

## Block 29/11, China - Jade drilling update

### EMPYREAN ENERGY PLC

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#### Empyrean Energy plc

#### Block 29/11, China - Elevated methane (C1) recorded in interpreted "Gas Cloud" zone

19 April 2022

Empyrean Energy plc ("**Empyrean**" or the "**Company**"), the oil and gas development company with interests in China, Indonesia and the United States, is pleased to provide the following update on drilling at the Jade prospect at its 100% owned Block 29/11 permit, offshore China:

#### HIGHLIGHTS

- **LH 17-2-1 well at the Jade prospect drilled 12-1/4" section to 2150 metres Measured Depth ("MD")**
  - **Elevated methane (C1) ranging from 227ppm to 15440 ppm was recorded while drilling 12-1/4" section.**
  - **Higher values of methane (C1) ranging from 4190 ppm to 15440 ppm were recorded in the pre-drill interpreted "gas cloud" zone between 1550 metres to 1800 metres MD.**
  - **CNOOC has confirmed comparable methane ranges in their oil discovery well LH 23-1-1d that is located 10km Southwest of the Jade prospect which also had a "gas cloud" feature**
- **Drilling results have validated the pre-drill interpretation of seismic data including the presence of gas clouds over the Jade as well as Topaz prospects**
- **Based on the results thus far, Empyrean has upgraded its internal Geological Chance of Success ("GCoS") over the Jade prospect from 41% to 65% and Topaz prospect from 35% to 47%**
- **Current operations are the installation of 9-5/8" casing before drilling 8-1/2" hole to the Total Depth ("TD") of 2860 metres MD**

Empyrean is the operator of Block 29/11 in China and has 100% working interest during the exploration phase. In the event of a commercial discovery, its partner, China National Offshore Oil Company ("**CNOOC**"), may assume a 51% participating interest in the development and production phase.

#### **Progress**

The NH9 Semisubmersible drilling rig made excellent progress at LH 17-2-1 with the drilling of the 12-1/4" section to 2150 metres MD and current operations are preparations for running 9-5/8" casing.

During drilling of the 12-1/4" section, elevated methane (C1) ranging from 227 parts per million ("ppm") to 15440 ppm was recorded at the gas chromatograph during mudlogging. Negligible C2 and no C3 components were recorded. Higher values of methane (C1) ranging from 4190 ppm to 15440 ppm were recorded in the zone between 1550 metres to 1800 metres MD which was interpreted pre-drill to be a "gas cloud" zone.

During the drilling of this section, EME was in regular communication with CNOOC to fully understand and cross check the significance of elevated methane (C1) against CNOOC discovery wells. CNOOC has confirmed comparable methane ranges in their oil discovery well LH 23-1-1d that is located 10km Southwest of the Jade prospect. LH 23-1-1d also exhibited a gas cloud on seismic data. The elevated methane readings to date have validated the Company's pre-drill interpretation of seismic data, including the presence of a gas cloud in overburden above the Jade prospect, a feature also present over the Topaz prospect. It is also the case that two dry wells drilled by AMOCO in the 1990s on the eastern flank of Empyrean's Block 29/11 permit area did not display any gas clouds nor did they have elevated methane (C1) whilst drilling the same geological formation.

Based on the latest elevated methane (C1) readings, Empyrean has upgraded its internal Geological Chance of Success ("**GCoS**") for the Jade prospect from 41% to 65%. It has also upgraded the GCoS for its Topaz prospect from 35% to 47%.

Prospect	GCoS Factor (after gas cloud study) - pre drill				GCoS
	Trap/ Seal	Reservoir	Source	Timing	
Jade	0.9	0.95	0.68	0.7	41%
Topaz	0.9	0.85	0.7	0.65	35%

Prospect	GCoS Factor (after elevated C1) - during drilling				GCoS
	Trap/ Seal	Reservoir	Source	Timing	
Jade	0.9	0.95	0.95	0.8	65%
Topaz	0.9	0.85	0.95	0.65	47%

#### Forward plan

Following the setting of 9-5/8" casing, the 8-1/2" hole will be drilled to the TD of 2860 metres MD.

#### Well Objective

The 2021 drilling campaign is targeting a world class conventional oil target in the Jade prospect, to which Gaffney Cline & Associates ("GCA") assigned a GCoS of 32%. Subsequent to this independent assessment, the Company completed a gas cloud study and post stack seismic inversion study that it believes further mitigates risk and increases the GCoS to 41%. Following the elevated methane readings whilst drilling through the "gas cloud" zone, the internal Company GCoS is now 65%.

The Jade prospect has a GCA audited mean in place potential of 225 MMbbl and a P10 in place upside of 395 MMbbl. Four recent nearby discoveries by CNOOC immediately to the West of the Jade prospect are filled to their P10 potential or better. All four CNOOC discoveries have gas clouds showing in the overburden on seismic.

Empyrean's excellent quality 3D seismic indicates that there is a classic "fill to spill" geological setup in the basin, and a robust regional seal, that provides the Jade and Topaz prospects with a very real possibility of being filled in a similar fashion to nearby discoveries. The Jade and Topaz prospects both have gas clouds, similar to nearby discoveries, in the overburden on 3D seismic. Dry wells nearby do not have gas clouds. The Jade prospect is the first of the three identified prospects within Block 29/11, which also contains the Topaz and Pearl prospects. The combined audited mean in place potential of all three prospects is 884 MMbbl and a P10 in place upside of 1,588 MMbbl. The post stack seismic inversion study showed Jade and Topaz both have the potential for excellent carbonate buildup reservoir quality with excellent porosity and permeability. Any oil discovered is expected to be light oil in the 38-41 API range, similar to nearby discoveries. These attributes combined with the potential for exceptional natural reservoir drive supports the potential for excellent recovery rates.

The objective of the Jade well is to test for hydrocarbons down to TD of 2860 metres MD.

The information contained in this announcement has been reviewed by Empyrean's Executive Technical director, Gaz Bisht, who has over 31 years' experience as a hydrocarbon geologist and geoscientist.

#### Empyrean CEO, Tom Kelly, stated:

"The first technical objective of the Jade well has now been drilled. The validation of "gas clouds" through the presence of elevated methane levels in exactly the depth zone we interpreted on the excellent quality seismic data proves that the gas clouds exist and supports the Company's pre-drill interpretation that the methane is probably coming from light oil in the anticipated reservoir section. This is a major box now ticked, if we are to make a light oil discovery at Jade. The comparisons to nearby CNOOC discovery wells look very compelling. Drilling operations continue to run smoothly and safely, with progress to date right on schedule".

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