

## LITHIUM MINERALISATION IDENTIFIED IN PEGMATITES AT PIONEER DOME PROJECT

Perth Western Australia, 29 April 2016: Pioneer Resources Limited ("Company" or "Pioneer") (ASX: PIO) is pleased to announce that it has discovered pegmatite-hosted lithium mineralisation at its 100%-held Pioneer Dome Project, near Norseman in Western Australia.

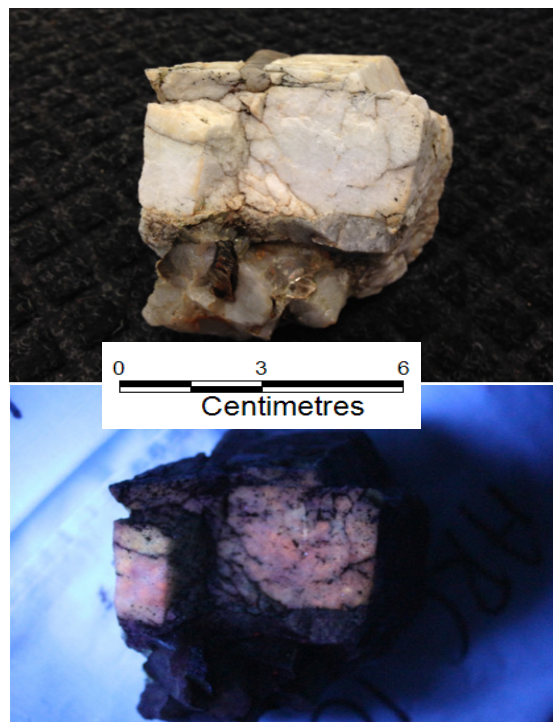
- Outcropping pegmatite-hosted lithium mineralisation identified in rock chip samples at the Pioneer Dome Project - confirms the presence of LCT pegmatites
- Tenements cover 13 pegmatite clusters that have been identified over a 20km strike length
- 4,000 sample soil geochemistry program underway - to be completed in May, 2016 with drilling likely in the September 2016 quarter.

The Company has identified at least thirteen clusters of pegmatites along the 20km strike length of the eastern periphery of the Pioneer Dome (*see Figure 1*). On-site reconnaissance by Pioneer of five of the clusters has confirmed the presence of pegmatites of the Lithium-Caesium-Tantalum (LCT) geochemical family, including pegmatites with lepidolite, a lithium mica. Based on the highly encouraging prospectivity, the Company has commenced a 4,000 sample soil geochemistry program. This is expected to be completed in May, with drilling of resultant priority targets to follow.

### LITHIUM TARGETS IDENTIFIED AND EXPLORATION COMMENCES



*Pioneer's Managing Director, David Crook, with lepidolite-bearing pegmatite samples at the Pioneer Dome Project.*



*A specimen of LCT pegmatite with fluorescent megacrystals from PEG004. (see Spodumene definition)  
Top: plain light  
Bottom: UV light*

## ABOUT THE PIONEER DOME LITHIUM PROJECT

The Pioneer Dome Project was recognised as having potential for lithium mineralisation following a review of historic exploration reports which recorded numerous pegmatite intersections in nickel or gold-focussed drilling completed since the 1960s. The prospectivity model was further enhanced by colloquial records of lepidolite, tantalite and tourmaline in prospector scale workings, which are some of the characteristic minerals of a zoned pegmatites complex.

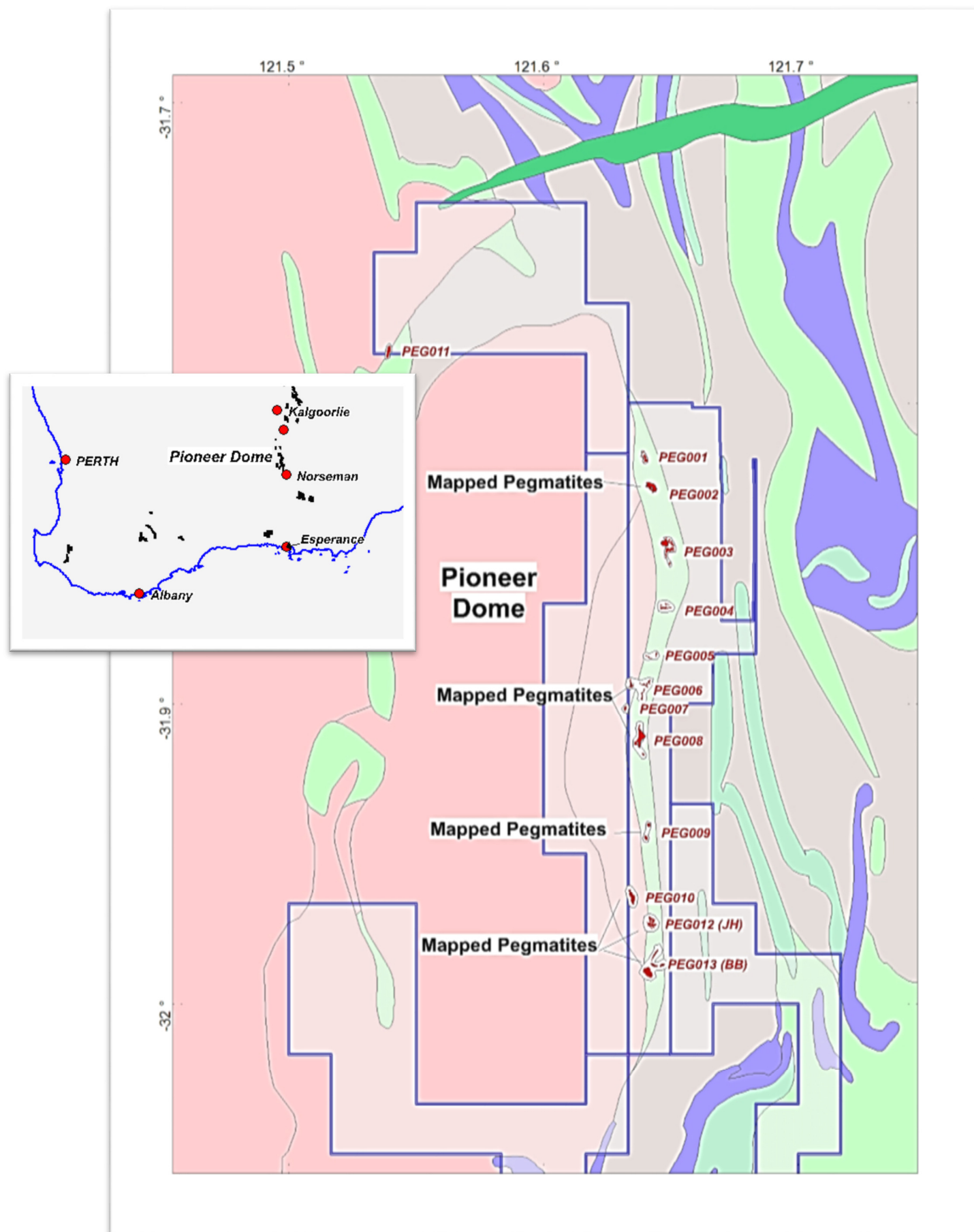
The Company had earlier commissioned a detailed geological interpretation of the Pioneer Dome (Jones M.G. 2005), and this has been supplemented by MERIWA granitoid mapping, (Whittaker and Cassidy, 2002). Together, these maps show at least thirteen clusters of pegmatites occurring along the eastern periphery of the Pioneer Dome (*see Figure 1*).

The Company has now accumulated approximately 300 km<sup>2</sup> of tenements that cover peripheral units to the Pioneer Dome. LCT pegmatites, thought to be late stage intrusions related to, but outboard of, parent S-type granite intrusions, exhibit a characteristic zonation pattern of a range of economically important rare-element minerals such as lithium (in spodumene or lepidolite), tantalum, niobium, tourmaline and tin (*see Figure 2*).



*PEG009 is an example of a complex LCT pegmatite. Lepidolite, a lithium mica, and tourmaline is evident in two parallel outcropping pegmatite dykes over a 200m strike length.*

The Project is well located being approximately 130km south of Kalgoorlie, and 200km north of the Port of Esperance. Access is excellent with the Goldfields Highway and Esperance railway, and water and gas pipelines passing through the Project.



**Figure 1.** The Pioneer Dome Lithium Project tenements showing mapped pegmatites. Lithium mineralisation has been located in outcrop at PEG009.

## PROJECT OUTLOOK

Pioneer's initial evaluation will consist of soil geochemistry programs, with priority orientation samples taken over targets PEG004, PEG006, PEG009 and PEG012 to provide base-line information. This will establish thresholds for lithium by chemical analysis, plus rubidium and niobium (pathfinder elements likely to be detectable using a pXRF). Concurrently, old drill holes will have pegmatite intervals re-sampled and assayed for lithium.

The proposed soil geochemistry program will see 4,000 samples taken, with initial assays expected before the end of May 2016.

With excellent year-round access to the Project, drilling can commence as targets are defined.

## ABOUT PIONEER RESOURCES LIMITED

Pioneer is an active exploration company focused on key global demand-driven commodities. This includes a portfolio of strategically located gold and other commodity projects in mining regions in Western Australia, plus a portfolio of high quality lithium assets, in Canada and WA.

The Company is focused on delivering shareholder value by actively strengthening its project portfolio through acquiring, pegging and reviewing new opportunities, and targeted exploration programs to enable the discovery and commercialisation of high value mineral resources.

Lithium has been classed as a 'critical metal' meaning it has a number of important uses across various parts of the modern, globalised economy including communication, electronic, digital, mobile and battery technologies; and transportation, particularly aerospace and automotive emissions reduction. Critical metals seem likely to play an important role in the nascent green economy, particularly solar and wind power; electric vehicle and rechargeable batteries; and energy-efficient lighting.

**The Mavis Lithium Project** is located in south western Ontario, Canada, covering an area of 2624 hectares. Pioneer may earn an initial 51% interest in the Mavis Lithium Project through expending C\$1.5 million within 3 years. Twenty pegmatites have been identified to date in outcrop within the Mavis Lithium Project properties.

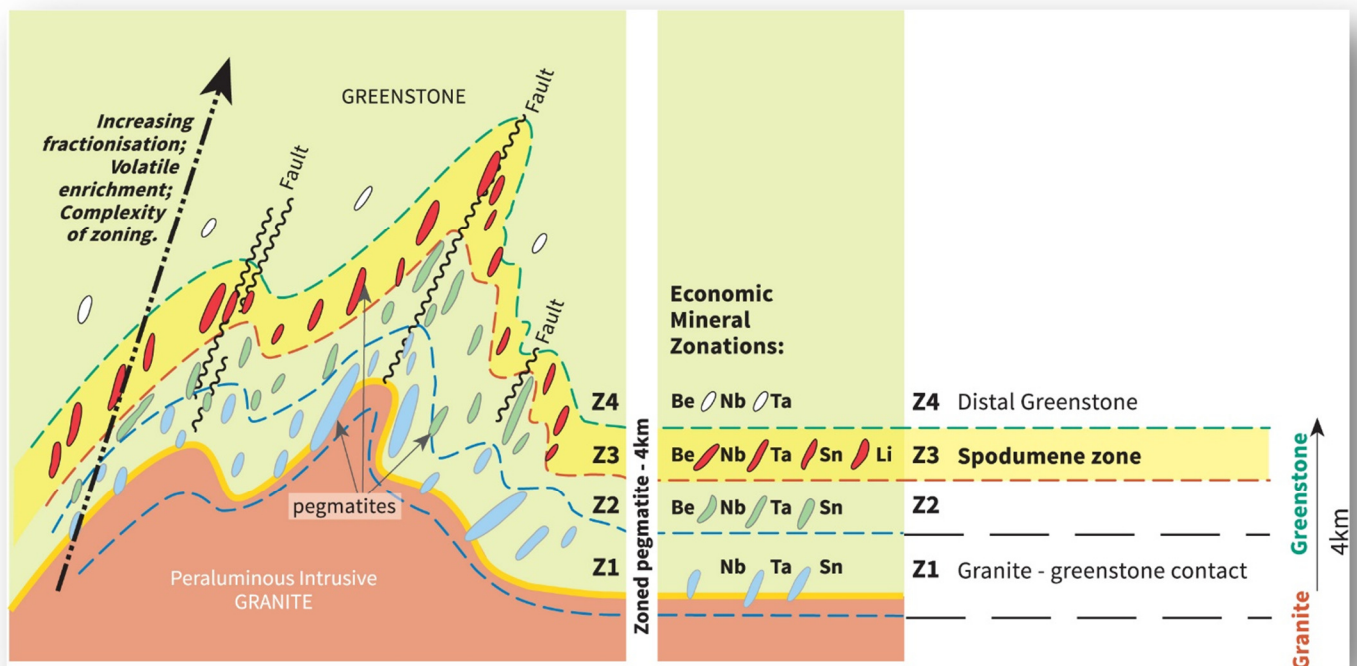
Drilling by earlier explorers intersected complex spodumene-pegmatites. The most recent drilling was undertaken by International Lithium Corporation (ILC – TSX-V) during 2011 and 2012, which returned results including 6m at 2.53% Li<sub>2</sub>O from 6m and 26.25m at 1.55% Li<sub>2</sub>O from 152m (**Fairservice Prospect**) and 5.35m at 1.51% Li<sub>2</sub>O (**Mavis Lake Prospect**). Further drilling is scheduled for June 2016.

**The Phillips River Lithium Project**, in southern Western Australia, was pegged by the Company and announced to the market on 6 April 2016. Geochemistry sourced from a Geoscience Australia publication, and roadside sampling by an earlier explorer has indicated 2 standout lithium anomalies supported by modified pegmatite PEG-4 index values, and a number of other lithium anomalies which warrant further investigation.

**The Donnelly Lithium Project** is prospective for LCT pegmatites, and extends between 12 and 60km from the world class Greenbushes Lithium Mine, in southwest Western Australia, with tenements covering approximately 220 km<sup>2</sup>. Pioneer can elect to acquire a 90% interest in the Project. Existing geochemistry anomalies provide initial lithium targets.

The Company's commitment to other projects, including its 100%-held Acra Gold Project, and the Blair Dome and Fairwater Nickel Projects remains unchanged and it will provide details of the next phase of planned exploration initiatives in due course.

-ENDS-



**Figure 2:** Schematic regional mineral zonation outboard of a fertile, peraluminous S-type granite, showing swarms of associated pegmatite dykes. Adapted by Pioneer from Černý 1991, Breaks et al 2003.

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## REFERENCES

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Černý, P., 1991: Rare-element granitic pegmatites: Part I, anatomy and internal evolution of pegmatite deposits; *Geoscience Canada*, V. 18, No. 2, p.49-67.

Jones, M.G., 2005: The Surface Geology of the Pioneer Dome Area, Yilgarn Craton, W.A

Whitaker, A.J. and Cassidy, K.F., 2002: MERIWA Report 222, Characterisation and metallogenic significance of Archaean granitoids of the Yilgarn Craton, Western Australia.

## GLOSSARY

“Li<sub>2</sub>O” means Lithia, or Lithium Oxide, and is the elemental metal quantity converted to its oxide (in percent (%)), which is a form of reporting used for lithium in scientific literature. The conversion factor for Li to Li<sub>2</sub>O is 2.152.

“Laterite” means a soil and rock type rich in iron and aluminium, developed by intensive and long-lasting weathering of the underlying parent rock.

“Lepidolite” is member of the mica group with formula K(Li,Al,Rb)<sub>3</sub>(Al,Si)<sub>4</sub>O<sub>10</sub>(F,OH)<sub>2</sub>. It is a secondary source of lithium. It is often associated with other lithium-bearing minerals like spodumene in pegmatite bodies. It is one of the major sources of the rare alkali metals rubidium and caesium.

“Spodumene” is a lithium aluminosilicate (pyroxene) found in certain rare-element pegmatites, with the formula LiAlSi<sub>2</sub>O<sub>6</sub>. Spodumene is the principal lithium mineral sourced from pegmatites and is the preferred source for high purity lithium products. Spodumene is known to form megacrystals, has a distinctive hardness and cleavage, and may fluoresce under ultraviolet light.

“Be” means beryllium, “B” boron, “Cs” caesium, “Li” Lithium, “Nb” niobium, “Rb” rubidium, “Sb” antimony, “Sn” tin, “Ta” tantalum.

“PEG-4 index” is an indicator for the presence of LCT pegmatites, and is a function of the assayed values for Sb, Sn, Nb and Ta.

“Pegmatite” is a common plutonic rock of variable texture and coarseness that is composed of interlocking crystals of widely different sizes. They are formed by fractional crystallization of an incompatible element-enriched granitic melt. Several factors control whether or not barren granite will fractionate to produce a fertile granite melt (Černý 1991; Breaks 2003):

- presence of trapped volatiles: fertile granites crystallize from a volatile-rich melt.
- composition of melt: fertile granites are derived from an aluminium-rich melt.
- source of magma: barren granites are usually derived from the partial melting of an igneous source (I-type), whereas fertile granites are derived from partial melting of a peraluminous sedimentary source (S-type).
- degree of partial melting: fertile granites require a high degree of partial melting of the source rock that produced the magma.

Initially, fractional crystallization of a granitic melt will form barren granite consisting of common rock forming minerals such as quartz, potassium feldspar, plagioclase and mica. Because incompatible rare elements, such as Be, Li, Nb, Ta, Cs, B, which do not easily fit into the crystal of these common rock-forming minerals, become increasingly concentrated in the granitic melt as common rock forming minerals continue to crystallize and separate from the melt.

## **COMPETENT PERSON**

The information in this report that relates to Exploration Results is based on information supplied to and compiled by Mr David Crook and Dr Nigel Brand. Mr Crook is a full time employee of Pioneer Resources Limited and a member of The Australasian Institute of Mining and Metallurgy (member 105893) and the Australian Institute of Geoscientists (member 6034). Mr Crook has sufficient experience which is relevant to the exploration processes undertaken to qualify as a Competent Person as defined in the 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Dr Brand is the principal of geochemical consultancy Geochemical Services Pty Ltd, and is a Competent Person as defined in the 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'

Mr Crook and Dr Brand consent to the inclusion of the matters presented in the announcement in the form and context in which they appear.

## **CAUTION REGARDING FORWARD LOOKING INFORMATION**

This document contains certain statements that may be deemed "forward-looking statements." All statements in this announcement, other than statements of historical facts, that address future market developments, government actions and events, are forward-looking statements.

Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes.

Forward looking statements in this document are based generally on the Company's beliefs, opinions and estimates as of the dates the forward looking statements that are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

Although Pioneer believes the outcomes expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include new rare earth applications, the development of economic rare earth substitutes and general economic, market or business conditions.

While, Pioneer has made every reasonable effort to ensure the veracity of the information presented they cannot expressly guarantee the accuracy and reliability of the estimates, forecasts and conclusions contained herein. Accordingly, the statements in the presentation should be used for general guidance only.