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ASX : NWE

27 September 2011

ASX Announcement

Arrowsmith-2 Northern Perth Basin Update

Arrowsmith-2 comprehensive data set indicates all five targeted zones have potential to flow gas following hydraulic stimulation treatment

Norwest Energy NL (ASX:NWE) (Norwest) reports that Arrowsmith-2 core analysis is essentially complete, and together with the interpretation of the extensive wireline suite, indicate that all five targeted zones have potential to flow gas following hydraulic stimulation treatment.

The program was originally scheduled to commence on 1 September 2011, however as previously reported, due to a third party referral to the Environmental Protection Authority (EPA), the start date for the hydraulic stimulation program of Arrowsmith-2 was deferred. Subsequent to the EPA determination to not assess the referral, the Department of Mines and Petroleum granted approval for Norwest to proceed with the program.

Even though Norwest now has both the EPA decision and DMP approval, there has been insufficient time available to conduct the hydraulic stimulation program prior to the equipment being mobilised to its next contract in the Northern Territory. It is currently anticipated that at the completion of the Northern Territory program, the equipment will return to the northern Perth Basin later in 2011, at which time the Arrowsmith-2 campaign will be resumed.

These delays have had a financial impact on the overall cost of the program, however Norwest is currently carried by Bharat PetroResources through the greater part of the revised budget and Norwest expects its contribution to final costs will be less than \$500,000.

Peter Munachen, Norwest Chief Executive Officer commented "The last month has been somewhat frustrating as we awaited both the EPA decision and DMP approval. Added to that was the delay in receiving the much awaited core results, however these results are positive, and reinforce the interpretation of the log suites, so we can

tick that box. This has been somewhat over-shadowed by the consequential effect of the delays that now sees the equipment heading to the Northern Territory before we can implement our program, however it has taken a long time to get this far so another small delay, whilst inconvenient and unfortunate, is minor in the total scheme of things”.

The Arrowsmith-2 drilling and evaluation program has been extremely successful, with the hydraulic stimulation and flow test program now the remaining phases to be undertaken to complete this proof of concept, and to establish the potential of the field. Data acquired indicates that all objectives - shale gas in the Kockatea, Carynginia and Irwin River Coal Measures (IRCM), and tight gas in the High Cliff Sandstones (HCSS) have the potential to flow gas following hydraulic stimulation. This offers Norwest the unique opportunity to assess numerous high potential targets from one well.

Norwest has obtained a comprehensive dataset from the Arrowsmith-2 well including mud logs, two full cores (101 meters in total), 30 mechanical rotary cores and an extensive wireline suite (including image logs).

The analysis of this comprehensive dataset is essentially complete and has provided Norwest with:

- The thickness of each of the zones:
 - Kockatea Shale 450m
 - Carynginia Shale 250m
 - IRCM 330m
 - HCSS 22m
- Confidence from a review of all data sources that each target is likely to flow gas.
- Gas analysis results indicating all shale targets are within the optimum maturation and generation window, and core results indicating comparable properties to known USA analogs. Compositional analysis indicates a predominance of C1 (methane) within all targeted zones, including much smaller concentrations of C2 (ethane) and C3 (propane).
- Rock strength analysis indicating formations are brittle and suitable for fracture stimulation.
- Shale mineralogy indicating a sufficient quartz fraction to assist in developing and maintaining a production which favours the reservoir fabric by supporting micro fractures, and preventing closure with time.
- Fluid sensitivities are now established, allowing for the hydraulic fluid chemistry to be accurately tailored for optimum stimulation.
- Maximum stress direction has been determined from well log data and will assist in the optimal placement of horizontal wells for future development plans.
- The Lower Permian HCSS is the deepest target in the well, and is a tight gas target. If on flow back and testing, this zone proves to be laterally extensive and

flows at a sufficient rate, there is the potential for the Arrowsmith-2 well to be completed as a High Cliff production well.

- TOC* results as high as 7.68% are evident within the IRCM. This is a good result; these TOC values are high compared to most reference shale gas resources where the recognized norm is in the 2% to 4% range.

**TOC (Total Organic Carbon) is the total amount of carbon bound in an organic compound and is an indicator of organic richness in shale formations.*

Norwest has now integrated the detailed core and petrophysical analyses into the stimulation design. This work has been undertaken by Denver-based shale gas stimulation experts in conjunction with the Norwest team.

Next Steps

Upon return of the equipment to the northern Perth Basin, the five separate zones across the HCSS, IRCM, Carynginia Shale (2 zones) and Kockatea Shale will each be perforated and stimulated. Based on the particular properties of each zone, slight variations in stimulation techniques will be applied to each zone in order to fully realize their individual potential.

After stimulation, the zones will be flowed back until an indicative flow rate is achieved. The HCSS target will likely be tested for an extended period to prove up a contingent resource.

In summary, the results from the fracture stimulation and well test program will provide the necessary data to:

- High-grade target intervals for subsequent development.
- Scale up the flow results from the vertical well to predict production rates for horizontal wells.
- Design an appropriate program for the next phase.
- Estimate contingent resource volumes.

The participants in the EP413/Arrowsmith Joint Venture are:

Norwest Energy NL (Operator)	(ASX: NWE)	27.945%
AWE Limited (via subsidiary Arc Energy Ltd)	(ASX: AWE)	44.252%
Bharat PetroResources Ltd		27.803%

Peter Munachen
CEO
Norwest Energy NL

Competent Person

The technical content of this announcement is based on information compiled by or under the direction of Mr. Andrew Sutherland of Dataco Australasia Pty Ltd. Mr. Sutherland holds a Bachelor Degree in Science and a Master Degree in Business. He has 30 years' experience in petroleum exploration. Mr. Sutherland has consented in writing to the inclusion of the information stated in the form and context in which it appears.

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