

ASX RELEASE ASX: PTR 14 September 2018

# PETRATHERM COMMENCES DRILLING AT CORUNNA SILVER, LEAD AND ZINC PROSPECT IN SOUTH AUSTRALIA

## **HIGHLIGHTS**

- Petratherm has commenced aircore drilling at the Corunna Ag-Pb-Zn project in South Australia
- Five high-priority silver-lead-zinc targets to be tested

Petratherm Limited ("Petratherm" or "the Company") (ASX: PTR) is pleased to announce that it has commenced drilling on five high-priority silver-lead-zinc targets. Petratherm signed a letter agreement to acquire 75% interest in the Corunna Project (EL5497) with Musgrave Minerals Limited in December 2017 (refer to Petratherm's 15/12/2017 ASX release for further details).

The Corunna Project occurs in the emerging Ag-Pb-Zn province of the Southern Gawler Craton which hosts the Menninnie Dam Zn-Pb-Ag deposit and the Paris epithermal silver deposit (Figure 1). The tenement covers 260km2 and is well positioned in regards to infrastructure and proximity to the coast, being located approximately 50km west of Port Augusta.

Shallow air-core drilling undertaken by Musgrave Minerals in August 2015 at its Area 1 Prospect, on Corunna, intersected anomalous silver, lead and zinc (Figure 2). Best intercepts include:

- CAOC17 11m @ 1.0% Pb, 0.5% Zn and 4.2g/t Ag from 19m
- CAOC18 6m @ 1.0% Pb, 0.2% Zn and 8.2g/t Ag from 14m
- CAOC19 13m @ 0.6% Pb, 0.4% Zn and 7.2g/t Ag from 32m
- CAOC21 22m @ 0.5% Pb, 0.2% Zn and 13.2g/t Ag from 17m

The silver-lead-zinc anomalism is present in five drill holes over a strike length of 300m and is open to both the north and south (refer to Musgrave Minerals 27/08/2015 ASX release for further details. Petratherm is not aware of any new data that materially affects the data within the referred announcement and that all material assumptions and technical parameters underpinning the referred announcement have not materially changed).

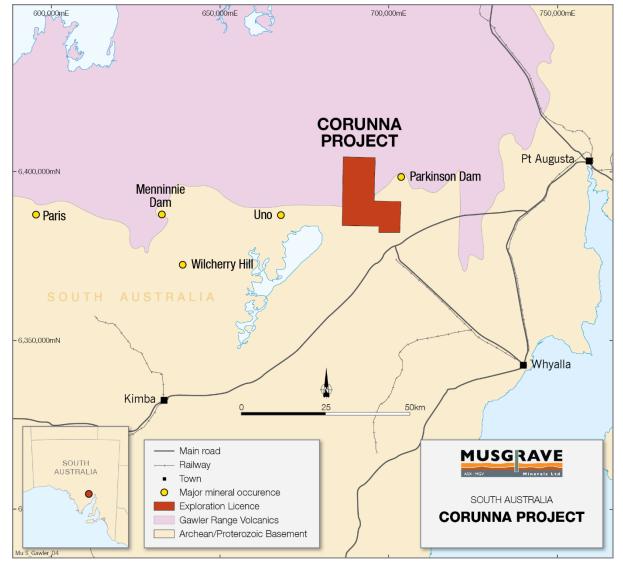


Figure 1 – Corunna Project Location Map and regional minerals occurrences (Image courtesy of Musgrave Minerals Ltd)

A recent infill ground magnetic survey completed by Petratherm in August 2018 has highlighted five structural targets within the Area 1 Prospect. All five targets are associated with anomalous surface geochemistry and present compelling drill targets (Figure 2). In addition, the ground magnetic survey also defined some discrete, high intensity, magnetic targets on the southern side of the project area. A rock chip sample taken from an historic prospector's pit, located adjacent to the magnetic targets, contained 0.31% Ni and 855ppm Cr. This geochemical anomalism suggests the magnetic bodies could represent ultramafic intrusives, a potential host rock for magmatic Ni-Co-Cu sulphides. Assay results from recent rock chip sampling completed by Petratherm in July 2018 has identified further anomalism up to 0.19%Ni coincident with the magnetic targets (Figure 2).

A follow-up 40 hole, 1,600m aircore drilling program will have a primary focus on testing the potential north and south extensions of the previously intersected Ag mineralisation and targeting further potential shallow mineralisation on similar structures delineated from the detailed ground magnetic survey. The magnetic bodies associated with Ni-Cr will also be drill tested to confirm the presence of ultramafic intrusives and assess Ni potential. The program is expected to take 2-3 weeks to complete, with assay results expected in late October.

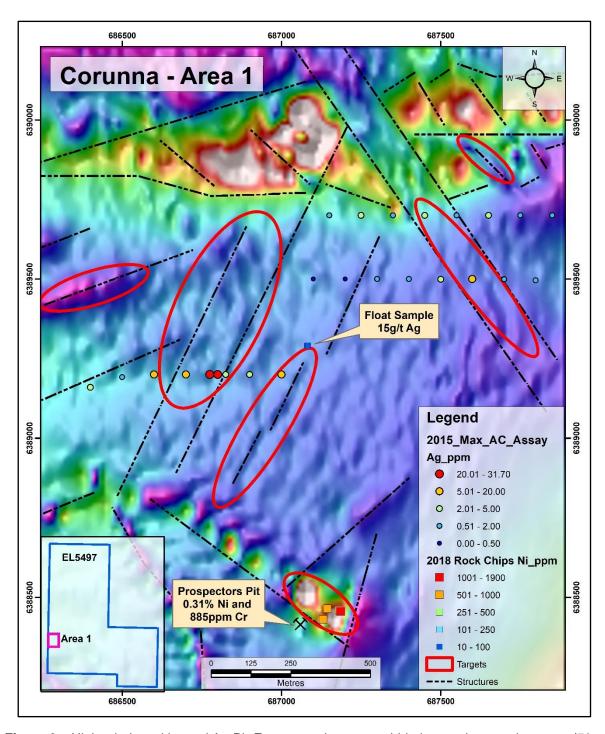
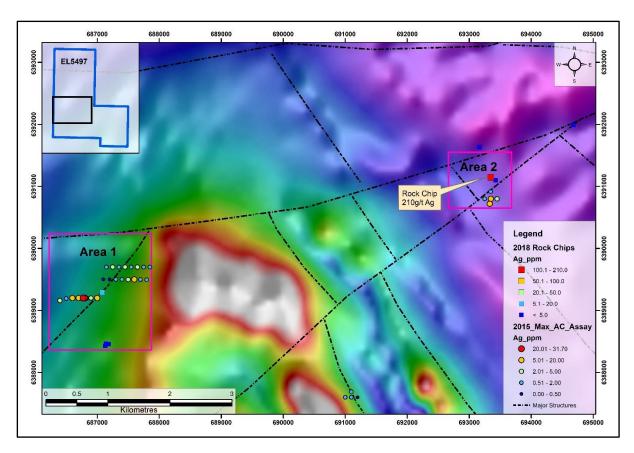


Figure 2 – High priority epithermal Ag-Pb-Zn targets shown on gridded ground magnetic survey (50m line spacing, east-west orientation, VRMI filter) with key structures highlighted.

In addition, the rock chip sampling completed by Petratherm in July 2018 also identified a new Ag prospect (Area 2), located 5.6km along strike to the ENE of Area 1 (Figure 3). Assay results received in September 2018 have returned a value of 210g/t Ag in a single rock chip associated with regional structures. Follow-up planning is currently underway for this high priority target.



**Figure 3** – High priority epithermal Ag-Pb-Zn prospects shown on gridded airborne magnetic survey (400m line spacing, east-west orientation, VRMI filter) with key structures highlighted.

## For further information please contact:

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Competent Persons Statement: The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Peter Reid, who is a Competent Person, and a Member of the Australian Institute of Geoscientists. Mr Reid is not aware of any new information or data that materially affects the historical exploration results included in this report. Mr Reid is an employee of Petratherm Ltd. Mr Reid has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

# EL 5497 (Corunna Project) JORC Table 1

Section 1 Sampling Techniques and Data (Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <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 Au that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Historical sampling was undertaken using standard industry practices.</li> <li>Historical drill hole, rock chip and soil sample coordinates are in UTM grid (GDA94 Z53) and have been measured by handheld GPS with an accuracy of ±4 metres.</li> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details.</li> </ul>
Drilling techniques	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.).	<ul> <li>Previous exploration drilling includes:</li> <li>Diamond: ST 1 – 2         (Broken Hill, 1971) &amp; DDHCC1 &amp; 2 (SADME, 1979).</li> <li>Rotary Percussion: 03_1 – 12 (Aberfoyle, 1991)</li> <li>Rotary Air: ESSORC10, 43, 69, 87, 118 &amp; 126 (Esso, 1980) &amp; BILLITONHB1 - 2, BILLITONRTP1 &amp; BILLITON RHB45-67 (Shell, 1983)</li> <li>The above results in this Report are historical and as such additional details are unknown.</li> <li>In addition, Musgrave Minerals completed 49 AC drillholes. See Table 1 from ASX: MGV announcement, 27 August 2015 for details.</li> </ul>
Drill sample recovery	<ul> <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</li> </ul>	<ul> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27</li> </ul>

Criteria	JORC Code explanation	Commentary
	have occurred due to preferential loss/gain of fine/coarse material.	August 2015 for AC details.
Logging	<ul> <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> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details.</li> </ul>
Sub- sampling techniques and sample preparation	<ul> <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> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <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> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <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> <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> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details.</li> </ul>
Location of data points	<ul> <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> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>All maps and locations are in UTM grid (GDA94 Z53) and have been measured by hand-held GPS with an accuracy of ±4 metres.</li> <li>Ground magnetic survey lines are walked using handheld GPS units.</li> <li>Drill hole RL's are approximate using hand held GPS. Topographic control with 2-5m accuracy using published maps is</li> </ul>

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <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> <li>Whether sample compositing has been applied.</li> </ul>	considered sufficient for modelling of ground magnetic survey results.  Ground magnetic survey lines extend for a nominal length of ~1600m. Receiver data is acquired continuously along east—west oriented lines spaced at 50m intervals.  The mineralisation has not yet been demonstrated to have sufficient continuity to support the definition of Mineral Resource and Reserves under the classification applied under the 2012 JORC Code.  No sample compositing has been undertaken by Petratherm.
Orientation of data in relation to geological structure	<ul> <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> <li>The precise dip and strike of the mineralisation is not yet known and it is unclear at this stage whether any sampling has a set bias.</li> <li>The geological strike is variable due to post emplacement deformation but the overall trend of stratigraphy is north northeast. No orientation based sampling bias is known at this time</li> </ul>
Sample security	The measures taken to ensure sample security.	Chain of custody is managed by Petratherm. samples are stored on site and transported to Bureau Veritas Minerals (BVM) in Adelaide, South Australia by a licenced reputable transport company. When at BVM samples are stored in a locked yard before being processed and tracked through preparation and analysis using the Lab Track system. Samples are collected in individually numbered calico bags.
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>No external audits or reviews of modelling techniques and data have been undertaken.</li> </ul>

Section 2 Reporting of Exploration Results (Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>Petratherm has signed a Letter of Agreement to acquire up to a 75% interest of EL 5497 (Corunna North) from Musgrave Minerals Ltd. See ASX:PTR announcement 15 December 2017 for further details.</li> <li>EL 5497 is located approximately 50 km west of Port Augusta overlapping Wartaka and Corunna Pastoral Stations.</li> <li>The southern half of the tenement overlaps the Corunna Range Geological Monument.</li> <li>Native Title Claims: SC1996/004 Barngarla, SCD2016/001 Barngarla (Determination)</li> <li>ILUAs: SI2013/001 Cultana Expansion Area, SI2013/002 Middleback Ranges SA</li> <li>The tenement is in good standing and no known impediments exist.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Previous exploration work includes surface geochemistry, mapping, structural interpretation, SIROTEM, ground magnetics, Hymap and exploration drill holes (4 diamond, 12 Rotary Percussion &amp; 32 Rotary Air).</li> <li>In addition, Musgrave Minerals completed 49 AC drillholes. See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	Petratherm is primarily exploring for epithermal- style Ag-Pb-Zn (e.g. Paris), volcanogenic carbonate-replacement Pb-Zn-Ag (e.g. Menninnie Dam) and metasomatic sedimentary-hosted Pb-Zn-Ag-Cu within the Hutchison Group of the

Criteria	JORC Code explanation	Commentary
		Gawler Craton, South Australia.
Drill hole Information	<ul> <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> <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> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details</li> </ul>
Data aggregation methods	<ul> <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> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details</li> </ul>
Relationship between mineralisati on widths and intercept lengths	<ul> <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>	See Table 1 from ASX:     MGV announcement, 27     August 2015 for AC details.
Diagrams	<ul> <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> <li>Refer to figures in the body of this report.</li> <li>See Figures from ASX: MGV announcement, 27 August 2015 for AC details</li> </ul>
Balanced reporting	<ul> <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> <li>No drilling has been undertaken by Petratherm although limited historical drilling exists.</li> <li>See Table 1 from ASX: MGV announcement, 27 August 2015 for AC details</li> </ul>
Other substantive exploration data	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.	A ground magnetic survey was conducted over the Corunna Area 1 Prospect area by Euro Exploration Services. The survey comprises 68.23 line km of data, with an E-W line orientation at 50m line

Criteria	JORC Code explanation	Commentary
		spacing and nominal sensor height of 1.5m. The grid system used is GDA94 Z53. Data was acquired with a Geometrics G-859 magnetometer.  Rock chips samples were collected over EL5497 by Petratherm. Samples were analysed by Bureau Veritas Minerals in Adelaide, South Australia using a peroxide fusion method.
Further work	<ul> <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> <li>A range of exploration techniques are being considered to progress exploration including drilling.</li> <li>Refer to figures in the body of this report.</li> </ul>