

## PRIORITY LITHIUM TARGETS CONFIRMED AT PIONEER DOME

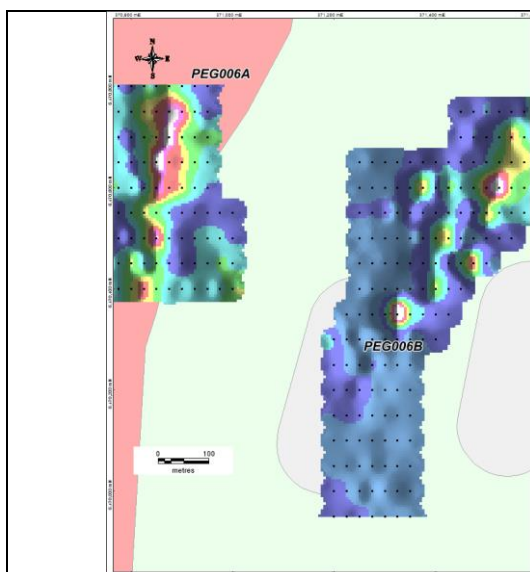
- Rock chip assay results of up to 3.94% Li<sub>2</sub>O
- Soil geochemistry program identifies five lithium anomalies

Perth Western Australia, 19 May 2016: Pioneer Resources Limited ("Company" or "Pioneer") (ASX: PIO) is pleased to provide an interim exploration report for its 100%-held Pioneer Dome Project, near Norseman in Western Australia following the receipt of assays for 668 soil samples and 36 rock chip samples. Soil sampling will resume later this week following a halt due to rain.

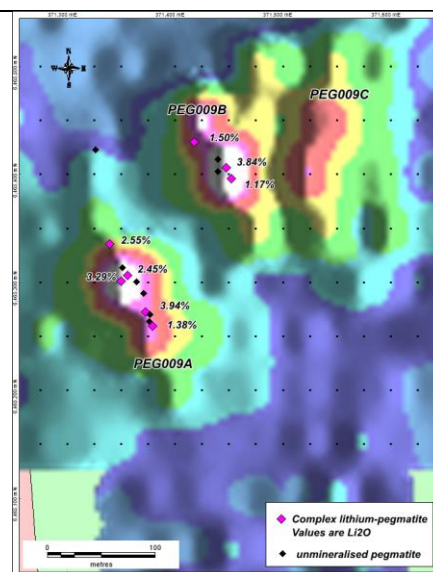
- First soil geochemistry results targeting lithium show multi-element anomalies with coincident lithium, niobium and rubidium over the PEG006 and PEG009 pegmatites;
- Rock Chips from 2 separate outcrops at PEG009 returned high grade lithia (Li<sub>2</sub>O) values. These included:
  - from PEG009A, lepidolite samples assaying between 1.38% and 3.94% Li<sub>2</sub>O; and
  - from PEG009B, silicate dominated rocks assaying between 1.17% and 3.84% Li<sub>2</sub>O;
- The remaining 3,300 soil sample collections are expected be completed during May 2016 with drilling likely in the September 2016 quarter.

Pioneer has received the first 668 results from its 4,000 sample soil geochemistry program, (Refer announcement to ASX 29 April, 2016), generating 5 anomalies. These are located at the PEG006 target (2 anomalies) and PEG009 (3 anomalies). PEG012 was not anomalous (see Images 1 and 2 below).






PEG009 was recognised in the field as an example of a complex lithium caesium tantalum (LCT) pegmatite, outcropping in two parallel structures over a 200m strike length. Lepidolite, a lithium mineral, outcrops at PEG009A.



**Image 1:** Soil geochemistry image for PEG006, showing 2 lithium anomalies. No rock chip samples were taken here.



**Image 2:** Soil geochemistry image for PEG009, showing 3 lithium anomalies, and locations of rock chip samples, with high grade assays annotated.

PEG009A		Li <sub>2</sub> O (%)	Nb (ppm)	Rb (ppm)
 ARC103047, lepidolite pegmatite		3.94%	93	12821
	 ARC103060, quartz, lepidolite pegmatite	2.55%	56	8813
	 ARC103061, lepidolite pegmatite	3.29%	67	11643
PEG009B				
 ARC10353, quartz, mica pegmatite		1.17%	32.21	8391
	 ARC10354, quartz, feldspar, mica pegmatite	3.84%	41.46	17194

**Photos** of reference samples, with assays of samples from the same location. While most samples from PEG009A were dominated by lepidolite, those from PEG009B were not. Petrography will determine the lithium-bearing mineral assemblage.

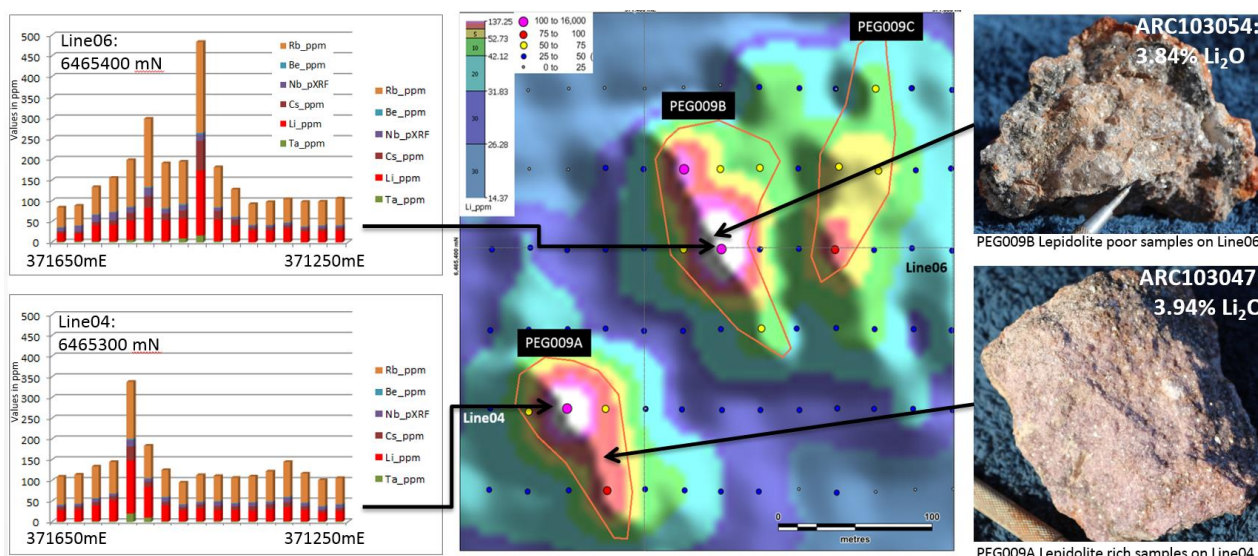
## SOIL GEOCHEMISTRY AT PEG009 SUPPORTED BY ROCK CHIP GEOCHEMISTRY

The soil geochemistry programme will initially comprise 13 pegmatite clusters sampled to determine whether each is likely to be a complex pegmatite and therefore potentially a host to lithium mineralisation. To date PEG006, PEG009 and PEG012 have been sampled. Further wider spaced samples will be undertaken in order to locate additional pegmatites that don't outcrop.

More importantly, rock chip geochemistry confirms that two lithium-mineralised pegmatites with different characteristics are evident at PEG009, (i.e. PEG009A and PEG009B) further substantiating the complex nature of this LCT pegmatite. (Refer to Diagram 1). Observations of rocks from each lithium zone included:

- PEG009A: Lepidolite-rich pegmatites with lithia values up to 3.94%  $\text{Li}_2\text{O}$ . Associated anomalous lithium in soil geochemistry, and with coincident with Cs, Ta and Tl.
- PEG009B: Pegmatite that is lepidolite poor, however lithia values are up to 3.84%  $\text{Li}_2\text{O}$ . Associated anomalous lithium in soil and coincident with Be, Cs, Ga, Nb, Rb, Sn, Ta and Tl.

Soil geochemistry results from PEG006 indicate two areas with elevated lithium and other coincident LCT pegmatite elements. Field inspection and rock sampling will be undertaken later this month.



**Diagram 1:** Stacked assay traverse plots show the multi-element nature of the geochemical responses in soils over the PEG009A and PEG009B LCT pegmatites. This may be useful to distinguish lepidolite-dominant lithium mineralised pegmatites (PEG009A) and pegmatites containing other lithium minerals (PEG009B), which may include spodumene.

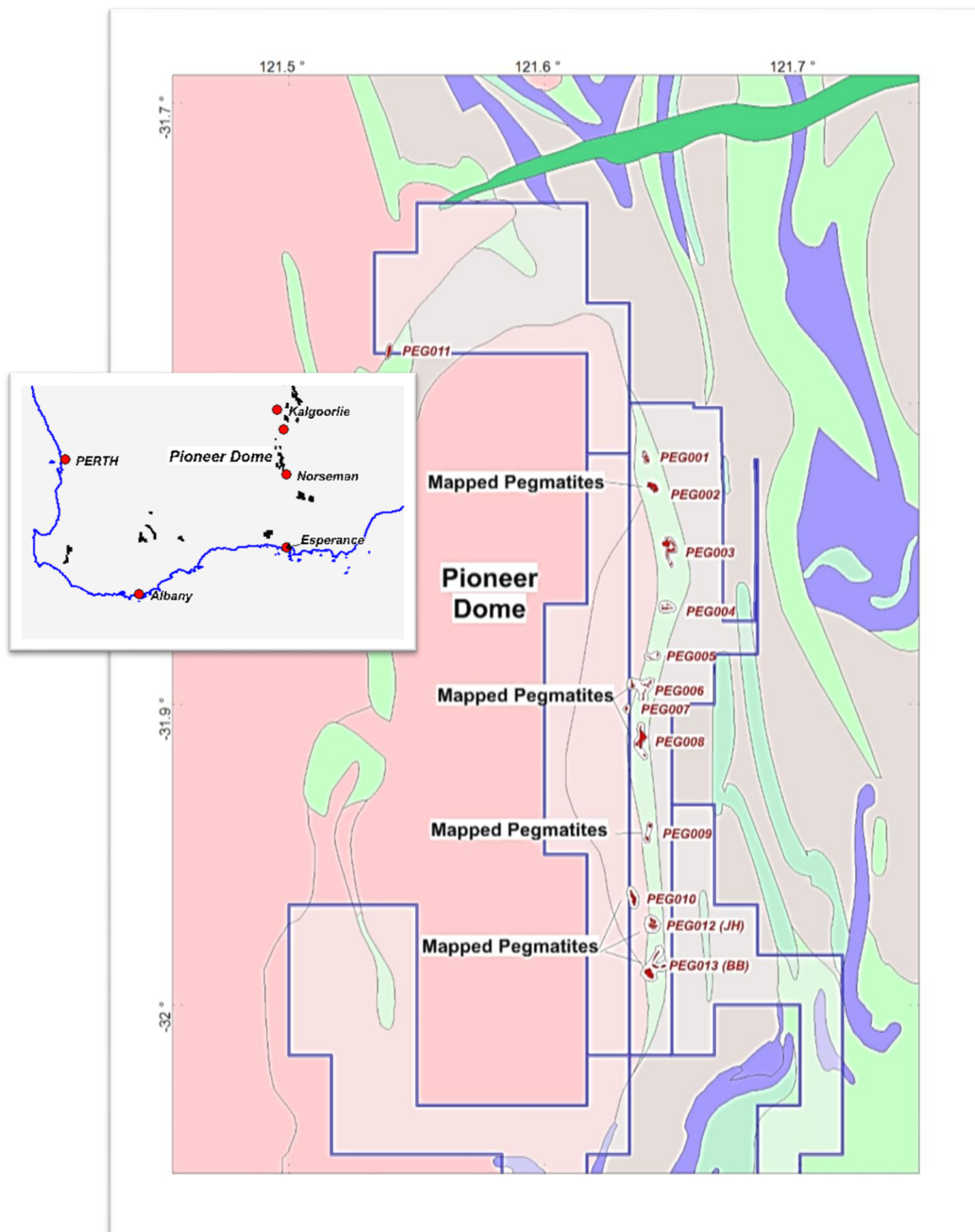
## ABOUT THE PIONEER DOME LITHIUM PROJECT

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-focused 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 Project comprises 1 granted exploration licence and 4 exploration licence applications, with a total area of 284  $\text{km}^2$ , extending over approximately a 45 km strike length and a 20 km width.

The Company had, in 2005, commissioned a detailed geological interpretation of the Pioneer Dome (Jones M.G. (Lithofire), 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 a 20 km





**Figure 1.** The Pioneer Dome Lithium Project tenements showing mapped pegmatites. Lithium mineralisation has been located in outcrop at PEG009A, supported by soil geochemistry. Additional lithium geochemical anomalies occur at PEG009B and PEG006A and B.

strike length of the eastern margin of the Pioneer Dome (*see Figure 1*). This extends for a further 14km (34 km strike) when a western pegmatite cluster is included.

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.

## PROJECT OUTLOOK

Pioneer's initial evaluation, which is well underway, consists of soil geochemistry programs 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 operated by Company personnel). Concurrently, old drill holes will have pegmatite intervals re-sampled and assayed for lithium.

Dependent upon weather conditions generally year-round access to the Project should be available with drilling to commence once 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, nickel 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 north 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 and paying the vendor C\$375,000 (50% in cash and 50% in Pioneer shares). The Company may acquire an additional 29% by spending a further C\$8.5m within a 7 year term. 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 holds a perpetual option to acquire a 90% interest in the Project for a cost of \$1.0m. Pioneer retains this option subject to meeting expenditure commitments and the payment of up to \$35,000 annually. Existing geochemistry anomalies have provided 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-



Managing Director  
**Pioneer Resources Limited**

**For further information please contact:**

David Crook  
Pioneer Resources Limited  
T: +61 8 9322 6974  
E: [dcrook@pioresources.com.au](mailto:dcrook@pioresources.com.au)

James Moses  
Media and Investor Relations  
M: +61 420 991 574  
E: [james@mandatecorporate.com.au](mailto:james@mandatecorporate.com.au)

## REFERENCES

Announcement to ASX 29 April, 2016.

Breaks, F. W., Selway, J.B., and Tindle, A.G., 2003: Fertile peraluminous granites and related rare-element mineralisation in pegmatites, Superior Province, Northwest and Northeast Ontario: Operation Treasure Hunt; Ontario Geological Survey, Open File Report 6099, 179p.

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.

“Lepidolite” is member of the mica group with formula K(Li,Al,Rb)3(Al,Si)4O<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, “Ga” gallium, “Li” Lithium, “Nb” niobium, “Rb” rubidium, “Sb” antimony, “Sn” tin, “Ta” tantalum, “Tl” thallium.

“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.



## APPENDIX 1. Soil Geochemistry Programme Summary

PEG NO	Grid	From	To	n	Target Commodity	Purpose
PEG006A	50x25m	73914	74008	95	LCT pegmatiites	Anomaly generation
PEG006B	50x25m	73745	73913	169	LCT pegmatiites	Anomaly generation
PEG009A	50x25m	73001	73161	161	LCT pegmatiites	Anomaly generation
PEG009B	50x25m	73431	73523	93	LCT pegmatiites	Anomaly generation
PEG012 (JH)	50x25m	73281	73430	150	LCT pegmatiites	Anomaly generation

## APPENDIX 2. Rock Chip Information, Result Summary

Sample	East	North	Prospect	Li <sub>2</sub> O	Cs	Ta <sub>2</sub> O <sub>5</sub>	Nb <sub>2</sub> O <sub>5</sub>	Rb	Be
	(m)	(m)		(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
ARC103044	371380	6465259	PEG009	0.04	27	0.3	0.6	41	0.3
ARC103045	371380	6465259	PEG009	1.38	971	48.2	133.1	4599	7.0
ARC103046	371380	6465259	PEG009	0.02	19	2.6	4.7	48	2.5
ARC103047	371373	6465271	PEG009	3.94	3876	88.4	133.6	12821	19.7
ARC103048	371370	6465290	PEG009	0.02	277	1.5	2.6	3992	2.2
ARC103049	371365	6465299	PEG009	0.03	35	2.7	5.5	192	1.7
ARC103050	371357	6465307	PEG009	2.45	1757	91.0	80.8	8328	13.2
ARC103051	371367	6965280	PEG009	0.10	80	3.8	8.5	421	3.3
ARC103052	371351	6465314	PEG009	0.03	20	14.3	44.9	95	2.2
ARC103053	371453	6465396	PEG009	1.17	3249	129.1	46.1	8391	12.1
ARC103054	371449	6465405	PEG009	3.84	6815	465.1	59.3	17194	15.4
ARC103055	371440	6465403	PEG009	0.43	2951	81.4	42.6	8741	19.4
ARC103056	371440	6465413	PEG009	0.11	163	5.7	26.6	411	4.7
ARC103057	371418	6465430	PEG009	1.50	4301	79.9	61.0	12972	16.6
ARC103058	371419	6465429	PEG009	0.36	507	19.1	136.5	1814	9.0
ARC103059	371326	6465424	PEG009	0.01	28	1.5	5.4	251	3.5
ARC103060	371339	6465334	PEG009	2.55	2390	93.4	80.2	8814	15.1
ARC103061	371351	6465302	PEG009	3.29	2919	99.4	96.6	11643	16.4
ARC103062	371605	6461707	PEG012a	0.02	30	5.1	29.8	621	6.5
ARC103063	371639	6461735	PEG012a	0.01	17	0.6	1.2	670	0.9
ARC103064	371609	6461662	PEG012a	0.01	9	0.8	2.4	41	2.0
ARC103065	371745	6460279	PEG013	0.00	21	0.4	0.6	420	0.5
ARC103066	371624	6460245	PEG013	0.00	28	4.4	35.0	967	1.8
ARC103067	371788	6460238	PEG013	0.00	22	0.3	0.7	457	0.4
ARC103068	371567	6460365	PEG013	0.00	5	25.2	200.8	125	4.1
ARC103069	371757	6471755	PEG005a	0.01	35	9.9	75.9	772	3.8
ARC103070	371764	6471710	PEG005a	0.00	37	6.6	53.9	811	2.3
ARC103071	371761	6471677	PEG005a	0.01	22	7.2	50.9	514	4.1
ARC103072	371766	6471651	PEG005a	0.01	28	7.6	54.4	493	3.5
ARC103073	371779	6471633	PEG005a	0.03	25	5.3	39.9	172	6.2
ARC103074	371779	6471604	PEG005a	0.00	95	0.3	3.2	1951	1.7
ARC103075	371779	6471579	PEG005a	0.00	96	0.3	2.0	1986	2.0
ARC103076	371975	6473400	PEG004	0.06	225	49.1	59.6	890	40.9
ARC103077	372026	6473432	PEG004	0.03	40	14.1	89.6	759	3.9
ARC103078	372013	6473435	PEG004	0.01	17	10.8	61.5	95	4.6
ARC103079	371984	6473442	PEG004	0.00	1	0.1	0.7	6	0.4

## Section 1 - Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

### Pioneer Dome Project:

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut Faces, 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.</li> </ul>	<ul style="list-style-type: none"> <li>Gridded Soil geochemistry sampling.</li> <li>Random rock chip samples.</li> </ul>
	<ul style="list-style-type: none"> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul style="list-style-type: none"> <li>Certified Reference Material were inserted at regular intervals to provide assay quality checks. The standards reported within acceptable limits.</li> </ul>
	<ul style="list-style-type: none"> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Soil geochemistry: a 100g sample of -0.25mm fraction taken from a depth of between 5 and 20cm below surface.</li> <li>Rock chips: 3 kg of smaller samples from a location taken.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>No drilling involved.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul style="list-style-type: none"> <li>Recovery not relevant.</li> </ul>
	<ul style="list-style-type: none"> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	<ul style="list-style-type: none"> <li>Recovery not relevant.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Recovery not relevant</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Soil sampling: basic 'nature of soil and site' log recorded.</li> <li>Rock Chip: Basic description of hand specimen. Representative sample kept for follow-up petrography.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, Face, etc) photography.</li> </ul>	<ul style="list-style-type: none"> <li>Logging is qualitative.</li> </ul>
	<ul style="list-style-type: none"> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>All sample sites were described.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	<ul style="list-style-type: none"> <li>Soil sampling: The sample is sieved to the desired fraction in the field.</li> <li>Rock chips were presented to the laboratory 'as-is'.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	<ul style="list-style-type: none"> <li>No subsampling undertaken.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Soil Geochemistry: Standard Reference Material is included at a rate of 1 per 25 samples, and duplicate samples taken 3 per hundred</li> <li>Rock chips: No standards nor duplicates</li> </ul>
	<ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Soil Geochemistry: Field samples in the order of 100g are considered fit for purpose</li> <li>Rock chips: approximately 3kg is considered representative.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> </ul>	<ul style="list-style-type: none"> <li>The sample preparation and assay method used is considered to be fit for purpose, with initial assays for all elements by 4 acid digest, ICP-MS finish.</li> <li>For high grade lithium values from rock chips, a second peroxide fusion technique with ICP-MS finish was used to determine Al, Li, Cs, Rb.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All samples were analysed by a commercial laboratory.</li> </ul>
	<ul style="list-style-type: none"> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Standards and laboratory checks have been assessed. Most of the standards show results within acceptable limits of accuracy, with good precision in most cases. Internal laboratory checks indicate very high levels of precision.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> </ul>	<ul style="list-style-type: none"> <li>Not at this stage of the project development.</li> <li>Soil Geochemistry: Duplicate samples taken 3 per hundred</li> </ul>
	<ul style="list-style-type: none"> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> </ul>	<ul style="list-style-type: none"> <li>The Company has a digital SQL drilling database where information is stored.</li> <li>The Company uses a range of consultants to load and validate data, and appraise quality control samples.</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>The Company has not adjusted any assay data, other than to convert Lithium (ppm) to Lithia (%), Ta (ppm) to Ta2O5 (ppm) and Nb to Nb2O5 (ppm)</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Collar surveys were completed using a hand-held GPS with an accuracy of +-5 metres. Downhole surveys were conducted with a Reflex instrument.</li> </ul>
	<ul style="list-style-type: none"> <li>Specification of the grid system used.</li> </ul>	<ul style="list-style-type: none"> <li>GDA94 Zone 51.</li> </ul>
	<ul style="list-style-type: none"> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Fit for purpose.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Soil samples: Gridded at 50x25m</li> <li>Rock chips: Random at outcrop locations.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> </ul>	<ul style="list-style-type: none"> <li>No.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>No.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Soil geochemistry: Possibly gives an indication of the strike direction of individual anomalies.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Sample security</i>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Company uses standard industry practices when collecting, transporting and storing samples for analysis.</li> <li>Soil samples are disposed of after analysis.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Sampling techniques for soil geochemistry have been developed by Pioneer's retained geochemist, Dr NW Brand, of Geochemical Services, Perth. The system has not been specifically audited but is similar to common practice methods in the Australian exploration industry.</li> </ul>

## Section 2 - Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li><i>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</i></li> </ul>	<ul style="list-style-type: none"> <li>The sampling reported herein is within E63/1669, which is a granted exploration licence.</li> <li>The tenements are located approximately 130km S of Kalgoorlie, WA.</li> <li>Title is currently registered in the name of Pindan Resources Pty Ltd (80%) and Pioneer Resources Limited (20%); however Pioneer holds a 100% beneficial interest in the tenement.</li> <li>The exploration licence is within an area of land determined as having non-exclusive Native Title in favour of the Ngadju People.</li> </ul>
	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>At the time of this Statement the exploration licence is in Good Standing. To the best of the Company's knowledge, other than industry standard permits to operate there are no impediments to Pioneer's operations within the tenement.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>This report refers to data generated by Pioneer Resources Limited.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>Zoned pegmatites that are prospective for lithium and tantalum.</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li><i>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, including 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 plus hole length.</i></li> </ul>	<ul style="list-style-type: none"> <li>Refer to Table 1 of this announcement.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>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.</li> </ul>	
Data aggregation methods	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Intersections noted in Table 3 are have the 'from' and 'to' meterage marked.</li> <li>Intervals reported are above a 1% Li<sub>2</sub>O (lower) cut-off,</li> <li>No metal equivalent values have been used, however metal units have been converted to metal oxide units, a standard industry practice.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul style="list-style-type: none"> <li>Downhole lengths are reported in Tables 1 and 3 are of drilled metres from surface, and most often are not an indication of true width.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to maps in this report.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Representative reporting of drill details has been provided in Appendix 1 and Appendix 2 of this announcement.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All meaningful and material exploration data has been reported.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Having ascertained the strike and dip of mineralised pegmatites at the Mavis-Lithium Project the next phase of drilling will be conducted using a similar drilling pattern.</li> <li>Fences of additional drill holes, on a nominal 100 x 20m grid are planned to test other geochemical, geophysical and geological targets.</li> </ul>