ABx4 Pty Ltd

Final Drilling Report on work subject to an Exploration Drilling Grant Initiative (EDGI) Funding – Round 9 on tenement:

EL9/2010 – Deloraine (aka Deep Leads) holes DL614 to DL628

Bryans Road Campaign

EDGI Ref: D23/298107

Grant deed:	D23/298107 ABx Group Limited, Bryans Road $70,000
EDGI grant references:	Deed D23/298107
Deed period:	20 November 2023 – 20 December 2024 (Items 5 & 6 of Deed)
Report deadline:	29 November 2024 (Item 4 of Deed)
Drilltray delivery deadline:	29 November 2024 (Item 4 of Deed)
Drilling Project Duration:	20/11/23 to 01/07/24 *
	* Note: Holes RM353 & RM354 were drilled from 16th to 19th November because it was thought that the EDGI grant period had started. Due to a change of office from Sydney to Melbourne, ABx did not receive the EDGI Deed until 4 months later on 12 February 2024. Holes RM353 and RM354 and their costs have been excluded.
Project Operator:	ABx4 Pty Ltd ABN 14 141 724 281 ASX ABX
New Address:	Level 4, 100 Albert Road, South Melbourne VIC 3205 Previously: 52 Phillip Street, Sydney, NSW, 2000
New Email:	tenements@abxgroup.com.au
Geologists supervising:	Julius Marinelli and Ian Levy
Geologist's Email:	jmarinelli@abxgroup.com.au and ilevy@abxgroup.com.au
Report Authors:	Nathan Towns and Ian Levy
Report Date:	26 November 2024

Addition information from Information Table

Item 1 (clause 1.1): Approved Purpose for which the Grant is provided

To assist ABx4 Pty Ltd ("ABx") to undertake the Bryans Road exploration drilling project as detailed in its Application.

Item 2 (clause 2.1): Grant Amount

Up to $70,000 (fifty thousand dollars) GST exclusive, payable in accordance with Item 3.

Item 3 (clause 3.1): Payment method for the Grant

The Grant Amount upon satisfaction of Condition precedent Item 4 by no later than 20 December 2024.

Item 4 (clause 3.2(a)): Conditions precedent to payment of the Grant

Recipient must provide a Final Drilling Project Report and lodgement of drill core and/or drill cuttings at the Mornington Core Library, both by 29 November 2024.

Item 7 (clause 7.2): Reporting requirements

(a) Final Drilling Project Report; and

(b) Final acquittal of all grant monies and including evidence of the Recipient's 50% contribution to the project in cash or in kind with respect to the actual drilling costs associated with the Approved Purpose and

(c) All information and reports requested by the Grantor of the Recipient must be provided

Item 8 (clause 10): Special terms and conditions

Recipient to

(a) contribute a minimum of 50% in cash or in kind with respect to the actual drilling costs associated with the Approved Purpose;

(b) any cost overruns are the Recipient's responsibility;

(c) any interest received on the Grant is to be used for the Approved Purpose;

(d) to provide any requested information within 10 days

(e) information to be provided as acceptable to the Grantor

(f) to participate in any funding evaluation by Grantor and

(g) all information and the drill core itself will be made publicly available 6 months after the Final Drilling Project Report is received

GLOSSARY

Exploration Drilling Grant Initiative Program (EDGI)

"Application" means the Recipients Application EDGI9-006 as approved by the Grantor on the following basis:

- up to 50% (capped at $70,000) of the direct drilling costs (excluding mobilisation and demobilisation); and
- (if applicable) helicopter costs but only where a remote location or environmental sensitivities necessitate rig mobilisation and support by helicopter (capped at $20,000).

"Final Drilling Project Report" means a final report as detailed in the *Mineral Resources Act 1995* and conform to the standard format for Mineral Tenement reports described in the MRT Reporting Guidelines, available at: www.mrt.tas.gov.au/forms_and_information/reporting_guidelinesreporting_guidelines

REE means Rare Earth Elements. Assaying can be expressed as elements or as oxides (REO)

TREO means total REE oxides reported as parts per million "ppm" (same as grams per tonne)

TREO-Ce2O means TREO minus cerium oxide as ppm.

IAC REE means "ionic adsorption clay rare earth elements" which is an attractive low-grade type of REE mineralisation occurring in shallow clay layers.

Not all clay-hosted rare earths are created equal.

Only those clay deposits formed by ionic adsorption of REE metals onto the outer layers of clay particles are IAC REE types of deposits. Only IAC REE deposits achieve high extraction rates at low cost and are the most sought-after deposits, delivering extraction rates of 50% to 75% of contained REE using benign, low-cost processing techniques.

ABx is the first to discover true IAC REE in Tasmania and has Australia's only confirmed JORC compliant IAC REE resource.

Dysprosium and Terbium enriched

ABx's Tasmanian REE deposits are exceptionally enriched in two very important REE species, namely dysprosium Dy and Terbium Tb with (Dy+Tb)/TREO ratios exceeding 4% which is the highest and Australia and very high by world standards.

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1. ABSTRACT

ABx4 Pty Ltd (ABN 14 141 724 281) is a wholly-owned subsidiary of parent public listed company ABx Group Limited (ASX code ABX) (ABN 14 139 494 885), collectively referred to herein as "ABx" and ABx4". ABx has discovered bauxite deposits in QLD, NSW and Tasmania since inception in 2009.

ABx4and holds exploration licences EL9/2010 Deloraine and EL10/2021 Bushy Rivulet in Northern Tasmania and the REE resource extends across both tenements.

EDGI Drilling Extends Over <u>Two</u> ELs

This Bryans Road EDGI drilling program involved drilling exploration holes in both EL9/2010 and EL10/2021. This report relates to the work done on EL9/2021 and a second report relates to EL10/2010.

Exploration History

In 2010 to 2014, ABx discovered and drilled out surface layers of bauxite at DL130 approximately 10km north of Exton, Northern Tasmania. In 2012 to 2014, ABx also discovered a previously unrecognised bauxite layer at Rubble Flat located 6.5km east of DL130.

During Covid lockdowns in mid 2020, discussions commenced via internet between two ABx employees, Ian Levy (Director, working in Berkeley Vale research lab, Central Coast NSW whilst Victorian based employees were locked down) and Nathan Towns (Group General Manager Operations, working in ABx research lab near Launceston Airport and free to move about in Tasmania). This dialogue began because geology Professor Plimer remarked to Ian Levy in Broken Hill in 2013 that he had noted some "favourable mixes" of REE in his research samples that he had collected near ABx's bauxite deposits around Goulburn NSW during his PhD studies in the 1960s. Initial tests were uninteresting. In 2018-19, ABx assayed its bauxite from Binjour in QLD for REE, and again with "uninteresting" results. However, ABx's then Exploration and Marketing Manager, Paul Glover had noted that whilst the Rare Earth Elements found in ABx's bauxite project on the Binjour Plateau located 110kms inland from Bundaberg, QLD were low grade, the REE were nonetheless "high priced and in short-supply".

ABx had not assayed any of its many thousands of bauxite samples for REE, so an algorithm that might correspond to REE patterns was applied to all of ABx's bauxite assays to highlight those ABx bauxite occurrences that may be "most favourable" for REE mineralisation.

The DL130 bauxite deposit in EL9/2010 located 10km north of Exton northern Tasmania appeared most favourable but other bauxite occurrences warranted exploration for REE mineralisation as well. Resampling of old bauxite hole samples revealed moderate grades of REE in clays at DL130. A few elevated REE values were also returned from resampling old bauxite holes at the Rubble Flat bauxite deposit that is mainly located on EL10/2021.

In October 2021 after Covid travel restrictions had eased, ABx drilled 31 drillholes numbered DL389 to DL419 and they extended the REE mineralisation outside of the bauxite mineralisation at DL130. So, to continue the drillhole prefixes as "DL", ABx named the REE project as "DEEP LEADS". For the same reason, the REE prospect around the Rubble Flat bauxite deposit 6.5km east of DL130/Deep Leads was renamed "RUBBLE MOUND" so that drillholes would continue with prefixes "RM". Unfortunately, the 2021 drillholes had failed to fully penetrate the full REE mineralised zone because the basement saprolite zone was too hard for the RC aircore rig with its low strength compressor.

ABx felt there was a possibility that Deep Leads and Rubble Mound could be parts of a single REE mineralised system, but all of ABx's available exploration funds were required to in-fill and confirm the nature of the REE deposits at Deep Leads.

ABx applied for Exploration Drilling Grant Initiative (EDGI) Funding grant to accelerate step-out drilling and additional "wildcat" drillholes located up to 7km outside the known REE mineralisation at Deep Leads.

Mineralisation was identified in a sufficient number of holes and ABx felt it should continue the program, drilling additional step-out1drillholes as part of this EDGI program (reported herein).

Conclusions

This EDGI-joint funded program of work achieved the following:

1. Deep Leads styled mineralisation continues throughout the Bryans Road program area and could extend considerably further. New Exploration Licence applications have been lodged with MRT Tas.

2. ABx discovered channels between Deep Leads and Leech Scrub that are strongly REE-mineralised

3. ABx worked with its Tasmanian drilling contractor, eDrill Australia to use a hired high pressure compressor for penetration into the bedrock and also to develop push-tube clay coring technology to suit this clay-hosted drilling project. Drill equipment is being upgraded to suit this specific mineral target with regards down-hole technologies, compressor configuration and logistic issues. Experimentation with a novel drilling methods that suit a wider exploration program, in different access conditions across northern Tasmania were conducted during this EDGI project.

4. REE exploration has accelerated as a result of this work, and an additional drilling program will commence in late January 2025 with possibly additional drill programs thereafter.

5. ABx's high standards of rehabilitation were applied to every hole collar, all materials removed from site and landholder relations remain respectful, supportive and cooperative.

2 GEOSCIENTIFIC INFORMATION

Objective (for the Approved Purpose)

To undertake the Bryans Road exploration drilling project as detailed in its Application.

Initial discovery

During Covid lockdowns in 2020, ABx's proprietary exploration technology was applied to its large drillhole database ("ABacus") across Eastern Australia to identify areas previously explored and drilled for bauxite that could be good prospects for rare earth elements (REE) mineralisation.

ABx identified ABx's DL130 bauxite deposit on EL9/2010 Deloraine as being the "most prospective" of several that were interpreted to be highly prospective.

Reassaying of selected intervals in the DL130 bauxite drillholes led to the initial REE discovery in late 2020, early 2021, which was the first REE discovery in Tasmania.

More importantly, leach testwork has shown that this REE discovery area hosts the first true Ionic Adsorption Clay REE (IAC REE) mineralisation in Tasmania and possibly the first of its type discovered in Australia, achieving REE leach extraction rates of up to 80% at pH 4 with low-cost benign reagents and short residence times which are unmatched in Australia.

Hole Prefixes

To differentiate the REE prospects from the smaller DL130 bauxite project area but to also continue naming conventions used for ABx's ABacus database, the wider REE exploration area covering much of EL9/2010 was referred to as "Deep Leads" so that all the drillholes on EL9/2010 could continue have the prefix "DL".

Similarly, the neighbouring EL, EL10/2021 was called Rubble Mound so that the drillhole prefixes of "RM" could be continued.

Bauxite at DL130: drilled in 2011 to 2014 (see Map 2 below)

Exploration Licence EL9/2010 "Deloraine" was originally applied for in 2010 by ABx4 Pty Ltd (ABx4) in order to facilitate an exploration program to discover economically viable deposits of bauxite associated with Tertiary Volcanics and underlying Jurassic Dolerite. During 2011 to 2014, 388 reverse circulation aircore holes were drilled for a total of 2,921 metres and 2,025 drill hole samples assayed for bauxite at ALS Laboratories, Brisbane.

REE at DL130: 2020 – 2021

A few of these 388 bauxite holes reached the Deep Leads REE clay horizons and re-assaying of clay zones in the in late 2020 – early 2021 produced some elevated REE values.

ABx applied for an additional EL in 2020 to cover ground that could host extensions to the Deep Leads REE mineralisation. This application became EL10/2021 Brushy Rivulet which ABx calls "Rubble Mound" so that holes can retain their RM prefixes.

Preliminary leach testwork that was conducted by ABx staff at the ABx Research Laboratory in Western Junction near Launceston Airport was reported in an ABx ASX release dated 9 February 2021. The results suggested that the REE may "leach well", even in plain water. The possibility of IAC REE was evident.

In October 2021, 31 reverse circulation drillholes numbered DL389 to DL419 were drilled at DL130 to sample the clay horizons but could not fully penetrate into the hard basement which was typically a 1m thickness of weathered dolerite grading sharply into fresh hard dolerite that could not be drilled.

Whilst these holes that were drilled in October 201 were not sampling the full thickness of the REE pay zone, they did confirm that the Deep Leads REE discovery and produced some high grade REE mineralisation up to 5m thick with excellent leach recovery results that were later independently confirmed.

In late 2021, ABx observed that the prospective mix of bauxite fragments and heavy clays extended over several kilometres away from the in-situ DL130 bauxite deposit and it was decided to apply for Exploration Drilling Grant Initiative (EDGI) Funding to help take on the added risk of a series of "wildcat step-out" drillholes to quickly identify structures that might host potentially mineable IAC REE orebodies.

OUTCOME – REE MINERALISATION AT DEEP LEADS, RUBBLE MOUND & WIND BREAK

See Maps 1, 2 & 3

This EDGI drill program discovered potentially mineable grades and thicknesses of IAC REE mineralisation that occur in clay-filled channels containing fragments eroded from the once extensive bauxite horizon and dolerite (and possibly Tertiary volcanics – basalts).

By investigating a much wider area with these EDGI drilling programs, ABx has vastly improved its exploration technology and it now has a proprietary method to explore much wider than the Deep Leads – Rubble Mound REE resource areas.

EDGI drill program number 8 in 2023 discovered the Wind Break REE deposit located 14kms ENE of Deep Leads.

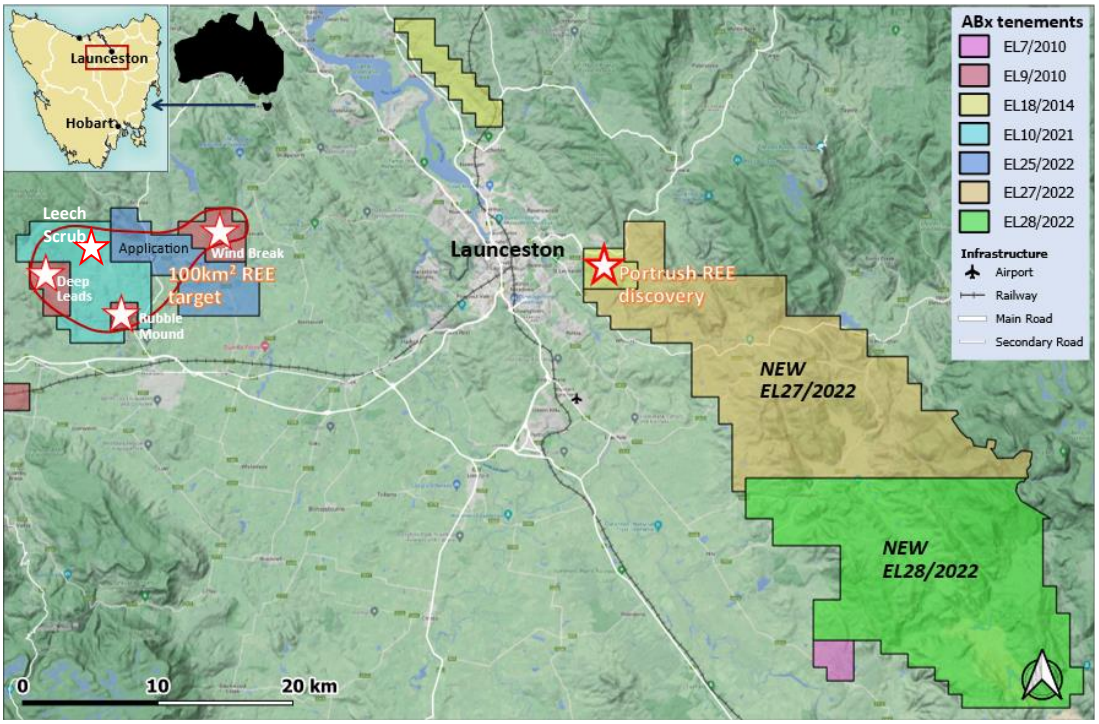
This EDGI drill program number 9 reported here, has not only discovered northwards extensions to Deep Leads, it has also revealed deep clay layers in the paleo river system northwest of Deep Leads. Whilst these deep sediments are not heavily mineralised, they are new geological information that was not known prior to this drilling.

As a result, aggressive further step-out drilling will recommence earlier than planned in February 2025 to test ABx's exploration technology (ie. hypothesis testing).

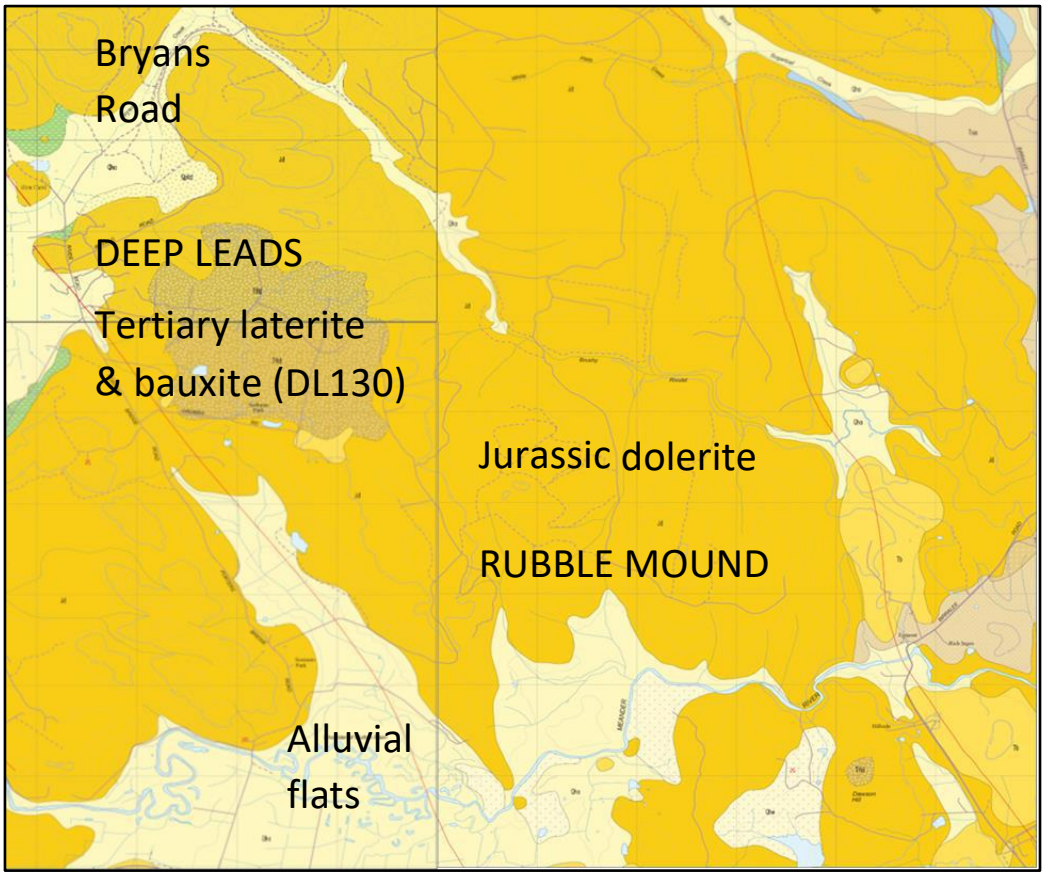
Furthermore, EDGI drill programs allowed ABx to confirm that this IAC REE mineralisation is far more extensive than originally expected and in fact, the 8km area of Deep Leads and Rubble Mound is a continuous REE deposit and Wind Break REE mineralisation is a further 14 to 16km north east of Deep Leads.

This REE prospect now exceeds 100 square kilometres.

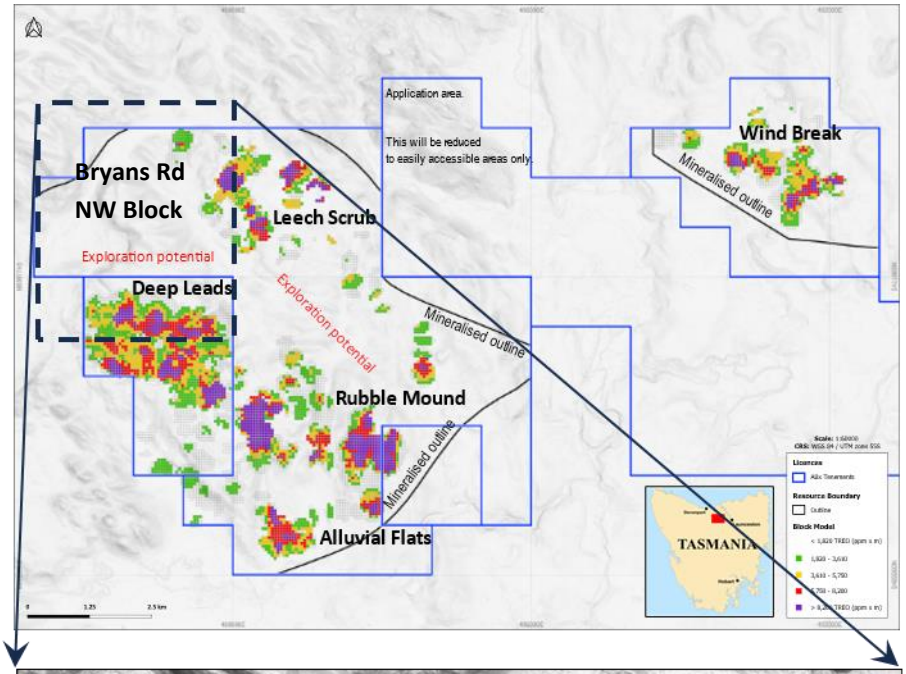
Applications have been made for several new Exploration Licences – see Map 1.



Map 1: current ABx rare earth discoveries in Tasmania as at 20 November 2024

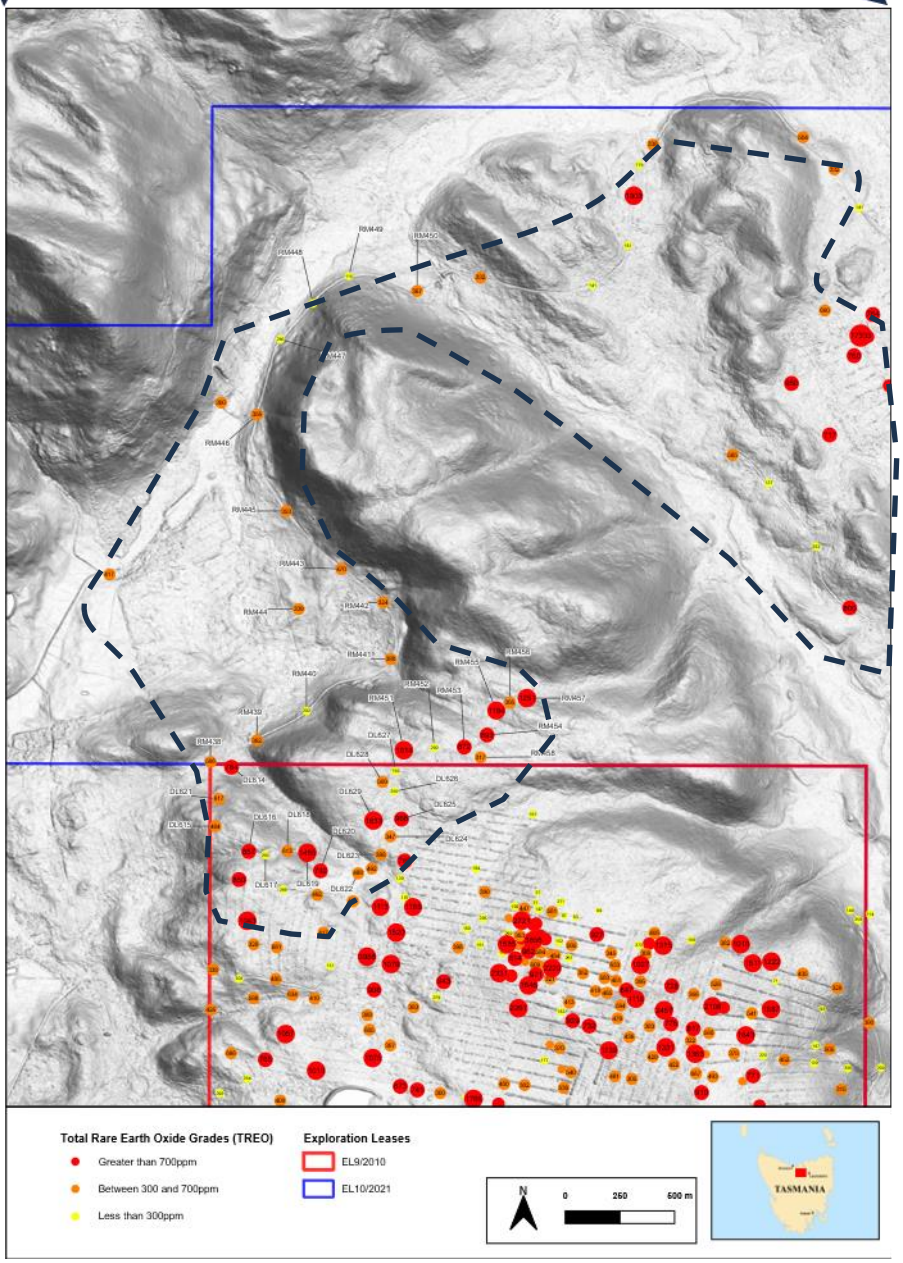


Map 2: Geology from MRT Tas geological maps



Map 3: Location of Bryans Road EDGI drill program

Plotted on ABx's REE Resources (87 million tonnes) as at May 2024. See ASX release dated 02 May 2024



Map 4: Bryans Road drillholes highest TREO grades (ppm)

Geological Setting

The historic work done by H.B. Owen ('Bauxite in Australia', 1954) demonstrated that bauxite in Tasmania can be found in both Jurassic Dolerite and Tertiary Basaltic Volcanics. According to Owen, these bauxite deposits, regardless of parent rock type, are thought to form either as 'grouped remnants of former continuous sheet' or 'formed in lenticular or pod shaped bodies in localised depressions'.

This setting of bauxite formed by weathering of Tertiary Volcanics (basalts) overlaying dolerite basement rocks is considered to also be conducive to the accumulation of REE mineralisation hosted by clay horizons, often most concentrated in buried channel structures.

The Deep Leads – Rubble Mound geology is shown in Map 2 above.

For REE exploration, the hydrological setting is also considered critical so that REE can be adsorbed onto clays so that genuine Ionic Adsorption Clay types of REE mineralisation (IAC REE) can develop. IAC REE are considered the best targets for REE because they can be leached in projects that are low in both capital and operating cost and can be developed rapidly. Supply of REE are vitally important for the manufacture of permanent magnets which are essential in electronics, mobile phones, wind turbines, electric vehicles and military applications.

Tasmanian IAC REE are especially enriched in the 4 permanent magnet REE species, namely neodymium Nd, praseodymium Pr, Terbium Tb and Dysprosium Dy.

3 TENEMENT INFORMATION

EL10/2021 "Bushy Rivulet" (aka Rubble Mound) was granted to ABx4 on 1l February 2021 for a period of 5 years. The Mineral Categories of EL9/2010 and EL10/2021 are:

1 – Metallic Minerals and Atomic Substances.

3 – Rocks, Stone, Gravel, Sand and Clay used in construction, bricklaying and ceramics.

5 – Industrial Minerals, Precious Stones, Semi-precious Stones.

Location

EL9/2010 an EL10/2021 are located north of Exton village which is east of the town of Deloraine (Figure 1) where there is a rail line and major highway which connect all the ports of Tasmania. Ports and railway lines in Tasmania are generally under capacity and the Deloraine Tenement is only 42km by sealed haulage highways from Devonport port and a similar distance from Bell Bay port.

EL10/2021 is contiguous to the east with EL 9/2010 (Figure 1)

EL9/2010 and EL10/2021 are located 40km west of the regional city of Launceston which could offer a wide range of services and skilled work force.

Tenure, including joint venture details and title transfers

EL9/2010 and EL10/2021 are 100% owned by ABx4 which is a wholly-owned subsidiary of ABx Group Limited.

4 RESULTS FOR THE FINAL DRILLING PROJECT REPORT

For EDGI Grant Round 9 Bryans Road, the drilling done on EL10/2021 is as follows:

Table 1 – Drilling conducted for EDGI 9 Bryans Road

		WGS84 55S					
Hole ID	**Northing**	**Easting**	**Latitude**	**Longitude**	**Elevation GPS**	**Elevation LiDAR 1m**	**Max Depth (m)**
EL9/2010							
DL614	5410988	477098	-41.45236	146.72581	292.3	249.5	9
DL615	5410719	477026	-41.45479	146.72493	315.2	285.6	8
DL616	5410604	477178	-41.45582	146.72675	273.3	288.9	13
DL617	5410588	477254	-41.45597	146.72766	310.9	287.9	24
DL618	5410607	477355	-41.4558	146.72886	312.1	282.3	9
DL619	5410599	477446	-41.45588	146.72996	306.5	277.4	19
DL620	5410517	477506	-41.45662	146.73067	309.8	282.3	10
DL621	5410843	477041	-41.45367	146.72511	287.2	269.1	11
DL622	5410506	477679	-41.45672	146.73275	310.7	281.5	11
DL623	5410592	477783	-41.45595	146.734	312.3	288.0	3
DL624	5410675	477826	-41.45521	146.7345	309.7	290.7	4
DL625	5410754	477876	-41.45449	146.73511	310.0	292.2	8
DL626	5410880	477842	-41.45336	146.73471	305.4	295.3	18
DL627	5410972	477848	-41.45253	146.73479	316.1	297.7	11
DL628	5410923	477789	-41.45296	146.73407	308.2	297.1	6

15	Holes	on EL9/2010	Total metres drilled	164

Claimable direct drilling expenditures were considerably larger than the maximum amount of the Grant.

The drilling expenditure details have been itemised in a separate spreadsheet for MRT purposes and are not included here because they are commercial in confidence.

Related Data Files

The following is a list of related data files accompanying this report:

Table 2. Related data files provided with this report

#	Related Data Files List	Name	Type
1	Final Drilling Project Report	EL102021_202411_01_Final Drilling Project Report EDGI-9 Bryans Road for EL10-2021.pdf	pdf & Word
2	Surface_location_data_file	EL092010_202411_02_SL_1.xlsx	xlsx
3	Downhole_survey_data_file	EL092010_202411_03_DS_1.xlsx	xlsx
4	Downhole_lithology_data_file	EL092010_202411_04_DL_1.xlsx	xlsx
5	Downhole_lithology_data_file	EL092010_202411_04a_DL_1.pdf	pdf
6	Lithology_code_file	EL092010_202411_05_LithologyCodes.xlsx	xlsx
7	Downhole_geochem_data_file	EL092010_202411_06_DG_1.xlsx	xlsx
8	QAQC_data_file	EL092010_202411_07_QAQC_1.pdf	pdf
9	Surface_Geochem_data_file	n.a.	n.a
10	Geophysics Reports (separate)	n.a.	n.a.
11	File verification list	EL092010_202411_09_File Verification List_1.xlsx	xlsx

5 CONCLUSIONS AND RECOMMENDATIONS

As a result of this drilling, ABx has confirmed that the EL 9/2010 and EL 10/2021 tenements are more prospective for the discovery of REE mineralisation of the Ionic Adsorption Clay type.

This work played an important role in the evolution and development of ABx's proprietary exploration technology which ABx is beginning to apply across northern Tasmania.

6 ENVIRONMENT

Surface Disturbing Operations:

All drilling was done on or immediately adjacent to existing hardwood plantation access roads or clearings. No off-road surface disturbance activities were carried out for the EDGI drillholes.

Surveys (archaeological, botanical):

No surveys were undertaken within the current annual reporting period for the area subject to this EDGI grant.

Rehabilitation

All rehabilitation on this tenement has been completed immediately after each hole was completed and accepted by the landowner in accordance with the ABx Group's mantra to "only go where we are welcome" and to "leave the land in as good or better condition than we found it".

Holes are drilled and all samples are collected and bagged and removed from site.

On completion, an octo-plug is rammed into the 100mm wide hole to a depth of at least 1.5 metres or until hard refusal. Then the hole is filled with loose soil and gravel, rammed hard and soil or, in the case of holes drilled on the dirt roads, gravel, is reinstated over the hole

There is no further rehabilitation required at this time and all future exploration activities will be immediately rehabilitated as ABx have always done in the past. Examples of photos of hole rehabilitation follow:

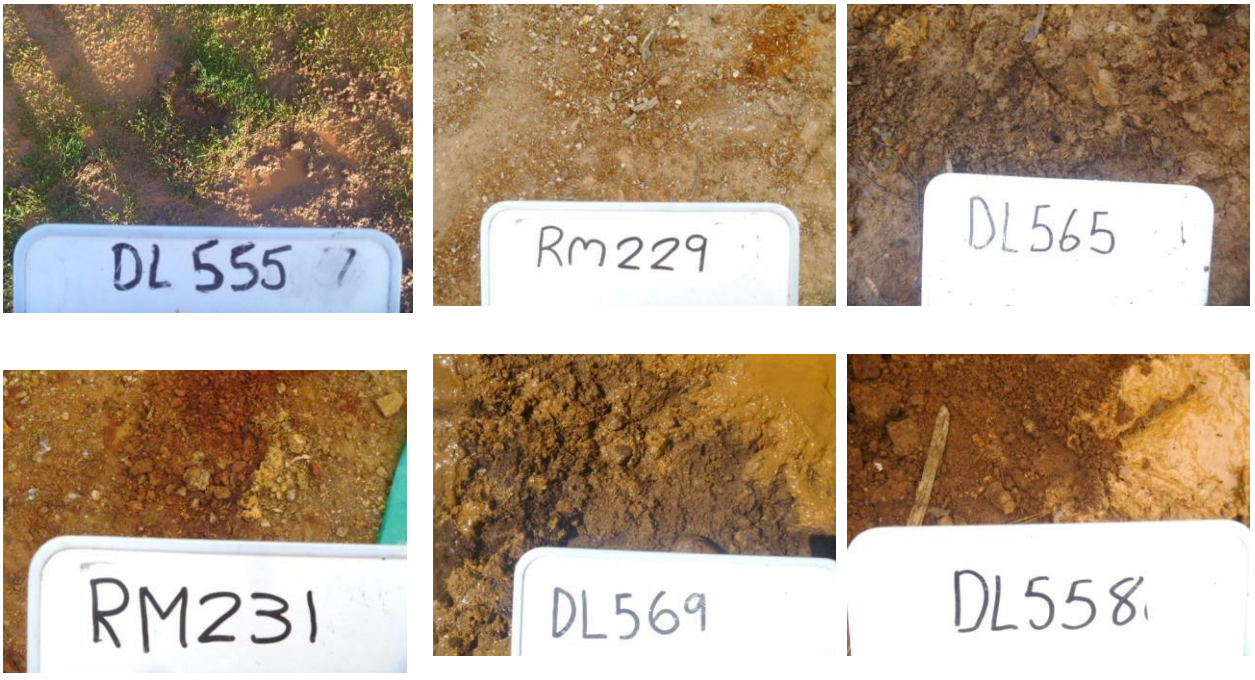


Figure 6: Representative photos of the immediate rehabilitation of drillhole collars after drilling is completed. The 6 main hole settings shown are (clockwise from top left):

1. Grassed farm pasture land (rare if any)
2. Gravel access roads
3. Soil-gravel on sides of access roads
4. Washed soil-gravel in clearings
5. Mud-slop in ploughed gaps between windrows and replanted seedlings in harvested plantation areas
6. General effect of slurry from very wet holes (rare)

7 EXPENDITURE

Total project expenditure exceeded $250,000 and the direct drilling expenditures, which are 50% claimable for the EDGI Grant, exceeded the maximum claimable amount of the Grant.

The drilling expenditure details and copy of original drill plods and invoices have been itemised in separate files for MRT review and other purposes and are not included here because they are commercial in confidence.

8 REFERENCES

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