Massive coarse crystalline hematite confirmed in outcrop samples

- **Coarse crystalline hematite confirmed from petrology analysis of Lake Anthony iron project in South Australia**
- **In addition to earlier high grade iron assays from surface outcrop samples**
- **Low levels of impurities**

Lake Anthony/ Mt Christie iron project (South Australia)

(Marmota Energy Limited 100%)

Marmota Energy Limited (ASX: MEU) is pleased to announce that petrological analysis has confirmed the presence of massive coarse crystalline hematite in outcrop sample from the Company's wholly-owned Lake Anthony project.

This follows on from high grade iron assay results grading above 58% Fe with low levels of impurities (ASX announcement 1 November 2013). Samples were collected as part of a field reconnaissance program to identify and map basement geology on Marmota's Lake Anthony and Mt Christie tenements (Figure 1). The project is part of Marmota's cluster of central Gawler Craton tenements, located within easy access to both the Adelaide to Darwin and Trans Australia rail corridors.

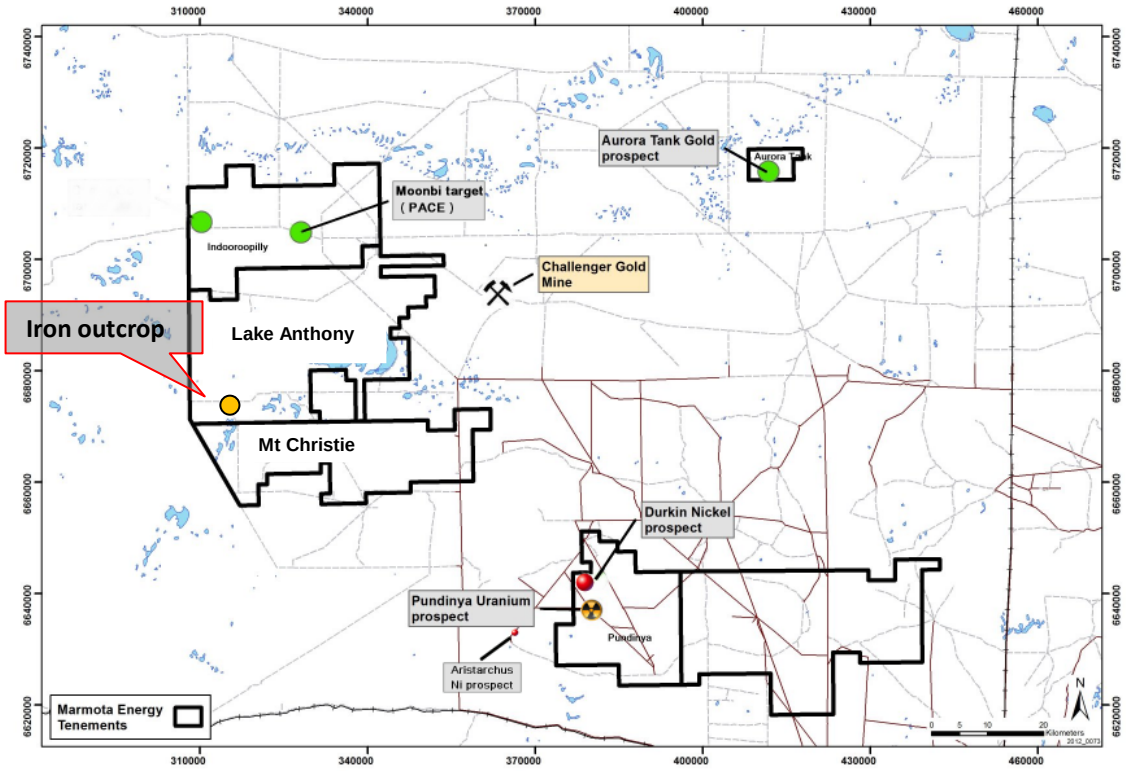

Figure 1: Lake Anthony, Mt Christie EL location map.

When analysed, 70% of the hand specimen shown in Figure 2 consists of a heterogeneous massive aggregate of large euhedral hematite crystals, about 5mm size, with internal platy cleavages. The other 30% consists of irregular patchy areas of the iron mineral, goethite.

The polished thin section (Figure 2) confirms an approximate 70% compact mass of hematite pseudomorphs after magnetite, ranging in size from 1 mm to 5 mm. There is no evidence of relict magnetite, with the specimen being non-magnetic.

Figure 2: Thin section from hematite sample (left). Bright to mid-grey crystals of hematite with diagnostic cross-hatch fabric. Orange-reddish internal reflections within ex-Fe-silicates, oxidised to earthy goethite-limonite.

The outcrop zone sampled is associated with a large scale geophysical anomaly highlighted by the broad scale government magnetic surveys (Figure 3). It is not uncommon for specular hematite mineralisation to contain residual magnetite, which is potentially responsible for the underlying magnetic signature. Iron samples analysed are also commonly related to iron formations which are part of the Archaean Christie Gneiss, which is well known for its banded iron formations (BIF's).

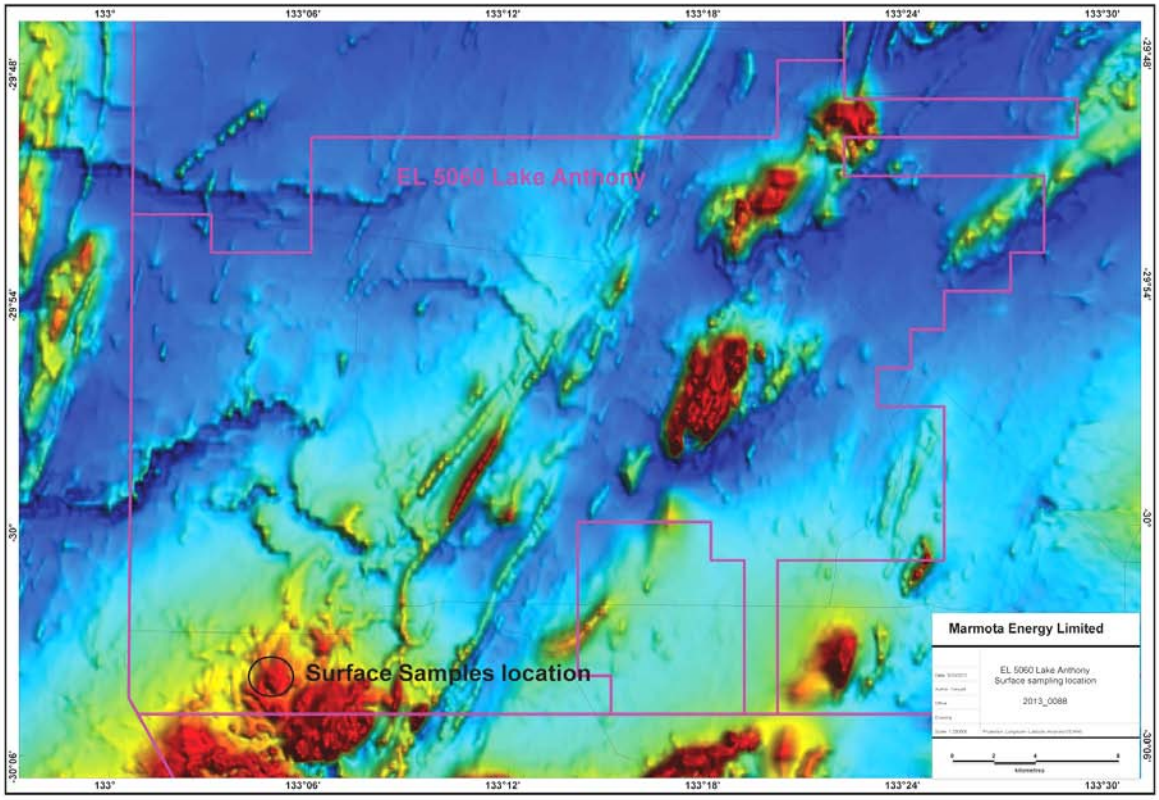

Figure 3: Regional TMI covering the Lake Anthony EL. Outcrop zone sampled located in the southwest of the tenement is shown.

Low cost ground based gravity surveys designed to replace the existing historic 4 mile spaced data coverage and ground magnetic surveys are being conducted and will be used to map any subsurface extension of the outcropping iron formations.

These surveys will form part of a coordinated program planned for Marmota's projects in the region over the coming weeks. Marmota has completed Traditional Owner heritage surveys where the Company was granted access to conduct low level exploration over the Company's Lake Anthony and Mt Christie tenements.

Marmota holds iron ore interests elsewhere in South Australia under its wholly owned 333km^2 Western Spur iron project (EL 4528), northeast of the Leigh Creek coal mine. Iron grades ranging above 58% Fe have also been confirmed from outcrops at Western Spur. With the confirmation of massive high grade hematite in outcrop on the Company's Lake Anthony project, this offers critical mass in what remains a high value commodity space.

Dom Calandro
MANAGING DIRECTOR

5 December 2013

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Dom Calandro as Managing Director of Marmota Energy Ltd who is a member of the Australasian Institute of Geoscientists . He has sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activities 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. Calandro consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Appendix 1

Table 1: Petrology results reporting – Jorc 2012

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *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.*	• Rock Chip sampling was undertaken as part of reconnaissance mapping and prospecting. Samples were taken when visible mineralisation was observed.
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).*	• No drilling undertaken.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• Rock chips samples were taken when visible outcrop mineralisation was observed. See ASX announcement 1 November 2013. No drilling undertaken.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate*	• No drilling undertaken.

Criteria	JORC Code explanation	Commentary
	Mineral Resource estimation, mining studies and metallurgical studies. • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• No sub-sampling completed.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *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.* • *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.*	• Sample was described by optical microscope examination of polished thin section.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• N/A
Location of data points	• *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.* • *Specification of the grid system used.*	• All coordinate information was collected using hand held GPS utilising GDA 94, Zone 53.

Criteria	JORC Code explanation	Commentary
	• *Quality and adequacy of topographic control.*	
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• Rock chips samples were taken when visible outcrop mineralisation was observed. See ASX announcement 1 November 2013.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *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.*	• Rock Chip sample submitted for assay were collected from outcrop in an approximate 50x50 metre pattern. See ASX announcement 1 November 2013.
Sample security	• *The measures taken to ensure sample security.*	• N/A
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• N/A

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	• *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.* • *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.*	• Lake Anthony (EL 5060) is 100% owned by Marmota Energy Limited. EL 5060 is located north west of Tarcoola in South Australia on the Mobella pastoral lease. The EL expiry date is 17/10/2014.EL 5060 lies within the Antakirinja Matu-Yankunytjatjara Native Title Detremination Area. Traditional owner heritage clearance completed for low impact exploration in late 2012.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• N/A
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Style of mineralisation is believed to be related to iron formations which are part of the Archaean Christie Gneiss, which is well

Criteria	JORC Code explanation	Commentary
		known for its banded iron formations (BIF's).
Drill hole Information	• *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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *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.*	• N/A, no drilling conducted.
Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• N/A
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• N/A, no drilling conducted.
Diagrams	• *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.*	• See figures in release attached.
Balanced	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades*	• N/A

Criteria	JORC Code explanation	Commentary
reporting	*and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	
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.*	• See attached release.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• See attached release.