionally, at the start of each sampling session, standards are analysed.</p> <p>Sampling was carried out under NTU protocols and employed QAQC procedures in line with industry standard practice and fit for purpose i.e. first-pass exploration drilling. RC</p>

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**Northern Minerals**  
Ground Floor  
34 Colin Street  
West Perth WA 6005

PO Box 669  
West Perth WA 6872  
northernminerals.com.au  
info@northernminerals.com.au

**ASX: NTU**  
T: +61 8 9481 2344  
ABN: 61 119 966 353

		drill holes were sampled at one metre intervals exclusively and split at the rig to achieve a target 2 to 5 kilogram sample weight.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report.</i>	This report relates to exploration results only.
<i>Drilling techniques</i>	<i>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).</i>	RC drilling was with nominal diameters of 4 1/2 inches or 5 3/8 inches bit depending on the drilling contractor used. Drilling at Wolverine West and Gambit West were completed at a diameter of 5 and 3/8", whilst the drilling at Dazzler Northwest, Dazzler North and Ripcord, and Toad prospects were drilled at a diameter of 4 and 1/2". RC drilling was completed using face sampling hammer.
<i>Drill sample recovery</i>	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	RC recovery was initially assessed by subjective assessment based on volume recovered. All intervals selected for geochemical analysis were subsequently weighed incorporating the bulk sample plus the primary and duplicate samples. RC recoveries were observed to be generally acceptable with recoveries typically 80% or greater. RC recovery information is recorded in the geologist logs and entered into the database.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	Geologists were based at the RC rig, and regularly inspected operations to ensure correct procedures were being used. RC sample recoveries were visually checked for recovery, moisture and contamination. The cyclone and splitter were routinely cleaned to minimise material build up.
	<i>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.</i>	At this stage of exploration this relationship has not been investigated at the prospects in question.
<i>Logging</i>	<i>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.</i>	RC logging was completed on one metre intervals at the rig by the geologist. Logging is completed directly onto a laptop in the field using a proprietary geological logging package with in-built validation. Logging information was reviewed by the responsible geologist prior to final load into the database. Chip trays were collected for each of the RC intervals.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	Logging was generally qualitative in nature.



	<i>The total length and percentage of the relevant intersections logged.</i>	All RC drilling metres were logged and entered into the database.
<i>Sub-sampling techniques and</i>	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	RC samples were collected from the full recovered interval by rig mounted static cone splitter. The majority of samples were collected dry with a minor number being moist due to ground conditions or excessive dust suppression. Samples were split without drying.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	The sample preparation techniques employed for the RC samples follow industry standard practice at Intertek Genalysis Laboratory. Samples are oven dried, crushed if required and pulverised prior to a pulp packet being removed for analysis.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	At this stage of exploration, subsampling is limited to on rig splitting using a static cone splitter. No QA/QC of the splitting method has been carried out.
	<i>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.</i>	Blanks were inserted in the field and developed from local host rock following chemical analysis. Field duplicates were collected by a second sample off the splitter (RC). Insertion rates targeted 1:20 for duplicates, blanks and standards, with increased frequency in mineralised zones..
<i>Sample preparation</i>	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	The RC sample is appropriate for the grain size of the material.
	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	Samples assayed by Genalysis for rare earth elements were fused with sodium peroxide within a nickel crucible and dissolved with hydrochloric acid for analysis. Fusion digestion ensures complete dissolution of the refractory minerals such as xenotime, which are only partially dissolved if the pulp is digested in acids. The digestion solution, suitably diluted, is analysed by ICP Mass Spectroscopy (ICP-MS) for the determination of the REE (La – Lu) plus Y, Th and U.
<i>Quality of assay data and laboratory tests</i>	<i>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.</i>	In the field a Niton (XL3T-950 GOLDD+) XRF handheld tool was used to provide a preliminary quantitative measure of mineralisation. A reading time of 30 seconds was used, with a single reading taken for every metre of RC drilling. The reading was on unprepared raw RC chips, through the calico sample bag. The samples contained natural

		moisture. Calibration of the PXRF is at least daily with the silica blank standard and the TILL-4 yttrium standard checked at the beginning of every sample run.
	<i>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.</i>	Certified reference materials, using values across the range of mineralisation, were inserted blindly and randomly. Insertion rates targeted 1:20 for duplicates, blanks and standards, with increased frequency in mineralised zones Results highlight that sample assay values are suitably accurate and unbiased. Blanks were inserted in the field and developed from local host rock following chemical analysis. Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures.
	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Internal verification of significant results by more than one company geologist.
<i>Verification of sampling and assay</i>	<i>The use of twinned holes.</i>	No holes have been twinned due to this being early stage exploration at the prospects in question.
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	<p><b>Portable XRF</b></p> <p>Analytical data was collected directly by the Niton pXRF and downloaded by digital transfer to an excel sheet with inbuilt QAQC.</p> <p>All data was checked by the responsible geologist and digitally transferred to Perth. Datashed is used as the database storage and management software and incorporates numerous data validation and integrity checks using a series of defined data loading tools. Data is stored on a SQL server and electronic backups completed three times per day.</p> <p><b>RC Drilling</b></p> <p>Primary data was collected into a proprietary logging package (OCRIS) with in-built validation. Details were extracted and pre-processed prior to loading. Datashed is used as the database storage and management software and incorporates numerous data validation and integrity checks, using a series of defined data loading tools. Data is stored on a SQL server by Northern Minerals Ltd subject to electronic backup.</p>

	<i>Discuss any adjustment to assay data.</i>	The assay data were converted from reported elemental assays for a range of elements to the equivalent oxide compound as applicable to rare earth oxides. Oxide calculations are completed by the laboratory and checked by Northern Minerals. No issues were identified. The oxides were calculated from the element according to the following factors below: CeO <sub>2</sub> – 1.2284, Dy <sub>2</sub> O <sub>3</sub> – 1.1477, Er <sub>2</sub> O <sub>3</sub> – 1.1435, Eu <sub>2</sub> O <sub>3</sub> – 1.1579, Gd <sub>2</sub> O <sub>3</sub> – 1.1526, Ho <sub>2</sub> O <sub>3</sub> – 1.1455, La <sub>2</sub> O <sub>3</sub> – 1.1728, Lu <sub>2</sub> O <sub>3</sub> – 1.1371, Nd <sub>2</sub> O <sub>3</sub> – 1.1664, Pr <sub>6</sub> O <sub>11</sub> – 1.2082, Sm <sub>2</sub> O <sub>3</sub> – 1.1596, Tb <sub>4</sub> O <sub>7</sub> – 1.1421, Tm <sub>2</sub> O <sub>3</sub> – 1.1421, Y <sub>2</sub> O <sub>3</sub> – 1.2699, Yb <sub>2</sub> O <sub>3</sub> – 1.1387
	<i>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.</i>	Drill collar locations have been surveyed with a high accuracy KGPS. Down hole surveys were completed by the drilling contractor using a gyroscope or single-shot survey tool at the time of drilling. Drill collar locations have subsequently been surveyed using high accuracy KGPS. Down hole surveys have also been conducted post-drilling, where practical, using a Reflex Gyro survey instrument.  Survey accuracy of both collars and down hole is considered acceptable at this stage of the exploration program.
<i>Location of data points</i>	<i>Specification of the grid system used.</i>	The grid system used is MGA94 Zone 52. All reported coordinates are referenced to this grid.
	<i>Quality and adequacy of topographic control.</i>	Topographic control is based on airborne digital terrain survey data collected in 2011 with accuracy considered to be +/-1m.
	<i>Data spacing for reporting of Exploration Results.</i>	Gambit West – 7 drill holes completed on 3 drill fences 50m apart, with individual holes 25m apart.  Wolverine West – 4 drill holes completed on 4 drill fences 50m apart, with individual holes 25m apart (along fences containing previous drilling).  Dazzler Northwest – 7 holes drilled along 3 drill fences 25m apart, with individual holes 20m apart.  Dazzler North/Ripcord – 12 holes along two fences 100m apart with individual holes between 20-40m apart. 4 individual holes drilled on 4 lines 25m apart.



		<p>Dazzler – 3 individual holes drilled on 3 lines 25m apart. 3 vertical holes spaced 20-50m apart.</p> <p>Toad – 5 holes completed along 2 drill fences 20m apart, with individual holes 20m apart.</p>
<i>Data spacing and distribution</i>	<i>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.</i>	Exploration Results only. Data spacing and distribution is not yet sufficient to support Mineral Resource or Ore Reserve Estimation.
	<i>Whether sample compositing has been applied.</i>	Sampling is on 1m intervals. Results have not been physically composited.
<i>Orientation of data in relation to geological structure</i>	<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>	<p>Most drill holes in the current program have been drilled at an inclination of 60° at an orientation perpendicular to the interpreted structural and/or lithological trend. The exception to this are 3 vertical holes drilled vertically at Dazzler.</p> <p>For the Gambit West and Wolverine West drilling, all holes are drilled -60 degrees to the south to intersect subvertical to steeply dipping, east – west trending primary structures known to host mineralisation.</p> <p>At Dazzler Northwest, holes were drilled at -60 degrees towards an azimuth of 45 degrees, the same orientation as the majority of holes completed at Dazzler, targeting extensions along west-northwest mineralised trend.</p> <p>The drilling at Dazzler North was oriented -60 degrees to the south, targeting outcropping narrow, mineralised east-west trending structures.</p> <p>The vertical holes at Dazzler were required due to being located on a scree slope, resulting in an insufficient pad size and area to be able to drill an inclined hole. However, each of the holes still intersected the targeted unconformity between the argillite unit and the underlying Browns Range Metamorphics at a high angle.</p> <p>At Toad, holes were drilled at an inclination of 60 degrees towards an azimuth of 45 degrees. This orientation is perpendicular to an interpreted regional structure, however the trend of the mineralisation at this stage is unclear.</p>

	<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>	<p>There is currently insufficient drilling at Toad, Dazzler Northwest and Dazzler North to confidently interpret the orientation of a potential mineralised zone. Current knowledge however indicates that the orientation of drilling with respect to overall structural and lithological trends is not expected to introduce any sampling bias.</p> <p>The mineralisation intersected at Gambit West appears to be a westward extension of the structure hosting the Gambit West deposit, and therefore the orientation of the drilling is suitable and not expected to introduce any sampling bias.</p>
<i>Sample security</i>	<i>The measures taken to ensure sample security.</i>	Samples are collected on site under supervision of the responsible geologist and stored in bulk bags on site prior to transport by company truck or utility to Halls Creek commercial transport yard. The samples are stored in a secure area until loaded and delivered to the Intertek Genalysis laboratory in Perth.
<i>Audits or reviews</i>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No audits/reviews have been conducted.

## Section 2: Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<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>	The Dazzler, Dazzler Northwest, Dazzler North/Ripcord prospects are located on Exploration licence E80/5041 and Gambit West, Wolverine West and Toad are located on M80/627. The tenements are all located in the company's Browns Range Project approximately 150 kilometres south-east of Halls Creek and adjacent to the Northern Territory border in the Tanami Desert. Northern Minerals owns 100% of all mineral rights on the tenement. The Jaru Native Title Claim is registered over the Browns Range Project area and the fully determined Tjurabalan claim is located in the south of the project area.
	<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>	The tenements are in good standing and no known impediments exist.
Exploration done by other parties	<i>Acknowledgment and appraisal of exploration by other parties.</i>	No previous systematic exploration for REE mineralisation has been completed by other parties prior to Northern Minerals at the prospects in question. Regional exploration for uranium mineralisation was completed in the 1980s without success.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	The Browns Range prospects are located on the western side of the Browns Range Dome, a Paleoproterozoic dome formed by a granitic core intruding the Paleoproterozoic Browns Range Metamorphics (meta-arkoses, feldspathic meta-sandstones and schists) and an Archaean orthogneiss and schist unit to the south. The dome and its aureole of metamorphics are surrounded by the Mesoproterozoic Gardiner Sandstone (Birringudu Group). The Browns Range xenotime mineralisation is typically hosted in hydrothermal quartz and hematite veins and breccias within the meta-arkoses of the Archaean Browns Range Metamorphics. Various alteration styles and intensities have been observed; namely silicification, sericitisation and kaolinite alteration.



		<p>Gambit West and Wolverine mineralisation is hosted by a sub-vertical quartz-hematitic fault breccia(s) that trend approximately east-west, within the Browns Range Metamorphics. Mineralisation is again related to the presence of hydrothermal xenotime.</p> <p>The Dazzler area prospects are located on a scarp slope that marks the unconformity between the younger overlying Gardiner Sandstone and the older Browns Range Metamorphics. At both prospects it is currently unclear what the controls on mineralisation are, however there is a clear spatial association between the unconformity and the most anomalous zones, with mineralisation occurring in both units above and below the unconformity.</p> <p>Further work is required to determine the controls on mineralisation at the Toad and Dazzler North prospects with follow-up RC drilling program planned.</p>
<i>Drill hole Information</i>	<p><i>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:</i></p> <p><i>easting and northing of the drill hole collar</i></p> <p><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></p> <p><i>dip and azimuth of the hole</i></p> <p><i>down hole length and interception depth</i></p> <p><i>hole length.</i></p>	See tables above in Appendix 1 and Table 1 in body of text.
<i>Data aggregation methods</i>	<p><i>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.</i></p>	Significant intervals were tabulated downhole for reporting. Each metre downhole was analysed using sodium fusion ICP-MS. All individual metres (one result per metre) were averaged over the entire tabulated range. A lower cut-off of 0.15% TREO was used during data aggregation, allowing for 2m of internal dilution. No top-cuts have been applied.

	<i>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.</i>	All intervals were initially based on 1m sample runs, with no lengths shorter than 1m. The geologist then qualitatively grouped contiguous mineralised runs together and the average analysis of the entire run is reported here.
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	No metal equivalents values are used for reporting of exploration results.
<i>Relationship between mineralisation widths and intercept lengths</i>	<i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	<p>At Gambit and Wolverine West, the mineralisation trend is sub-vertical and east-west, with drill holes oriented at 60 degrees towards the south, the intersection angle with the mineralised zone is considered optimal.</p> <p>The geometry of mineralisation at Toad, Dazzler North and Northwest is currently unclear, but is generally assumed to be east-west or northwest-southeast based on mineralisation and outcropping structures at adjacent prospects or targets. Based on these assumptions the drilling orientation at each of the aforementioned prospects is considered optimal.</p>
<i>Diagrams</i>	<i>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.</i>	Refer to Figures 2, 3, and 4 in the body of text.
<i>Balanced reporting</i>	<i>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.</i>	Previous exploration results are the subject of previous reports. The results of all drill holes have been reported, including those with "No Significant Results".
<i>Other substantive exploration data</i>	<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,</i>	<p>At Browns Range Project WA, airborne magnetic and radiometric surveys were acquired by Northern Minerals in 2011. Hyperspectral data captured during October 2012 by Hyvista Corporation Pty Ltd. Very high resolution "Ultracam" aerial photography was captured by Hyvista during the Hyperspectral survey.</p> <p>Regional reconnaissance including geological mapping, rock chip sampling and also geochemical soil sampling completed over all the prospects reported</p>

	<i>geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	<p>herein. Ground based radiometric surveys were completed over Dazzler North West, Dazzler North, Ripcord and Toad during 2019-2020.</p> <p>Mineral Resource estimates have been completed at the Dazzler, Gambit West and Wolverine deposits and in 2017 open-cut trial mining was completed at Gambit West and Wolverine.</p>
<i>Further work</i>	<i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i>	Follow-up drilling is being planned at the Toad, Dazzler North and Dazzler Northwest prospects.
	<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>	Refer to Figures 2, 3, and 4 in body of text.

### *Section 3: Estimation and Reporting of Mineral Resources*

Not applicable

### *Section 4: Estimation and Reporting of Ore Reserves*

Not applicable