Paning-2 intersects 117 metres of net gas pay in the northern Cooper Basin’s tight sands and deep coals

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Key points

- Senex Energy Limited (ASX: SXY, Senex) has completed drilling and casing the unconventional gas exploration well Paning-2 in northern Cooper Basin permit PEL 90.
- Paning-2 drilled into a 9,000 acre structure and intersected 47 metres of net gas pay in Permian tight sands and 70 metres of net gas pay in the deep coals of the Patchawarra Trough.
- Senex estimates potential gas in place of 2.1 trillion cubic feet (Tcf) in the deep coals with additional material gas volumes in the tight Permian sands.
- A number of similar targets have been identified by Senex throughout the Patchawarra Trough.
- Paning-2 will be fracture stimulated as part of Senex’s Cooper Basin unconventional gas program.

The Paning-2 well in northern Cooper Basin permit PEL 90 (100% Senex) has been cased and suspended by Weatherford Rig 826 to a total depth of 3,144 metres. The well is located 1.2 kilometres southwest of Paning-1, which was drilled in 1980 by Delhi Petroleum and encountered gas in the Permian section.

Paning-2 is the first unconventional gas exploration well to be drilled in the region and has confirmed the potential of the tight sands and deep coals to host material gas volumes.

Senex Managing Director Ian Davies said the result highlighted the untapped potential of the company’s interests in the northern Cooper Basin.

“Paning-2 confirms the potential of the Patchawarra Trough and the northern Cooper Basin as a new province for unconventional gas exploration. Following the success of this well, we will continue to test similar targets across the region,” he said.
Tight sands

Paning-2 is the first exploration well designed to specifically test the potential of the Permian tight sand sequence that exists across the entire Patchawarra Trough.

*Figure 1 – Toolachee coal thickness and the Paning structure*

The well tested a domal structure up-dip of Paning-1 at the top of the Patchawarra Formation which covers an area of more than 36 square kilometres (9,000 acres). The well intersected 47 metres of gas-bearing tight sandstones in the Lower Poolawanna, Epsilon and Patchawarra Formations, as shown below.

*Figure 2 – Tight sand thickness*

<table>
<thead>
<tr>
<th>Formation</th>
<th>Thickness (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Poolawanna</td>
<td>9</td>
</tr>
<tr>
<td>Epsilon</td>
<td>22</td>
</tr>
<tr>
<td>Patchawarra</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>47</strong></td>
</tr>
</tbody>
</table>
Deep coals – Estimated potential gas in place of 2.1 Tcf

Paning-2 intersected 70 metres of Permian coals, these are known to exist throughout the Patchawarra Trough where Senex holds an extensive acreage position.

*Figure 3 – Deep coal thickness*

<table>
<thead>
<tr>
<th>Formation</th>
<th>Thickness (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toolachee</td>
<td>32</td>
</tr>
<tr>
<td>Epsilon</td>
<td>13</td>
</tr>
<tr>
<td>Patchawarra</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
</tr>
</tbody>
</table>

Data from the desorption of Permian coals cored in previous Senex wells indicates gas contents of at least 600 standard cubic feet per tonne (equivalent to approximately 17 cubic metres per tonne).

The productivity of the Permian coals was proven by Santos at the Moomba-77 well, where Patchawarra Formation coals flowed at 100,000 cubic feet per day. The unconventional gas target located in deep coals within this 9,000 acre structure is estimated to contain potential gas in place of 2.1 Tcf.

Senex has taken core samples from Paning-2 to allow petrophysical and gas content analysis of the target zones. This information will allow the design of future completion techniques to maximise flow rates and prove the commerciality of tight sand and deep coal formations.

Paning-2 will be fracture stimulated as part of Senex’s Cooper Basin unconventional gas program.

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Figure 4: Senex unconventional gas exploration activities

Competent person’s statement

Unless otherwise indicated, the statements contained in this drilling report about Senex’s reserves estimates have been compiled by Mr James Crowley BSc (Hons), who is General Manager – Exploration and Development, a full time employee of Senex, in accordance with the definitions and guidelines in the 2007 Petroleum Resources Management System approved by the Society of Petroleum Engineers (SPE PRMS). Mr Crowley consents to the inclusion of the estimates in the form and context in which they appear. Senex’s reserves and resources are consistent with the SPE PRMS.