

First Annual Report
for
EL18/2014 – Prossers Rd

Reporting Period: 2 December 2014 – 1 December 2015
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ABSTRACT

Objective:

Exploration Licence No. 18/2014 “Prossers Rd” was applied for by ABx4 Pty Ltd (**ABx4**) in order to facilitate an exploration program to discover economically viable deposits of bauxite associated with Jurassic Dolerite and Tertiary Volcanics. The goal of the program is to determine the quality and quantity of bauxite in the area using an RC drill rig mounted on a light 12 tonne truck.

Methodology:

1. Detailed geological mapping, including geomorphological mapping, to define the areas with best potential for bauxite.
2. Systematic sampling of natural outcrops and exposures in road cuts of the bauxite profile.
3. Chemical analyses of samples, including specialist analyses to determine total and available alumina, total and reactive silica, loss on ignition and other analyses as required in bauxite search.
4. Drill testing of zones with best potential defined by work under 1, 2, and 3, by an RC drill rig mounted on a light 12 tonne truck to get samples representing the whole bauxite profile.
5. Systematic drill testing at close spacings to obtain data for resource estimation in the best target areas defined by programme under 4.

Results:

Australian Bauxite Limited (ABx) drilled 68 RC holes for 715 metres into the St Leonards bauxite target. Assay results revealed that 31 of these 68 holes intersected bauxite of good quality. The drilling of the area showed a fairly consistent bauxite/laterite formation derived from dolerite occurring at the Jurassic/Tertiary contact. This layer appears to be gently dipping to the south west and is only exposed at surface where there has been significant erosion. All data collected and data analysis completed; suggests the bauxite layer is a continuous sheet which covers an area of somewhere between 4-12 km².

Field work was also conducted on the Dilston, Hunting Grounds and Magazine Road Targets. The brief work completed around Magazine road suggests that a small bauxite deposit may occur. However, this small deposit, should it exist, would not be highly prospective and the target area is now deemed relatively low-priority.

The bauxite samples taken from the Dilston area showed it is low-grade ferruginous bauxite/laterite. From previous experience good and/or high grade bauxite can occur underneath a ferruginous upper bauxite or “ferricrete” layer. Therefore it is possible that drilling the deposit may recover some higher quality bauxite that is currently not exposed at surface.

The Hunting Grounds Target area did not have bauxite outcrops at surface and is a low priority. ABx submitted an application to Mineral Resources Tasmania to relinquish 21km² of the original 135km² tenement area at the end of the 1st year of tenure. This relinquishment covers the Hunting Grounds area.

Recommendations for future work:

ABx intends to continue with its recommended work program of:

1. Detailed geological mapping, including geomorphological mapping, to define the areas with best potential for bauxite.
2. Systematic sampling of natural outcrops and exposures in road cuts of the bauxite profile.
3. Chemical analyses of samples, including specialist analyses to determine total and available alumina, total and reactive silica, loss on ignition and other analyses as required in the bauxite search.
4. Drill testing of zones with best potential defined by work under 1, 2. and 3, by an RC drill rig mounted on a light 12 tonne truck to get samples representing the whole bauxite profile.
5. Systematic drill testing at close spacings to obtain data for resource estimation in the best target areas defined by programme under 4.

Specifically, more desktop work is required on the St Leonards deposits to assess the economic feasibility of a mining operation.

INTRODUCTION

Exploration Rationale

ABx4 Pty Ltd - the holder of Category 1 Exploration Licence EL 18/2014 - is the wholly owned subsidiary of Australian Bauxite Ltd. Australian Bauxite Limited (ABx) (ASX: ABX) is an exploration company that holds the core of the Tasmanian Bauxite Province with all tenements selected on 3 principles:

- Quality – good quality bauxite with potential for significant resource tonnages;
- Proximity – easy access to infrastructure connected to export ports; and
- Accessibility – free of socio-environmental or native title land constraints.

EL 18/2014 “Prossers Road” was applied for in order to facilitate an exploration program to discover economically viable deposits of bauxite associated with Tertiary Volcanics and Jurassic Dolerite in an area with old peneplained surfaces preserved as plateaus.

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 host 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’.

The bauxite was formed during the Lower Tertiary period when volcanism commenced and extreme tropical climatic conditions prevailed – at the boundary between the Cretaceous Era and the onset of the Tertiary Era which is often referred to as the K-T boundary commonly associated with the extinction of the dinosaurs, approximately 60 million years ago. The bauxite occurs on the old lateritic surface, where the processes of laterisation in the Tertiary period has removed silica from the rock, leaving mainly Aluminium and Iron rich minerals behind.

Tenement Information

EL 18/2014 “Prossers Rd” was granted on and from 2 December 2014 for a period of 5 years to ABx4 Pty Ltd, a wholly-owned subsidiary of Australian Bauxite Limited.

ABx applied to relinquish 21km² of the original 135km² of tenement area at the end of the first year of tenure.

The mineral category of EL 18/2014 is; ‘Mineral Category is 1 – Metallic Minerals and Atomic Substances’.

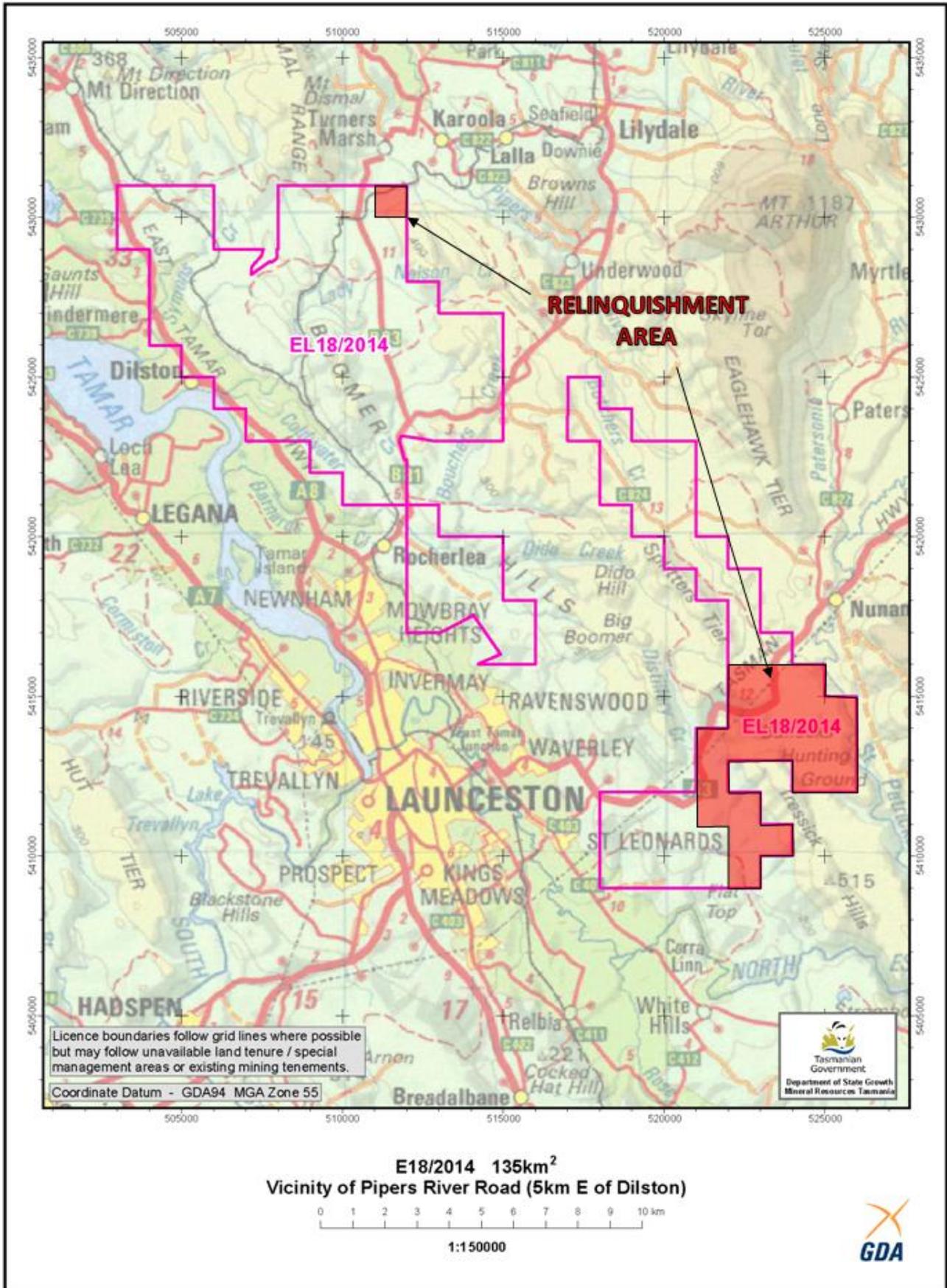
Tenure, including joint venture details and title transfers

EL 18/2014 “Prossers Rd” is 100% owned by ABx4 which is a wholly-owned subsidiary of Australian Bauxite Limited.

Location

The Prossers Rd tenement extends from directly east of Launceston in the St Leonards area along the eastern hills and extending north around Dilston and Turner's Marsh.

Prossers Rd is ideally located close to Bell Bay Port – only 24km by road from the northernmost part of the tenement – as well as the city of Launceston which offers a skilled work force and a wide variety of services.



Map 1. Location of EL 18/2014 "Prossers Rd". The location of relinquished areas are shown (red shaded areas)

REVIEW OF PREVIOUS WORK

Literature Review

St Leonards

Initial work was completed by the Australian Bureau of Mineral Resources in conjunction with the Tasmanian Mines Department on the bauxite deposits in the St Leonards area in the mid-to-late 1940s. This work is reported in the BMR Bulletin No. 24 “*Bauxite in Australia*” by H.B. Owen (1954).

Owen describes a total of seven separate bauxite bodies developed upon Dolerite in the St. Leonards area, though noting that only Deposit No. 1 and No. 3 contain “appreciable quantities of economic bauxite”. The total tonnages at St. Leonards was noted by H.B. Owen as being relatively small but having the advantage of being in close proximity to Launceston and only 38 miles from the Bell Bay alumina plant.

Owen describes the general geology of the deposits as follows:

“No. 1 Deposit crops out as a narrow bench following the contours along the western slopes of a valley trending south. The bauxite outcrop is continuous for 2,900 ft [~883m] on the valley side and also appears in small exposures at the head of the valley. The several small discontinuous outcrops which constitute Nos. 3 and 4 Deposits lie on the opposite side of the valley at a similar general elevation. It is probable that these bodies mark the outer edges of a once continuous sheet of laterite which lay on a surface dipping gently to the south-west.”

Proved resources were calculated by Owen for Deposit No. 1 and No. 3 though these estimates **are not** considered “JORC-compliant”. The “Summary of Reserves” has been reproduced in the table below.

Table 1. Historical (non-JORC compliant) resources calculated for St Leonards bauxite deposits.

Deposit No.	Tonnes	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	TiO ₂ %	Available Al ₂ O ₃ %
No. 1	112,300	5.6	41.7	25.7	2.2	37.7
No. 3	30,200	7.1	40.9	25.8	2.2	36.5
Total	142,500	5.9	41.5	25.7	2.2	37.4

Dilston

A reference to a small bauxite deposit north of Dilston (referred to as “Thorp”) was also made in Owen’s *Bauxite in Australia*. The single paragraph written on the deposit is as follows:

“Doleritic bauxite of granular texture outcrops on a farm named Thorp at about 1.5 miles north-west of Dilston Post Office and 0.5 mile east of the Georgetown road. The bauxite, which is believed to be thin, wedges out against dolerite to the north, east and south, but may continue to the west where a small exposure is visible in highly improved land adjacent to the farmstead. The deposit is not sufficiently large to warrant interference with the farm.”

EXPLORATION COMPLETED DURING THE REPORTING PERIOD

Prospect-based Exploration Activities

St Leonards Historic Deposits

Field Reconnaissance

Field reconnaissance was undertaken by ABx4 geologists at the St Leonards bauxite deposits on the Scramble Flats Property in the St Leonards area of Launceston. Deposits Nos. 1, 2, 3 and 4 are identified in *Bauxite in Australia* (see Appendix 1). This was done prior to the commencement of drilling activities in order to identify the historic deposit locations and assist in planning drillhole locations.

Bauxite was identified at surface at all four historic deposit locations and in new areas not previously identified. The deposits were all located within a large, wide valley consisting of mostly-cleared farms used for livestock grazing; all properties were owned by the same landholder.

Drilling Results

A total of 68 Reverse Circulation (RC) holes were drilled for 715 meters.

Using a cut-off value for bauxite of 25% Available Alumina (“Avl Al₂O₃”) for samples sieved at 0.26mm, 31 of the 68 holes drilled intersected bauxite.

ABx drillholes intersected bauxite in the historical bauxite deposits Nos. 1, 3 & 4 and in some adjacent areas; however, no bauxite was sampled from drillholes at the historical bauxite deposit No. 2.

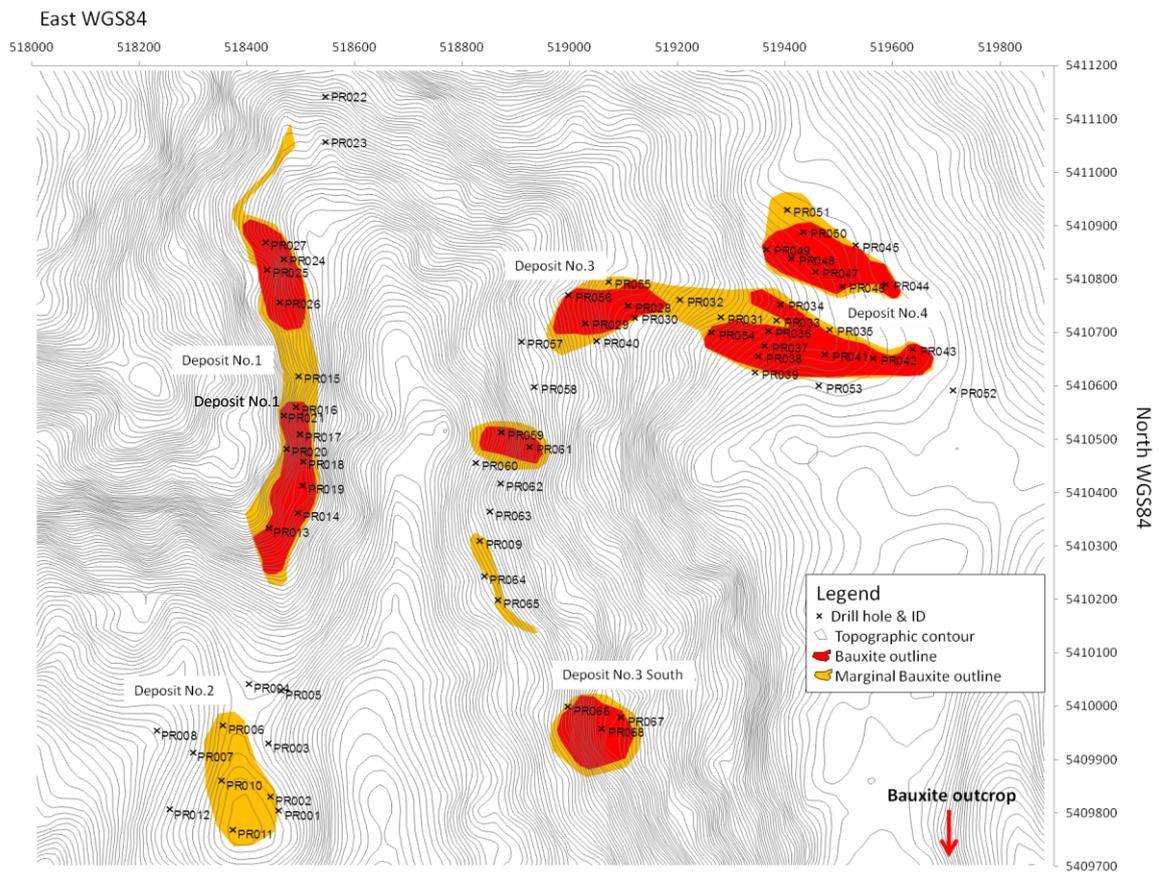
Table 2. Summary of ABx drillholes (grouped by historic deposit locations).

Deposit No. 1 Area	PR013-PR021, PR024-PR027
head of valley	PR022-PR023
Deposit No. 2 Area	PR001-008, PR010-PR012
Deposit No. 3 Area	PR028-PR030, PR032, PR040, PR055-PR062
south of 3	PR009, PR063-PR068*
Deposit No. 4 Area	PR031, PR033-PR039, PR041-PR054

ABx sampling protocol:

RC drillholes sampled sub-surface material at 1m intervals. A small representative mass from each 1m interval of each drillhole is collected and carefully placed in a chip tray. Each metre of each drillhole is then logged by the geologist using the chip tray which then informs which samples will undergo chemical analysis at an accredited laboratory (ALS Laboratories, Virginia, Brisbane QLD).

Sample IDs are a combination of the drillhole ID and the base of the 1m sampling interval e.g. sample PR01304 is the material sourced from 3-4m of drillhole PR013.



Map 2. St Leonards Drill hole and deposit map

A summary of drilling results by deposit area

Deposit 1 Area: The bauxite layer was intersected in all holes except for PR015 and possessed an average thickness of 2.25m, ranging from 1 to 4m. Bauxite intersections in drillholes higher up on the hill indicate that the bauxite layer extends at least 50m (horizontal axis) to the west into the hill in many places. The steep terrain in this area inhibited drilling any further up the hill.

The head of the valley which makes the northernmost extension of Deposit 1 is defined by a Y-shaped valley where two smaller creeks cut through the high-relief terrain and form a single waterway at the base of the hills. The creeks cut through bauxite outcrops but these could not be accessed because of steep terrain and wet weather conditions. As a substitute two deep holes were instead drilled on the far eastern side of the valley head. These holes did not intersect bauxite and may provide constraints for the subsurface extent of Deposit 1. There is the potential for large fault displacement of the bauxite layer through the northern part of the valley where these holes were drilled. The Dolerite basement comes to the surface north and east of these drill holes which suggests the basement Dolerite is no longer a level flat continuous surface like it is to the south.

Deposit 2 Area: As stated above, no significant bauxite was intersected at Deposit 2. It is likely that the material resembling bauxite on surface at Deposit No. 2 is very thin (< 0.5-1m) and may have assayed poorly due to dilution by the underlying kaolin rich material. There is no overburden on this deposit which would usually provide a protective layer which resists erosion and preserves the full thickness of the bauxite layer. The grade of Deposit 2 makes it the least prospective deposit on the property but may be quickly and efficiently strip mined if mining were ever to occur. Surface sampling, or use of push-tubes, may be a more appropriate way to sample this deposit.

Deposit 3 Area: 5 of the 13 drillholes in this area intersected bauxite. The bauxite in these five holes had an average thickness of 1.4m, ranging from 1 to 2m. The holes that intersected bauxite in this deposit area are divided into two main ore zones; whether they are connected is unclear due to the wide-spacing of the drill-holes and thick overburden.

Bauxite exposures were identified along the west-facing hillside to the south of Deposit No. 3. While most holes did not intersect bauxite of acceptable grade, the southernmost drill holes PR066 and PR068 intersected a 2m layer of high-quality bauxite. The spatial extent of this ore zone in the proximity of these two holes is uncertain. Cross-sections of these holes interpreted that the bauxite intersects are significant and part of a continuous sheet of bauxite pervasive through the hill.

Deposit 4 Area: Just over half of the holes in this area intersected bauxite (12 of 22). Deposit 4 is divided into northern and southern body separated by an east-west extending dry creek. The average intercept thickness was 1.8m (range 1 to 2m) on the northern side and 2.7m (range 2 to 4m) on the southern side of the creek.

Bauxite was intersected in many locations underneath the cover of Quarternary sediments and is likely to be quite extensive. This represents the most significant part of the deposit because the overburden to ore ratio is much lower than the other deposits.

Comments on challenges encountered during drilling:

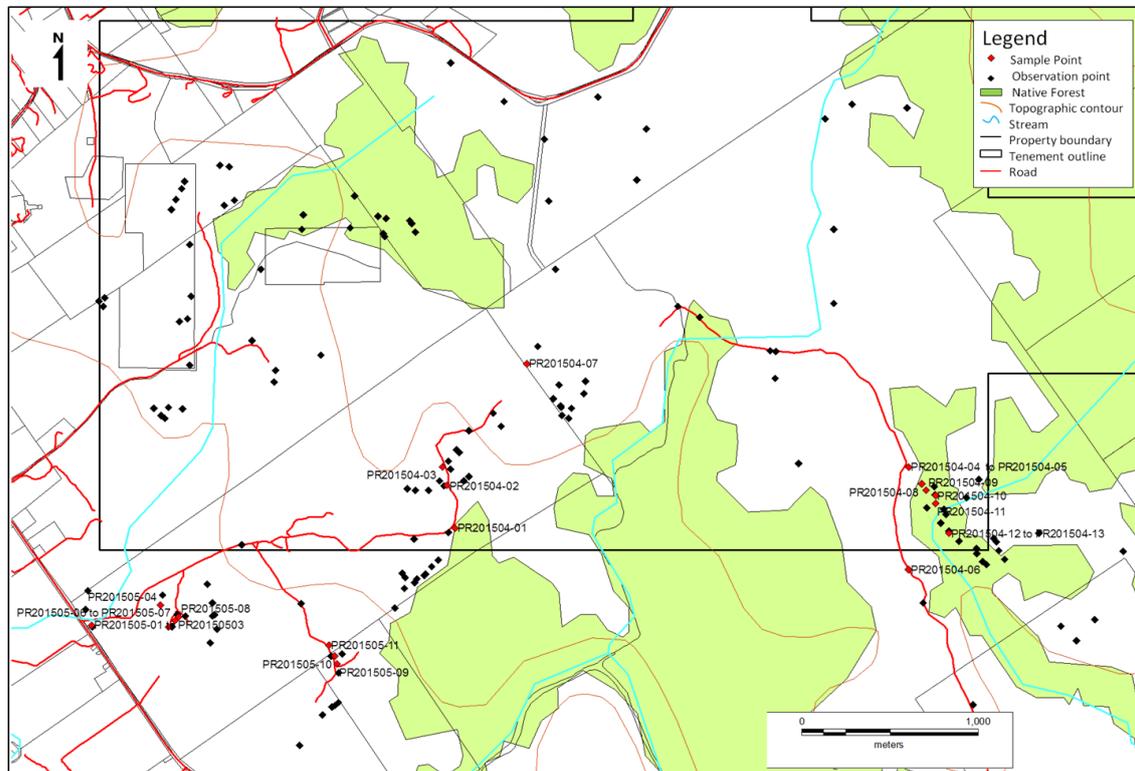
The majority of the cleared farmland on which the St Leonards historical deposits 1 – 4 occur was covered by black, muddy soil and grass. This feature, in combination with the steep terrain throughout much of the valley area, made traversing certain parts of the deposit area by vehicle potentially dangerous under wet or moist conditions. This hampered drilling progress and should be treated as a safety hazard in any future exploration on the property.

St Leonards – Dunedin and Hunting Grounds Properties

Field Reconnaissance

Field reconnaissance and surface sampling was undertaken on the Dunedin and Hunting Grounds properties to the east and northeast of the St Leonards deposits, respectively. The vast majority of the land explored was cleared to semi-cleared for agricultural purposes.

Map 3. Field reconnaissance map of the wider St Leonards area including; sample locations & observation points.



Dunedin Property (incl. Charlie's Quarry Area) – PR201504-01 to 05, 07 to 15

Surface samples collected from the Dunedin Property were taken from the entrance area (PR201504-01 to 03 & 07), the southern valley area (or 'Charlie's Quarry'; PR201504-04 to 05 & 08 to 13) and in the northern valley area (PR201504-14 & 15).

Bauxite was first identified on the main road through the property (PR201504-01 & 02). The bauxite occurs as randomly-located boulders at surface. One of the boulders had been dug up recently to install irrigation piping and is thought to have been in-situ prior to removal. While the Niton XRF results done in-house are not as reliable or accurate as laboratory results, these samples were almost definitely bauxite (high Al, low silica). These boulders occurred in an area mapped as Tertiary sediments occurring stratigraphically above the Dolerite basement which was exposed in the nearby valley. The nearby Table-Top Hill was explored but no bauxite was identified (PR201504-07).

The remaining surface samples collected from the Dunedin were taken along a long NW-SE trending fault zone which has resulted in a long linear NW-SE trending depression in the topography. This long shallow asymmetric valley is mapped predominantly as Jurassic Dolerite with Tertiary sediments filling in the depressions. Samples PR201504-14 & 15 were collected from the northern end of this fault zone but did not contain bauxite.

Surface samples PR201404-04 to 05 & 08 to 13 were collected on the fault zone in an area referred to as 'Charlie's Quarry'. The quarry takes the form of a series of diggings along the hillside and is cut in half by a small E-W trending creek. The quarry was cut into a very thin narrow bauxite body which was used for road gravel throughout the property. This made identification of in-situ bauxite very difficult and some of this transported quarry material was likely sampled by accident. Only one of eight samples in this area were of acceptable bauxite grade. The bauxite layer was observed to be very thin and thought unlikely to be extensive underneath cover.

Hunting Grounds Property – PR201504-16, 17 & 18

The Hunting Grounds area is a large tertiary valley caused by graben faulting in the underlying Jurassic dolerite basement which forms the hills along the edges of the valley. The valley contained large amounts of Tertiary volcanics with sporadic laterite outcrops along the edges of the valley (PR201504-16 to 18). The laterite did not contain any alumina but occurred in the right geological location for bauxite formation. The Jurassic-Tertiary contact was checked thoroughly but no bauxite was identified on the property.

Map 4. Field reconnaissance map of the Hunting Grounds area including; sample locations & observation points

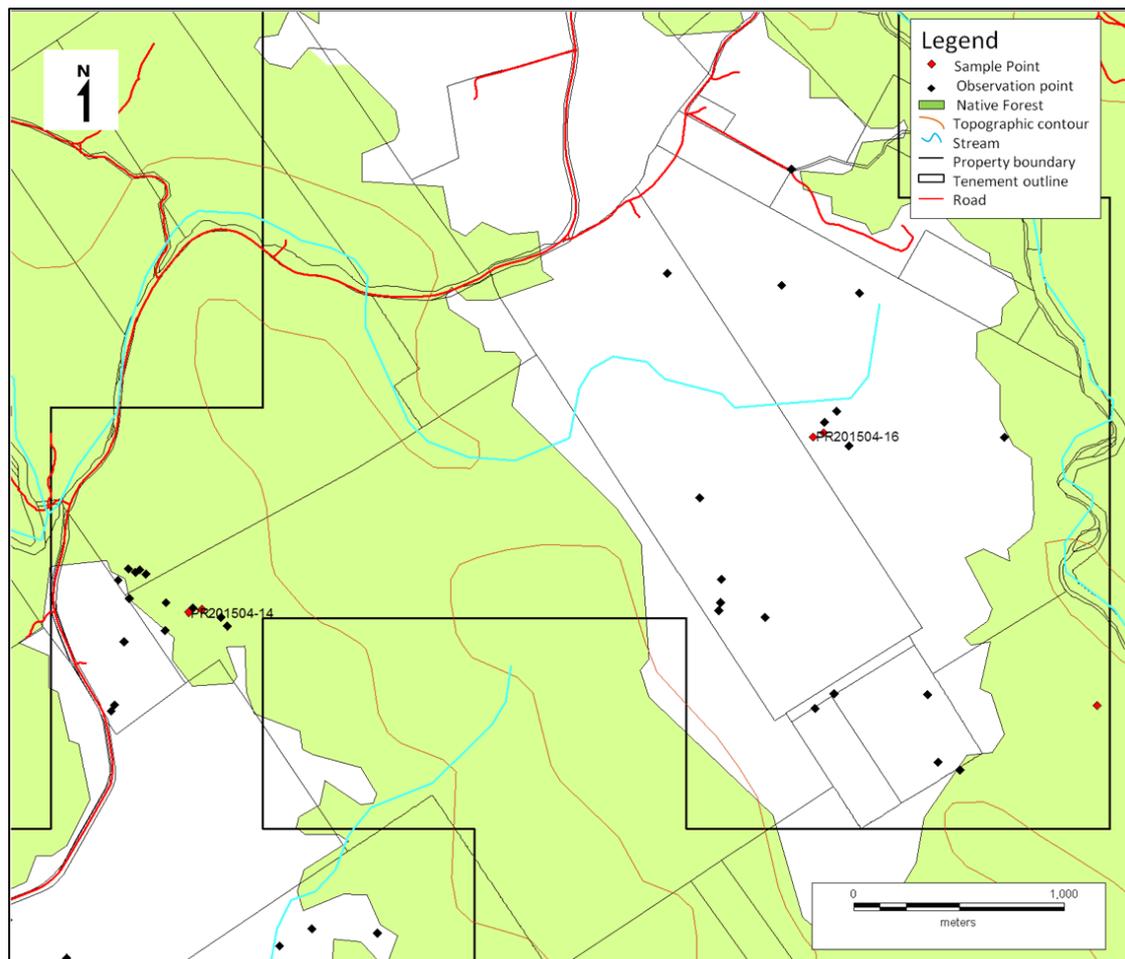
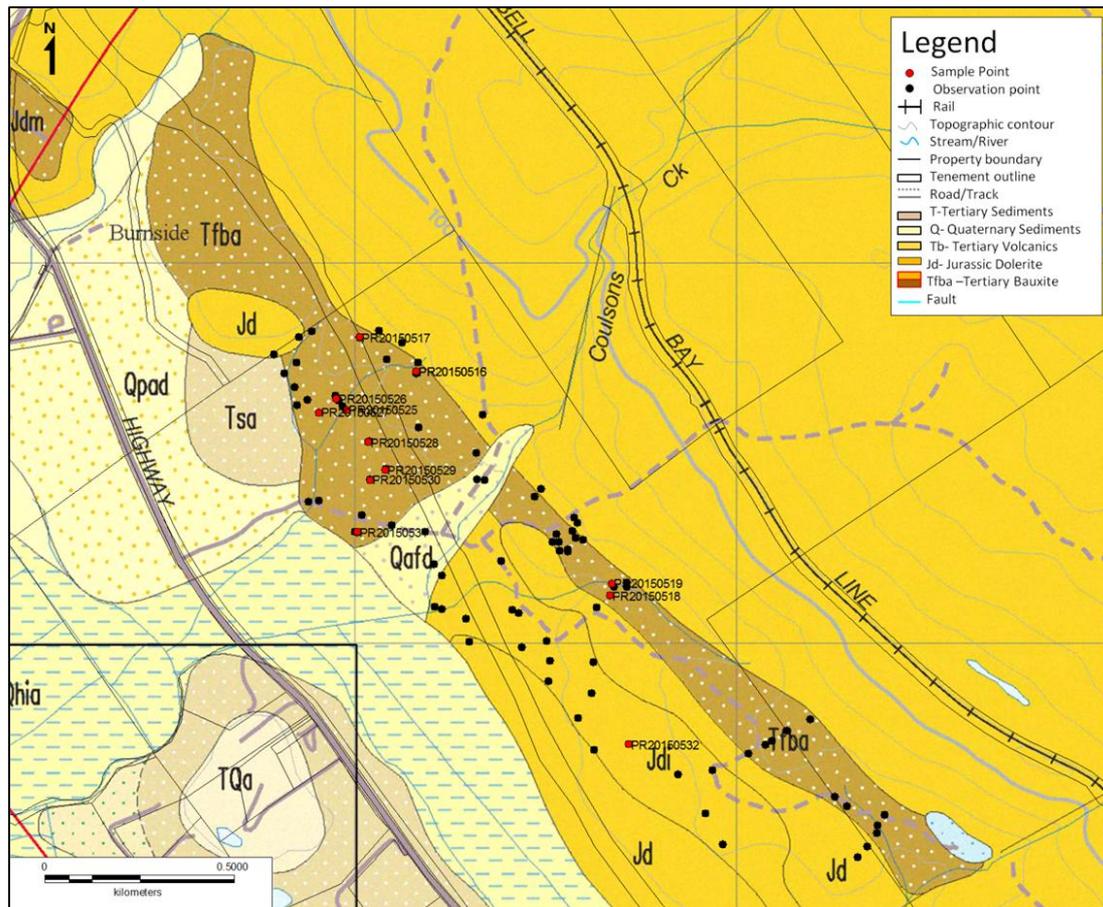


Table 3. Assay results of surface samples taken from the St Leonards area.

Sample ID	Easting MGA94	Northing MGA94	Al2O3 %	SiO2 %	Fe2O3 %	TiO2 %	Description
PR201504-01	520000	5409124	50.3	7.1	18.7	2.1	Pisolitic bauxite on dolerite contact, may not be original source
PR201504-02	519951	5409365	52.9	6.4	19.6	2.3	Boulder of bauxite dug up with Ag pipe. Pisolitic nodular doleritic bauxite with grey gibbsite concretions, potentially a narrow thin deposit
PR201504-03	519929	5409470	12.0	33.9	21.3	3.3	Small nodules of potential bauxite
PR201504-04	522548	5409470	18.1	32.7	43.6	0.8	Samples taken from ferruginous part of mottled zone red ferruginous laterite on pallid zone
PR201504-05	522548	5409470	10.7	42.8	34.9	0.6	
PR201504-07	520403	5410056	<i>n/a</i>	37.4	47.8	3.5	Ferruginous and siliceous laterite (Conara type)
PR201504-08	522622	5409375	19.4	31.0	46.6	0.8	Charlie's Quarry. Vuggy granular red lump in mottled zone looks residual but from local area.
PR201504-09	522646	5409338	14.4	34.6	47.9	0.4	Pink and Yellow cemented mottled zone in light sandy soil, dolerite derived.
PR201504-10	522700	5409308	28.2	35.4	25.5	0.9	Charlie's Quarry. Granular bauxite, beige and brown and white bauxite with micro vughs, lower bauxite layer- thin.
PR201504-11	522701	5409263	42.0	15.3	28.9	0.9	Charlie's Quarry. Granular "Rosevale type" doleritic bauxite, high grade and 3m thick the bauxite is speckled yellow/white and brown with coarse relic crystal structure and with micro vughs, very narrow, 10-50m wide.
PR201504-12	522778	5409094	39.5	27.4	31.3	0.8	Pale pink and brown vuggy bauxite transition from Bauxite to dolerite with iron bands.
PR201504-13	522778	5409094	12.4	15.1	72.7	0.3	Red ferruginous bauxite with dolerite textures from upper layer.
PR201504-14	521653	5413029	28.3	31.2	37.9	0.7	Mottled zone white and red mottled dolerite near contact, no vughs.
PR201504-15	521712	5413041	27.5	34.8	34.8	0.7	Vuggy pale cemented granular doleritic bauxite very thin.
PR201504-16	524600	5413862	0.8	47.9	37.7	2.9	Ferruginous Conara type laterite.
PR201504-17	524649	5413884	<i>n/a</i>	50.4	37.5	2.8	Ferruginous Conara type laterite.
PR201504-18	524649	5413884	<i>n/a</i>	45.3	42.3	2.7	Ferruginous Conara type laterite.

Note - Assay Results completed in house with handheld Niton, Niton reads about 2% over on SiO2

Dilston – Thorp Property and Magazine Rd

Map 5. Dilston target area with geological map, observation points, and sample locations with labels.

Base map: Forsyth, S.M. and Calver, C.R. (compilers) 2005. Digital Geological Atlas 1:25,000 scale Series. Sheet 5042. Dilston. Mineral Resources Tasmania.

Field Reconnaissance

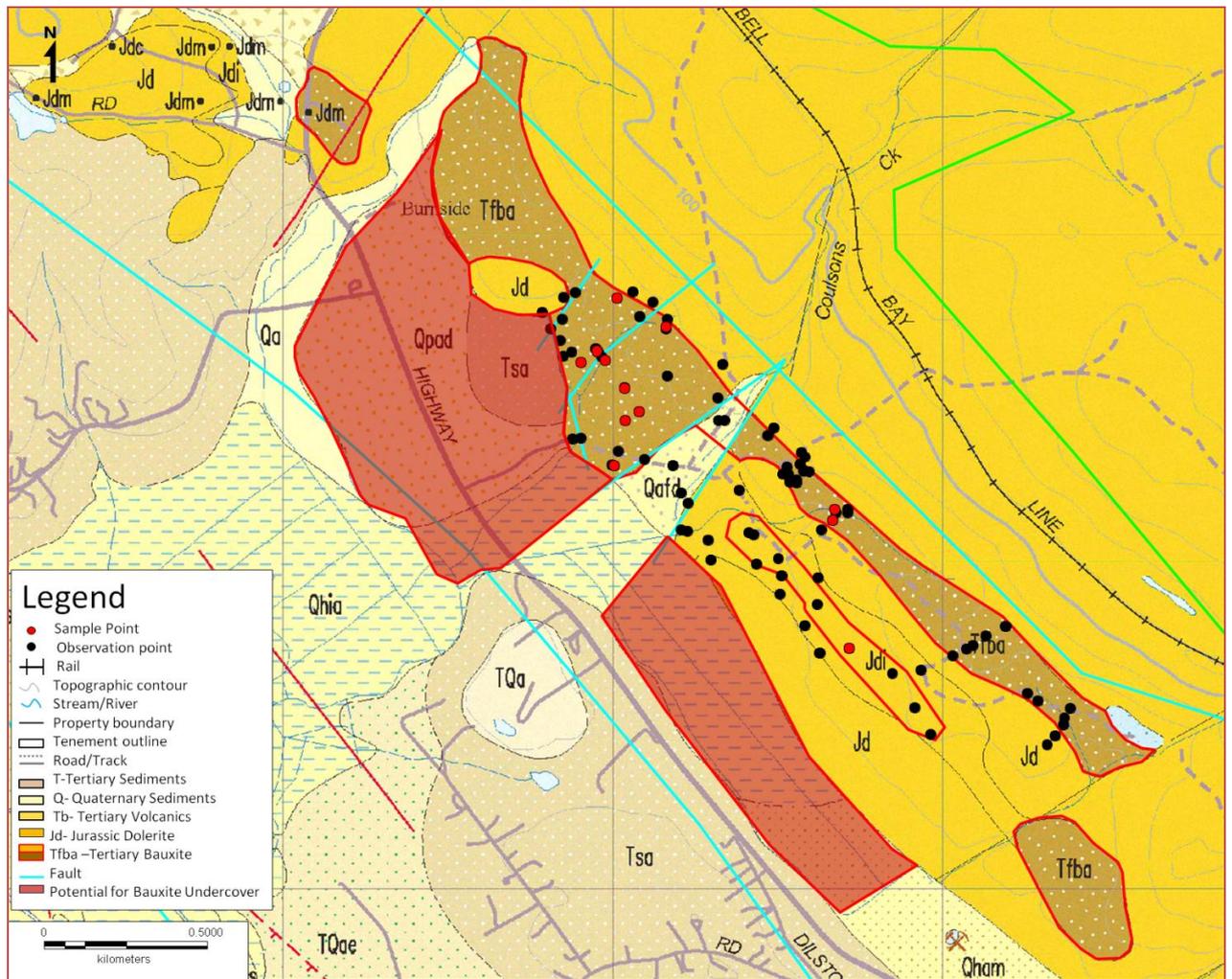
Field reconnaissance and surface sampling was undertaken throughout the Dilston area.

The main areas of interest were along a NW-SW trending bauxite exposure 'Tfba' mapped on the Launceston sheet of the *1:25,000 Geological Map Series* (Mineral Resources Tasmania). The northern part of this exposure, located on the "Thorp" property, is quite clearly the deposit referred to by Owen in *Bauxite in Australia*.

Field work on the central part of the exposure resulted in a refined map of the bauxite deposit exposed at surface. Thirteen surface samples were collected at various bauxite outcrops on the central part of the exposure but unfortunately all returned assay results of low-grade or submarginal bauxite.

The bauxite was highly ferruginous, usually pisolitic and often earthy, brecciated and vuggy with ferruginous zoning. The bauxite contains gibbsite, kaolinite, goethite, magnetite, hematite, some limonite and generally very low in quartz.

As stated by Owen, there is significant potential for bauxite to extend under cover to the west.



Map 6. Dilston reconnaissance map with geological interpretation overlying the *Digital Geological Atlas 1:25,000 Scale Series. Sheet 5042. Dilston.*

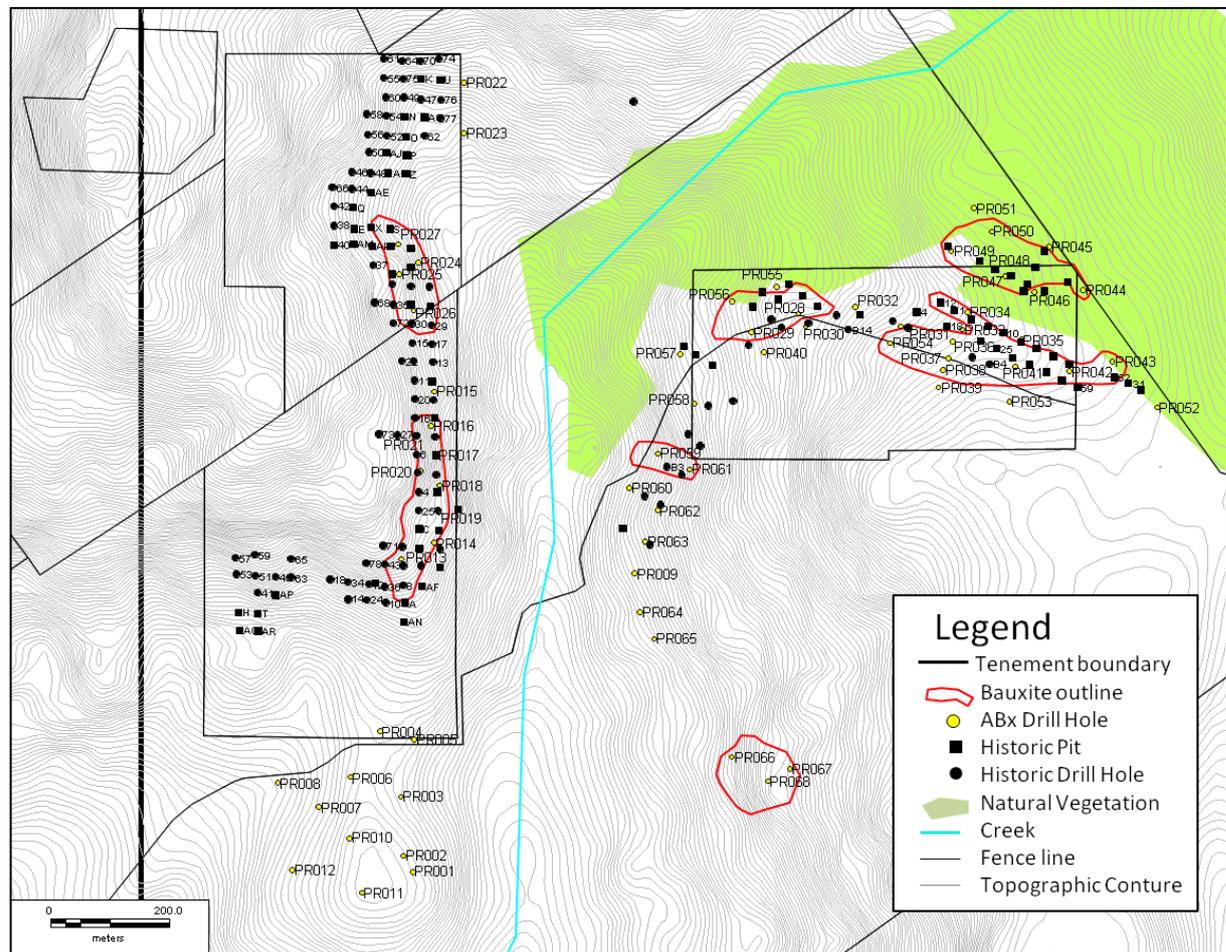
Table 4. ALS assay results of surface samples taken from the Dilston historic deposit.

Sample ID	MGA94		Avl Al ₂ O ₃	Rx SiO ₂	Al ₂ O ₃	SiO ₂	Fe ₂ O ₃	TiO ₂	Description
	Easting	Northing	%	%	%	%	%		
PR20150515	520000mE	5409124mN	26.8	9.6	37.0	10.6	29.5	2.5	Pisolitic Red/Yellow Doleritic Bauxite zones of Limonite and Hematite
PR20150516	519951mE	5409365mN	8.4	19.8	28.2	20.6	32.0	2.6	Gibbsitic Pisolites with Matt red matrix: some white Gibbsite.
PR20150517	519929mE	5409470mN	21.2	16.8	37.0	17.1	22.1	2.9	Minor vughs and pisolites with lots of micro vughs, large vughs filled with grey clay, Matt pale red matrix 80% with micro vughs.
PR20150518	522548mE	5409470mN	20.1	10.5	31.2	11.3	35.7	3.4	Semi formed Pisolites and small vughs with 1/2 ferruginous veinlets, earthy matrix
PR20150519	522548mE	5409470mN	19.0	9.5	29.7	10.4	36.8	3.9	Pisolitic bauxite, red with 2mm Pisolites (40%)
PR20150525	520403mE	5410056mN	16.4	11.4	29.1	12.4	36.6	1.8	Pisolitic heavy vuggy Iron rich bauxite goethite/limonite/hematite and very minor magnetite
PR20150526	522622mE	5409375mN	23.8	5.7	30.6	6.6	39.6	2.9	Pisolitic, Magnetic pisolites, minor vughs around pisolites, concretionary, moderately heavy, Granular bauxite(micro concretions and Fe zonations)
PR20150527	522646mE	5409338mN	13.8	8.3	25.3	9.6	45.7	2.1	Vuggy bauxite with zones of ferruginous material (non-magnetic) yellow granular bauxite and some zones are very hard and vuggy.
PR20150528	522700mE	5409308mN	18.1	10.4	31.3	11.8	36.9	1.7	Typical ferruginous Pisolitic bauxite, minor magnetite, matrix supported
PR20150529	522701mE	5409263mN	21.9	12.3	35.4	13.1	28.6	1.6	Red/Yellow vuggy bauxite (vughs are angular) moderate Fe
PR20150530	522778mE	5409094mN	23.0	5.6	30.6	6.6	38.7	3.5	Vuggy red/orange granular bauxite with macro-Crystalline relic dolerite Textures, moderate Fe.
PR20150531	522778mE	5409094mN	20.1	10.5	32.6	11.7	33.7	1.7	Pisolitic with angular vughs, non-magnetic ferruginous concretionary (nodular) bauxite
PR20150532	521653mE	5413029mN	29.0	6.5	36.4	7.4	30.7	3.3	Heavy/Strongly magnetic ferruginous pisolitic bauxite. Small areas of gibbsite fractures and filled vughs, minor granular texture between vughs, small pisos

Field reconnaissance also took place along the hills adjacent to Magazine Road to the north of Dilston. The mapped geology of this area was of various types of Tertiary sediments overlying the Dolerite that constitute the west-facing hills that make up most of the tenement. Bauxite has been identified in other areas with a similar mapped geology so this location was investigated. The area was found to consist of fresh and semi-bauxitised dolerites. No samples were collected.

Analysis of Historical Data from St Leonards

Historical pit and drilling data was extracted from HB. Owen's Book '*Bauxite in Tasmania*' and incorporated into recent drilling by ABx. Historical pit and drill holes locations are approximated, bauxite intercepts/horizon where also estimated from literature.



Map 7. Pit and drill hole map incorporating both recent and historical data

The combination of historical and recent pits and drilling produced a series of cross-sections of the area (See Appendix 2). The cross-sections show that bauxite occurs as a potential sheet of bauxite which covered most of the drilled area and is typically only not present when recent erosion has removed the layer. The grade and thickness of the bauxite does vary greatly, from laterite to bauxite but the horizon is generally present. From study of mapped outcrops and drill holes it is predicted that outcrops on either side of Able's Hill and Table-Top hill are somewhat continuous through the large hills. H.B Owen suggested that the outcrops are part of the same ore-body which has been dissected by erosion and buried by younger geological units. This suggests the tonnage potential for the St Leonards area could be very significant but mining under such huge overburdens would be largely problematic. In terms of exploration, the best course of action is to look for bauxite in areas where there is less overburden focusing to the south and east where bauxite is believed to intersect the surface at a lesser inclination to topography.

The analysis also shows that ABx Drill holes- PR039, PR053, PR052, PR046, & PR067 failed to intersect the bauxite layer and stopped in overburden. These drill holes should not be included in any resource estimates.

DISCUSSION OF RESULTS

The scout drilling undertaken on the St Leonards historic deposits was successful at intersecting both good and high-quality bauxite in a number of holes. Bauxite of grade was intersected in Deposits 1, 3 & 4 both at surface and under significant overburden.

The drilling revealed that the historic bauxite deposits are more extensive than previously recorded by H.B. Owen in *Bauxite in Australia*. In many locations bauxite was identified under significant overburden in areas where no historic shafts or drillholes had occurred (e.g. PR054). Also, the discovery of an unmapped outcrop at PR066 (the underground extension of which was intersected at PR068) shows that the historic Deposit No.3 extends much further to the south than first thought.

If a preliminary assessment of the deposit deems that a mining operation would be economic – which at the moment is uncertain due to the thick overburden covering most of the deposit – then further drilling would be required to properly delineate the deposit.

One of the most significant discoveries of the field reconnaissance across the Dunedin property was the discovery of good-quality in-situ bauxite outcropping along the hillside on the east side of the historic St Leonards deposits (PR201504-02). This finding supports the hypothesis that the bauxite layer may extend right through the middle of the hill (which is capped on top of the ridge by a hard layer of fresh Tertiary basalt) which would render the St Leonards deposits a lot more extensive than first thought.

Field reconnaissance and drilling of the area showed a fairly consistent bauxite/laterite formation derived from dolerite occurring at the Jurassic/Tertiary contact. This layer appears to be gently dipping to the south west and is only exposed at surface where there has been significant erosion. There is an unconformity at the Jurassic/Tertiary boundary and large gaps in the deposit where the bauxite grade seems to disappear. H.B. Owen suggests this is because "the underlying surface on which the bauxite formed was partly dissected". All data collected and data analysis completed so far strongly suggests the bauxite layer is a continuous sheet which is very extensive and covers an area of somewhere between 4-12 km². This finding has significant implications for exploration of this area and all other dolerite derived deposits in Tasmania. The potential for finding larger tonnages of low-moderate grade bauxite deposits under thin overburden has increase significantly and ABx's Exploration activities in Tasmania will shift from exploring for Volcanogenic Deposits to Bauxite derived from Dolerite. A number of these types of targets have already been identified. The main issue with this type of bauxite will be finding bauxite under overburden which is not too thick.

No bauxite was identified on the Hunting Grounds Property although there is some likelihood that bauxite could occur under cover. Scout drilling of this area to test this would be quite risky and expensive and is therefore not recommended.

The bauxite samples taken from the Dilston area showed it is low-grade ferruginous bauxite/laterite. It is the known by ABx geologists; that good and/or high grade bauxite can occur underneath a ferruginous upper bauxite or "ferricrete" layer. Therefore it is possible that drilling the deposit may recover some higher quality bauxite that is currently not exposed at surface. It is also possible that high-grade material may occur at surface but was simply not observed and/or sampled.

Furthermore, one third of the deposit at Dilston occurs on the Burnside property which has not yet been explored by ABx geologists.

The brief work completed around Magazine road suggests that a small bauxite deposit may occur. However, this small deposit, should it exist, would not be highly prospective and the target area is now deemed relatively low-priority.

CONCLUSIONS AND RECOMMENDATIONS

The scout drilling undertaken on the St Leonards historic deposits were successful at intersecting both good and high-quality bauxite in a number of holes. The drilling of the area showed a fairly consistent bauxite/laterite formation derived from dolerite occurring at the Jurassic/Tertiary contact. This layer gently dips to the south west and has the potential to be a continuous sheet of bauxite (Owen 1954) that covers an area of somewhere between 4-12 km². This could have significant implications for exploration of this area and all other dolerite derived deposits in Tasmania. This 'new' model for bauxite forming in Tasmania has the potential for finding larger tonnages of low-moderate grade bauxite deposits under thin overburden. ABx has already discovered a number of these types of targets which will have an increased priority in the future.

More desktop-based work is recommended to reconcile work done by ABx with historical data, in addition to undertaking deposit modelling and preliminary resource estimation. An important task is to determine if mining is economic in areas at St Leonards with thick clay overburden and what the tolerances to these economic variables are. If it were evident that such a project could be economical, taking into account the large potential for bauxite forming under cover, further drilling would be required to properly delineate the deposit.

If the deposit was deemed potentially economic then further drilling would be recommended on the Dunedin property to determine if bauxite is near surface in this area. The Eastern-side of the Table-Top hill is the most prospective area for large tonnages of bauxite with a low stripping ratio.

No bauxite was identified on the Hunting Grounds Property although there is some likelihood that bauxite could occur under cover. Scout drilling of this area to test this would be quite risky and expensive and is therefore not recommended. This area is proposed for relinquishment.

It is recommended that a short 2-3 day drilling program should be completed on the Dilston Target to drill through the ferruginous capping and to test if higher grade material exists underneath.

The bauxite target at Magazine Road is of relatively low prospectivity. Exploration in this area is low-priority and is unlikely to occur anytime soon.

ENVIRONMENT

Surface Disturbing Operations:

68 shallow RC holes were drilled during the current reporting period. However, each hole was rehabilitated immediately after it was drilled.

Surface sampling has a nil/negligible impact on the surface and does not require rehabilitation.

Surveys (archaeological, botanical):

A Botanical & Fauna Habitat Survey was undertaken by P. Milner at the St Leonards historic deposit locations prior to the RC drilling program (Appendix 3).

Rehabilitation:

Drillholes are rehabilitated immediately after being drilled by capping the hole at 1.5m depth with an “OctoPlug” and filling the remaining hole with innocuous drillhole material and/or any excess soil.

All required rehabilitation has been completed. No further rehabilitation is required.

EXPENDITURE

Table 5. Exploration expenditure for EL18/2014 over the current annual reporting period.

Exploration Category	Description of Activity	Quantity	Expenditure
Office Administration			
Authority Management	Tenement Management		\$ 756
	Land Holders Compensation		
Office Activities	Data Processing & Interpretation		
	Report Preparation		
Field Activities	Geological Mapping	Days or Ha	
	Sampling		
	Equipment Hire	Vehicle Hire & Petrol	\$ 3,049
	Accommodation/Field Camp	Days	\$ 19,356
	Travel		\$ 2,520
	Land Holder Liaison		
	Field Supplies		\$ 19,989
	Other	Sample Freight	\$ 2,771
	Geophysics		
	Airborne		
	Type	Line kms	
	Ground		
	Type	Line kms	
	Drilling (program cost)		
	RAB/AC	Holes/total metres	
	RC	68 Holes for 715m	\$ 29,599
	Diamond	Holes/total metres	
	Surface Samples	Holes/total metres	
Laboratory	ME-XRF 13B, Reactive Silica & Available Alumina	Surface and Drilling Samples	\$ 4,539
Salaries / Wages	Contractors - Geologists		\$ 129,926
	Contractors - Field Assistance		\$ 7,257
	Contractors - Other Technical		\$ 9,539
		Grand Total	\$ 229,301

Note: Office Administration was met by parent company – Australian Bauxite Limited.

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