

# ASX:EEG

Beetaloo Appraisal Program Underway

19 October 2021



Level 19, 20 Bond Street  
Sydney NSW 2000

## Carpentaria-1 Flow Rates Increase and Carpentaria-2H Drilling to Commence

- **45% increase in Carpentaria-1 vertical well average flow rate to 0.364 mmcf / day over the first 10 days following recommencement of extended production testing**
- **Northern Territory Government approvals received for the drilling and hydraulic fracture stimulation of up to seven horizontal wells in EP187**
- **Carpentaria-2H horizontal appraisal drilling scheduled to start in late October 2021**
- **EP187 infill 2D seismic acquisition scheduled to start in November 2021**

### Comments from Managing Director Alex Underwood:

“Activity in Empire’s 100% owned and operated EP187 in the Beetaloo Sub-basin is ramping up substantially. We are seeing encouraging results at Carpentaria-1 where flow testing has recommenced, with a ~45% increase in flow rates over the first 10 days compared to the rates achieved prior to shut-in.

We have received all key NT Government approvals for a broad appraisal program including the drilling of our first horizontal appraisal well, Carpentaria-2H, located 11km north of Carpentaria-1. Rig mobilisation to site has commenced and we expect to be drilling by the end of this month.

An infill seismic survey to better define the Velkerri shale resources across EP187 to enhance our understanding of the size of the resource and to delineate future drilling locations will commence in November.

Success in these field activities will drive updated independent Contingent and Prospective Resources assessment for EP187 with results expected in Q1 2022.

Key Beetaloo operators Origin, Santos and Empire are now answering the critical questions that will determine the commercial future of the Beetaloo, most notably demonstration of flow rates from horizontal appraisal wells. It was horizontal appraisal drilling success across the key US shale basins that drove an explosion in development activity and production, ultimately giving the US energy independence.

Origin and its JV partner Falcon Oil & Gas recently announced flow rates at the Amungee NW-1H well that imply normalised flow rates of >5 mmcf / day per 1,000m of horizontal section, and Santos and JV partner Tamboran are expected to announce flow rates from their first two horizontal appraisal wells late this quarter. We look forward to drilling Carpentaria-2H this quarter followed by fracture stimulation and flow testing in Q2 2022 to assess horizontal flow rate potential in EP187.

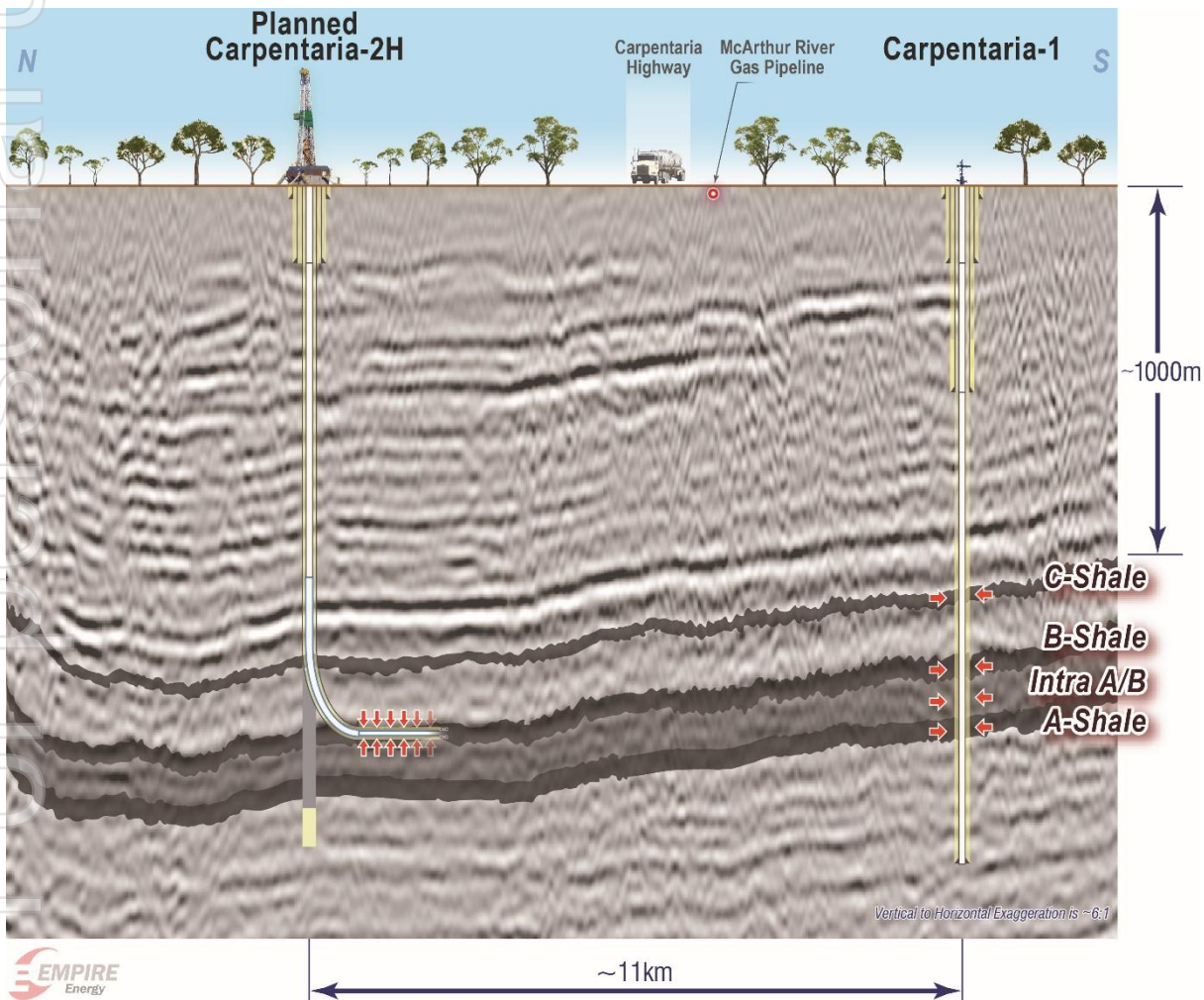
Our appraisal activities and those of our neighbours in the coming months will, in the success case, drive shareholder value and move the Beetaloo towards commercialisation.”

### Carpentaria-1 Extended Production Test Recommences with Improved Flow Rates

On 28 September 2021, Empire restarted production testing of the fracture stimulated Carpentaria-1 vertical well in EP187. The first Extended Production Test (“EPT”) was suspended on 16 July 2021 due to COVID-19 related travel restrictions. In the first ten days of this second EPT, the average flow rate has lifted by ~45% to 0.364 mmcf / day compared to the average reported flow rate reached in the first EPT.

Empire’s technical team believes that the uplift in production rates may be due to diffusion of water into the Middle Velkerri shales during the shutdown period, providing enhanced pathways for gas production through induced fractures. This data will be incorporated into the innovative completion and stimulation methodologies Empire is developing specific to the Beetaloo Sub-basin.

Sampling of gas and flowback fluid at surface has also continued and the returned hydrocarbons will be used to determine the best shale to target with the Carpentaria-2H lateral.



EP187 Carpentaria-2H to Carpentaria-1 Subsurface Schematic

### Carpentaria-2H Drilling to Commence in late October

Civil works are now well underway for the Carpentaria-2H well including the construction of the Carpentaria Highway turn off, access roads and the well pad. The conductor casing has been installed and water source and monitoring bores are being drilled within the well pad area. Baseline water sampling will commence shortly for aquifer protection.

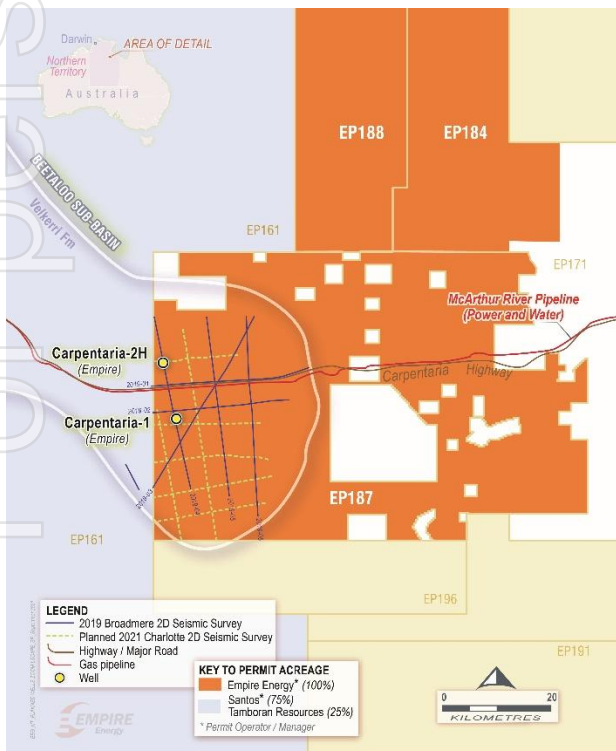
The vertical section of Carpentaria-2H will target the same Velkerri Formation shales (A, B, Intra A/B and C) as Empire’s Carpentaria-1 well approximately 200m deeper than those target shales existing at Carpentaria-1. Following vertical drilling through the target formations, a horizontal hole section will be drilled into one of the target Velkerri shale zones.

Following the drilling of Carpentaria-2H, Empire intends to commission an updated independent resource report to update Prospective and Contingent Resources in EP187 which will incorporate the Carpentaria-2H drilling results, updated seismic data and existing Carpentaria-1 data. Empire expects the updated independent resource report to be completed in Q1 2022.

The Carpentaria-2H well will be drilled 11km north of Carpentaria-1, with the Carpentaria Highway and McArthur River Pipeline located midway between the two wells.

### EP187 Infill Seismic Survey to commence in November

Acquisition of the Charlotte 2D Seismic Survey, designed to further delineate the Velkerri shales within EP187, is expected to start in the first week of November 2021. Acquisition is expected to take approximately two weeks and will be followed by seismic processing and line rehabilitation.



EP187 Map Detailing Drilling and Seismic Survey Locations



## Northern Territory Government Drilling Approvals Received

Empire has received approval from the Northern Territory Government for its Environment Management Plan (“EMP”) for up to seven horizontal wells in EP187 including permission to:

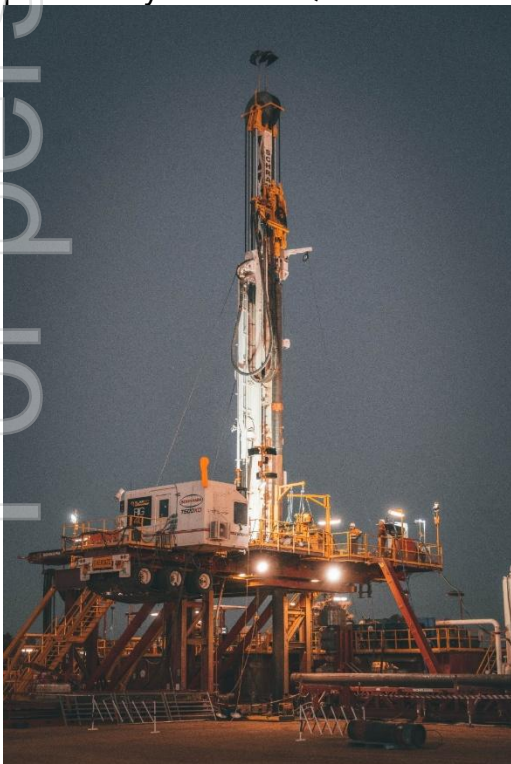
- Construct up to 6 well pads with the ability to drill up to 4 wells from each pad
- Drill up to 7 wells including a horizontal from the existing Carpentaria-1 vertical well and up to 6 new horizontal wells
- Evaluate, log, test and core each well including diagnostic fracture injection tests
- Hydraulic fracture stimulation and extended production test each well

Following approval of the EMP, Empire has now received all key NT Government approvals for Carpentaria-2H operations and the work programs for which Empire has executed grant agreements with the Australian Government under the *Beetaloo Cooperative Drilling Program*.

## Drilling Contract Executed and Mobilisation Underway

Empire has selected and engaged the Silver City Drilling Rig 40 to drill, case and suspend the horizontal Carpentaria-2H well in EP187. Rig 40 and its crew have recently drilled Origin Energy’s Velkerri 76 well and is mobilising from that site to the Carpentaria-2H location.

Silver City Drilling Pty Ltd is an independently owned Northern Territory company based in Alice Springs. The company has a long history in oil and gas drilling in Australia and has been particularly active in Queensland’s coal seam gas industry.



Silver City Drilling Rig 40

