CSG RESOURCE EVALUATION
CASE STUDY

Dart Energy - PELs 456, 459, 460, 461, 463 & 464

New South Wales, Australia

AWT DISCIPLINES

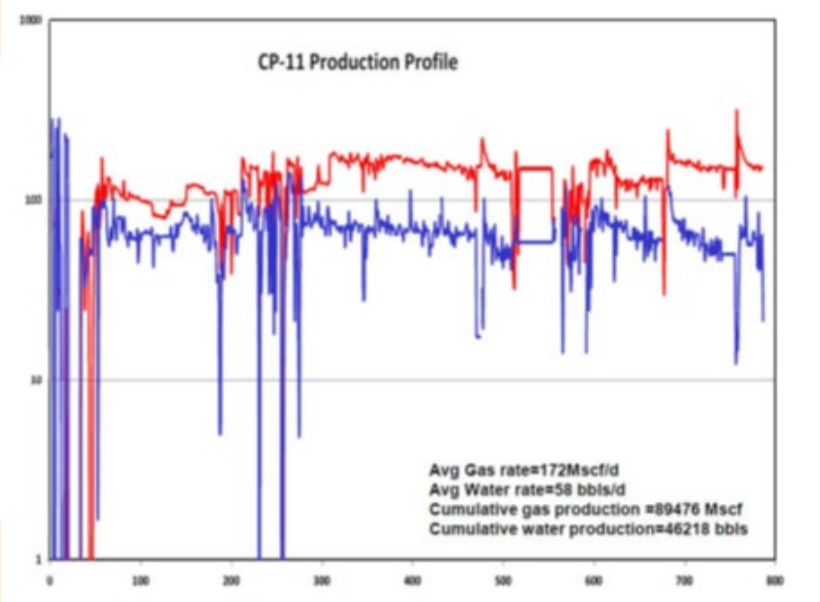
Geology

Geophysics

Reservoir Engineering

Petrophysics

Project management



PROJECT BACKGROUND

In 2011, Dart Energy Limited (Dart) engaged AWT International (AWT) to conduct a Coal Seam Gas (CSG) Prospective Resource evaluation for PELs 456, 459, 460, 461, 463 & 464 in New South Wales, Australia. A Contingent Resource evaluation of PEL 463 was also undertaken at Dart's request. Dart then re-engaged AWT to prepare an updated report of licenses 456, 459, 460, 463 & 464 as of 31 December 2013.

Location:
New South Wales,

Australia

AWT WORKSCOPE

The resource in these permits was reassessed to take into account the relinquished areas and the changes in NSW regulations in relation to CSG.

All geological interpretation, gridding, volumetrics and mapping were performed using the SMT Kingdom and Petrosys software packages. Original gas in place was calculated according to the equation:

GIP(methane) = AREA x NET COAL THICKNESS x AVERAGE DENSITY x RAW GAS CONTENT x (1 – INERT GAS FRACTION)

The process used to determine each variable of the GIP equation is discussed below. Each variable was calculated as a basin-wide grid with a 250m x 250m cell size. Multiplication of the grids to produce a GIP grid was performed using the grid arithmetic module in Petrosys. The volumetrics module of Petrosys was then used to determine the GIP for each resource area.

AWT VALUE ADDED

The report aimed to provide a concise overview of the data and methodologies employed and should not be considered an in-depth geological review.

Since 2011, the NSW government had brought into effect Stage 1 and 2 residential exclusions zones (2km buffer), Critical Industry Clusters (CIC) and Biophysical Strategic Agricultural Land (BSAL). The residential exclusions zones and CIC had a direct effect on the resource estimate for PELs 456, 460, 464 and 463. These regulations are subject to ongoing change and it was unclear how these would have affected Dart's permits in the future.

In addition, Dart had mapped the residential zones at a council level, which in part differ from the residential zones supplied by the government. These areas were included in this study (additional residential – Dart research).

For more information contact:
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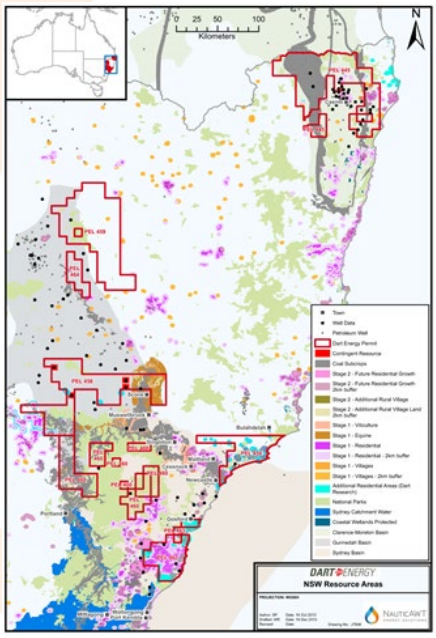

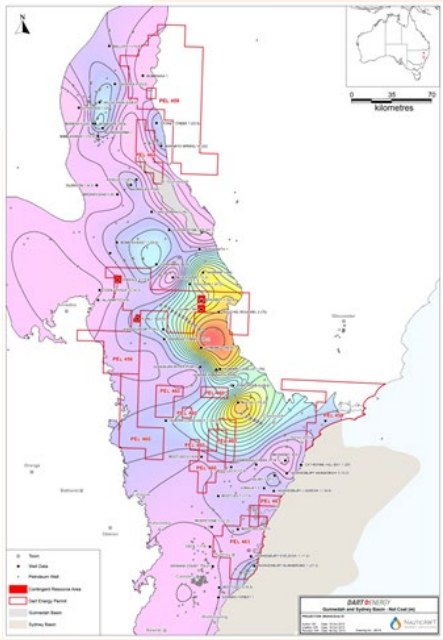

Evaluation and appraisal of PELs 456, 459, 460, 463 and 464 was at a relatively immature stage. Drilling to date had indicated the presence of thick coals and encouraging gas contents and compositions in some areas. Further drilling was required to better delineate coal thickness, distribution and quality, the distribution of CO_2, and volumes of other inert gases, intrusions and permeability. Pilot testing was needed to demonstrate production potential.

In PEL 445, the prospective resource's "chance of discovery" was satisfied and therefore no further core holes were necessary. Upgrading to Contingent Resource will require evidence that HDP seams can flow gas.

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