



ARDIDEN

26 April 2017

## SEYMOUR LAKE: ADDITIONAL METALLURGICAL TESTWORK CONFIRMS ABILITY TO PRODUCE EXCEPTIONALLY HIGH-GRADE LITHIUM CONCENTRATE

*Grades of up to 7.23% Li<sub>2</sub>O from HLS testwork confirms project's commercial potential*

### HIGHLIGHTS:

- **Additional Heavy Liquid Separation (HLS) testwork on Seymour Lake spodumene confirms earlier excellent results, producing high grade lithium concentrate of up to 7.23% Li<sub>2</sub>O.**
- **Further and more extensive metallurgical testwork underway with a range of samples from the North Aubry prospect.**
- **The most recent testwork again verifies that the spodumene particles are well liberated at a relatively coarse particle size.**
- **Testwork is continuing to develop a suitable processing flowsheet.**

Diversified minerals explorer and developer, Ardiden Limited (ASX: ADV) is pleased to advise that it has received additional highly encouraging metallurgical testwork results from Independent Metallurgical Operations (IMO), based in Perth, Western Australia for a composite bulk sample obtained from the North Aubry prospect at its majority-owned **Seymour Lake Lithium Project** in Ontario.

The HLS testwork results from the spodumene samples provided to IMO have again indicated that the spodumene particles are well liberated at a relatively coarse particle size. These additional tests were undertaken to verify and expand on the metallurgical test results which were announced by Ardiden on 9 February 2017.

This phase of testwork is more comprehensive and being undertaken on a broad range of ore samples with an average input head grade of approximately 2.5% Li<sub>2</sub>O. These tests will assist Ardiden to identify the most appropriate recovery process for extraction of the lithium from the spodumene ore at the Seymour Lake project.

Ardiden considers these current laboratory HLS tests to be extremely encouraging, having replicated the earlier metallurgical results, demonstrating the ability to produce very high grade lithium concentrate, with grades of up to **7.23% Li<sub>2</sub>O** achieved – which is very close to the pure form spodumene.

The production of the lithium concentrate at such a high grade is well over the industry standard of 6% Li<sub>2</sub>O, as required by most lithium end-users.

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ASX Code: ADV  
Shares on Issue: 819.0M

Ardiden confirms that as these are only preliminary tests and further work is required to define the process flowsheet to produce a final lithium concentrate.



**Figure 1.** Drill core from diamond drill hole SL-17-02 showing high quality spodumene mineralisation from 0m to 17m.

The next phase of the metallurgical testwork program will allow Ardiden to investigate the lithium recovery rates and various extraction process options including gravity, flotation and magnetic separation processes to develop an optimum process flowsheet for the project.

Ardiden looks forward to providing further updates as they come to hand.

## ENDS

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### About Ardiden Ltd

Ardiden Limited (ASX: ADV) is an emerging international strategic metals company which is focused on the exploration, evaluation and development of multiple projects located in the established mining jurisdiction of Ontario, Canada.

The Seymour Lake Lithium Project comprises 7,019 Ha of mining claims and has over 4,000m of historic drilling. Mineralisation is hosted in extensive outcropping spodumene-bearing pegmatite structures with widths up to 26.13m and grades of up to 6.0% Li<sub>2</sub>O. These high-grade pegmatite structures have been defined over a 5km strike length.

The 100%-owned Root Lake Lithium Project is located in Ontario, Canada. The project comprises 1,013 Ha of mining claims and has over 10,000m of historic drilling. Mineralisation is hosted in extensive outcropping spodumene-bearing pegmatite structures with widths up to 19m and grades of up to 5.10% Li<sub>2</sub>O. In addition, tantalum grades of up to 380 ppm were intersected.

The 100%-owned Root Bay lithium project is strategically located approximately 5km to the east of the recently acquired Root Lake Lithium Project and consists of three claim areas, totalling 720 hectares. The project was staked by Ardiden as part of its regional exploration focus in and around the Root Bay spodumene-bearing pegmatite.

Initial observations of the exposed pegmatite is characterized by coarse white albite, grey quartz and pale grey-green spodumene crystals up to 10cm long.

The 100%-owned Manitouwadge Flake Graphite Project covers an area 5,300 Ha and has a 20km strike length of EM anomalies with graphite prospectivity. Previous preliminary metallurgical testwork indicated that up to 80% of the graphite at Manitouwadge is high value jumbo or large flake graphite. Testwork also indicated that simple, gravity and flotation beneficiation can produce graphite purity levels of up to 96.8% for jumbo flake and 96.8% for large flake. With the proven caustic bake process ultra-high purity (>99.95%) graphite can be produced. The graphite can also be processed into high value expandable graphite, high quality graphene and graphene oxide.

All projects located in an established mining province, with good access to infrastructure (road, rail, power, phone and port facilities) and local contractors and suppliers.

#### **Competent Person's Statement**

The information in this report that relates to exploration results for the Seymour Lake Lithium project and is based on, and fairly represents, information and the supporting geological information and documentation in this announcement and has been reviewed by Mr Robert Chataway who is a member of the Association of Professional Geologists of Ontario. Mr Chataway is not a full-time employee of the Company. Mr Chataway is employed as a Consultant Geologist. Mr Chataway has more than five years relevant exploration experience, and qualifies as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code). Mr Chataway consents to the inclusion of the information in this report in the form and context in which it appears.

#### **Forward Looking Statement**

This announcement may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. All references to dollars (\$) and cents in this presentation are to Australian currency, unless otherwise stated. Investors should make and rely upon their own enquires and assessments before deciding to acquire or deal in the Company's securities.

## Table 1: Seymour Lake Lithium Project (Claim Title 1245661)

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, 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> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <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>Diamond Core was split using a core saw along a plane perpendicular to the foliation within the host rock gneiss.</li> <li>Bagging of the half core samples was supervised by a geologist to ensure there are no numbering mix-ups.</li> <li>One tag from a triple tag book was inserted in the core tray in the position of the sample interval.</li> <li>Standard sample intervals averaged 1 m.</li> <li>Sampling continued through intervening barren rock (if less than 10m width) where multiple Spodumene Pegmatite zones were intersected</li> <li>The sample preparation and assaying techniques are industry standard and appropriate for this type of mineralisation.</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 orientated and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Diamond wireline core drilling.</li> <li>The drill core size is CHD 76, core diameter is 43.5 millimeters</li> <li>Drillholes were orientated using the Reflex ACT II RD core orientation tool</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> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <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>The sample interval of core was measured and recorded along with a description and incorporated in the completed drill logs.</li> <li>Core within the mineralised zone tended to be uniform and competent so loss was minimal and samples represent the true nature of the mineralisation</li> <li>No relationship between sample recovery and grade is evident.</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</li> </ul>	<ul style="list-style-type: none"> <li>Samples represent half the core width, and are logged in detail to support appropriate Mineral Resource estimation at a later stage of exploration.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>estimation, mining studies and metallurgical studies.</i></p> <ul style="list-style-type: none"> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	
<p><i>Sub-sampling techniques and sample preparation</i></p>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Core is split in half using a pressure hydraulic splitter with the remaining half retained in the core tray.</li> <li>• Mineralisation is massive and relatively uniform so assay samples closely represent the in situ material.</li> <li>• Samples were taken on an average of 1 meter intervals and were determined to be appropriate for the mineralised material being sampled</li> </ul>
<p><i>Quality of assay data and laboratory tests</i></p>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All samples were analysed by Actlabs in Thunder Bay, Ontario Canada a SCC (Standards Council of Canada) accredited laboratory.</li> <li>• The assay technique was FUS-Na202 with a 0.01% detection limit</li> <li>• Quality control procedures included the insertion of certified standards and blanks into the sample stream.</li> </ul>
<p><i>verification of sampling and assaying</i></p>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drill logs and sample information is documented and stored digitally in field laptop units and backed up on the Ardiden server.</li> </ul>
<p><i>Location of data points</i></p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drill hole collar positions were located with handheld WAAS enabled handheld GPS units set for recording UTM NAD83 Zone 16N projection coordinates and drilled collars were picked up using a Trimble DGPS.</li> <li>• Drillholes were orientated using the Reflex ACT II RD core orientation tool</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Core samples of the mineralised zone were taken at approximately 1 meter intervals and deemed appropriate to represent the in situ nature of the mineralization.</li> <li>• Further drilling and sampling will be required to adequately establish the geologic and grade continuity for any Mineral Resource and Ore Reserve estimation procedure.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>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.</i></li> </ul>	Drill hole locations were designed to intercept the mineralised zone as close to true width as possible to avoid sampling bias.
<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>• Samples were secured and delivered to the assay lab under chain of custody controls by the Caracle Creek Consulting group</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>• No audits or reviews of sampling techniques have been conducted</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, wilderness or national park and environmental settings.</i></li> <li>• <i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All claims in the Seymour Lake Lithium project are in good standing and these include claims 1245661 1245648 1245662 1245664 1245646, which are 100% owned by Stockport Exploration Inc. Ardiden has exercised option to acquire 100% ownership of the project claims.</li> <li>• Ardiden staked and owns additional claims around the project including claims:  4270593, 4270594, 4270595, 4270596, 4270597, 4270598, 4279875, 4279876, 4279877, 4279878, 4279879, 4279880, 4279881, 4279882, 4279883, 4279884, 4279885, 4279886, 4279887, 4279888, 4279889,</li> </ul>

Criteria	JORC Code explanation	Commentary
		4279890, 4279891, 4279869, 4279870, 4279871, 4279872, 4279873 and 4279874
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Other parties have not appraised the exploration carried out to date</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Seymour Lake area pegmatites have been classified as belonging to the Complex-type, Spodumene-subtype. Mineralization is dominated by spodumene (Li), with lesser tantalite(Ta) hosted in a series of steeply dipping pegmatite dykes.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <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>	<ul style="list-style-type: none"> <li>See Table 2 for the drill collar information</li> <li>See Figure 4 for the location of the drill collars.</li> <li>See Table 1 for the reported significant intersections of Lithium mineralisation</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>With the homogeneity of the mineralised material, sample intervals for the most part were kept at one metre intervals</li> </ul>
Relationship between mineralisation	<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> </ul>	<ul style="list-style-type: none"> <li>Mineralised zones were determined to be shallow dipping and drill holes were drilled vertically so that mineralised drill intercepts represented close to true widths minimizing any bias in reporting of results.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>widths and intercept lengths</i>	<ul style="list-style-type: none"> <li><i>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').</i></li> </ul>	
<i>diagrams</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>See Figure 3 for the location of the drill hole collars</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>No comprehensive report has been completed to date to include the latest Ardiden exploration results.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>All meaningful and material data is reported</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Refer to text within the report.</li> </ul>