DRILLING UNDERWAY AT PIONEER DOME LITHIUM PROJECT

Perth Western Australia, 1 September 2016: Pioneer Resources Limited ("Company" or "Pioneer", ASX: PIO) is pleased to advise that its 5,000m RC drilling programme, to test lithium targets at its 100%-held Pioneer Dome Project, commenced on Tuesday 30 August, and is progressing well.

The first of nine planned traverses of holes (5 holes for 420 metres) has been completed across the PEG008 target. All holes intersected multiple, steeply dipping zones of pegmatite, which is the rock unit considered prospective for lithium mineralisation.

The first 100 samples will be delivered to the laboratory later today, with results expected to be returned within a 3 week period later in September. Drilling and sample submissions will continue throughout September, with the final assays expected by late October 2016.

The PEG008 target is a 1.7 km long suite of differentiated pegmatites with a coincident lithium soil geochemistry anomaly. Drilling will also test targets at PEG001 and PEG002. Subject to results, additional RC and diamond core drilling can immediately follow.

Photograph 1. RC drill hole PD001 is collared at the mid-point traverse of PEG008.

Photograph 2. Drill hole PD001 reached a depth of 90m. White sample piles are of pegmatite. Three pegmatite zones were intersected, with the thickest down-hole intersection being 40m.

Pioneer’s Managing Director said “We’re very encouraged with the geology and information gained from the drill holes completed at PEG008 to date, and the Company looks forward to providing further updates to the market as the assays and other information comes to hand.”
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Notes about the Pioneer Dome Lithium Project

- Rock samples from the Pioneer Dome granite show rare metal anomalism – (see the GSWA Granites database).

- Many pegmatites in Pioneer’s tenements were mapped by WMC during the 1960-70s nickel boom.

- The pegmatites tend to daylight in greenstone units which are best developed along the eastern side of the Pioneer Dome. (eg Jones 2005, and the numerous WMC reports from the 1960-70s)

- There is a basal gneiss unit that acts as a buffer zone between the Pioneer Dome granite and the greenstones. (See Cowan 1:100,000 notes, Jones 2005). This means that pegmatites PEG001-PEG008 occur 0.5-5km outboard from the Pioneer Dome Granite, in a concentric zone. Such zonation is recognised internationally as a feature of lithium and other rare metals deposits. (“Rare Metal Corridor”). (eg Selway, J.B., Breaks, F.W and Tindle, A.G., (2005)), making this gneiss critical.

- Where Pioneer has completed soil geochemistry, the pegmatites that fall into the Rare Metal Corridor have Rb, Nb (and where assayed) Li anomalies, and strongly elevated “Li_Index” values (when Li hasn’t been directly analysed). These include at PEG001, 002, 008 and 009 (and postage stamp orientation anomalies at PEG003 and PEG006).

  The “Li_Index” is an estimate of the lithium content of a sample that uses a proprietary algorithm derived by the Company’s geochemist, Dr Nigel Brand. The algorithm uses a suite of 5 co-existing elements that can be determined using a recently available pXRF analyser. The algorithm has been tested at a number of sites and is considered ‘fit for purpose’.

- Where the pegmatites occur close to the granite, i.e. PEG011 and PEG012, there is no Li anomaly.

- Pioneer’s geologists found lepidolite at PEG009, demonstrating the presence of complex LCT pegmatites along the eastern side of the Pioneer Dome. (See Company announcements to ASX 19 May, 2016, 27 July 2016). The presence of lepidolite does not preclude the presence of spodumene mineralisation (in fact at Mt Cattlin and at Pilgangoora lepidolite/lithium micas and spodumene are known to coexist in places).

- The soil geochemistry around PEG009 acted as an orientation survey – indicating the level of Li, Rb, Nb, Ta, Ga, Cs etc response in soils at a known lithium occurrence. The company also has open file soil geochemistry data for some other Western Australian spodumene mines. The 3 parallel PEG009 Li anomalies are each about 150m long.

- The PEG008 Li anomaly has the same anomalous elements, in the same ranges as PEG009 (and other sites based on the open file data), however **PEG008 is 1.7km long**. The PEG001-002 anomalies have the same anomalous elements, in the same ranges, - the **PEG001-002 anomalies are 2.0km long**.

- A fully differentiated pegmatite will have a quartz core. (eg Bradley, D., and McAuley, A. (2013). Soil geochemistry taken over the quartz core at PEG008 is very elevated in rare metals. The quartz core is the most weather-resistant rock-type thus most likely to outcrop.

- The spodumene zone within the pegmatite should be outboard of the quartz core. Spodumene is a pyroxene, and occurs with feldspar – and these minerals weather strongly in the WA environment. It is anticipated that these minerals, if present, would be found at the break of slope at the side of the quartz core, or not outcropping at all.
REFERENCES


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


GLOSSARY


“Diamond Drilling” or “Core Drilling” uses a diamond-set drill bit to produce a cylindrical core of rock.

“Li_2O” 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_2O is 2.152.

“Mafic” and “Ultramafic” are a class of igneous rocks high in magnesium “ma” and iron “fic”, which are thought to be derived from magma from near the earth’s mantle.

“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.

“Spodumene” is a lithium aluminosilicate (pyroxene) found in certain rare-element pegmatites, with the formula LiAlSi_2O_6. Spodumene is the principal lithium mineral sourced from pegmatites and is the preferred source for high purity lithium products.

“ppm” means 1 part per million by weight.

“RC” means reverse circulation, a drilling technique that is used to return uncontaminated pulverised rock samples through a central tube inside the drill pipes. RC samples can be used in industry-standard Mineral Resource estimates.
“Regolith” means the layer of loose, heterogeneous material covering solid rock. It includes dust, soil, broken rock, and other related materials. In Western Australia it most commonly refers to the almost ubiquitous layer of weathered and decomposed rock overlying fresh rock.

“N”, “S”, “E”, or “W” refer to the compass orientations north, south, east or west respectively.

“pXRF” means portable x-ray fluorescence. Pioneer owns an Olympus portable XRF analyser which is an analytical tool providing semi-quantitative analyses for a range of elements ‘in the field’.

**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.

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