

## Monthly drilling report – May 2014

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Release Date: 4 June 2014

### Key points

- Mustang-2 appraisal well in PPL 243 cased and suspended after intersecting net pay of 6.4 metres of excellent quality sands in the mid-Birkhead reservoir
- Drilling ahead on the Tornado-1 exploration well in PEL 104 southeast of Mustang oil field on the western flank of the Cooper Basin
- Drilling program for FY14 completed as planned with 30 oil wells drilled

### OIL EXPLORATION, APPRAISAL AND DEVELOPMENT

Senex Energy Limited (Senex, ASX: SXY) and its joint venture partners have completed the planned 30 well drilling program for FY14. The oil drilling program for FY15 will be announced in July 2015, with drilling expected to commence shortly thereafter.

**Tornado-1 exploration well** (*PEL 104: Senex 60% and operator, Beach Energy Limited (Beach, ASX: BPT) 40%*)

EDA Rig 3 is drilling ahead on the Tornado-1 exploration well, targeting a total depth of approximately 2,200 metres. The rig commenced drilling on 26 May 2014 approximately 4 kilometres southeast of Mustang-1 on the western flank of the South Australian Cooper Basin.

Tornado-1 is the first exploration well to be drilled from the results of the Lignum 3D seismic survey. The primary objective is the mid-Birkhead reservoir sands within a combined structural-stratigraphic trap. As secondary objectives, the well will evaluate the Patchawarra Formation and Namur Sandstone.

The location for Tornado-1 was selected on the basis of the same AVO/Inversion<sup>1</sup> work used to predict the presence of Birkhead reservoir in the Mustang wells. Further prospects identified from the Lignum 3D seismic survey will be drilled as part of the FY15 drilling campaign.

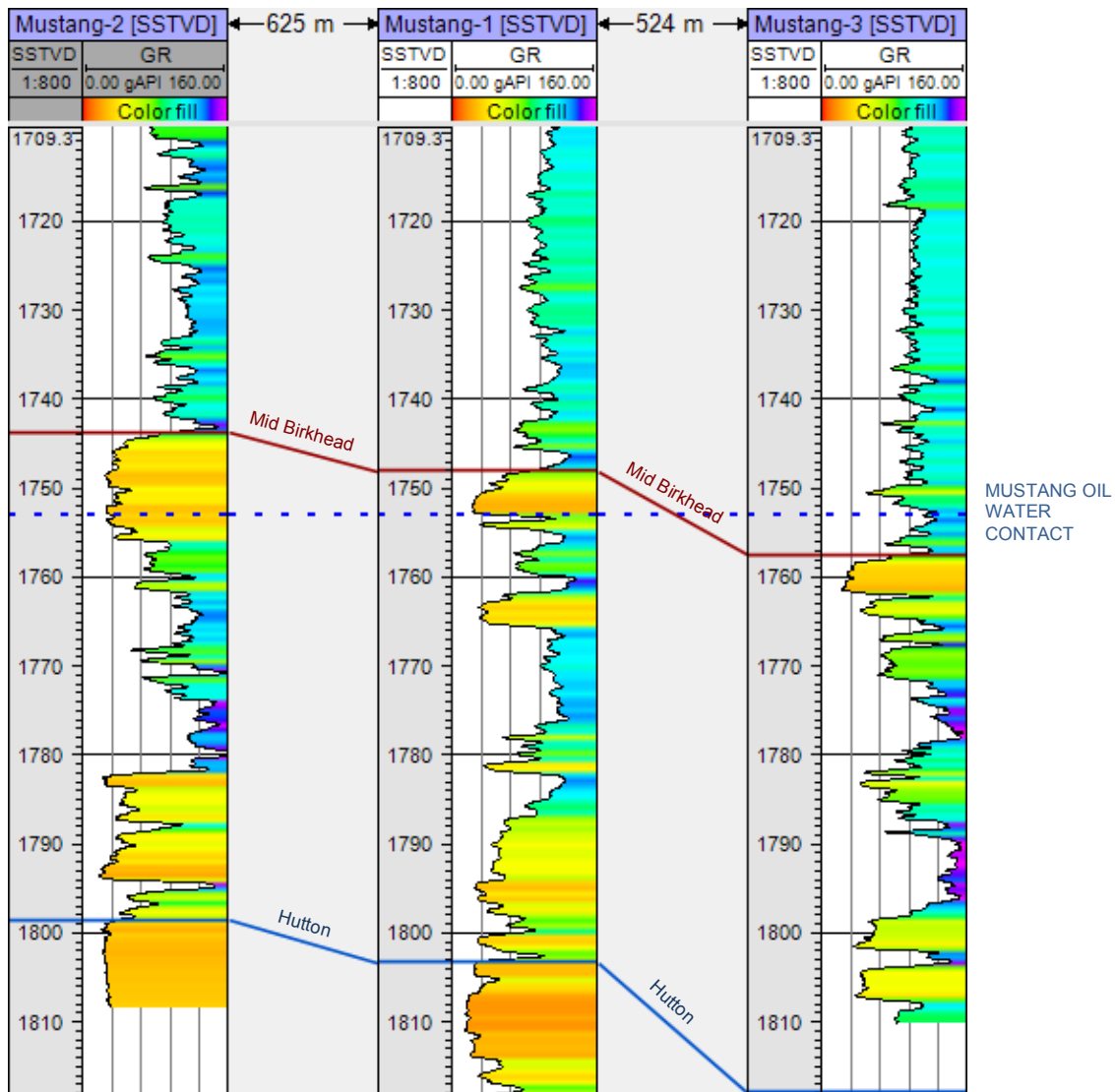
<sup>1</sup> A brief description of AVO/Inversion enhanced seismic interpretation techniques is provided on page 5.

**Mustang-2 appraisal well (PPL 243: Senex 60% and operator, Beach 40%)**

The Mustang-2 appraisal well was cased and suspended as a future Birkhead oil producer after intersecting 6.4 metres of net oil pay updip of the Mustang-1 oil discovery. The well intersected 12 metres of gross sand, which is almost twice the thickness of the reservoir section intersected at Mustang-1 (refer Figure 1).

EDA Rig 3 commenced drilling the Mustang-2 appraisal well on 2 May approximately 570 metres northwest of Mustang-1. Mustang-2 was drilled to a total depth of 1,915 metres to evaluate the oil bearing potential of the mid-Birkhead Formation.

Figure 1: Well correlation for Mustang wells



## DRILLING REGISTER

Exploration, appraisal and development drilling undertaken in FY14 is shown below. The location of Senex oil fields is shown in Figure 2.

### Oil

Well	Location	Spud date	Type	Result*
Worrior-8	PPL 207	22-Jun-2013	Development	Up to 18 metres in the McKinlay, Namur, Birkhead and Patchawarra
Worrior-9	PPL 207	4-Jul-2013	Exploration	Plugged and abandoned
Burruna-2	PEL 115	6-Aug-2013	Exploration	5.3 metres of net pay in the Namur 3,600 bopd during testing
Acrasia-7	PPL 203	24-Aug-2013	Development	7.1 metres of net pay in the Hutton, Poolowanna, Tinchoo and Arrabury
Ventura-2	PPL 214	28-Aug-2013	Development	13.4 metres of net pay in the Murta and McKinlay
Kobari-2	PEL 516	14-Sep-2013	Exploration	Oil shows over 22 metres
Pirie-1 <sup>1</sup>	PEL 105	30-Sep-2013	Exploration	Moderate oil shows in the Birkhead Formation
Dunlop-1	PEL 113	1-Oct-2013	Exploration	Approx 3 metres of net pay in the McKinlay
Moothandella-4 <sup>2</sup>	ATP 794P	5-Oct-2013	Appraisal	10 metres of net pay Murta, Namur and Westbourne
Sprigg-1	PEL 514	6-Oct-2013	Exploration	No net pay calculated with a gas show in the Paning Member. Well suspended pending evaluation of test results
Pirraminta-2	PEL 514	22-Oct-2013	Exploration	Residual oil. Cased and suspended as a future water well
Burruna-3	PEL 115	8-Nov-2013	Appraisal	Interpreted net pay of approximately 3 metres in the lower Birkhead
Acrasia-6	PPL 203	14-Nov-2013	Appraisal	32.8 metres of net pay in the Hutton, Poolowanna and Tinchoo
Vintage Crop-3	PPL 241	24-Nov-2013	Appraisal	4.2 metres of net pay in the Murta and Birkhead
Growler-13	PPL 242	27-Dec-2013	Exploration	Oil-saturated interval intersected
Acrasia-8	PPL 203	30-Dec-2013	Development	29.8 metres of net pay in the Birkhead, Hutton, Poolowanna and Tinchoo
Mirage-5	PPL 213	04-Jan-2014	Appraisal	12.1 meters of net pay in the Murta
Spitfire-4	PEL 104	09-Jan-2014	Appraisal	13.8 metres of net pay in the Birkhead
Growler-12	PRL 15	17-Jan-2014	Appraisal	Intersected an oil saturated interval
Snatcher-11	PPL 240	31-Jan-2014	Appraisal	Approximately 4.5 metre oil-saturated interval

Well	Location	Spud date	Type	Result*
				intersected in the Birkhead
Mirage-6	PPL 213	01-Feb-2014	Appraisal	11.6 metres of net pay in the Murta
Vintage Crop-4	PEL 516	21-Feb-2014	Appraisal	2.5 metres of net pay in the McKinlay 8.0 metres of net pay in the Murta
Worrior-10	PPL 207	27-Feb-2014	Appraisal	4.5 metres of net pay in the Patchawarra 4.9 metres of calculated net pay in the Murta
Vintage Crop-5	PEL 516	08-Mar-2014	Appraisal	4.3 metres of calculated net pay in the Murta 5 metres of porous sand with oil and gas shows in the McKinlay Member
Spitfire-5	PEL 104	23-Mar-2014	Development	7.2 metres of net pay in the Birkhead
Spitfire-3	PEL 104	24-Mar-2014	Appraisal	6.1 metres of net pay in the Birkhead
Spitfire-6	PEL 104	04-Apr-2014	Development	8.9 metres of net pay in the Birkhead
Mustang-3	PPL 243	19-Apr-2014	Appraisal	Plugged and abandoned
Mustang-2	PPL 243	2-May-2014	Appraisal	6.4 metres of net pay in the Birkhead
Tornado-1	PEL 104	26-May-2014	Exploration	Drilling ahead

\* Net pay figures represent the latest calculations and may differ from originally published numbers.

## Gas

Well	Location	Spud date	Type	Result
Paradise Downs-10 <sup>3</sup>	PL 171	13-Aug-2013	Appraisal	Cased and suspended
Kato-3 <sup>4</sup>	ATP 593P	13-Oct-2013	Exploration	Plugged and abandoned after testing
Kato-4 <sup>4</sup>	ATP 593P	27-Oct-2013	Exploration	Plugged and abandoned after testing
Indy-3 <sup>4</sup>	ATP 771P	22-Nov-2013	Exploration	Plugged and abandoned after testing
Indy-4 <sup>4</sup>	ATP 771P	9-Dec-2013	Exploration	Plugged and abandoned after testing

1 Operated by Tellus Resources

2 Operated by Bridgeport Energy

3 Operated by QGC

4 Core hole not designed for gas production

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**About AVO/Inversion enhanced seismic interpretation techniques**

**AVO** (Amplitude variation with offset): This technique uses the changes in seismic reflection amplitude to determine rock-type and fluid content. Successful AVO analysis requires special processing of seismic data and modelling of rock properties with a known fluid content. When the rock-types and their seismic properties have been determined, it is possible to interrogate the seismic volume and find other areas where those criteria are met. In the Cooper Basin, this process can be used to predict the presence or absence of the Jurassic reservoirs and sealing shales.

**Inversion:** A mathematical process by which the components of seismic data are used to generate a model that is consistent with well data where rock and seismic properties are known i.e. the process of solving the inverse problem. In seismology, 3D seismic data, vertical seismic profiles and well log data can be used to perform inversion, the result of which is a model of geological layers and their thickness, density and seismic velocities. These data can be directly related to the quality of the reservoir rocks being investigated and is used on Senex's 3D seismic surveys to optimise well locations and to help define the limits of stratigraphic traps.

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**Competent person**

Information about Senex's reserves and resources estimates has been compiled in accordance with the definitions and guidelines in the 2007 SPE PRMS. The information is based on, and fairly represents, information and supporting documentation prepared by, or under the supervision of, Mr James Crowley BSc (Hons) who has consented to the inclusion of this information in the form and context in which it appears in this report. Mr Crowley is a qualified petroleum reserves and resources evaluator, a member of Society of Petroleum Engineers and full time employee of Senex.

Figure 2: Senex conventional oil fields (operated and non-operated)

