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## COAL SEAM GAS DISCOVERY AT NOMGON-1

### HIGHLIGHTS

- Elixir's Nomgon-1 well determined to be a coal seam gas (CSG) discovery
- Average gas content (raw) of >5m<sup>3</sup>/t measured in very thick coal seam
- Range of permeabilities that meet definition of discovery requirements
- Further testing and delineation work will follow at this location

Elixir Energy Limited ("Elixir" or the "Company") today provides an update on the results of the Nomgon-1 core-hole well in its 100% owned Nomgon IX CBM PSC.

The detailed reporting requirements mandated by rule 5.30 of the ASX Listing Rules – *requirements applicable to reporting material exploration and drilling results* - are addressed in Appendix 1.

The well-site desorption laboratory at Nomgon-1 has measured an average total gas content in the thickest 49m gross (37m net) coal seam package of >5 cubic metres per tonne. This measurement is on a "raw" basis. Further work over coming months will provide a "dry ash free" ("DAF") number, which is the figure most commonly quoted by CSG companies – and which by definition will be higher than the raw number when corrected for ash and moisture.

Three down-hole permeability tests were successfully conducted on the well using injectivity fall-off test (IFOT) equipment. The results therefrom are subject to further analysis but at this point the ranges measured are sufficiently robust to meet the requirements of a coal seam gas discovery.

Accordingly, the result of the well meets the technical definition of a gas discovery under the *Petroleum Resource Management System* (PRMS) – see Appendix 2.

The Nomgon-1 well has now been plugged and abandoned in accordance with Mongolia's petroleum regulations. The drilling work program was conducted safely and environmentally responsibly.

Further laboratory work will be undertaken to measure features such as saturation and ash content. The results of this will feed into a planning process which is now underway to design a testing and delineation program for this sub-basin.



*A rare recent snow-fall at Nomgon-1*

Elixir's Managing Director, Mr Neil Young, said: *"The coal seam gas discovery at Nomgon-1 is the first in Mongolia and a great outcome for the Company. We have now moved onto the technical and regulatory bodies of work required for further work at this location and elsewhere in our massive PSC. This de-risking work will increasingly make the PSC more and more attractive to potential partners and discussions with such parties will ramp up in the months to come."*

By authority of the Board:

**Neil Young** - Managing Director  
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## Appendix 1 - requirements applicable to reporting material exploration and drilling results

Item	Description	Reporting
(a)	The name and type of the well	Nomgon 1 CSG core-hole
(b)	The location of the well and details of the permit or lease in which the well is located	Lat 042/52/33.9; Long 105/27/46.4 Nomgon IX CBM PSC
(c)	The entity's working interest in the well	100%
(d)	If the gross pay thickness is reported for an interval of conventional resources, the net pay thickness	Logging has measured net coals of 71m with the thickest seam (called the series 100 seam) having an interval thickness of 49m (which the well site geologist previously measured at 51m). Although further detailed analysis is required to refine the definition of "net" coals in this well, current estimates of a cut-off point give a net coal measuring 37.4m. The coal measures are structured synclinally – the above figures are the drilled thickness and are not adjusted for dips
(e)	The geological rock type of the formation drilled	Permian coals
(f)	The depth of the zones tested	IFOT tests carried out at 270-282 metres, 372-390 metres and 390-402 metres
(g)	The types of test(s) undertaken and the duration of the test(s)	Permeability testing using an injectivity fall off test (IFOT) tool. Each test took around 8 to 12 hours. The test interpretation directly measured Kh for the interval tested, which ranged from 1.2 to 23.3 millidarcy-metres.
(h)	The hydrocarbon phase(s) recovered in the test(s)	Gas been recovered by wellsite gas desorption laboratory analysis. This gas was then analysed in a gas chromatograph and determined to be dominantly methane (CH <sub>4</sub> ). Recordings were made over the gross interval 270.90m to 456.91m. In total, 42 samples were taken. The results delivered raw gas contents from 0.6 to 7.4 m <sup>3</sup> per tonne. The readings were seen to increase with depth, which is generally the case. The thickest and most prospective coal seam ("100 series") extended from 373.0m to 423.6m (logger), and measured raw gas from 2.4 to 7.5 m <sup>3</sup> per tonne, with an average raw gas content of 5.3 m <sup>3</sup> per tonne
(i)	Any other recovery, such as, formation water and water, associated with the test(s) and their respective proportions	Further laboratory testing work is planned to determine gas/water saturation levels
(j)	The choke size used, the flow rates and, if measured, the volumes of the hydrocarbon phases measured	Not applicable
(k)	If applicable, the number of fracture stimulation stages and the size and nature of fracture stimulation applied	Not applicable
(l)	Any material volumes of non-hydrocarbon gases, such as, carbon dioxide, nitrogen, hydrogen sulphide and sulphur	Preliminary gas composition analysis conducted in Mongolia in a gas chromatograph determined the desorbed gas to be predominantly methane, with an adjusted CH <sub>4</sub> volume of 81% on average (adjusted air free basis) – with the balance being CO <sub>2</sub> . The company plans further more detailed composition analysis in due course upon the completion of desorption testing.
(m)	Any other information that is material to understanding the reported results	Not applicable

## Appendix 2 – Definition of PRMS Discovery

The *Petroleum Resources Management System* (PRMS) of June 2018 sets out an internationally recognised system for the categorisation and characterisation of petroleum projects and resources.

The PRMS defines a “discovery” as follows:

### 2.1.1 Determination of Discovery Status

*2.1.1.1 A discovered petroleum accumulation is determined to exist when one or more exploratory wells have established through testing, sampling, and/or logging the existence of a significant quantity of potentially recoverable hydrocarbons and thus have established a known accumulation. In the absence of a flow test or sampling, the discovery determination requires confidence in the presence of hydrocarbons and evidence of producibility, which may be supported by suitable producing analogues (see Section 4.1.1, Analogues). In this context, “significant” implies that there is evidence of a sufficient quantity of petroleum to justify estimating the in-place quantity demonstrated by the well(s) and for evaluating the potential for commercial recovery.*

Under this definition, the Nomgon-1 well has made a coal seam gas discovery, given:

- a) An exploratory well has been drilled.
- b) It has obtained and tested numerous cored samples.
- c) The testing work has confirmed the presence of significant quantities of methane.
- d) Injectivity Fall Off Testing (IFOT) was used to measure the permeability of the coal seams in a number of different zones. The test interpretation directly measured Kh, which ranged from 1.2 to 23.3 millidarcy-metres, indicating that the methane is potentially recoverable. Further work will be undertaken to determine matters such as optimal completion techniques for the particular coal characteristics in the area.
- e) The well has been logged – confirming the presence of the thick coal seams that host the methane.
- f) The results of the well have validated a sub-basin geological model indicating those seams are highly likely to extend beyond the immediate location of the well-bore.
- g) A flow test would not be possible for this type of unconventional petroleum discovery at this stage of the exploration process.
- h) Accordingly, Elixir’s technical experts consider that the data gathered from the well met the test of being supported by suitable producing analogues.
- i) The results to date justify the further work which the Company plans to evaluate the resources in the area and ultimately for estimating the potential for commercial recovery.