November 1, 2023

2023 Development Drilling Program Successfully Completed at Halleck Creek

American Rare Earths **(ASX: ARR | ADRs - OTCQX: AMRRY | Common Shares - OTCQB: ARRNF| FSE:1BHA) ("ARR" or the "Company")** announces the successful completion of the development drilling program at its flagship Halleck Creek project. The Halleck Creek project was previously announced to be a 1.43 billion tonne JORC resource[1], making it potentially the largest strategic rare earth project in the United States**.**

Highlights

- The program, totaling 2,389 metres (23 holes), has been completed on schedule with assay results expected in December 2023.
- High grade zones identified, with XRF grades observed up to 8,875 ppm. All drillholes in the program confirmed enriched rare earth mineralisation and de minimis levels of uranium and thorium (Appendix C).
- The Company announced on 3 October 2023 enriched mineralisation to be present to at least a depth of 300 metres (an increase of 178% over previous drilling), indicating the resource may be much larger than previously expected. Only 25% of the deposit has been drilled, and the deposit remains open at depth and width.
- Following receipt of its assay results the Company plans to upgrade its previously announced JORC resource.
- Two tonnes of core material obtained during the program is being shipped to the Company's partner laboratories to assess and quantify metallurgical characteristics through the proposed hydrometallurgical facility.

The drilling program focused on confirming high-grade mineable area(s) to define a significant volume of measured and indicated resources, which is necessary for resource reporting requirements and can provide greater confidence as the Company refines its future strategy at Halleck Creek. Core material obtained from this drilling program will be used to further refine the flowsheet design and inform cost estimates for use in a Preliminary Economic Analysis (PEA), building upon the recently announced positive metallurgical tests[2].

"This drilling campaign was an important initial step on our development path," said Donald Swartz, Chief Executive Officer of American Rare Earths. "Our next steps are to ship the core material we have extracted to laboratories. Concentrate will be prepared, then dispatched to several downstream testing facilities to continue de-risking the project utilising our low-cost processing technology. I'd like to thank our geologists and technical staff for their strong execution managing this exploration program, which was completed on schedule and within budget."

This market announcement has been authorised for release to the market by the CEO of American Rare Earths.

1. ASX announcement March 30, 2023
2. ASX announcement October 19, 2023

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Technical Summary

During the drilling program, the Company completed 15 Reverse Circulation (RC) holes and 8 diamond core holes (please refer to Table 1, Table 2, Figure 1, and Figure 2). The Company drilled a total of 2,388.5 metres (5,828.41 feet) at 100 m resolution at the Overton Mountain Area. Drilling was conducted in partnership with FTE Drilling. The final 1,730 samples have been shipped to ALS Global Laboratories for assay.

Table 1 - Drill hole information for diamond core holes

DHID	Easting	Northing	Elevation (m)	Elevation (ft)	TD (m)	TD (ft)	Azimuth	Dip	Recovery	Samples Collected
HC23-OM026	475305.35	4635160.42	1748.41	5736.25	80	262.5	-	-90	82.34 %	58
HC23-OM027	475496.04	4635176.41	1735.72	5694.62	80	262.5	-	-90	80.11 %	60
HC23-OM028	475478.09	4635315.26	1736.04	5695.67	302	990.8	-	-90	97.53 %	239
HC23-OM030	475801.08	4635042.52	1724.43	5657.58	80	262.5	-	-90	89.45 %	65
HC23-OM032	475689.89	4635123.68	1727.44	5667.45	76.5	251.0	-	-90	88.75 %	57
HC23-OM034	475631.38	4635368.47	1732.10	5682.74	80	262.4	-	-90	92.26 %	60
HC23-OM037	475571.57	4635494.25	1739.84	5708.14	80	262.5	-	-90	92.44 %	61
HC23-OM039	475369.32	4635444.09	1740.25	5709.48	80	262.5	-	-90	92.51 %	57

Table 2 - Drill hole information for RC holes

DHID	Easting	Northing	Elevation (m)	Elevation (ft)	TD (m)	TD (ft)	Azimuth	Dip	Samples Collected
HC23-OM029	475358.943	4635080.740	1739.58	5707.28	102	334.65	-	-90	71
HC23-OM031	475449.852	4635090.641	1735.33	5693.34	102	334.65	180	-65	72
HC23-OM033	475397.094	4635169.653	1742.25	5716.04	102	334.65	-	-90	71
HC23-OM035	475561.243	4635120.125	1732.63	5684.48	102	334.65	-	-90	72
HC23-OM036	475445.436	4635254.200	1738.68	5704.33	102	334.65	-	-90	71
HC23-OM038	475382.270	4635322.922	1739.22	5706.10	102	334.65	270	-65	72
HC23-OM040	475617.668	4635190.434	1731.44	5680.58	102	334.65	-	-90	72
HC23-OM041	475633.200	4635291.194	1733.19	5686.32	102	334.65	-	-90	71
HC23-OM042	475710.326	4635348.776	1729.65	5674.70	102	334.65	70	-65	72
HC23-OM043	475538.055	4635376.234	1733.76	5688.19	102	334.65	-	-90	71
HC23-OM044	475450.749	4635399.295	1736.42	5696.92	102	334.65	-	-90	72
HC23-OM045	475529.030	4635454.429	1736.00	5695.54	102	334.65	-	-90	71
HC23-OM046	475443.095	4635489.809	1741.61	5713.94	102	334.65	-	-90	72
HC23-OM047	475371.842	4635571.217	1744.79	5724.38	102	334.65	-	-90	72
HC23-OM048	475295.002	4635500.425	1745.02	5725.13	102	334.65	270	-65	71

Geological data collected at site show that the Red Mountain Pluton, the ore bearing unit, comprises between 88%-100% across all drill holes completed during the Fall 2023 program. This is supported by robust handheld XRF values, which can be observed in Appendix A and Appendix B. Furthermore, one deep core hole was drilled to 302 metres (990.81 feet) and shows that mineralisation remains open at depth (please refer to Table 3).

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Table 3 - Select XRF Values from 302 m hole

DHID	Depth (m)	Depth (ft)	Lithology	4 Element Total	3 Reading Average			
					Ce	La	Nd	Pr
HC23-OM028	20	65.62	RMP	**3047**	1406	711	646	284
HC23-OM028	80	262.47	RMP	**6650**	3063	1573	1507	507
HC23-OM028	100	328.08	RMP	**4191**	1802	1004	1007	378
HC23-OM028	120	393.70	RMP	**5185**	2422	1281	1173	309
HC23-OM028	140	459.32	RMP	**3532**	1622	832	840	238
HC23-OM028	206	675.85	RMP	**3449**	1589	826	770	264
HC23-OM028	227	744.75	RMP	**3092**	1371	734	734	253
HC23-OM028	240	787.40	RMP	**4284**	1859	992	858	575
HC23-OM028	302	990.81	RMP	**3605**	1524	770	848	464

During the program, the Company conducted detailed geotechnical logging of core, and selected various core samples to be sent to WSP to undergo Uniaxial Compressive Strength testing, Triaxial Compressive Strength testing, and Brazilian tensile strength testing. The geotechnical logging was complemented by acoustic televiewer (ATV)/ optical televiewer (OTV) logging. Geotechnical logging, geomechanical testing, and ATV/OTV logging will aid in future pit design. Core holes also received slim hole induction which surveys natural gamma and conductivity/resistivity.

The Company is finalising drill hole logging and geological interpretation. Data from this program will be incorporated into the Company's existing geological model in hopes to publish an updated measured resource at the Overton Mountain project area.

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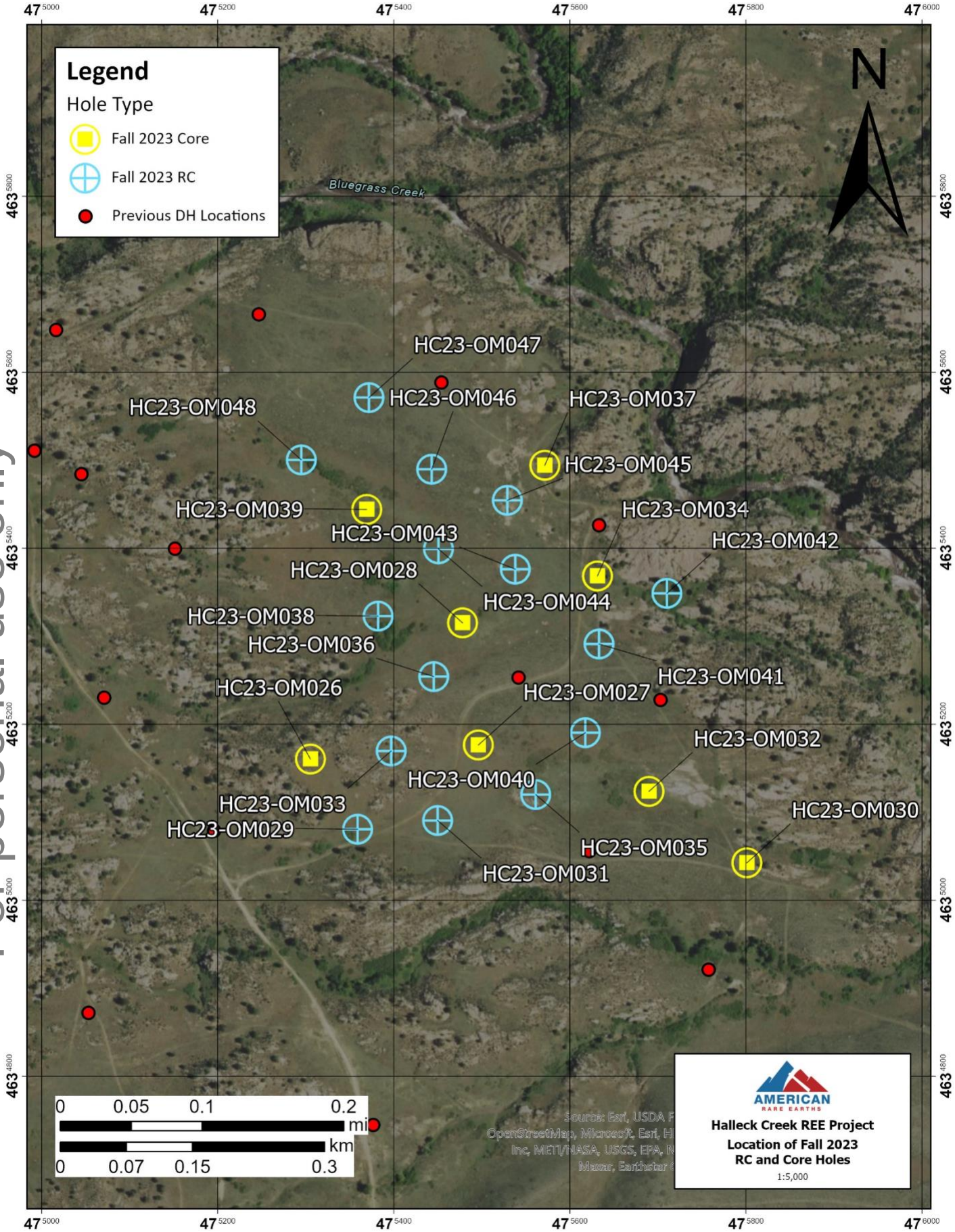

Figure 1 - Locations of drill holes from Fall 2023 campaign

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 | ADRs - OTCQX: AMRRY | Common Shares - OTCQB: ARRNF| FSE:1BHA) owns the Halleck Creek, WY and La Paz, AZ rare earth deposits which have the potential to become the largest and most sustainable rare earth projects in North America. American Rare Earths 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 rare earth elements to help ensure a renewable future.

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Appendix A – JORC Table

JORC Code, 2012 Edition – Table 1 Halleck Creek Exploration Area		
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.*	ARR drilled 15 reverse circulation (RC) holes and eight HQ-sized diamond core holes between September and October 2023. All RC holes were 102 meters (334.65 feet) deep, with seven core holes at 80 meters (262.47 feet) and one deep core hole at 302 m (990.81 feet). RC chip samples were collected at a 1.5-meter (4.92 ft) continuous interval via rotary splitter. Rock core was divided into sample lengths of 1.5 m (4.92 feet) long and at key lithological breaks. ARR drilled 38 reverse circulation (RC) holes across the Halleck Creek Resource Claim area between October and December 2022. All holes were approximately 150 meters (492.13 feet) deep, with the exception of HC22-RM015 which went to a depth of 175.5 meters (576 feet). Chip samples were collected at 1.5-meter continuous intervals via rotary splitter. In March and April 2022, ARR drilled nine HQ-sized core holes across the Halleck Creek Resource claim area. All holes were approximately 350 ft, with the exception of one hole which was terminated at 194 ft. Total drilled length of 3,008 ft (917 m). Rock core was divided into sample lengths of 5 ft (1.52 m) long and at key lithological breaks. A total of 734 surface rock samples exist in the Halleck Creek database. Surface rock samples collected by ARR are logged, photographed and located using handheld GPS units.

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		As part of reverse circulation (RC) and diamond core exploration drilling at Halleck Creek, ARR collected XRF readings on RC chip and core samples. Elements included in XRF measurements include: Lanthanum, Cerium, Neodymium, and Praseodymium. ARR collected three XRF readings on each sample, then averaged the readings. Readings are performed at 20-meter intervals down each drill hole. These values are qualitative in nature and provide only rough indications of grade.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For the April 2022 core drilling program, core recoveries and RQDs were calculated by ARR field geologists. The same was done for the Fall 2023 program with the addition of detailed geotechnical logging.
	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. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	Reverse circulation rock chip samples were collected at 1.5-meter continuous intervals via rotary splitter. For each interval chip samples were placed in labelled sample bags weighing between 1-2kg. A 0.5-1kg sample was collected for reserve analysis and logging. Chip samples were also placed into chip trays with 20 slots for logging and XRF analysis.
		RC chip samples for the 2023 program were sent to ALS labs in Twin Falls, ID for preparation and forwarded on to ALS labs in Vancouver, BC for ICP-MS analysis. ALS analysis: ME-MS81. Core samples for the 2023 program were first sent to ALS in Reno, NV, for cutting and preparation, and also sent to Vancouver, BC for the same suite of test work.

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		For the 2022 program rock core samples 5 ft (1.52 m) long are fillet cut. The fillet cuts are being pulverised and sampled for 60 elements including rare earth elements using ICP-MS and industry standards. A select number of samples are additionally being assayed for whole rock geochemistry. American Assay Labs in Sparks, NV is performed the analyses for the Spring 2022 program, and ALS Laboratories in BC, Canada.
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.).*	A Schraam T-450 reverse circulation drill rig was used to drill all 15 RC drill holes from the Fall 2023 program. A continuous rotary sample splitter was used to collect the RC samples at 1.5m intervals. Total drilled depth of 3,011.81 ft (1,530 m). Core, fall 2023: HQ, diamond tip, 5 ft (1.52 m) runs, unoriented. Total drilled depth of 2,816.60 ft (858.5 m).
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	A continuous rotary sample splitter was used to collect the RC samples at 1.5m intervals. All drill core was visually logged, measured, and photographed by ARR geologists. Drill core was collected in lengths (runs) of 5 ft (1.52 m). Recoveries were calculated for each core run. Each rock sample was described, photographed with its location determined using handheld GPS.
	Measures are taken to maximise sample recovery and ensure the representative nature of the samples.	Reverse circulation rock chip samples were collected at 1.5-meter continuous intervals via rotary splitter. For each interval chip samples were placed in labelled sample bags weighing between 1-2kg. A 0.5-1kg sample was collected for reserve analysis and logging. Chip samples were also placed into chip trays with 20 slots for logging and XRF analysis. All core and associated samples were immediately placed in core boxes.
	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.	Recoveries were very high in competent rock. No loss or gain of grade or grade bias related to recovery

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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 RC samples were visually logged by ARR geologists from chip trays using 10x binocular microscopes. Samples at 25m intervals were photos and analysed using an Olympus Vanta handheld XRF analyser in triplicate. Lanthanum, Cerium, Neodymium, and Praseodymium were analysed via XRF. All drill core was visually logged, measured, and photographed by ARR geologists. Drill core was collected in lengths (runs) of 5 feet (1.52m). ARR geologists calculated recoveries for each core run. ARR geologists logged lithology, various types of alteration and mineralisation, fractures, fracture conditions, and RQD.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	RC samples and logging is quantitative in nature. Chip samples are stored in secure sample trays. Chip samples were photographed and 25m intervals. Core logging is quantitative in nature. All core was photographed.
	The total length and percentage of the relevant intersections logged.	All RC samples were visually logged by ARR geologists for each 1.5-meter continuous sample. All drill core was visually logged, measured, and photographed by ARR geologists. Drill core was collected in lengths (runs) of 5 feet (1.52m). ARR geologists calculated recoveries for each core run. ARR geologists logged lithology, various types of alteration and mineralisation, fractures, fracture conditions, and RQD.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	RC chip samples were not cut. Drill core was fillet cut by ALS Laboratories with approximately 1/2 of the core used for assay. The remaining core material will be kept in reserve by ALS until sent for future metallurgical test work.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Samples varied between wet and dry. The course crystalline nature of the deposit minimizes adverse effects of wet samples. Samples were rotary split during drilling and sample collection. ALS labs dried wet samples using their DRY-21 drying process.

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	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	RC samples were taken from pulverize splits of up to 250 g to better than 85 % passing minus 75 microns. 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. Both sampling methods are considered appropriate for the type of material collected and are considered industry standard.
	Quality control procedures adopted for all sub-sampling stages to maximise the representivity of samples.	ARR submitted CRM sample blanks, CRM standard REE samples from CND Labs and duplicate samples for analysis. Each CRM blank, REE standard, and duplicate were rotated into both the RC and core sampling process every 20 samples.
	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.	RC samples were collected using a continuous feed rotary split sampler. Fillet cuts along the entire length of all core are representative of the in-situ material.
	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-MS81). For quantitative results of all elements, including those encapsulated in resistive minerals. These assays include all rare earth elements. AAL Labs uses 5-acid digestion and 48 element analysis including REE reported in ppm using method REE-5AO48 and whole-rock geochemical XRF analysis using method X-LIB15.
	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.	Samples at 20m intervals were photographed and analysed using an Olympus Vanta handheld XRF analyser in triplicate. Lanthanum, Cerium, Neodymium, and Praseodymium were analysed. Simple average values of three XRF readings were calculated.

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		Seven of the core holes received ATV/OTV logging as well as slim hole induction which recorded natural gamma and conductivity/resistivity. All geophysical logging was completed by Century Geophysical located in Gillette, WY. All tools were properly calibrated prior to logging.
	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.	For the RC drilling, ARR submitted CRM sample blanks, CRM standard REE samples from CND Labs and duplicate samples for analysis. CRM and Blank samples were inserted alternately at 20 sample intervals. The same was done for the core drilling completed Fall 2023. ALS Laboratories will additionally incorporate their own Qa/Qc procedure. For core drilling completed Spring 2022, ARR submitted CRM sample blanks, CRM standard REE samples from CND Labs and duplicate samples for analysis. Blank samples were added one for every 10 core samples, REE samples were added one for every 25 core samples, and Duplicate samples were added one per every 25 core samples. Internal laboratory blanks and standards will additionally be inserted during analysis.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	RC chip samples have not yet been verified by independent personnel. Consulting company personnel have observed the assayed core samples. Company personnel sampled the entire length of each hole.
	The use of twinned holes.	No twinned holes were used.
	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 of the core were also uploaded to the file server daily. Drilling data will be imported into the DHDB drill hole database. All scanned documents are cross-referenced and directly available from the database. Assay data from the RC samples was imported into the database directly from electronic spreadsheets sent to ARR from ALS.

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		Core assay data was received electronically from AAL labs. These raw data as elements reported ppm were imported into the database with no adjustments.
	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.*	RC drill holes have been located using handheld GPS units. Final surveys of hole locations will be performed by professional surveyors. Drill hole location is based on GPS coordinates +/- 10 ft (3 m) accuracy.
	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).
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The Fall 2023 program included drill hole spacing at approximate 100 m resolution. For previous programs, holes were both randomly spaced and localised clustering of drillholes.
	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.	Data from the Fall 2023 program will be at a high enough resolution to provide a measured resource at the Overton Mountain project area.
	Whether sample compositing has been applied.	Each sample is the result of assaying a 5 ft interval of core or 1.5 m RC interval.
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. Therefore, orientation of drilling does not bias sampling.

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	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.	Orientation of drilling does not bias sampling.
Sample security	*The measures are taken to ensure sample security.*	All RC chip samples were collected from the drill rigs and stored in a secured, locked facility. Sample pallets were shipped weekly, by bonded carrier, directly to ALS labs in Twin Falls, ID. Chains of custody were maintained at all times. All core was collected from the drill rig daily and stored in a secure, locked facility until the core was dispatched by bonded courier to ALS Laboratories. Chains of custody were maintained at all times. All rock samples were in the direct control of company geologists until dispatched to American Assay Labs.
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 acquired 5 unpatented federal lode claims on BLM US Federal Land totalling 71.6 acres (29 has) from Zenith Minerals, Ltd (Zenith). in 2021. 67 unpatented federal lode claims were staked by ARR that totalled 1193.3 acres (482 ha) in summer 2021. ARR staked 182 unpatented federal lode claims in March 2022 covering an area of approximately 3,088 acres (1,250 ha). ARR staked 118 unpatented federal lode claims in November 2022 covering an area of approximately 2,113 acres (855 ha). As of September 30, 2023, ARR controlled 367 unpatented federal lode claims and 4 Wyoming State mineral licenses covering 8,165 acres (3,304 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 of 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:*	For the Fall 2023 program, FTE DRILLING USA INC. of Mount Uniacke, Nova Scotia used a Schraam T-450 track mounted rig to drill 15 reverse circulation drill holes. Drill hole depths for 37 holes was 102 m. FTE also utilized an enclosed Versa-Drilling diamond core rig to drill eight HQ-sized core holes.

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		For the Fall 2022 program, FTE DRILLING USA INC. of Mount Uniacke, Nova Scotia used a Schraam T-450 track mounted rig to drill 37 reverse circulation drill holes. Drill hole depths for 37 holes was 150m and one hole at 175.5m Authentic Drilling from Kiowa, Colorado used both a track mounted and ATV mounted core rig to drill nine HQ diameter core holes. From March to April 2022, ARR drilled nine core holes across the Halleck Creek claim area. Drill holes ranged in depth from 194 to 352.5 ft with a total drilled length of 3,008 ft (917 m).
	easting and northing of the drill hole collar	Drilling information from the Fall 2022 drilling campaign is presented in detail in the "Technical Report of Exploration and Maiden Resource Estimates of the Halleck Creek Rare Earths Project", March 2023. Drilling information from the Fall 2023 campaign will be published in an updated, upcoming report. Drill hole locations and XRF data are included in this 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 understanding of the report, the Competent Person should clearly explain why this is the case.	No Drilling data has been excluded.
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.*	Average Grade values were cut at minimum of TREO 1,500 ppm.
	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 5 ft (1.52 m) sample interval.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents used.

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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 in detail in the "Technical Report of Exploration and Maiden Resource Estimates of the Halleck Creek Rare Earths Project", March 2023
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.*	The latest exploration results reported in "Mapping and Surface Sampling Summary at the Halleck Creek Project Area: April 2022". All relevant information for this section can be found in Table 1 in the "Technical Report of Exploration and Maiden Resource Estimates of the Halleck Creek Rare Earths Project", March 2023
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.

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Section 3 Estimation and Reporting of Mineral Resources		
(Criteria listed in the preceding section also apply to this section.)		
Criteria	***JORC Code explanation***	**Commentary**
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	Drill hole data header, lithologic data checked by field geologists and by visual examination on maps and drill hole striplogs. Assay and Qa/Qc data were imported into the database directly from electronic spreadsheets provide by laboratories. Histograms graphical logs were also prepared and reviewed by ARR geologists.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	Mr. Dwight Kinnes visited the Halleck Creek site during the RC and core drilling projects. Mr. Jim Guilinger has not visited the site during the RC and core drilling projects. ARR will facilitate a site visit during the 2023 calendar year. Mr. Alf Gilman has not visited the site during the RC and core drilling projects. Mr. Gilman resides in Perth, Western Australia. Site visits to the project have so far been logistically difficult and very expensive.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	The Halleck Creek RE deposit is contained with rocks of the Red Mountain Pluton. These rocks consist primarily of clinopyroxene quartz monzonite (CQM), and biotite hornblende syenite (BHS). These two lithologies are difficult to visually distinguish. However, the concentration of rare earth elements is observable between lithologies. Rocks of the Elmers Rock Greenstone Belt (ERGB) and the Sybille (Syb) intrusion are easily distinguishable from rocks of the RMP. These rock units are essentially barren of rare earth elements. Therefore, the confidence in discerning rocks of the RMP from is high. The extent of the RMP relative to other units was outlined into modelling domains used for resource estimates.

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		The distribution of allanite throughout CQM and BHS rocks of the RMP is generally uniform and is not structurally controlled. Potassic alternation observed does not appear to affect the grade of allanite throughout the deposit.
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The Halleck Creek REE project currently contains two primary resource areas: the Red Mountain area and the Overton Mountain area. Resources also extend into the Bluegrass resource area. The Red Mountain resource area is bounded to the west by the ERGB, and to the south by the Syb. Further exploration is needed to determine the extent to the north and two the east. RC samples with TREO grades exceeding 1,500 ppm occurred at the base of 37 drill holes in the Red Mountain resource area extending down to depths of 150m with one hole extending to a depth of 175.5m. Therefore, ARR considers the Red Mountain resource area to be open at depth. The Overton Mountain resource area is bounded to the west by mineral claims, and therefore, remains open to the west. Lower grade BHS rocks occur at the northern end of Overton Mountain. Drilling data to the east and south indicate that the Overton Mountain resource area remains open across Bluegrass Creek. Like the Red Mountain drilling, RC samples at Overton Mountain contained TREO assay values exceeding 3,500 ppm to depths of 150m in 18 holes. Therefore, ARR considers the Overton Mountain resource area to be open at depth.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	Relevant information is presented in detail in the "Technical Report of Exploration and Maiden Resource Estimates of the Halleck Creek Rare Earths Project", March 2023

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	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages are based on dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Currently a subjective cut-off grade of 1,500 ppm TREO was applied to reported resource estimates. Ongoing metallurgical testwork and upcoming conceptual planning will provide input to determine a net smelter return.
Mining factors or assumptions	*Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be*	No mine plan or design has been prepared at this stage however the shallow nature of the deposit assumes extraction by open pit mining methods.

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	reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	ARR is performing preliminary metallurgical test work at Halleck Creek. These results have been reported previously[2].
Environmental factors or assumptions	*Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	ARR is in the process of outlining environmental, social, and community impacts regarding the potential development of the project. These impacts are being included in conceptual designs of all facets of the project.
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	An average specific gravity of 2.70 represents the in-place ore material at Halleck Creek based on hydrostatic testing.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The basis of classification of mineral resources was based on geostatistical analysis of variograms of rare earth elements. The variographic results showed a resource boundary based on 90% of

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	Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). *Whether the result appropriately reflects the Competent Person's view of the deposit.*	sill range of approximately 325-meters is applicable at Halleck Creek. These results do reflect the CP's view of the project.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	There have not been any audits of mineral resource estimates.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	Reported resources for Halleck Creek are in-place global estimates of tonnage and rare earth grade. The basis of classification of mineral resources was based on geostatistical analysis of variograms of rare earth elements. Within the confines of the available data resource estimates should be accurate for a maiden resource estimate.

Appendix B – Diamond Core XRF Readings*

*Please note that XRF readings from core are an average of three analyses and are subject to extreme bias.

DHID	Depth (m)	Lithology	4 Element Total	3 Reading Average			
				Ce	La	Nd	Pr
HC23-OM027	8.5	RMP	1135	495	231	360	50
HC23-OM027	20	RMP	2066	955	502	482	128
HC23-OM027	40	RMP	4133	1918	1042	950	223
HC23-OM027	60	RMP	7193	3365	1814	1618	397
HC23-OM027	80	RMP	7832	3769	2038	1632	394
HC23-OM028	5	RMP	1688	826	343	519	
HC23-OM028	20	RMP	3047	1406	711	646	284
HC23-OM028	40	RMP	1227	574	331	322	
HC23-OM028	60	RMP	1586	789	419	378	
HC23-OM028	80	RMP	6650	3063	1573	1507	507
HC23-OM028	100	RMP	4191	1802	1004	1007	378
HC23-OM028	120	RMP	5185	2422	1281	1173	309
HC23-OM028	140	RMP	3532	1622	832	840	238
HC23-OM028	150	RMP	2812	1239	634	692	247
HC23-OM028	170	RMP	1844	879	458	506	
HC23-OM028	206	RMP	3449	1589	826	770	264
HC23-OM028	219	RMP	2359	1050	577	523	209
HC23-OM028	221	Granite	275	83	55	137	
HC23-OM028	227	RMP	3092	1371	734	734	253
HC23-OM028	240	RMP	4284	1859	992	858	575
HC23-OM028	260	RMP	2477	1033	532	462	451
HC23-OM028	278	RMP	1502	595	334	391	182
HC23-OM028	284	RMP	620	123	247	251	
HC23-OM028	302	RMP	3605	1524	770	848	464
HC23-OM030	2.5	RMP	3609	1537	852	763	456
HC23-OM030	20	RMP	1488	664	348	314	162
HC23-OM030	40	RMP	1755	741	380	432	202
HC23-OM030	60	RMP	5004	2236	1139	974	654
HC23-OM030	80	RMP	4672	2130	1115	1034	393
HC23-OM032	20	RMP	3879	1614	890	804	571
HC23-OM032	40	RMP	4073	1837	977	911	349
HC23-OM032	60	RMP	961	473	251	237	
HC23-OM032	76.5	RMP	5560	2504	1217	1202	637
HC23-OM034	3.88	RMP	1257	523	307	427	
HC23-OM034	20	RMP	1391	573	296	347	175
HC23-OM034	40	RMP	1502	541	310	455	196
HC23-OM034	59	RMP	1601	684	290	436	191
HC23-OM034	80	RMP	3185	1421	769	826	169
HC23-OM037	3	RMP	3376	794	1410	332	840
HC23-OM037	20	RMP	5150	1214	2605	252	1079
HC23-OM037	40	RMP	3588	815	1650	291	832
HC23-OM037	60	RMP	15165	3892	7063	1236	2975
HC23-OM037	77.91	RMP	7018	1682	3334	405	1597
HC23-OM037	80	RMP	1287	227	499	170	391

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Appendix C – Diamond Core XRF Readings*

*Please note that XRF readings from RC samples are an average of three analyses and are subject to bias. All RC samples were passed through 180 µm for homogeneity and received strict Qa/Qc analysis.

DHID	Depth	Lithology	4 Element Total	3 Reading Average					
				Ce	La	Nd	Pr	U	Th
HC23-OM029	0-1.5	RMP	345	172	84	89		11	42
HC23-OM029	19.5-21	RMP	2461	1186	586	550	139	12	62
HC23-OM029	39-40.5	RMP	5812	2796	1398	1295	323	22	129
HC23-OM029	58.5-60	RMP	2490	1232	636	494	128	14	66
HC23-OM029	79.5-80	RMP	4567	2203	1110	988	266	10	86
HC23-OM029	99-100.5	RMP	4640	2264	1116	1015	245	11	86
HC23-OM031	0-1.5	RMP	95	66	29			10	47
HC23-OM031	19.5-21	RMP	1465	681	316	334	134	13	65
HC23-OM031	39-40.5	RMP	2316	1115	574	506	121	12	64
HC23-OM031	60-61.5	RMP	2332	1157	576	468	132	12	68
HC23-OM031	79.5-81	RMP	1937	924	482	422	109	6	38
HC23-OM031	100.5-102	RMP	1763	848	420	362	132	9	64
HC23-OM033	0-1.5	RMP	567	290	156	121		10	39
HC23-OM033	19.5-21	RMP	2410	1150	644	474	143	10	71
HC23-OM033	40.5-42	RMP	3457	1674	853	722	208	11	82
HC23-OM033	60-61.5	RMP	3042	1476	764	632	170	13	60
HC23-OM033	79.5-81	RMP	2798	1345	697	597	159	10	69
HC23-OM033	100.5-102	RMP	3608	1722	877	803	207	10	72
HC23-OM035	0-1.5	RMP	483	265	107	111		7	39
HC23-OM035	19.5-21	RMP	600	288	125	186		7	39
HC23-OM035	39-40.5	RMP	3096	1494	760	669	173	8	74
HC23-OM035	60-61.5	RMP	3039	1454	727	668	190	11	71
HC23-OM035	79.5-81	RMP	2141	1028	519	457	137	8	49
HC23-OM035	100.5-102	RMP	2042	971	499	437	136	9	41
HC23-OM036	0-1.5	RMP	1998	992	485	422	98	11	54
HC23-OM036	19.5-21	RMP	2937	1386	687	667	197	12	67
HC23-OM036	39-40.5	RMP	3213	1605	803	640	165	8	72
HC23-OM036	60-61.5	RMP	2110	1039	533	414	124	15	72
HC23-OM036	79.5-81	RMP	2557	1264	624	523	147	8	48
HC23-OM036	100.5-102	RMP	3110	1491	752	679	189	11	70
HC23-OM038	0-1.5	RMP	696	370	176	150		16	64
HC23-OM038	19.5-21	RMP	6602	3188	1600	1431	383	12	81
HC23-OM038	39-40.5	RMP	3466	1644	818	773	232	11	45
HC23-OM038	60-61.5	RMP	4487	2151	1088	960	289	11	34
HC23-OM038	79.5-81	RMP	3657	1799	916	779	164	12	73
HC23-OM038	100.5-102	RMP	3569	1723	867	799	181	13	87
HC23-OM040	0-1.5	RMP	434	57	47	331	0	11	124
HC23-OM040	19.5-21	RMP	2184	926	469	613	176	13	72
HC23-OM040	39-40.5	RMP	2463	1320	650	339	154	9	63
HC23-OM040	60-61.5	RMP	1806	773	393	518	121	9	62
HC23-OM040	79.5-81	RMP	2306	1056	555	543	152	7	58
HC23-OM040	100.5-102	RMP	1699	1145	554			6	46
HC23-OM041	0-1.5	RMP	13	13	0	0	0	7	27
HC23-OM041	19.5-21	RMP	2550	1199	599	593	159	6	29
HC23-OM041	39-40.5	RMP	3754	1790	897	858	209	5	52

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HC23-OM041	60-61.5	RMP	1713	805	406	386	116	8	57
HC23-OM041	79.5-81	RMP	2322	1099	556	487	181	10	68
HC23-OM041	100.5-102	RMP	1738	855	422	350	110	8	47
HC23-OM042	0-1.5	RMP	622	341	178	103	0	11	49
HC23-OM042	19.5-21	RMP	2600	1275	655	523	147	11	65
HC23-OM042	39-40.5	RMP	3096	1493	745	686	172	11	69
HC23-OM042	60-61.5	RMP	2840	1369	683	617	171	10	69
HC23-OM042	79.5-81	RMP	2664	1261	656	598	149	14	61
HC23-OM042	100.5-102	RMP	2955	1414	715	651	175	7	49
HC23-OM043	0-1.5	RMP	351	177	97	78		10	40
HC23-OM043	19.5-21	RMP	2295	1135	566	464	130	8	60
HC23-OM043	39-40.5	RMP	2263	1054	563	489	156	9	33
HC23-OM043	60-61.5	RMP	3057	1523	781	624	129	11	74
HC23-OM043	79.5-81	RMP	3115	1537	783	631	165	17	67
HC23-OM043	100.5-102	RMP	2145	1039	532	453	121	10	73
HC23-OM044	0-1.5	RMP	2683	1304	652	581	147	11	61
HC23-OM044	19.5-21	RMP	2780	1351	668	594	167	13	68
HC23-OM044	39-40.5	RMP	8875	4276	2160	1932	507	12	116
HC23-OM044	60-61.5	RMP	7848	3764	1913	1732	440	11	112
HC23-OM044	79.5-81	RMP	2713	1291	653	609	160	12	55
HC23-OM044	100.5-102	RMP	1257	593	295	249	120	9	37
HC23-OM045	0-1.5	RMP	238	112	67	59		10	36
HC23-OM045	19.5-20	RMP	2858	1366	691	621	179	10	45
HC23-OM045	39-40.5	RMP	3475	1661	861	754	200	10	68
HC23-OM045	60-61.6	RMP	3473	1674	842	728	230	12	65
HC23-OM045	79.5-81	RMP	3342	1642	840	696	163	10	70
HC23-OM045	100.5-102	RMP	3266	1554	767	746	198	10	66
HC23-OM046	0-1.5	RMP	122	80	42			8	36
HC23-OM046	19.5-20	RMP	2974	1423	707	665	179	9	64
HC23-OM046	39-40.5	RMP	3664	1756	886	796	226	8	71
HC23-OM046	60-61.6	RMP	3810	1838	935	821	215	9	79
HC23-OM046	79.5-81	RMP	3231	1562	801	691	177	12	70
HC23-OM046	100.5-102	RMP	2537	1229	620	547	141	7	66
HC23-OM047	0-1.5	RMP	59.5	31	28.5			11	33
HC23-OM047	19.5-20	RMP	4143	1961	964	924	294	11	66
HC23-OM047	39-40.5	RMP	3360	1599	773	789	199	7	63
HC23-OM047	60-61.6	RMP	2683	1288	625	605	165	10	58
HC23-OM047	79.5-81	RMP	1913	908	451	425	128	7	39
HC23-OM047	100.5-102	RMP	2215	1061	538	490	127	9	50
HC23-OM048	0-1.5	RMP	697	322	172	111	92	11	39
HC23-OM048	19.5-20	RMP	2691	1305	659	575	152	10	47
HC23-OM048	39-40.5	RMP	2403	1136	559	559	149	9	65
HC23-OM048	60-61.6	RMP	2533	1191	583	611	148	11	52
HC23-OM048	79.5-81	RMP	2747	1322	660	594	172	10	57
HC23-OM048	100.5-102	RMP	3918	1929	963	835	191	11	74

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