Lynas Rare Earths

1 March 2022

MT WELD DRILLING CONFIRMS CONTINUOUS RARE EARTH MINERALISATION

Lynas Rare Earths Limited (ASX:LYC, OTC:LYSDY) is pleased to announce the results of a 1 kilometre deep exploration hole drilled in fresh carbonatite below the current Mt Weld life of mine design and ore reserve.

The results confirm continuous Rare Earth Element (REE) mineralisation along the 1020m drill core at an average grade of 2.22% REO, no cut-off grade applied. Apatite Zones at shallower depths show enriched REE grade (7m zone of 7.6% REO at 0m to 27m below the current pit floor and 23m zone of 13.67% REO at 42m to 62m depth below the current pit floor).

The successful completion of the 1 km deep diamond drill hole was announced on 2 August 2021. The drilling program was partially funded by the Western Australia Government Exploration Incentive Scheme (EIS).

The Mt Weld Carbonatite (MWC) is a sub-vertical cylindrical igneous intrusion approximately 3.6 kilometres in diameter. The MWC is concealed under a 25m thick layer of younger transported alluvial sedimentary cover. Prior to the sedimentation, a prolonged widespread lateritic weathering process over the Laverton geological region has concentrated REE minerals in the carbonatite's upper saprolite zone. The saprolite zone has variable thickness from about 80m to 120m below the surface. Lynas' current REE open pit mine is about 65m deep and is producing REE ore from the saprolite zone. Previous exploration activities focussed on the saprolite zone and shallow depths of less than 150m. The drilling of MWEX10270 was carried out to obtain a better understanding of the mineralogy and REE mineralisation within the fresh carbonatite below the Mineral Resource.

Analysis of samples obtained from the exploration drill hole have revealed:

- REE mineralisation was confirmed along the entire 1010m drillhole at an average grade of 2.22% REO, no cut-off grade applied
- The weathering process has significantly enriched the REE grade in the saprolite zone, due to the relative enrichment of monazite within the Apatite Zones. Apatite Zones at shallower depths show 27m of 7.6% REO (0m to 27m depth below the current pit floor and 65 to 92m below the surface) and 23m of 13.67% REO (42m to 62m depth below the current pit floor and 107 to 127m below the surface)
- All samples returned REE assay; the highest grade is 21.44% REO from 60m to 62.4m hosted in the apatite zone and the lowest grade is 0.17% REO in a 4m composite sample from 969m to 973m depth hosted in calcite-rich carbonatite
- The REE mineralisation continued beyond the end of the drillhole, with the last 4 meters of single metre samples analysed at an average grade of 1.47% REO from 1016m to 1020m
- Dolerite dyke emplacement has resulted in a metasomatic alteration / remelting zone in carbonatite from 600m to 800m depth, which has been identified in the MWC as favourable for relative enrichment of HREE
- Significant REE mineralisation observed is hosted within the dolomite and ankerite carbonatites of the upper 800m of the drill core.

The results reveal a large area of new exploration target in the fresh carbonatite below the zone of surficial weathering profile.

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Lynas will establish a new exploration program on the identified target. This program is an important element in continuing to develop the Mt Weld resource to meet growing demand for Rare Earth materials. Detailed metallurgical testing will be conducted on the drillcore samples to guide development of a suitable ore beneficiation process for producing ore concentrate from the transition and fresh carbonatite.

Lynas CEO and Managing Director Amanda Lacaze commented, "I'm delighted to announce the results of this 1km deep core drilling and analysis which show a large endowment of Rare Earth Elements below the current Mt Weld open pit mine. The Mt Weld ore body is remarkable in its geology including its REE enrichment. We are excited to establish a new, targeted exploration program with the goal of meeting accelerating customer demand for many years to come."

Further details of the latest drilling campaign are set out in the following pages.

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Background

On 2 August 2021, Lynas provided an update about the successful completion of 1020m deep core drilling into fresh carbonatite below the current Rare Earth Elements (REE) open pit mine. The exploration drilling program was partially funded by the Western Australia Government Exploration Incentive Scheme (EIS), 2020-2021. Under this scheme, the Western Australia Government reimburses half of the direct drilling cost to Lynas up to a maximum of $200,000. Lynas greatly appreciates the support of the Western Australia Government EIS scheme.

Exploration Drilling update

The drill hole was collared at the current mine floor which is about 65m deep from the general topography (425 m AMSL) of the area, refer Figure 1. Drill collar coordinates are below.

Table 1: Drill collar details

Drill Hole ID	Grid MGA94					
	Northing	Easting	RL metres	Depth metres	Dip	Azimuth
MWEX10270	6807114.8	455825.5	365	1020.40	-55° *	270º *

Note *: Continuous downhole gyro survey was conducted through the drillhole to determine the accurate dip and azimuth of the drill hole trajectory for geological interpretation and modelling.

Table 2: Drillhole specifics

Depth		Size			
From-metres	To-metres	Size	Hole diameter	Core diameter	Comment
0	92	HQ	96.1mm	63.5mm	Metal casing
92	1020.4	NQ2	75.7mm	50.7mm	Downhole core orientation mark was obtained on NQ2 core

Downhole Geophysics:

Multi-probe geophysical downhole wire line logging was conducted for the length of the drillhole. Multiple types of petrophysical data including rock density, electrical conductivity, Full Sonic Wave acoustic property, natural gamma, magnetic susceptibility, and structural orientation logs were collected. These proved very useful in obtaining an understanding of the lithologies observed in the drill core.

Geological insights from MWEX10270

The Mt Weld Carbonatite (MWC) is a sub-vertical cylindrical igneous intrusion approximately 3.6 kilometres in diameter. The MWC is concealed under a 25 m thick layer of younger transported alluvial sedimentary cover. Prior to the sedimentation, a prolonged lateritic weathering process has concentrated REE minerals in the carbonatite's upper saprolite zone. The saprolite zone has variable thickness from about 80m to 120m. Lynas' current REE open pit mine is about 65m deep and is producing REE ore from the saprolite zone. The MWC also hosts other ore deposits of niobium, tantalum and phosphates, refer Figure 3. Previous exploration activities focussed on the saprolite zone and shallow depths of less than 150m. The drilling of MWEX10270 was carried out to obtain a better understanding of the mineralogy and REE mineralisation within the fresh carbonatite below the Mineral Resource.

Core logging and sampling:

The complete drill core was orientated, metre-marked and photographed (wet and dry) before being preliminarily logged for both lithology and structure. Following this, geotechnical rock quality designation (RQD) measurements were collected. The core was then split into half and quarters. The half core was sent to the West Australian Government core storage facility in Perth while one quarter was sent to a commercial assay laboratory in Perth for geochemical analysis. 36 elements were analysed in each sample. Selected ~5cm pieces of this core were used in the mineralogical study. The remaining quarter has been retained by Lynas for future geological work.

Lithological observations:

Multiple geological domains were observed during the core logging of MWEX10270 and are summarised in Table 3. The drillhole started at the top of the apatite zone and transitional carbonatite zone which persisted until ~63m depth. There were observed stackings of apatite and transitional carbonatite zones, which likely represents multiple geochemical weathering zones caused by groundwater movement along rock joints and structural units.

Following this zone of weathered material was a long intersection of dominantly dolomite carbonatite from ~63m to 817m depth. There is substantial variation within this intersection. Two distinct thin dolerite dykes between ~653-670m are observed. This zone is characterised by a groundmass of medium to coarse grained ferroan dolomite with minor ankerite, accompanied by minor apatite and fine-grained (potentially secondary) amphibole. In areas there is evidence for significant hydrothermal activity and likely remobilisation of primary minerals; observed as narrow veins of calcite, pyrite, fluorite, graphite and re-mobilised REE minerals.

The dominant rock type encountered in the core transitions to a calcite carbonatite at 817m depth and continues until the end of drillhole (1024m). This calcite rich zone contains numerous small (<5m width) intersections of dolomite and ankerite rich carbonatite units. Enclaves of brecciated biotite-magnetite rock – interpreted to be phoscorite, occur from ~750m to end of hole, EOH. Varying concentrations, and speciation of REE minerals were observed, refer Figure 4. Identification of these minerals via visual inspection is difficult and petrographic studies were relied upon for mineral speciation.

Table 3: Summary lithology log of MWEX10270

Lithology	From-metres	To-metres
Apatite zone	0	1
Transitional carbonatite	1	12
Apatite zone	12	23
Transitional carbonatite	23	24
Apatite zone	24	25
Transitional carbonatite	25	40
Apatite zone	40	62
Transitional carbonatite	62	63
Dolomite carbonatite	63	174
Fluorite-rich dolomite carbonatite with minor dolomite carbonatite	174	239
Dolomite carbonatite	239	653
Dolerite with minor dolomite carbonatite	653	670
Dolomite carbonatite	670	732
Dolomite carbonatite with minor calcite carbonatite and phoscorite enclaves	732	817
Calcite carbonatite with minor dolomite/ankerite carbonatite and phoscorite enclaves	817	1020.4 (EOH)

Mineralogical observations:

Twenty-five samples of carbonatite from MWEX10270 were selected from multiple geological zones in the quartered drillcore and catalogued and photographed, followed by the preparation of polished 30μm thick sections mounted on 25 x 75mm glass slides for microscopic analysis. These were used in a comprehensive mineralogical and petrological study under scanning electron microscope that utilised SEM, EDS and QEMSCAN methods in the Research School of Earth Sciences, Australian National University, Canberra.

Important findings are summarised below:

- Extensive REE mineralisation observed in majority of samples examined
- The dominant REE-bearing mineral present in samples shows progression with depth as:
  - Parisite (23.3-30.2m)
  - Monazite (71.1-445.1m)

- Bastnasite and synchysite (514.1-806.4m)
- Complex Ba-Sr-Ca-REE carbonates (from 914.6m to end of hole, EOH)

- Significant REE mineralisation observed is hosted within the dolomite and ankerite carbonatites of the upper 800m of the drill core
- From 800m to 1020m, REE mineralisation of significance is restricted to narrow ankerite carbonatite units within the calcite carbonatite
- The REE carbonates (bastnasite, parisite and synchysite) show variation in texture and grain size, ranging from large 3mm euhedral grains to fine grained ~100 µm clusters, refer Figure 5 and Figure 6.
- Monazite solely occurs as fine grained (generally <50 µm) and often spherical grains and is associated with apatite and pore space within the carbonatite groundmass.

HyLogger mineral scanning results:

A HyLogger mineral scanning study was undertaken by Geological Survey of Western Australia on the drillcore at the DMIRS core storage facility in Perth, refer Figure 7. Some initial geological observations were made from the HyLogger data that reinforced the observations during lithological logging and mineralogical studies, including:

- A clear distinction of the weathered units (the apatite zone and the transitional carbonatite) from fresh carbonatite
- Primary apatite is distributed throughout the drillhole
- Continuous LREE mineralisation up to 800m depth
- Sporadic HREE enrichment occurs at various locations within the drillhole
- A Carbonatite domain transition zone at about 800m to 850m depth along the drillhole: wherein the domain changes from dolomite to calcite carbonatite.

Geochemical Assay results:

Geochemical assay was conducted on the quarter core of the complete drillhole at a commercial assay laboratory, Intertek Genalysis Perth. In general, 4m composite sample assays were conducted in fresh carbonatite from 93m to end of drillhole. Between 0m to 93m depth, sample interval varies from single metre to 4m composites, intended to assess variations between weathered zone and transitional (partially weathered) carbonatite. Each sample assay involved a total of 36 analytes which included complete suite of Rare Earth Elements, a few select major elements and trace elements.

Highlights of REE mineralisation are:

- REE mineralisation was confirmed along the entire drillhole, 1020m at an average grade of 2.22% REO, no cut-off grade applied

- Weathering process has significantly enriched REE grade. Apatite zones at shallower depths shows 27m of 7.6%REO (0m to 27m depth below current pit floor) and 23m of 13.67% REO (42m to 62m depth below current pit floor)
- Every sample has returned REE assay; the lowest grade is 0.17%REO in a 4m composite sample from 969m to 973m depth hosted in calcite carbonatite and the highest grade is 21.44%REO from 60m to 62.4m hosted in the apatite zone
- The drillhole ended in REE mineralisation, the last 4 meters of single metre samples were analysed at an average grade of 1.47% REO from 1016m to 1020m
- Dolomite carbonatite host rock from 27m to 800m depth shows a 7 times higher average grade; 773m at 2.16%REO in comparison to calcite carbonatite host rock from 800m to 1020m at 0.36%REO.

Table 4: Average grade and thickness of REE mineralisation hosted in different lithology domains are tabulated below.

Average grades and intervals by lithology							
From (m)	**To (m)**	**Interval (m)**	**REO (%)**	**Nd_2O_3 (%)**	**Pr_6O_{11} (%)**	**(Nd_2O_3+Pr_6O_{11})/REO (ratio)**	**Host rock description**
0	62.4	62.4	9.12	1.56	0.45	0.22	Apatite zone and transitional carbonatite
62.4	612	549.6	2.60	0.48	0.14	0.24	Fresh magnesiocarbonatite
612	798	186	0.94	0.17	0.05	0.23	Dolerite dyke intruded and altered magnesiocarbonatite
798	905	107	0.27	0.06	0.01	0.26	Calciocarbonatite with minor small magnesiocarbonatite dykes
905	917	12	1.16	0.22	0.06	0.24	Magnesiocarbonatite dyke within calciocarbonatite
917	1016	99	0.30	0.07	0.02	0.29	Calciocarbonatite with minor small magnesiocarbonatite dykes
1016	1020.4	4.4	1.47	0.24	0.07	0.21	Magnesiocarbonatite dyke within calciocarbonatite

Geochemical interpretation:

Elemental ratios and relationships between multiple analytes were assessed in excel spreadsheet as well as IoGas geochemical software. Highlights of geochemical interpretation are:

- Apatite zones resulting from the weathering process at shallow depths (<62m depth) show enrichment of REO% and depletion of MgO and CaO
- At 800m depth, carbonatite domain changes from dolomite type to calcite type; MgO/CaO ratio demarcates this lithological variation
- At 800m depth, REO% decreases from dolomite to calcite carbonatite

A few select correlation graphs with corresponding lithology are shown in Figure 8.

Conclusions:

Deep exploration drillhole MWEX10270 into the Mt Weld Carbonatite has revealed the following geological insights:

- Mt Weld Carbonatite hosts a large endowment of REE mineralisation including HREE
- Continuous REE mineralisation is confirmed for 1020m along the drillhole in fresh carbonatite below the current life of mine design and ore reserve.
- A large area of new exploration target is revealed in the fresh carbonatite below the zone of surficial weathering profile.
- Dolomitic carbonatite (Rauhaugite) has higher concentration of REE minerals in comparison to Calcitic carbonatite (Sovite).
- Mafic alteration of carbonatite due to dolerite emplacement appears to be favourable for relative enrichment HREE shown in Figure 9.

Follow-up work:

This deep exploration drillhole has opened the following technical work,

- Metallurgical test work on fresh carbonatite to assess potential economic development pathways for mineral beneficiation of REE minerals, niobium, tantalum, and molybdenum minerals
- Two simultaneous Ph.D level research work on fresh carbonatite in collaboration with Minerals Research Institute of Western Australia, MRIWA, Murdoch University and Curtin University over a period of three and half years. MRIWA funding has been approved recently. These two research projects will focus on the relationship between REE mineralisation and different domains of carbonatite, geological evolution of different domains of carbonatite and geological controls on the enrichment of HREE in mafic alteration zones of Mt Weld carbonatite
- Systematic drilling program on the newly identified exploration target in fresh carbonatite below the zone of current Mineral Resources.

Sequence of figures are below.

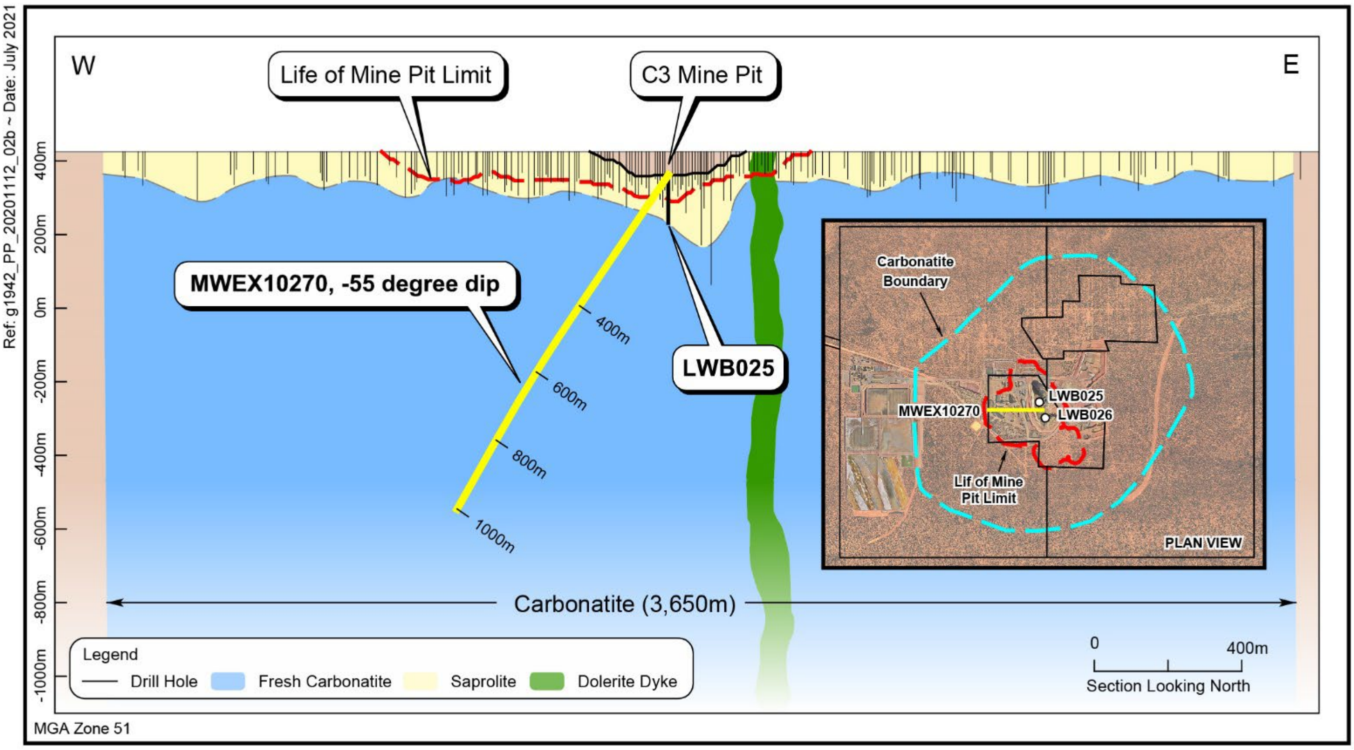

Figure 1 : Schematic cross section of deep exploration drillhole MWEX10270 and plan view in relation to existing drillholes through the saprolite zone. Aerial photo shows the extent carbonatite boundary, 2018 design of life of mine saprolite zone and currently operating mine pit in the middle.

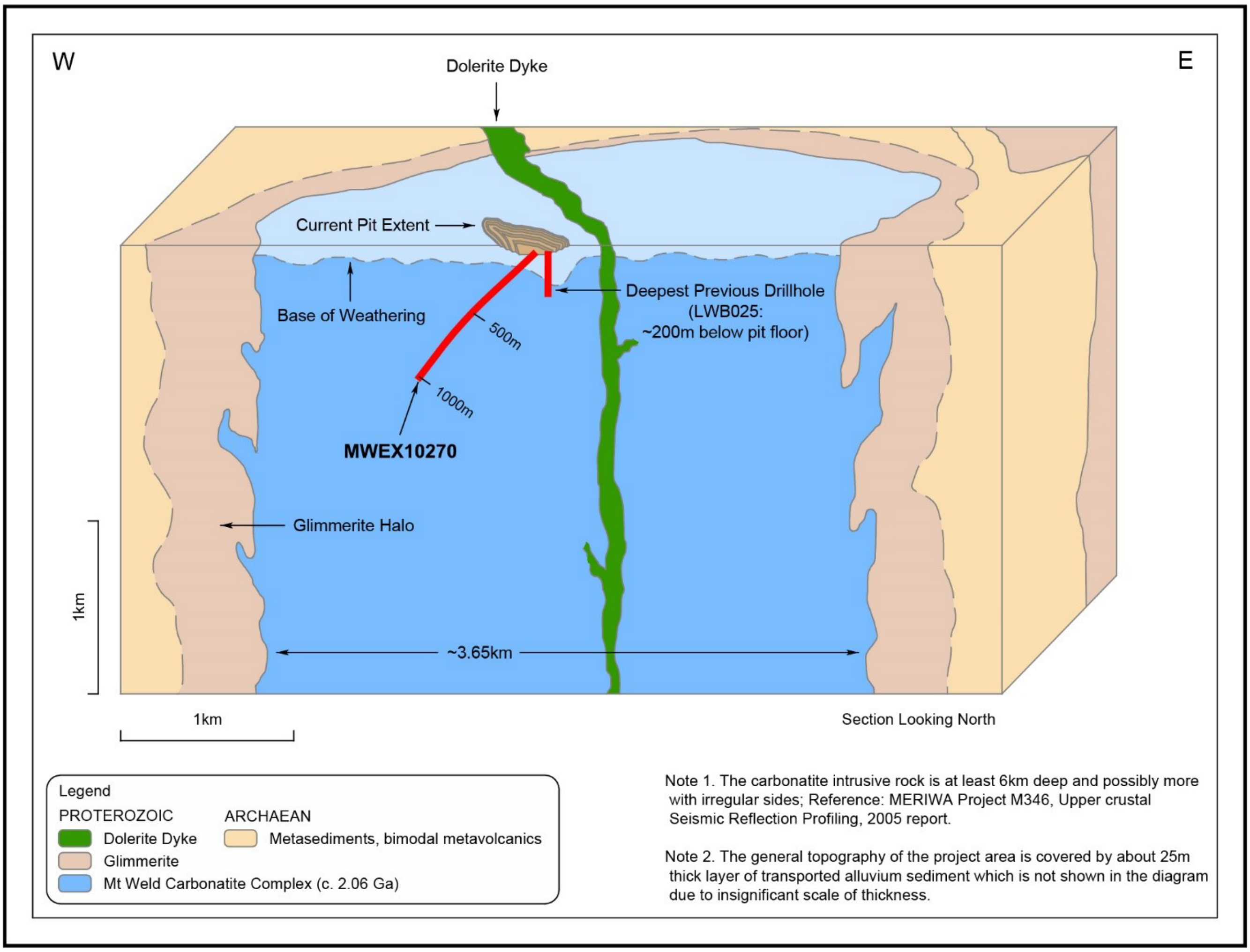

Figure 2: Schematic cross section of deep exploration drillhole MWEX10270 into primary carbonatite at Mt Weld REE project

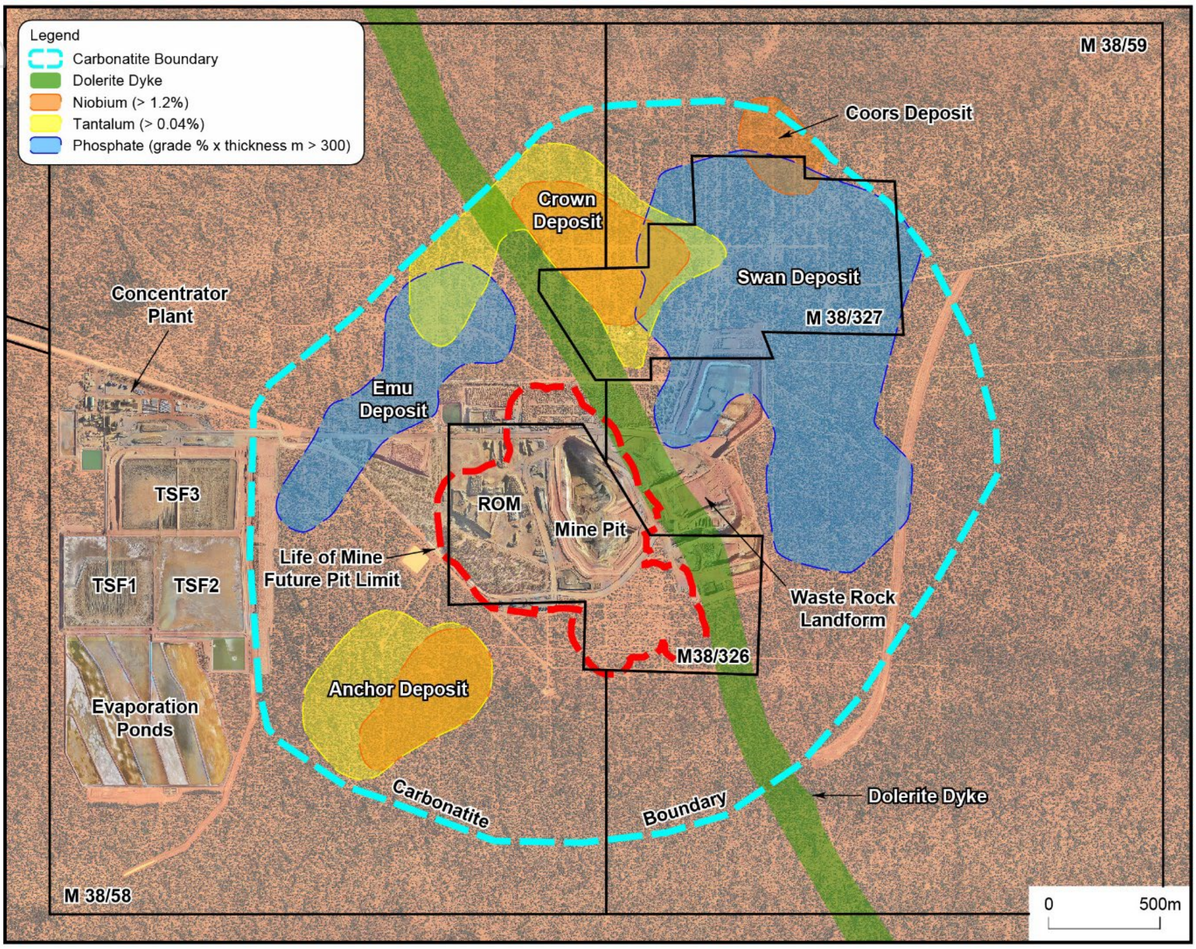

Figure 3 Mt. Weld Carbonatite (MWC) and related mineral deposits. Rare Earth Elements (REE) mine pit and 2018 mine design of the future pit limit (red outline) is confined to the saprolite zone of the carbonatite

Figure 4 Figure 4: Brick red coloured coarse grained disseminated REE minerals at 748m depth-ankerite carbonatite host rock. The sample is part of a 4m composite from 747m to 751 has assayed 2.44% REO

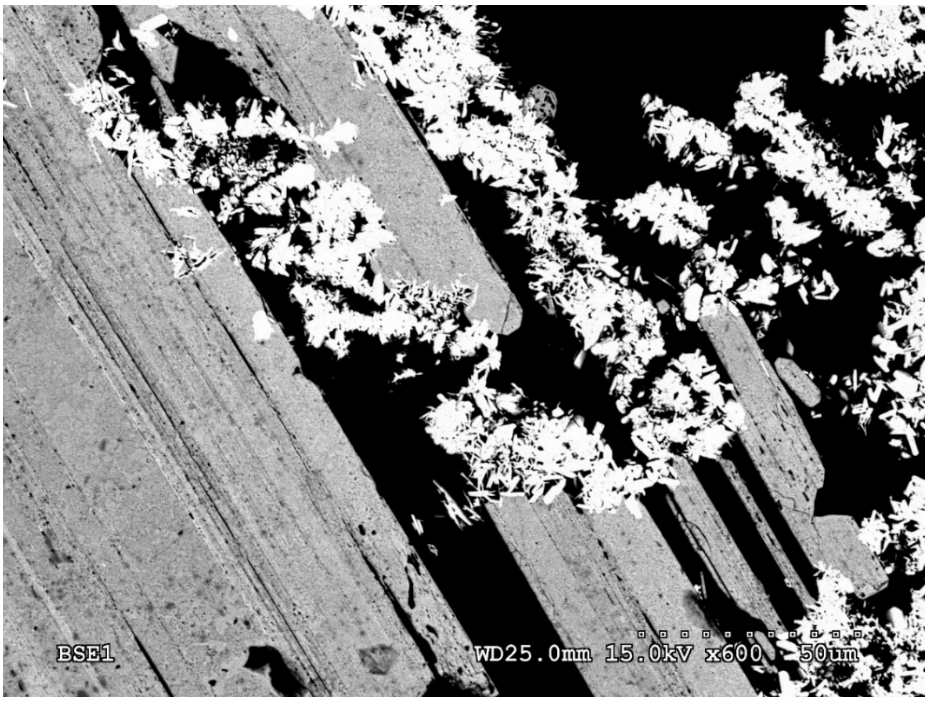

Figure 5 High contrast BSE image of blocky parisite (grey) with an overprint of fine-grained rods of monazite (white) from 30.2m downhole

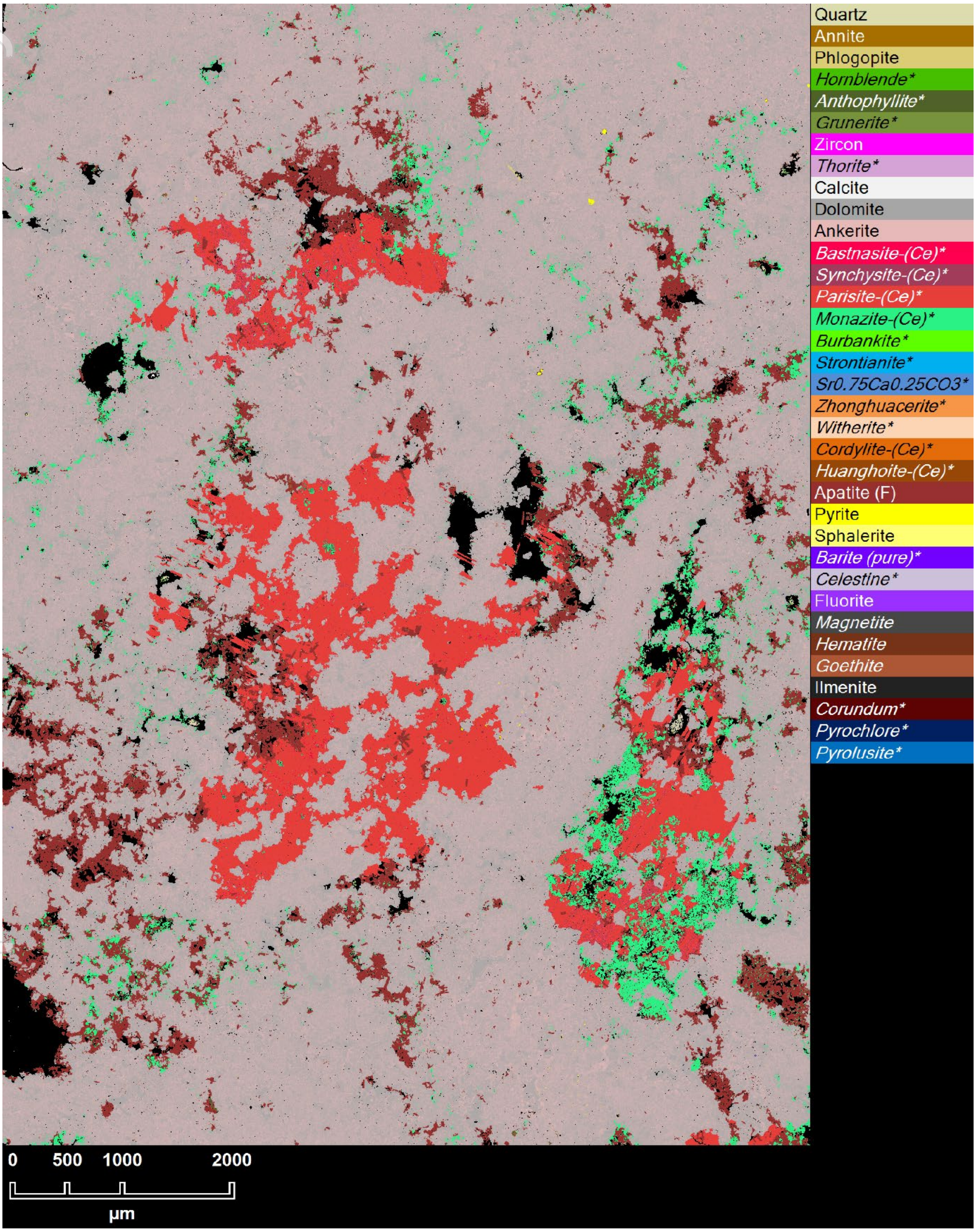
Quartz
Annite
Phlogopite
Hornblende*
Anthophyllite*
Grunerite*
Zircon
Thorite*
Calcite
Dolomite
Ankerite
Bastnasite-(Ce)*
Synchysite-(Ce)*
Parisite-(Ce)*
Monazite-(Ce)*
Burbankite*
Strontianite*
Sr0.75Ca0.25CO3*
Zhonghuacerite*
Witherite*
Cordylite-(Ce)*
Huanghoite-(Ce)*
Apatite (F)
Pyrite
Sphalerite
Barite (pure)*
Celestine*
Fluorite
Magnetite
Hematite
Goethite
Ilmenite
Corundum*
Pyrochlore*
Pyrolusite*
0
500
1000
2000
µm

Figure 6 QEMSCAN map of sample taken from 30.2m downhole. Abundant parisite, apatite and monazite forming within vugs in dolomite (with minor ankerite component) groundmass.

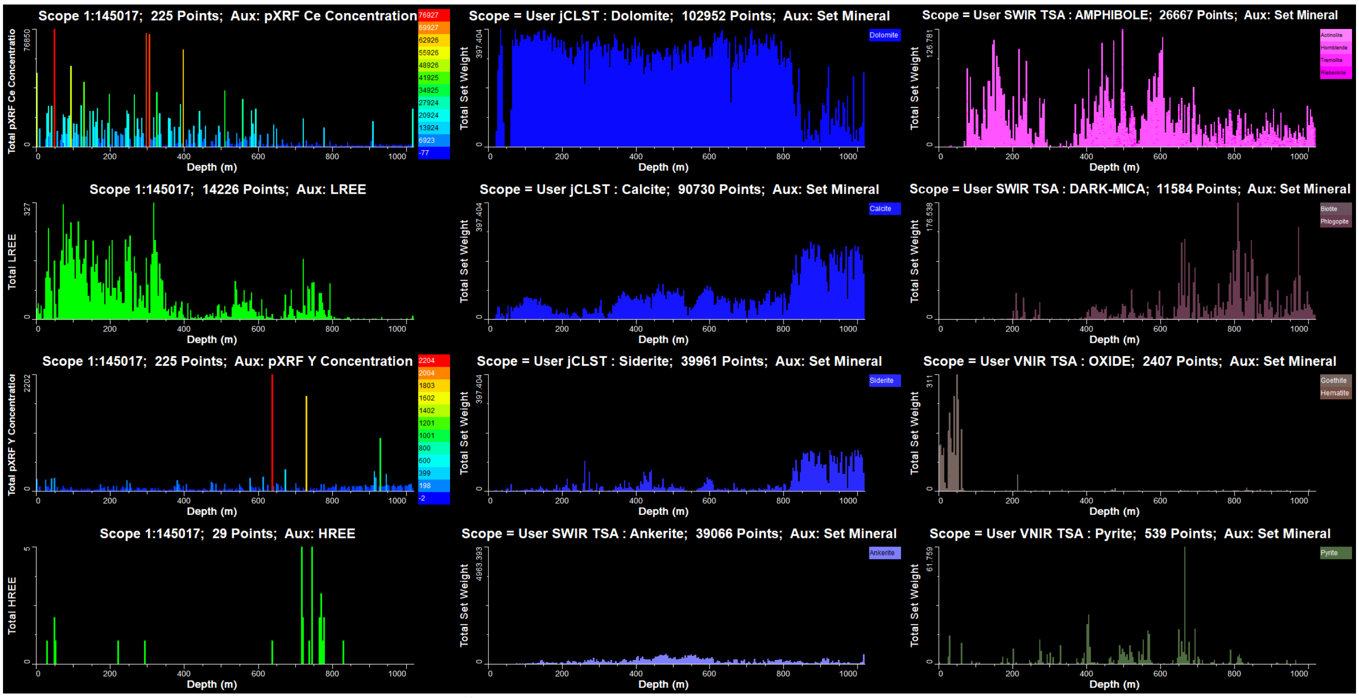

Figure 7 HyLogger mineral scanning data of the complete drillcore showing various mineral contents and their relative abundance

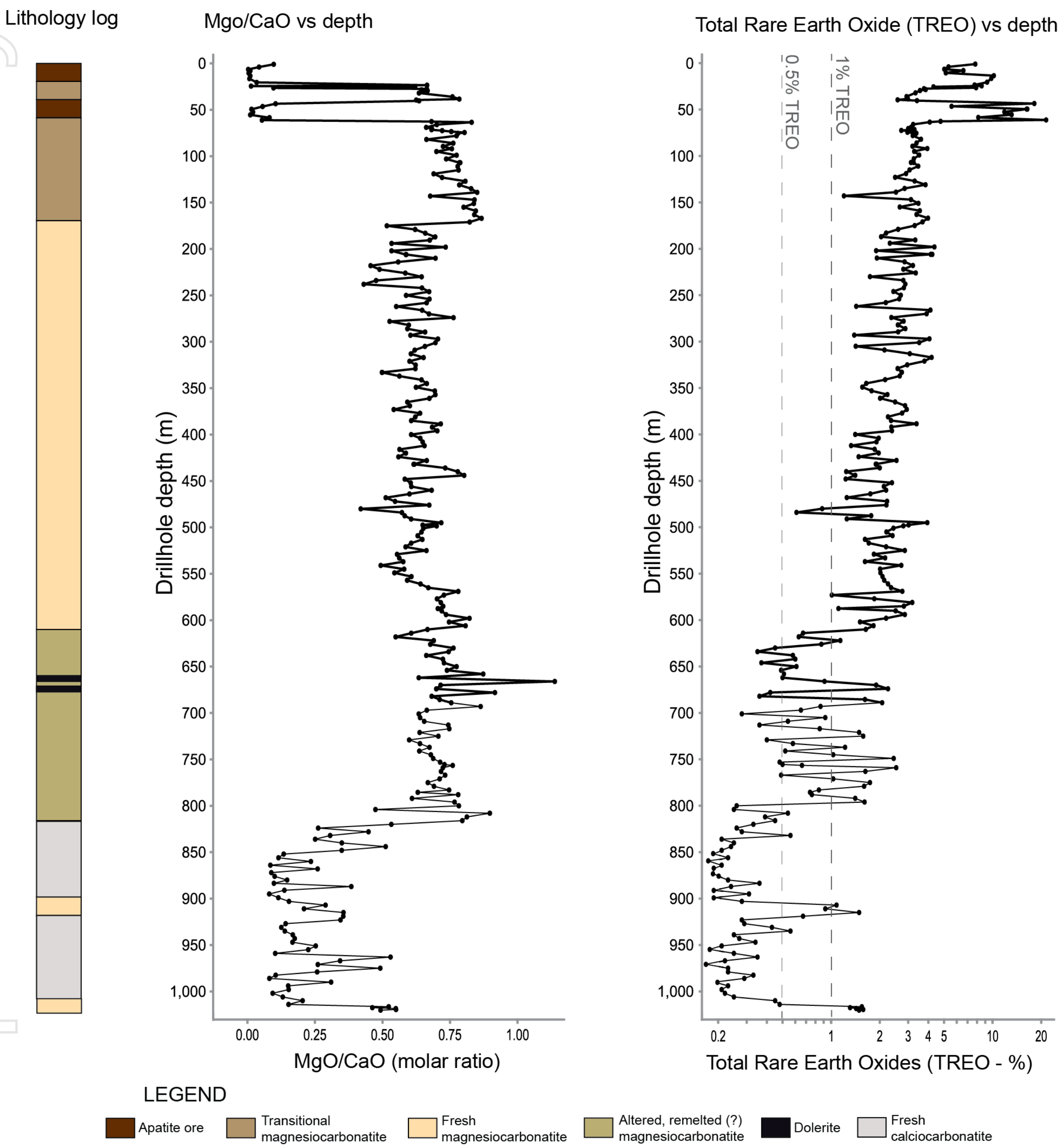

Figure 8 Downhole lithology correlated to MgO/CaO and total REO%

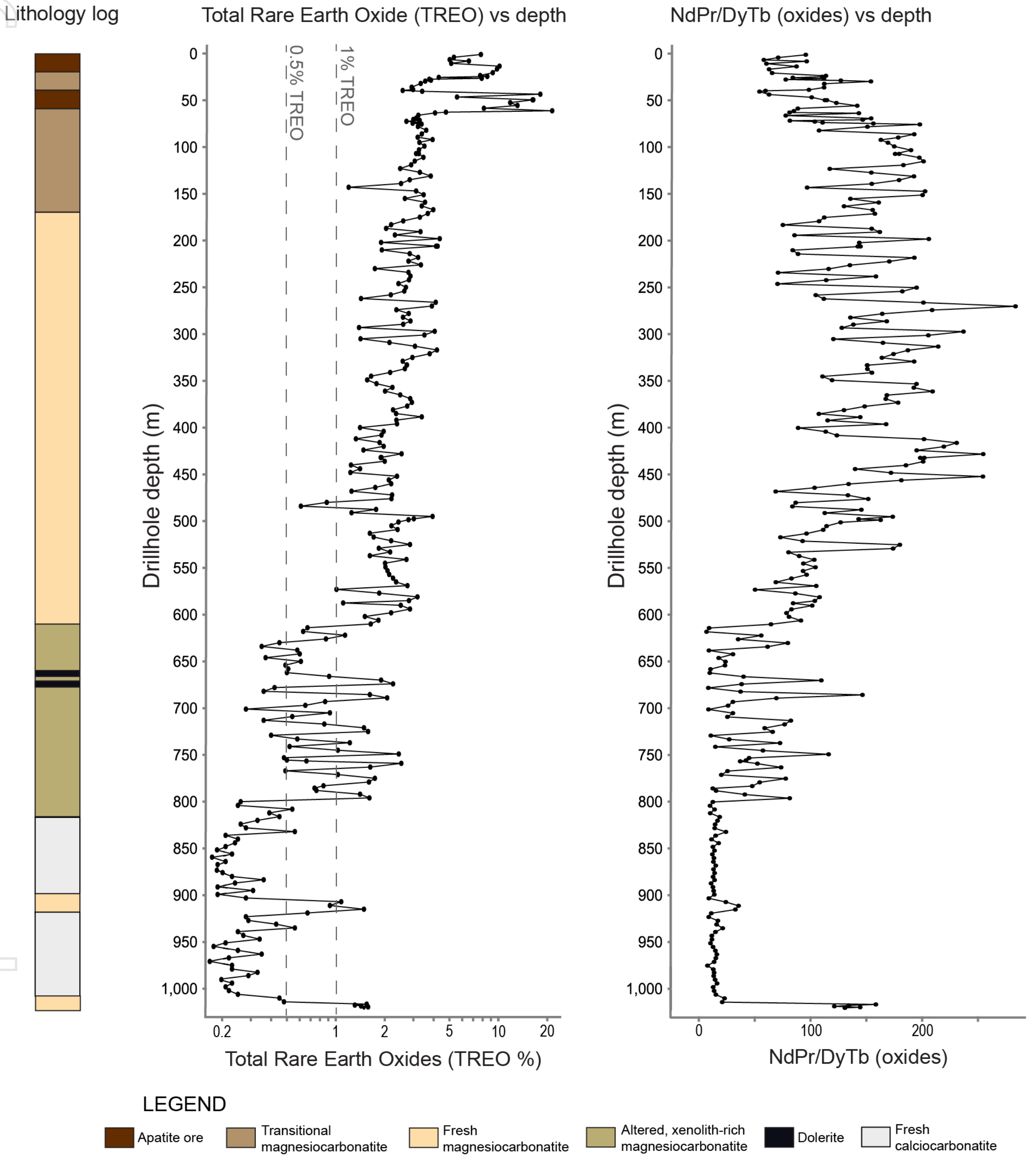

Figure 9 Downhole lithology correlated to total REO% and ratio between Light Rare Earth Elements Nd, Pr and Heavy Rare Earth Elements Dy and Tb. NdPr/DyTb oxide ratio of less than 40 implies relative enrichment of HREE

Authors:

Geological data collection, interpretation and compilation of this report is jointly prepared by Dr. Ganesh Bhat, Senior Resource Geologist and Ross Chandler, Geologist. Ganesh Bhat is a full-time employee of Lynas Rare Earths Ltd and a member of AusIMM. Ross Chandler is Ph.D research scholar in The Research School of Earth Sciences in Australian National University Canberra and an associate of AusIMM.

JORC Code 2012 Edition – Table 1 report template

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ORC Code, 2012 Edition – Table 1 report template

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 (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• A single 1020.40m diamond drill was drilled from the open pit mine floor using a combination of HQ and NQ2 hole diameters. The core was measured and placed in core trays with core blocks showing depth and core recovery. • The core was split in half then quarters using an automatic core cutting machine. • Geological samples have been submitted to Intertek Genalysis, a commercial geological analytical laboratory in Perth, Western Australia. • Sampling work was completed on the complete depth of drillhole
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• A combination of HQ and NQ2 diameter diamond drilling was used within the hole. HQ diameter (hole diameter 96.1mm, core diameter 63.5mm) was drilled from hole collar to 92 meters and NQ2 (hole diameter 96.1mm, core diameter 63.5mm) was drilled from 92 meters to end of hole depth, 1020.40 meters. The hole was collared at an azimuth of 270° and a dip of -55°. Continuous downhole gyro survey was conducted by the drilling company using the Reflex- gyro survey instrument through the drillhole.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• The length of each diamond rod drill was measured and compared to the measured length of the core returned. • The hole diameter was increased from NQ2 to HQ to maximise sample recovery for the first 92 meters. • Drilling techniques to ensure adequate sample recovery and quality included careful slow drilling especially in the saprolite zone to maximise the core recovery. Similar process was adopted at structural zones. • Worn out drilling bit was promptly replaced with a new diamond drill bit to ensure good quality core recovery. • In a few drill intervals in the weathered zone, small amount of core loss (<10%) was recorded. • Downhole core orientation mark was recorded in NQ2 core to facilitate structural logging. Orientation marks were reliable which could be linked to multiple drill runs • A Lynas employee geologist was engaged during the drilling process to ensure all geological QAQC protocols for reliable, representative, least contaminated sample collection was maintained. • Logging of all samples followed the established company procedures which included recording of qualitative fields to allow discernment of sample reliability. This included (but was not limited to) recording: sample condition and sample recovery. • Geological assay and petrology sample results have been completed.
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Each length of core was logged by a Lynas employee competent geologist to a level of detail to support the various studies carried out using the geological interpretations and future resource estimation process. • The logging is qualitative in nature with a review of the logging carried out after the assay data is received to ensure the logging fits with the geochemistry of the sample. • During logging, Rock Quality Designation (RQD) data was collected. • Using the downhole core orientation mark in NQ2 drillcore, structural logging was conducted. Orientation mark and structural data was not recorded in the HQ drillcore • Structural data was also obtained from the downhole wireline geophysical survey probe, which was conducted and interpreted by a professional service providing company, Wire Line services Group.
Sub-sampling techniques	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split,*	• The core was split in half then quarters using an automatic core cutting machine. • Geological assay and petrology sample results are completed.

Criteria	JORC Code explanation	Commentary
and sample preparation	*etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Sampling work has been completed on the complete depth of drillhole. • Single meter samples were collected from the quarter core. • Each meter of quarter core was collected in pre-numbered calico bags and dispatched to Intertek Genalysis assay laboratory, Perth. • Samples, in their entirety, are placed into an appropriately sized clean aluminium tray and labelled in a suitable manner. The samples are placed on trolleys in a specific order. The trolleys are wheeled into a drying oven and dried for 8 hours at approximately 105°C. • Samples are routinely jaw crushed to a nominal 10mm if they are <3kg mass. Samples exceeding 3kg in mass and requiring crushing are Boyd crushed to a nominal 2-3mm. The size of the crusher split is made so that the sample can be milled in one operation. Excess sample is stored in a new bar-coded plastic bag as a crusher reject. • As per geologist's sampling instruction sheet, 4-meter composite samples were generated in the laboratory after crushing to nominal 2-3mm size • Prior to milling a sample, a quartz flush is milled in the bowl and retained. At the end of a shift a quartz flush is milled and retained. Milling equipment is cleaned using compressed air or vacuuming between samples. Samples are milled in LM5 pulverisers. Milling efficiency is checked at a scheduled frequency to ensure 85% passing a 75µm sieve. The sample sizes are appropriate for the grain size of the material being sampled. • Sampling for petrography and mineralogical investigation under scanning electron microscope- Twenty-five samples of carbonatite were selected from multiple geological zones in the quartered drillcore and catalogued and photographed, followed by the preparation of polished 30µm thick sections mounted on 25 x 75mm glass slides for microscopic analysis. • These were used in a comprehensive mineralogical and petrological study under scanning electron microscope that utilised SEM, EDS and QEMSCAN methods in the Research School of Earth Sciences, Australian National University, Canberra.
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.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg*	• Work was carried out by Lynas and Intertek Genalysis Laboratories Perth to develop accurate assaying of rare earths using ICP-MS (FP6/MS) and ICP-OES (FP6/OE). The techniques developed have been implemented for the drill hole data. • Fusion (FP6/) analytical method involves the complete breaking down of all types of material by sodium peroxide. The solid formed after the fusion is progressively leached with water and then hydrochloric acid to give a clear solution. A catch weighed aliquot of 0.25grams of the homogenize pulped sample is transferred to a nickel crucible with sodium peroxide flux. Matrix

Criteria	JORC Code explanation	Commentary
	standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	matched reference materials, control blanks and duplicates are included with the analytical batch. Samples are fused with the sodium peroxide in a muffle furnace at 650°C. After cooling, crucibles are added to water in a beaker, hydrochloric acid and then more water is added volumetrically. • Instrument finish (ICP_OES) An aliquot of the digest solution read on an Agilent 5100 ICP-OES instrument. Instrument calibration standards and blanks are diluted to matrix match with the diluted samples. Instrument interferences are corrected using single element solutions. Results are uploaded directly to the Laboratory Information Management System (LIMS) for QC. Repeat fusions are done as required as part of the routine QC process. After final approval of the results the oxides are derived by calculation from the elemental results before reporting. • OREAS geological standards of appropriate REE analytical values have been submitted with each batch of samples to ensure the accuracy of geochemical assay. Geological standards were inserted one in hundred sample bags ending at multiples of hundreds. • As part of laboratory QAQC process, control blank samples and standard samples were also introduced by Intertek Genalysis. • Upon receiving the assay results, analytical data were compared with the know data corresponding to the standard samples. Results within a range of 2 standard deviation are accepted and assimilated into the geological database. 2 to 3 standard deviations are flagged. Outside 3 standard deviations are requested for re-analysis by the laboratory. • Assay results of all standards inserted to MWEX10270 drillhole samples are within 2 standard deviations, hence acceptable QAQC protocols
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No twinned holes have been undertaken. • Lynas Corporation has strict procedures for data capture, flow, data storage and validation of drilling information. • Lynas geological database is SQL system which is maintained and managed by Maxgeo a professional database management company.
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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drill hole collar has been surveyed to an accuracy of +/- 1cm by an authorised mine-surveyor. • Continuous downhole gyro survey was conducted by the drilling company through the drillhole. Additional continuous downhole gyro survey was conducted by a professional downhole survey service provider company Wire Line Services Group. • The core was measured and placed in core trays with core blocks showing

Criteria	JORC Code explanation	Commentary
		depth and core recovery. Each metre down-hole is measured from core blocks marked with driller depth. The depth of each metre interval is likely to have an accuracy of +/-2 cm.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the rare earth element of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Geological assay and petrology sample results are obtained. • Every metre of the drill core was sampled for geochemical assay. • In geological intervals of nearly homogeneous lithology, majority of the samples were composited for 4m intervals after crushing the single meter samples of quarter core. As per geologist's sampling instructions, composite samples were generated in the laboratory. • In the saprolite zone and in specific lithological units, single metre assay was conducted
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.* • *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.*	• Mt Weld carbonatite plug is subvertical and the rare earth mineralisation in the carbonatite regolith is in horizontal layers. Geological orientation within the fresh carbonatite is unknown with a cross cutting dolerite striking NNW-SSE across the carbonatite. The diamond hole was collared at 270° azimuth and -55° dip. • No known sampling bias has been introduced by the drilling orientation. • Geological assay and petrology sample results are completed.
Sample security	• *The measures taken to ensure sample security.*	• Single meter quarter core samples were placed inside a sequentially pre-numbered calico bag. Group of ten samples were placed in polyweave bags. Polyweave bags were placed and securely packed in bulker bags. • 4 batches of bulker bags containing about 250 samples were securely transported to Intertek Genalysis assay laboratory at Perth. • Geologist and field assistant have cross checked the sample submission sheets against the sampling spreadsheet to eliminate sampling errors.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• None completed. Reviews of sampling techniques will be conducted during the next infill drill campaign.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *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.*	• The Mt Weld Rare Earths Project is covered by 4 mining tenements with long term tenure that can be automatically renewed for 20 year periods upon application. These tenements are M38/58, M38/59, M38/326 and M38/327. All these tenements are 100% owned by Mt Weld Mining Pty Ltd a 100% subsidiary of Lynas Rare Earths Ltd. • There are no impediments to operate in the area with operating licenses in place.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Mt Weld Rare Earths Project has been explored by several other parties before Lynas took control of the project. Feasibility studies have been carried out by CSBP Wesfarmers on mining phosphate in the 1980s and Ashton Ltd on mining the rare earths in the 1990s.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Mt Weld rare earth ore deposit occurs as supergene enriched mineralisation hosted in the Mt Weld Carbonatite regolith. The deposits have formed in the regolith profile of carbonatite with the rare earths concentrated by the removal of calcium, magnesium and other carbonate minerals during prolonged weathering process. • The current drillhole MWEX10720 was drilled from the mine pit floor to explore the geology and REE mineralisation hosted in the underlying fresh carbonatite.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *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.*	• Historic drillholes are too numerous and not practical to summarise all drill hole data used. All drilling results have been reported previously. • Exclusion of drill hole data will not detract from the understanding of this report. All drill data has been previously reported, holes in the bulk of the modelled area are closely spaced and located in the mining area. • A complete list of the reported significant results from the current drillhole is provided in the body of the report. • Details of the drill hole coordinates, orientations and metrics are provided as a table in this report.

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Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Results reported have been for total rare earth oxides intercepts; no cut-off grades used, and interval grades were calculated by length weighted average. • No aggregation methods or grade truncations were applied to these exploration results as individual results were consistent within each intercept.
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 not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Assay results are reported along the length of drillhole. • Cut-off grades were not applied • Results are tabulated in the announcement
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Refer to figures in announcement.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Drill hole location is reported, and a table of significant assay intervals is provided in the announcement. • Low or non-material grades have been reported.
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.*	• No additional information to be reported at this time.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further step-out drilling is required to better define the REE mineralisation hosted in the Mt Weld carbonatite. • Metallurgical test work will be conducted on fresh carbonatite to assess potential economic development pathways for mineral beneficiation of REE minerals, niobium, tantalum, and molybdenum minerals

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