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## ASX RELEASE

31 January 2019

### QUARTERLY ACTIVITIES REPORT

1<sup>st</sup> October 2018 – 31<sup>st</sup> December 2018

#### HIGHLIGHTS:

- Successful drilling of Primero West-1 well and Nyanda-4 corehole.
- Primero West-1 encountered a net gas-bearing zone of up to 12.5m. Gas was flowed at a rate of 0.436 mmscf/d through a 48/64" choke.
- Nyanda-4 the first CSG well drilled in Reid's Dome / PL 231. 40.4m net coal and 25m carbonaceous shale confirmed, plus conventional / tight gas in sands and shales of Reid's Dome Beds.
- Gas bubbling and hissing from both coals and sandstones in Nyanda-4 core, with numerous gas peaks in logs.
- While gas desorption is continuing, average gas content recorded to date is 11.6m<sup>3</sup>/t in cored coal seams from Nyanda-4 commencing at 396m.
- State Gas increased its Participating Interest in PL 231 to 80% and is transitioning to 100%, with Offer/Acceptance Notices issued on 4 December under the Joint Operating Agreement.

Brisbane-based gas developer **State Gas Limited (ASX: GAS)** is pleased to provide its Quarterly Activities Report for the December Quarter, 2018.

#### Background

State Gas Limited (State Gas or the Company) holds an 80% Participating Interest in, and is operator of, the Reid's Dome Gas Project (PL 231) in central eastern Queensland, approximately 545 km northwest of Brisbane and 50 km southwest of Rolleston, in the Bowen Basin Central Queensland. The permit is less than 50 km from the high pressure gas pipeline network in Queensland (see Figure-1).

Prior to the development of pipeline infrastructure and a significant east coast gas market, a conventional gas accumulation within the Denison Trough was discovered at Reid's Dome in the area of PL 231 in the 1950s. 15 wells have been drilled within the area of PL 231 between 1955 to 2006, and gas flows were achieved from sandstone reservoirs in both the shallow Cattle

Creek Formation and the deeper Reid's Dome Beds.

Permian coal measures within the Reid's Dome Beds are extensive across the entire permit but the area had not been explored for coal seam gas prior to the drilling program undertaken in November-December 2019.

During the previous Quarter Pipeline Survey Licence 2028 was issued to the Company, enabling investigations to commence for a pipeline route to market.

## **PROJECT ACTIVITIES**

The Company successfully undertook drilling of two wells during the Quarter: Primero West-1 in the northern area of the permit to test the Cattle Creek Formation in accordance with the terms of the Reid's Dome Joint Operating Agreement, and Nyanda-4 to investigate the gas potential of both the tight gas sands and Permian coal seams within the Reid's Dome Beds. The drilling was undertaken by Silver City Drilling (NSW) Pty Ltd Rig 25.

### **Primero West-1**

The Primero West-1 well was located and designed to test the Cattle Creek Formation within PL 231, a formation containing 3-way dip closed structural and stratigraphic traps with over-pressure. Primero West-1 is located approximately 650m west-southwest of AOE-1 and was designed to test the southwestern extent of the Cattle Creek gas sand discovered in AOE-1 in 1955, as well as satisfy the Company's obligations under the Joint Operating Agreement.

Primero-West-1 spudded on 10 November 2018, reached its planned total depth of 250m on 15 November, and the rig was released on 18 November. Operations were successfully conducted without safety or environmental incident.

The well encountered the "Primero" gas sand in the Cattle Creek Formation from 131.5m depth, in line with expectations. Analysis of wireline logs has indicated a net gas-bearing zone of up to 12.5m.

Firetail conducted flow testing and sampling, with two gas samples obtained for gas composition analysis. Firetail measured a maximum gas flow rate of 0.436 mmscf/d through a 48/64" choke, in line with expectations. Laboratory analysis has confirmed the gas composition to be 96.7% methane, a result similar to offset well data.

The Primero West-1 well was plugged and abandoned on the basis that any full-field development of the Cattle Creek Formation within PL 231 will require additional seismic to optimise the locations of production wells.

The well was 100% funded by State Gas and completed the Company's sole-funding obligations under the Joint Operating Agreement for PL 231.

### **Nyanda-4**

Following completion of drilling of the Primero West-1 well Silver City Rig 25 commenced drilling the Nyanda-4 corehole to test the gas potential of the Reid's Dome coals and sandstone reservoirs. Nyanda-4 is located approximately 13.5km south of the Primero West-1 well and 50m southwest of Nyanda-1 (drilled in 1987).

Nyanda-4 spudded on 22 November with a planned Total Depth of 1000m. However, as a result of the favourable results achieved from drilling and testing, the well was extended a further 200m to 1200m. Approximately 150m of core was obtained, commencing at 392m depth. The well was also logged, and drill stem tests conducted. The well reached the revised total depth on 30 November and the rig was released on 3 November. Again because of the favourable results, the Nyanda-4 well has been suspended for future re-entry and testing, rather than plugged and abandoned as originally planned. As with Primero West-1, operations were conducted without serious safety or environmental incident.

Gas was observed bubbling from the coal and hissing from sandstones in Nyanda-4 cores. Numerous gas shows were seen in the logs, associated with both coals and sandstones.

Analysis has confirmed 40.4m of net coal in seams up to 4m thick, and a further 25m of carbonaceous shales and thinner coal seams (i.e. <0.3m), indicating 65m of coals and carbonaceous shales (excluding conventional sandstones). Correlation with AOE-1, located approximately 14 km north of Nyanda-4 within PL 231, supports the expectation of additional coals below TD of 1200m.

The coal cores are generally bright black, with good cleating. The cores show open fractures. DST data indicates permeability of the coals in the cored section of the well, and that the Reid's Dome Beds are ~100psi over-pressured compared to hydrostatic.

After 7 weeks' desorption the average gas content from cored samples is 11.6 m<sup>3</sup>/t, with gas content increasing with ongoing desorption in the laboratory. Gas content for the thickest seams is currently ~13 m<sup>3</sup>/t.

Gas composition data of the latest desorption sample indicates a weighted average composition of 80% methane, with balance CO<sub>2</sub>. The thickest seam contains 87.6% methane. Within the cored interval, the CO<sub>2</sub> content reduces with depth. In the greater permit area, as well as diminishing with depth, CO<sub>2</sub> values decline to the north, with AOE-1 having 0.7% CO<sub>2</sub> at 1,360m.

Further analysis of the core samples and well data is ongoing.

### **Ownership of PL 231**

At commencement of the Quarter State Gas held a 60% Participating Interest in PL 231 and the associated Joint Venture. On 27 November 2018 the Company entered into an agreement to acquire a further 20% interest in the permit and Joint Venture, taking its interest to 80% with the Joint Operating Agreement continuing in full force and effect. This transfer was registered by the Queensland Department of Natural Resources, Mines and Energy on 4 January 2019.

In addition, in early December 2018 State Gas elected under the provisions of the Joint Operating Agreement for the Joint Venture to acquire the remaining 20% and increase its interest in PL 231 to 100%. Offer/Acceptance Notices were issued on 4 December, and this process is anticipated to be completed in the first or second quarter of 2019.

### **CORPORATE ACTIVITIES**

The Company has received approaches and interest from experienced industry participants to progress the Reid's Dome Gas Project in both partnering (asset-level) and corporate (company-

level) transactions. The Board aims to ensure that discussions include all qualified and interested counterparties and is currently considering the appointment of advisors to help assess opportunities and facilitate the process.

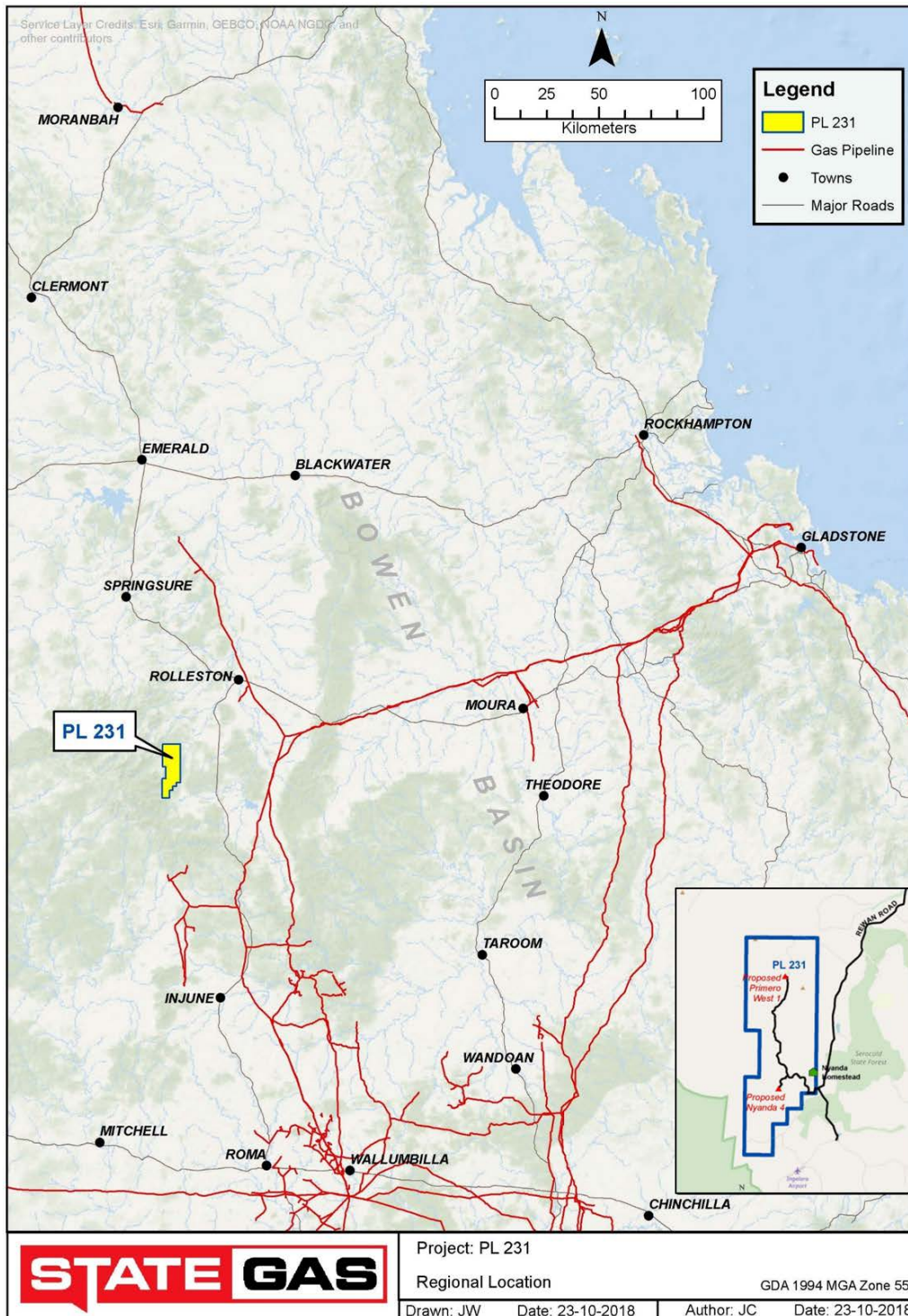


Figure 1: Location of PL 231 shown relative to regional pipeline infrastructure and towns. Inset shows location of Primero West-1 and Nyanda-4

## FOR FURTHER INFORMATION

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## ABOUT STATE GAS

**STATE GAS LIMITED** (ASX: **GAS**) is a Queensland-based developer of the Reid's Dome gas field (including both CSG and conventional gas). Originally discovered during oil drilling in 1955, Reid's Dome is located in the Bowen Basin in Central Queensland on the apex of the Springsure-Sericold Anticline. State Gas is sole Operator and 80%-owner of the Reid's Dome gas project, which is well-located 50 kilometres southwest of Rolleston, approximately 47 kilometres from the Queensland Gas Pipeline.

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**Above:** Nyanda-4 core showing coal at 476m



**Above:** Silver City Drilling Rig-25 on location at Primero West-1.