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ASX/Media Release

15 February 2017

Beetaloo Basin drilling results indicate material gas resource

Origin Energy Limited (Origin) today announced it had submitted the Amungee NW-1H – Velkerri B Shale Gas Pool Discovery Evaluation Report to the Northern Territory (NT) Government, on behalf of the Beetaloo Joint Venture*.

This follows the completion of extended production testing at the Amungee NW-1H exploration well of the "B Shale" member of the Velkerri Formation in the onshore Beetaloo Basin. Origin has also undertaken a resource study based on Amungee NW-1H well results and other key wells in the Beetaloo Basin including regional seismic data.

Key report and study points:

- Drilling and seismic results across more than 10,000km^2 illustrate the continuity of the Velkerri Formation shale gas play over a large area
- The "B Shale" member of the Velkerri Formation is interpreted to be the most continuous of the three individual targets within the Velkerri Formation shale gas play
- Production test data from Amungee NW-1H, an approximately 1100m in-zone horizontal well with 11 fracture stimulation stages across approximately 600m of the lateral section, confirms the ability of the Velkerri Formation "B Shale" to flow gas following hydraulic fracture stimulation
- Origin has prepared a Contingent Resource estimate (Table 1) using probabilistic methods and reservoir evaluation data, in addition to regional seismic data

Table 1. Assessment of 2C Contingent Gas Resource Estimates for the Velkerri B Shale Pool within EP76, EP98, and EP117 as of 15 February 2017[1]

Measured and Estimated Parameters	Units	Best Estimate
Area[2]	km^2	1,968
Original Gas In Place (OGIP)[3] (Gross)	TCF[6]	61.0
Contingent Resource[4] (Gross)	TCF	6.6
Contingent Resource[4] (Net)[5]	TCF	2.3

[1] Contingent Resource Estimates have been prepared on a statistical aggregation basis and in accordance with the Society of Petroleum Engineers Petroleum Resources Management System (SPE-PRMS). Contingent Resource Estimates are those quantities of gas (produced gas minus carbon dioxide and inert gasses) that are potentially recoverable from known accumulations but which are not yet considered commercially recoverable due to the need for additional delineation drilling, further validation of deliverability and original gas in place, and confirmation of prices and development costs.
[2] P50 area from the Contingent Resource area distribution
[3] OGIP presented is the product of the P50 Area by the P50 OGIP per km^2
[4] Estimated Gas Contingent Resource category of **2C**
[5] Net to Origin's 35% interest in EP76, EP98, and EP117
[6] TCF: trillion cubic feet

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Origin CEO Integrated Gas, David Baldwin, said "Origin is pleased to confirm it has submitted a report to the Northern Territory Government that indicates the existence of a material gas resource within the Beetaloo Basin.

"The Beetaloo Basin is the Territory's most prospective onshore basin for unconventional gas and our test results further confirm the region's outstanding shale gas potential. Further exploration and appraisal activity will be required to progress our understanding of the play and mature the contingent resources to reserves," Mr Baldwin said.

On 14 September 2016, the Northern Territory Government implemented a moratorium on hydraulic fracturing of unconventional gas reservoirs. The moratorium will remain in place until the Government has considered the outcomes of a comprehensive independent scientific inquiry into the social and environmental impacts of hydraulic fracture stimulation.

* BEETALOO JOINT VENTURE

Origin Energy Limited (Operator) **:	35%
Sasol Petroleum Australia Limited:	35%
Falcon Oil and Gas Limited:	30%

** Via a wholly owned subsidiary

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Further information relating to the Discovery Evaluation Report:

Table 2. Amungee NW-1H Well Test Results

Well name	Amungee NW-1H
Permit	EP98 (onshore Beetaloo Basin NT)
Working interest in well	Origin 35%
Geological rock type of formation drilled	Organic rich shale (mudstone and siltstone)
Depth of zones tested	~2170-2190 metres below sea level
Type of test	Production test following hydraulic fracture stimulation
Hydrocarbon phases recovered	Gas (Approximate composition: methane ~92%, ethane+ ~3%, carbon dioxide and inerts ~5%)
Flow rates and volumes	Average rate (57 days): 1.1 million standard cubic feet per day (mmscf/d) Final production rate: 1.07 mmscf/d Cumulative production: 63 million standard cubic feet (mmscf)
Number of fracture stimulation stages	11 stages (average size ~ 100T/stage)

Table 3. Contingent Resources

Type of permit	Exploration Permit (EP)
Permits	EP76, EP98, EP117
Basis for determining a discovery	• The successful well test at Amungee NW-1H which produced enough gas to surface to be of commercial interest. • Core and log data from Amungee NW-1H, Beetaloo W-1, Kalala S-1, Tanumbirini-1, McManus-1, Altree-2 and Walton-2 provide convincing evidence of a significant volume of moveable hydrocarbons (See Appendix 1) • The Marcellus Shale (Pa., USA) and Barnett Shale (Tx., USA) are analogous, commercially-productive fields that are similar to the Velkerri B Shale reservoir
Analytical procedures used in estimation	Contingent Resource Estimates have been prepared on a statistical aggregation basis and in accordance with the SPE Petroleum Resources Management System
Key contingencies preventing classification as reserves	Key contingencies for commercialising the estimated resource include the lifting of the Northern Territory moratorium on hydraulic fracture stimulation, completing longer-duration production testing, reducing well costs with scale of activity, establishing gas sales agreements and building infrastructure to connect the resource to market.
Further appraisal drilling and evaluation work	Contingent on the moratorium on hydraulic fracture stimulation being lifted, additional appraisal drilling is planned (as per the work program associated with the permits), along with hydraulic fracture stimulation and testing to assess deliverability and move the project towards commercialisation.

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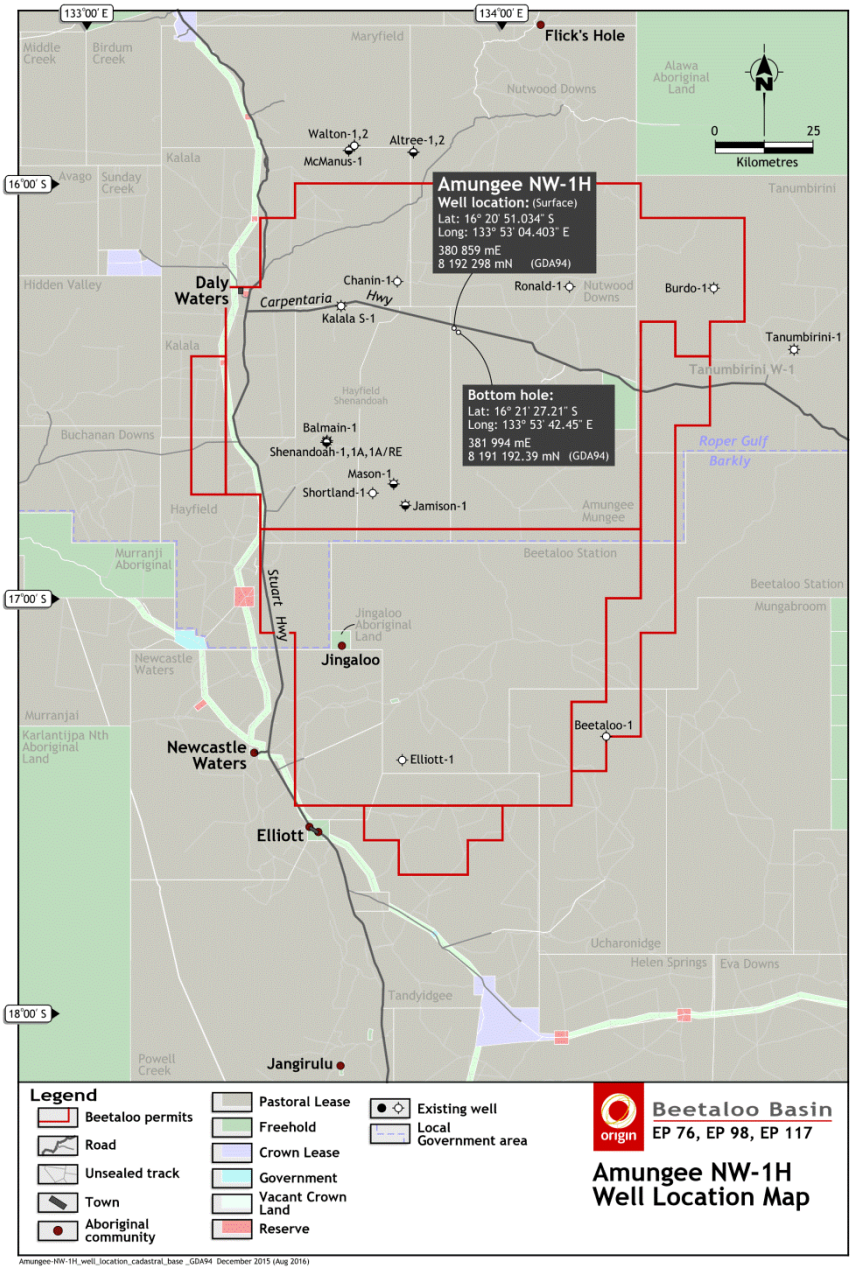
Figure 1. Well Location Map



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Appendix 1: Data Obtained to Characterise the Velkerri B Shale Gas Reservoir			
Data	**Usage**	**Acquired**	**Comments**
TOC	Provides an indication of source-rock richness and sorption capacity.	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, Tanumbirini -1, McManus-1, Altree-2, Walton-2
Gas content	Includes the volumes of desorbed, lost, and residual gas obtained from the desorption of core. It is an indicator of the in-situ sorbed gas content.	Yes	Data from Kalala S-1
Sorption isotherm	A relationship, at constant temperature, describing the volume of gas that can be sorbed to a shale as a function of pressure.	Yes	Data from Amungee NW-1, Kalala S-1
Gas composition	Used to quantify the percentage of methane, carbon dioxide, nitrogen, ethane, etc. in the desorbed gas. Used to build composite sorption isotherms.	Yes	Data from Amungee NW-1, Amungee NW-1H, Kalala S-1, Beetaloo W-1
Rock-eval pyrolysis	Assesses the petroleum-generative potential and thermal maturity of organic matter in a shale sample.	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, McManus-1, Altree-2, Walton-2
Mineralogical analyses	Determines bulk and clay mineralogy using petrography, X-ray diffraction, scanning electron microscopy, and similar techniques.	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, McManus-1, Altree-2, Walton-2
Vitrinite reflectance	A value indicating the amount of incident light reflected by the vitrinite maceral. It is a fast and inexpensive means of determining thermal maturity.	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, McManus-1, Altree-2, Walton-2
Core description	Visually captures lithology, bedding, fracturing, grain size variations, etc.	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, Tanumbirini -1, McManus-1, Altree-2, Walton-2
3D seismic	Used to determine interwell shale properties including lateral extent, thickness, faulting, and those areas with higher gas saturation and brittleness.	No	2D seismic coverage over the majority of the pool

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Kerogen types	Used to assess whether rocKalala S are Type I (oil-prone), II (mixed), or III (coal).	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, McManus-1, Altree-2, Walton-2
Routine core analysis	Includes total porosity, fluid saturations, bulk density, and matrix permeability (via pressure pulse testing on crushed samples).	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, McManus-1, Altree-2, Walton-2
Conventional logs	SP, GR, resistivity, microlog, caliper, density, neutron, sonic, and temperature logs are run to provide thickness, porosity, matrix, and sorbed gas saturations.	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, Tanumbirini -1, McManus-1, Altree-2, Walton-2
Special logs	May include image logs (fractures), NMR logs (free water, bound water, gas saturation), pulsed neutron and geochemical tools (mineralogy), dipole sonic (geomechanical properties), spectral GR (clay types), etc.	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1, Tanumbirini -1
Pressure transient tests	Pressure buildup or injection fall-off tests to determine static reservoir pressure, permeability, skin factor, and to detect fractured-reservoir behaviour.	Yes	Data from Amungee NW-1H, Kalala S-1
Geomechanical properties	Young's modulus and Poisson's ratio for determining shale brittleness, stress orientations and magnitudes to predict fracture growth.	Yes	Data from Amungee NW-1, Kalala S-1, Beetaloo W-1
Microseismic	Used to assess hydraulic fracture geometries and stimulated reservoir volumes.	No	
Fracture diagnostics	Treating pressures, closure stress, pumped volumes, flowback volumes, etc. to determine the quality of a fracture stimulation.	Yes	Data from Amungee NW-1, Amungee NW-1H, Kalala S-1
Gas, water rates	Captured daily (preferably) to assess individual well behaviour.	Yes	Data from Amungee NW-1H
Bottomhole pressures	Preferably recorded in closely-spaced increments early in well life; can also use surface pressures with wellbore-fluid gradients.	To be collected	Data from Amungee NW-1H
Tracer surveys	Chemical or radioactive tracers to assess which fracture stages are contributing.	No	
Facilities	Variations in line pressure, etc., that affect producing well rates.	Yes	Data from Amungee NW-1H

Rate-transient analysis	Decline analysis tool that analyses production rates and pressures using various methods to assess EUR, GIP, drainage area, etc.	Yes	Data from Amungee NW-1H
Numerical modelling	Helpful in understanding reservoir mechanisms, predicting early well behaviour, and estimating EURs and recovery factors.	Yes	Data from Amungee NW-1H
Decline-curve analysis	Traditionally used to forecast well performance. More reliable later in well life (after a few years) due to uncertainties regarding b-factor values.	Yes	Data from Amungee NW-1H
Analogues	May be useful to estimate EURs and recovery factors if a strong correlation exists between key reservoir parameters of subject and analogue reservoir.	Yes	Key static reservoir parameters are analogous Marcellus and Barnett

The contingent resource estimates contained in this report are based on, and fairly represents, information and supporting documentation that have been prepared by Alexander Côté who is a full time Origin employee and a Qualified Reserves and Resource Evaluator. Mr Côté is a registered professional engineer with specialised unconventional gas resource characterisation and development experience. Mr Côté has consented to the form and context in which these statements appear.

The contingent resource estimates have undergone an assurance process to ensure that the contingent resource estimates contained in this report are based on, and fairly represents, information and supporting documentation and have been prepared according to our reserves and resources process, which includes adherence to the SPE PRMS guidelines. This process is overseen by full time Origin employee, Andrew Mayers, Chief Petroleum Engineer and Mr Mayers has consented to the form and context in which these statements appear.