19 August 2024

2024 Drilling Completed in Cowboy State Mine Area

Highlights

- 11 HQ holes completed with a total length of 1,585m (5,309 feet).
- 12 Reverse Circulation (**"RC"**) holes completed with a total length of 1,031m (3,381 feet).
- Two core holes drilled to 300m indicate rare earth mineralisation and deposit remaining open at depth.
- Samples have been collected, logged and shipped to ALS Global for splitting and assay with results expected in the coming weeks.
- The results of this drill program to be used to update geological models, resource estimate and input for the upcoming Prefeasibility Study (**"PFS"**).

American Rare Earths (**ASX: ARR | OTCQX: ARRNF | ADR: AMRRY) ("ARR"** or the **"Company"**) is pleased to announce completion of the 2024 drilling campaign at the Cowboy State Mine (**"CSM"**) area.

The drilling campaign consisted of 12 RC holes with a total length of 1,031m (3,381 feet), 11 HQ core with a total length of 1,585m (5,309 feet), two of the core holes have been completed to depths of 300m each. At total length of 2,616m (8,581 feet) was drilled during the program. 689 RC samples and 659 core samples, for a total of 1,348, were collected, logged and shipped to ALS global for splitting and assay. While assay data will determine rare earth element (**"REE"**) grades, lithologic logs show Red Mountain Pluton (**"RMP"**) at the base of each core hole, see Figure 2 and Figure 3.

Chris Gibbs, CEO, commented:

"The team at Wyoming Rare (USA) (**"WRI"**) continue to demonstrate the exciting potential for this world class deposit at the Cowboy State Mine area, which forms part of the Halleck Creek District. The drill program was successfully completed ahead of schedule, and we look forward to the pending assay results."

"We continue to see the significant upside potential with mineralisation observed to depths of at least 302m. The primary focus of WRI is to develop the Cowboy State Mine on a portion of the Halleck Creek Wyoming State Tenements. The results of this drill campaign will be instrumental for updating our geological models, resource estimate and input for the upcoming Prefeasibility Study (**"PFS"**)."

Technical Summary

As shown in Figure 4 the preliminary lithology of drill holes in the SE corner of State T22N R71W Section 25 along with gamma logs compiled to date. Cross section Figures 5 and Figure 6 illustrate the preliminary lithology of drill holes in the northeastern corner of State T22N R71W Section 36 along with gamma logs compiled to date. Final interpretation will be updated as assay data is received from ALS Global.

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Geologists continue to log core and update drill hole databases. Televiewer logs of the final core holes and gamma logs of the open RC holes still need to be collected. Final locations of each drill hole will also be surveyed by professional surveyors for inclusion into geological models.

Geological models and grade resource models will be updated as assay data is received. ARR plans on updating resource estimates. The geological models will then be used as the foundation for a planned pre-feasibility study over the Cowboy State Mine area.

Table 1 - Preliminary Locations of 2024 Exploration Drill Holes at CSM

DHID	Easting	Northing	Collar	Total Depth	Azimuth	Dip	Hole Type
HC24-RM023	475,674	4,632,570	1,753	120	0	-90	HQ
HC24-RM024	475,676	4,632,440	1,754	302	0	-90	HQ
HC24-RM025	475,439	4,632,380	1,759	100	0	-90	HQ
HC24-RM027	475,789	4,632,480	1,751	100	90	-65	HQ
HC24-RM029	475,331	4,632,080	1,765	81	115	-65	HQ
HC24-RM034	475,152	4,632,060	1,771	150	0	-90	HQ
HC24-RM035	475,170	4,632,210	1,768	300	250	-45	HQ
HC24-RM042	475,135	4,631,930	1,776	50	250	-45	HQ
HC24-RM043	475,131	4,631,980	1,772	150	0	-90	HQ
HC24-RM044	475,170	4,632,210	1,769	175	300	-45	HQ
HC24-RM045	475,831	4,632,730	1,745	90	160	-65	HQ
DHID	**Easting**	**Northing**	**Collar**	**Total Depth**	**Azimuth**	**Dip**	**Hole Type**
HC24-RM026	475,678	4,632,690	1,748	81	0	-90	RC
HC24-RM028	475,533	4,632,740	1,757	81	0	-90	RC
HC24-RM030	475,603	4,632,640	1,753	81	270	-65	RC
HC24-RM031	475,504	4,632,600	1,756	81	0	-90	RC
HC24-RM032	475,681	4,632,280	1,754	81	0	-90	RC
HC24-RM033	475,474	4,632,250	1,759	81	0	-90	RC
HC24-RM036	475,561	4,632,440	1,756	81	0	-90	RC
HC24-RM037	475,435	4,632,180	1,762	81	0	-90	RC
HC24-RM038	475,321	4,632,250	1,764	81	350	-65	RC
HC24-RM039	475,315	4,632,140	1,765	81	0	-90	RC
HC24-RM040	475,232	4,632,080	1,768	110	0	-90	RC
HC24-RM041	475,229	4,631,980	1,771	110	140	-55	RC

This announcement is authorised for release by the CEO of American Rare Earths.

Further information
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Competent Persons Statement:

The information in this document is based on company work performed in September and October 2023. This work was reviewed and approved for release by Mr Dwight Kinnes (Society of Mining Engineers #4063295RM) who is employed by American Rare Earths and has sufficient experience which is 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 JORC Code. Mr Kinnes consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

About American Rare Earths Limited:

American Rare Earths **(ASX: ARR | OTCQX: ARRNF | ADR: AMRRY)** owns Wyoming Rare (USA) Inc. which is focused on the development of the Halleck Creek Project, WY. It also owns La Paz, AZ rare earth deposit. Both can potentially become the largest and most sustainable rare earth projects in North America. The Company is developing environmentally friendly and cost-effective extraction and processing methods to meet the rapidly increasing demand for resources essential to the clean energy transition and US national security. The Company continues to evaluate other exploration opportunities and is collaborating with US Government-supported R&D to develop efficient processing and separation techniques of (REEs) elements to help ensure a renewable future.

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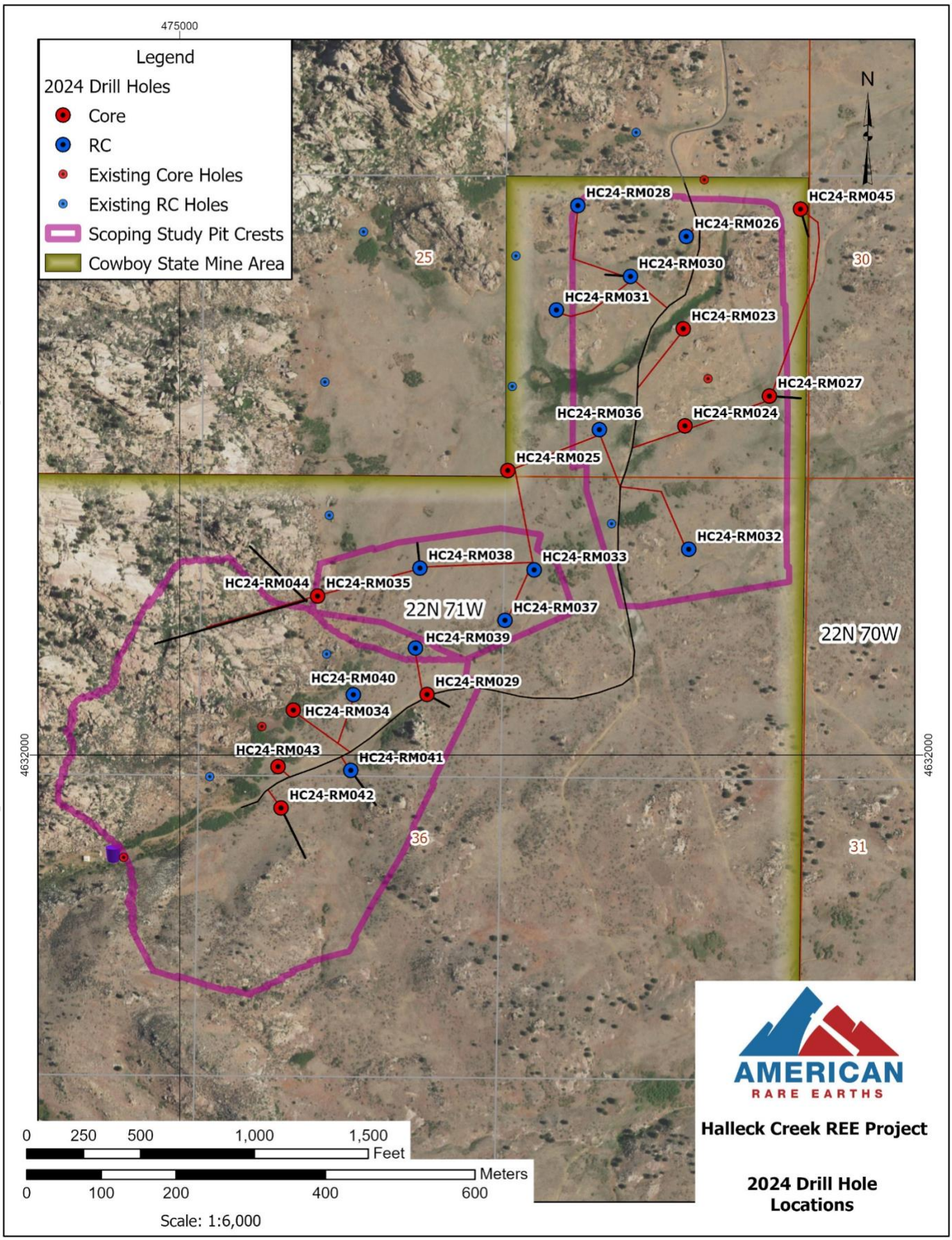

Figure 1 – 2024 Drill Hole Locations

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Figure 2 – Core from HC24-RM024 at 302m showing RMP rocks

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Figure 3 – Core from HC24-RM035 at 300.7m showing RMP rocks

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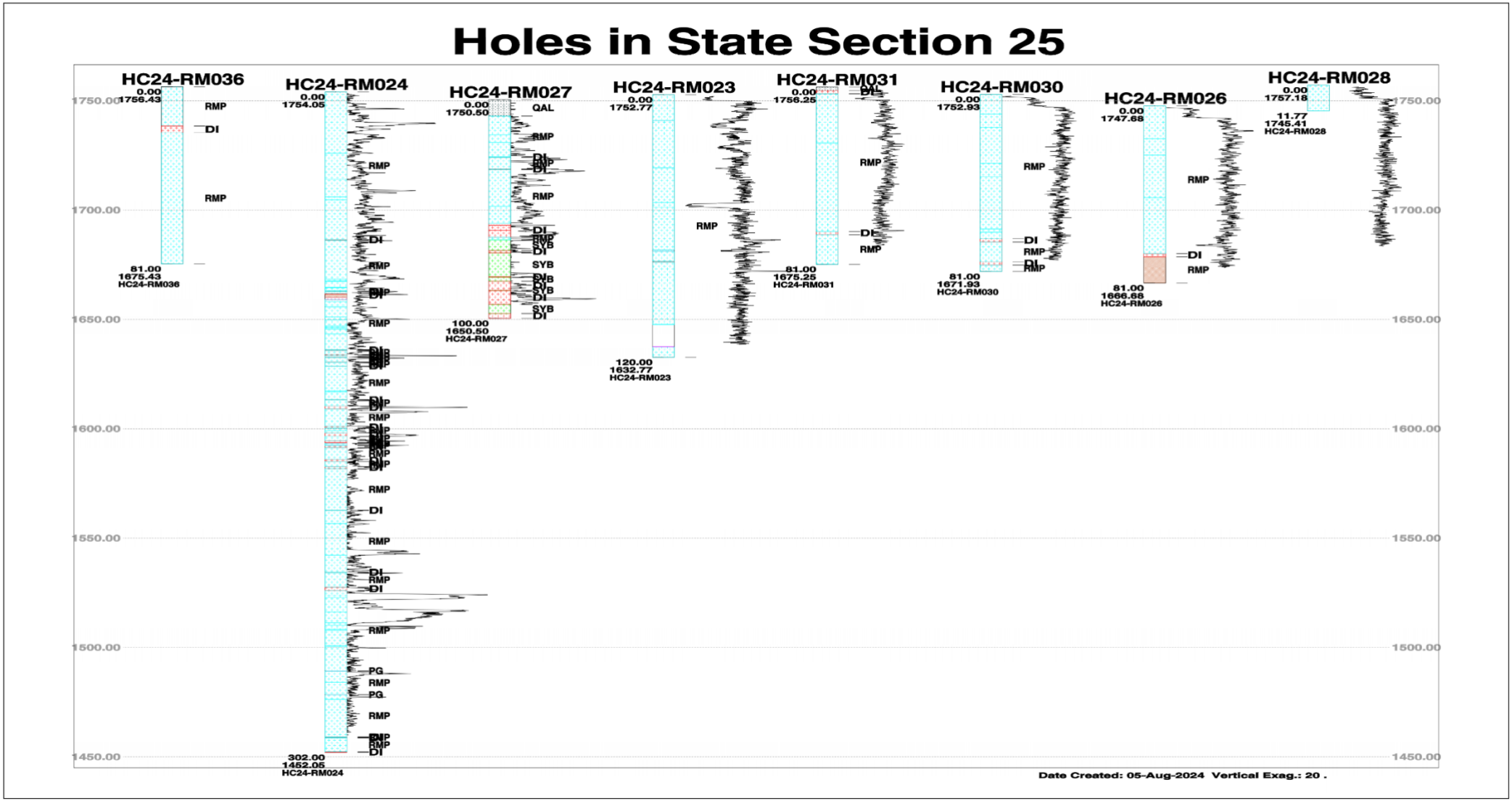

Figure 4 – Fence Diagram of 2024 Holes in the SE Corner of Section 25

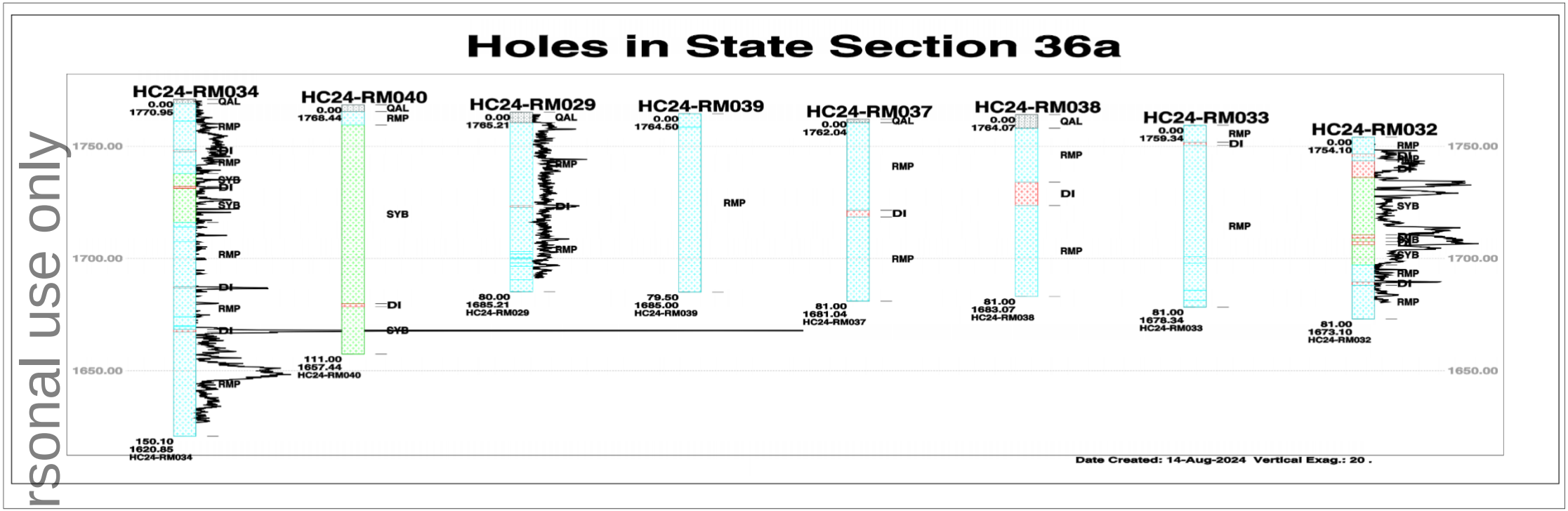

Figure 5 – Fence Diagram 1 of 2024 Holes in Section 36

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Holes in State Section 36b

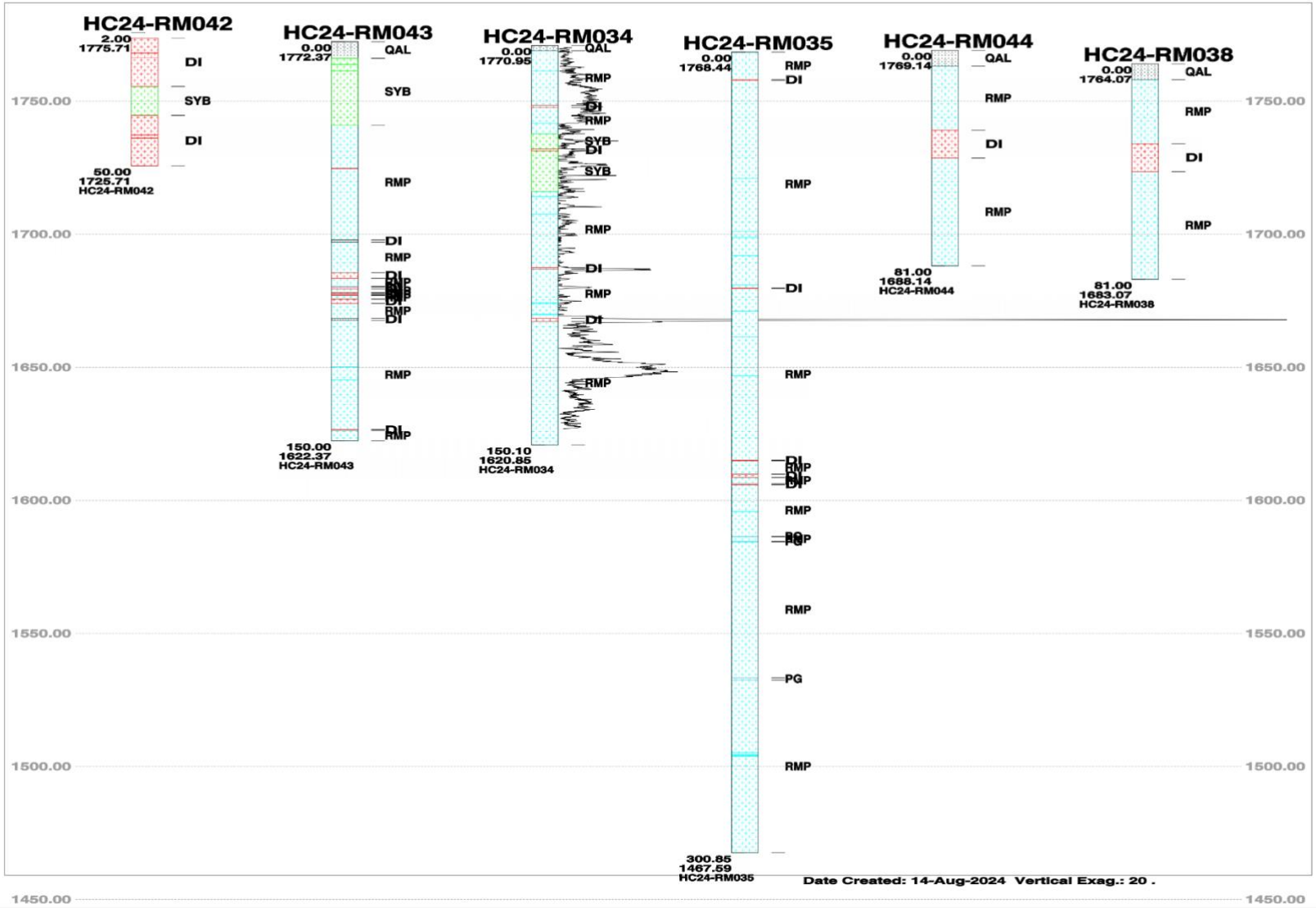

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Figure 6 – Fence Diagram 2 of 2024 Holes in Section 36

APPENDIX A – JORC TABLE 1

Section 1 Sampling Techniques and Data		
(Criteria in this section apply to all succeeding sections.)		
Criteria	***JORC Code explanation***	**Commentary**
Sampling techniques	*Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*	WRI drilled 23 drill holes in the Cowboy State Mine area. 11 HQ holes completed with a total length of 1,585 meters (5,309 feet). 672 core samples have been collected, logged and shipped to ALS global for splitting and assay. 12 reverse circulation holes completed with a total length of 1,031 metres (3,381 feet). 689 RC samples were collected, logged and shipped to ALS global for assay.
	Include reference to measures taken to ensure sample represe6ntivity and the appropriate calibration of any measurement tools or systems used.	RC samples were collected every 1.5 meters. Core samples were collected every 3 meters, or at lithological contacts observed in core.
	Aspects of the determination of mineralisation that are Material to the Public Report.	The Red Mountain Pluton (RMP) of the Halleck Creek Rare Earths Project is a distinctly layered monzonitic to syenitic body which exhibits significant and widespread REE enrichment. Enrichment is dependent on allanite abundance, a sorosilicate of the epidote group. Allanite occurs in all three units of the RMP, the clinopyroxene quartz monzonite, the biotite-hornblende quartz syenite, and the fayalite monzonite, in variable abundances.
	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.	RC samples were collected using a rotary splitter to prepare three samples across each 1.5 meter interval. Each sample was logged by geologists and given a unique sample ID and prepared for assay Core samples were logged in detail by geologists for lithology, alteration and geotechnical attributes. Homogenous lithology was

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	Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	broken into 3m samples. Shorter samples were collected at lithologic contacts observed in core.
Drilling techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or another type, whether the core is oriented and if so, by what method, etc.).*	WRI drilled 12 reverse circulation drill holes with samples collected using a rotary splitter. WRI drilled 11 HQ core holes. Angle holes were oriented
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Core recoveries were calculated by WRI geologists.
	Measures are taken to maximise sample recovery and ensure the representative nature of the samples.	Core recoveries were calculated by WRI geologists.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	There is not a relationship between sample recovery and sample bias. Allanite occurs as phenocrysts in a plutonic body.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	All rock samples were geologically and geotechnically logged WRI geologists familiar with the deposit. Lithology, alteration, geotechnical parameters were recorded for each sample.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging of rock samples are quantitative adhering to methods established by WRI.
	The total length and percentage of the relevant intersections logged.	Rare earth mineralization occurs across the rocks of the RMP. All lengths of RMP material are relevant.

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Criteria	***JORC Code explanation***	**Commentary**
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	ALS global is slitting the core into two halves.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC samples were collected using a rotary splitter into three samples.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	All core samples were dry. Sample preparation: 1kg samples split to 250g for pulverising to -75 microns. Sample analysis: 0.5g charge assayed by ICP-MS technique.
	Quality control procedures adopted for all sub-sampling stages to maximise the representivity of samples.	WRI geologists added blanks, CRM and identified duplicate samples across each drill hole using establish company standards.
	Measures are taken to ensure that the sampling is representative of the in situ material collected, including, for instance, results for field duplicate/second-half sampling.	WRI geologists added blanks, CRM and identified duplicate samples across each drill hole using establish company standards.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Allanite is generally well distributed across the core and the sample sizes are representative of the fine grain size of the Allanite.
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.*	ALS uses a 5-acid digestion and 32 elements by lithium borate fusion and ICP-MS (ME-MS71h). For quantitative results of all elements, including those encapsulated in resistive minerals. These assays include all rare earth elements.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument	XRF readings were collected for qualitative indications in the field. XRF was not used for quantitative purposes.

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	make and model, reading times, calibrations factors applied and their derivation, etc.	
	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.	WRI geologists added blanks, CRM and identified duplicate samples across each drill hole using establish company standards.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Surface samples have not yet been verified by independent personnel.
	The use of twinned holes.	n/a
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Data entry was performed by ARR personnel and checked by ARR geologists. All field logs were scanned and uploaded to company file servers. All photographs were also uploaded to the file server daily. All scanned documents are cross-referenced and directly available from the database. Assay data from the surface samples was imported into the database directly from electronic spreadsheets sent to ARR from ALS.
	Discuss any adjustment to assay data.	Assay data is stored in the database in elemental form. Reporting of oxide values are calculated in the database using the molar mass of the element and the oxide.
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.*	Preliminary drill hole locations were determined using handheld GPS units. Final drill hole location will be surveyed by a professional land surveyor.
	Specification of the grid system used.	The grid system used to compile data was NAD83 Zone 13N.
	Quality and adequacy of topographic control.	Topography control is +/- 10 ft (3 m).

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Criteria	***JORC Code explanation***	**Commentary**
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	Drill hole locations vary between 100 and 300 meters.
	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.	Geostatistical analysis of previous drilling data indicates that the drill hole spaced defined for the 2024 program is appropriate for minor resource and reserve estimation procedures.
	Whether sample compositing has been applied.	Composite have not been applied.
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.*	Mineralization at Halleck Creek is a function of fractional crystallization of allanite in syenitic rocks of the Red Mountain Pluton. Mineralization is not structurally controlled and exploration drilling to date does not reveal any preferential mineralization related to geologic structures.
	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.	n/a
Sample security	*The measures are taken to ensure sample security.*	All samples were in the direct control of company geologists until dispatched to ALS Global. Transport to ALS is handling using licenced and bonded carriers.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No external audits or reviews have been conducted to date. However, sampling techniques are consistent with industry standards.

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Section 2 Reporting of Exploration Results		
(Criteria listed in the preceding section also apply to this section.)		
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.*	ARR controls 365 unpatented federal lode claims and 4 Wyoming State mineral licenses covering 8,124 acres (3,288 ha).
	The security of the tenure held at the time of reporting and any known impediments to obtaining a licence to operate in the area.	No impediments to holding the claims exist. To maintain the claims an annual holding fee of $165/claim is payable to the BLM. To maintain the State leases minimum rental payments of $1/acre for 1-5 years; $2/acre for 6-10 years; and $3/acre if held for 10 years or longer.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Prior to sampling by WIM on behalf of Blackfire Minerals and Zenith there was no previous sampling by any other groups within the ARR claim and Wyoming State Lease blocks.
Geology	*Deposit type, geological setting and style of mineralisation.*	The REE's occur within Allanite which occurs as a variable constituent of the Red Mountain Pluton. The occurrence can be characterised as a disseminated type rare earth deposit.
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:*	Exploration results for this drilling program are still being prepared.
	easting and northing of the drill hole collar	The preliminary locations and orientations of the drill holes are included in the release.
	elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	
	dip and azimuth of the hole	
	downhole 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	n/a

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Section 2 Reporting of Exploration Results		
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Criteria	***JORC Code explanation***	**Commentary**
	understanding of the report, the Competent Person should clearly explain why this is the case.	
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.*	No cut-offs have been applied to the data
	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.	Assays are representative of each sample.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents used.
Relationship between mineralisation widths and intercept lengths	*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 unknown and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	Allanite mineralization observed at Halleck Creek occurs uniformly throughout the CQM and BHS rocks of within the Red Mountain Pluton. Therefore, the geometry of mineralisation does not vary with drill hole orientation or angle within homogeneous rock types.
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.*	Location information is presented the text above
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 practised to avoid misleading reporting of Exploration Results.*	Assays results are pending

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Criteria	***JORC Code explanation***	**Commentary**
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.*	In hand specimen this rock is a red colored, hard and dense granite with areas of localised fracturing. The rock shows significant iron staining and deep weathering. Microscopic description: In hand specimen the samples represent light colored, fairly coarse-grained granitic rock composed of visible secondary iron oxide, amphibole, opaques, clear quartz and pink to white colored feldspar. All of the specimens show moderate to strong weathering and fracturing. Allanite content is variable from trace to 2%. Rare Earths are found within the Allanite. Historical metallurgical testing consisted of concentrating the Allanite by both gravity and magnetic separation. The current program employs sequential high gradient magnetic separation and flotation to produce a concentrate suitable for downstream rare earth elements extraction.
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).*	Further drilling is planned to increase the area of the project, and to increase confidence levels of resources. Geological mapping and surface sampling will also be performed to define and prioritize drilling targets.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Additional drilling is planned in new exploration areas and to increase resource confidence levels.