

# QUARTERLY ACTIVITIES REPORT



## Quarterly Report – For the Period Ended 30<sup>th</sup> September 2012

### ASX CODE: AJQ

**Shares on Issue**  
300 million

**Listed Options**  
57.7 million

**Market Capitalisation (30/9)**  
\$66m (at AUD\$0.22)

### DIRECTORS

Nick Mather (Chairman)  
Phil McNamara (MD and CEO)  
William Stubbs  
Roland Sleeman  
Stephen Bizzell  
Jeremy Barlow

### COMPANY SECRETARY

Karl Schlobohm

### CONTACT DETAILS

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### HIGHLIGHTS

- Kilgour North 1 well drilled in EP 171 in the Northern Territory.
- Glyde 1 vertical well drilled in EP171.
- Glyde 1 lateral well drilled and intersected a gas bearing zone.
- Glyde 1 lateral flow tested at 3.33 million standard cubic feet per day equivalent at 125 psi pressure after 10 minutes on a 1 inch choke.
- Glyde 1 lateral well temporarily suspended awaiting future testing.
- Glyde River Field estimated to contain a Mean Prospective Conventional Gas Resource of 130.7 BCF.
- Drilling contractor suspended in the Northern Territory and drilling contract terminated.
- Research and development tax incentive progressed.
- Native Title Agreements Entered Over Key Gas Targets in the South Nicholson and Isa Super Basins, North Queensland.
- Holdgate1 well drilled in PEP166, Gippsland Basin Victoria.



## About Armour Energy

Armour Energy Limited (ASX: AJQ) was admitted to the official list of the ASX with official quotation of securities in the Company commencing at 11:00am AEST on Thursday, 26<sup>th</sup> April.

The Company successfully raised \$75,000,000 in an oversubscribed offer with the issue of 150,000,000 fully paid ordinary shares at an issue price of \$0.50 and 37,500,000 free attaching options exercisable at \$0.50 expiring on 31<sup>st</sup> August 2014 (issued on the basis of one option for every four new shares).

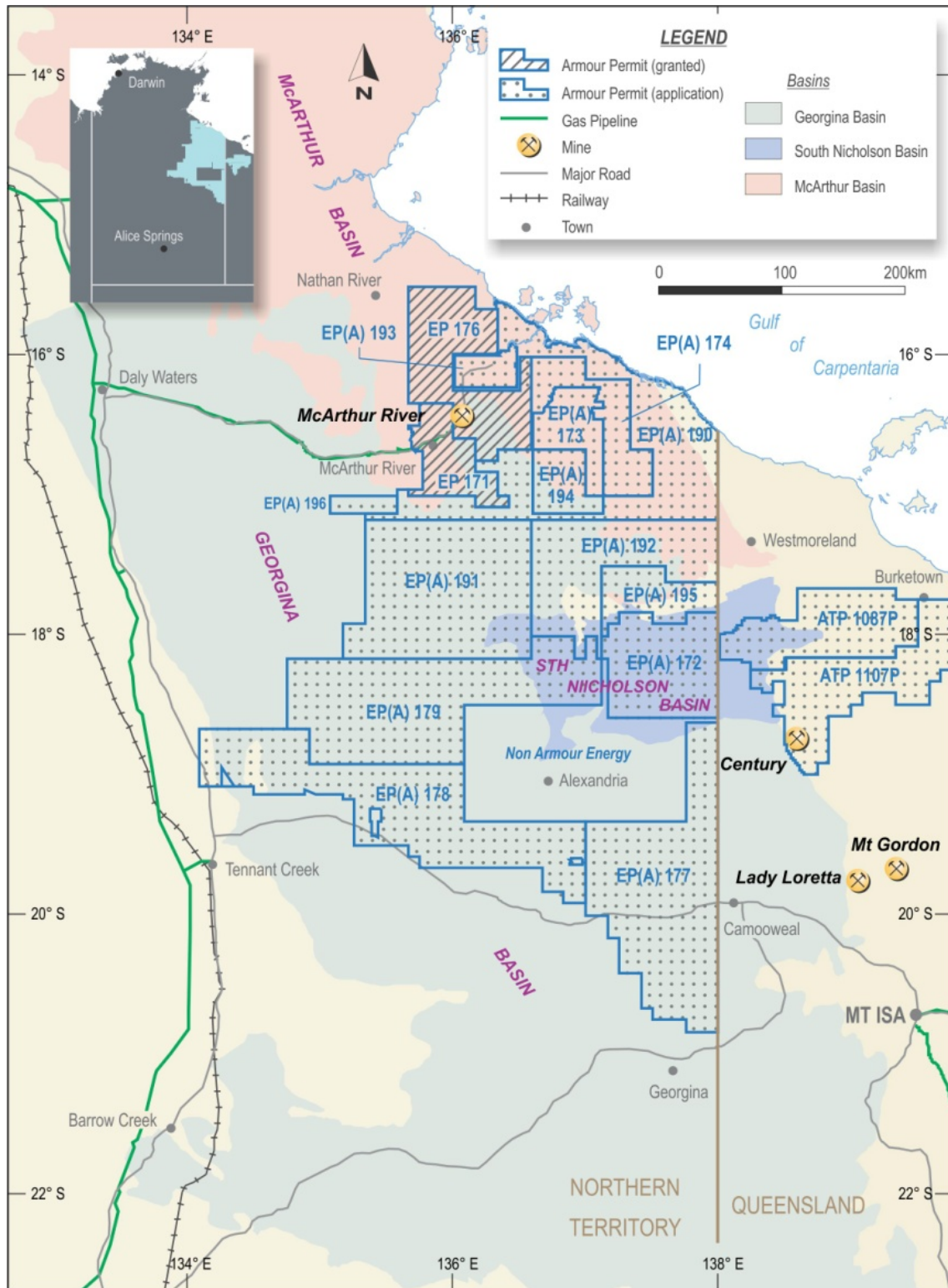
The non-escrowed securities **quoted** at the time of listing were:

- 221,050,000 fully paid ordinary shares (ASX code : AJQ);
- 57,687,500 options exercisable at \$0.50 expiring on 31<sup>st</sup> August 2014 (ASX code : AJQO);
- Escrow conditions apply to further shares and options in the Company through to 26 April 2014.

The Company was created, and raised its initial seed and then IPO funding, to focus on the discovery and development of gas and associated liquids resources in a hydrocarbon province in Northern Australia, where it holds two granted exploration permits EP171 and EP176. These granted permits are located in the Northern Territory along with an additional thirteen applications for exploration permits in the Northern Territory. (Figure 1)

The Company is also the preferred tender applicant for ATP1087 and ATP1107 in the Gulf of Carpentaria region of North Queensland, and is pursuing the grant of those tenements and an active drill program thereafter.

Armour Energy holds a 13% interest in ASX-listed Lakes Oil NL (ASX:LKO) and is progressing the exploration and development of gas and associated liquids resources in the Otway and Gippsland basins in Victoria. This will be achieved through the Company's farm in agreements with Lakes Oil where it has now acquired a 51% ownership and operatorship of PEP 169 (Otway Basin) and a 25% ownership of PEP166 (Gippsland Basin) with an option to increase this to 51%. Armour Energy also holds an option to acquire 50% of Lake Oil's interests in PRL2 covering the Trifon Gangell and Wombat gas fields.



**Figure 1: Location Map of Armour Energy’s Northern Australia Exploration Permits and Application Areas**

## **Kilgour North 1 Well**

The Kilgour North 1 well was drilled following the completion of the Cow Lagoon well that had been drilled in May and into June 2012 in EP176 in the Northern Territory. Cow Lagoon was the first well in the 2012 McArthur Basin drill program, located in the highly prospective Batten Trough (Figure 2).

The Batten Trough is covered by granted EPs 171 and 176 (100% Armour Energy). These tenements cover 11,000km<sup>2</sup> and are the subject of an independently assessed mean technically recoverable prospective resource of some 18.6 TCF (Trillion Cubic Feet) of gas.

In 1979 during zinc exploration activities, the narrow diameter Glyde River 9 drill core hole, located in the Batten trough, was drilled and flowed wet gas to surface at approximately 300,000 standard cubic feet per day from the Coxco dolomite underlying the Barney Creek Shale, at a depth of some 500 metres.

The result from the Cow Lagoon 1 hole located 90km to the north of the historic 1979 Glyde River 9 well demonstrated the broad presence of both gas generating shales and dolomites of reservoir potential in the Batten Trough of the McArthur Basin on Armour Energy's 100% owned tenements.

The Kilgour North 1 well is located on the Kilgour Anticline (Figure 2) where the subsurface structure had been confirmed by the processing and interpretation of the Kilgour-Abner seismic survey completed in May 2012.

The Kilgour North 1 well was drilled to assess the Yalco, Lynott, Reward, Barney Creek and Coxco Formations using improved drilling techniques and streamlined formation evaluation methods that had been developed at the previously drilled Cow Lagoon 1 well.

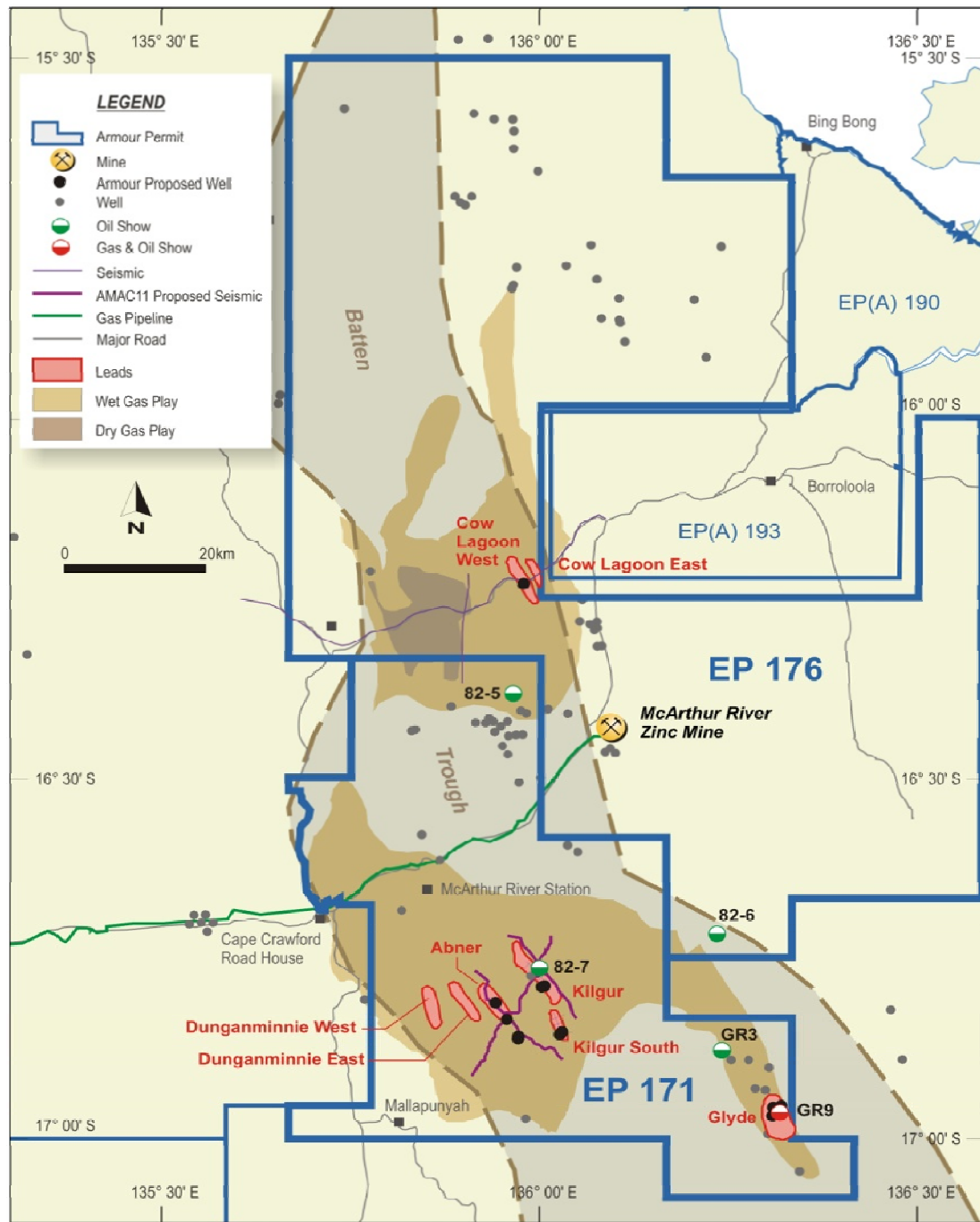
The well was spudded on 23<sup>rd</sup> June 2012 and a surface casing set to 319 metres. Drilling out from the surface casing commenced on 29<sup>th</sup> June and had progressed to 1046 metres by the 6<sup>th</sup> July. During this phase of drilling, two water bearing zones were intersected in the porous and permeable reservoir units of the Lynott and Reward Formations at approximately 350 metres and 750 metres depth.

At 1046 metres a decision was made to log and case the well to reduce water inflow into the well, as the water inflow was compromising the efficiency of the air drilling operation.

Drilling re-commenced from the bottom of the cased section of the well in dry drilling conditions and continued to 1142 metres where a further high water inflow zone was intersected with an inflow of approximately 10 litres per second.

Based on these repeated water inflows, a decision was made to suspend drilling of the Kilgour North 1 well and relocate the drilling rig to the Glyde drill site. The Kilgour North 1 well was further logged and then suspended in a manner where it can be re-entered as required.

Results at Kilgour North 1 confirmed the presence of reservoir quality porous and permeable units in the Lynott Formation and Reward Dolomites. Gas and oil shows encountered indicate primary charge of these reservoirs but subsequent water inflows have flushed out and oxidized the hydrocarbons.



**Figure 2: Location Map – Cow Lagoon, Kilgour and Glyde well locations within EP 171 and EP176 in the Batten Trough**

## **Glyde 1 Well**

During the quarter Armour Energy completed construction of an access road and drill pad at the Glyde 1 well site. The site is within the 100% Armour Energy owned EP 171 in the Northern Territory. The well is located approximately 61kms south of McArthur River Zinc Mine in the Batten Trough of the McArthur Basin.

The Glyde 1 drill site is located 300 metres from the location of the gas flow discovery that was made in 1979 by Amoco Minerals when exploring for zinc in the Glyde Sub-Basin. The 1979 gas flow occurred from the Coxco Dolomite located immediately below the Barney Creek Shale at approximately 500 metres depth.

The Glyde 1 well was spudded on the 27<sup>th</sup> July 2012 and a surface casing set and cemented to a depth of 234 metres. Drilling out from the surface casing commenced on 30 July and the well was drilled to a total depth of 698 metres. The well intersected a continuous vertical section of 132 metres of black, gas-charged, naturally-fractured, Barney Creek Shale before intersecting the Coxco Dolomite Formation.

During drilling of the shale interval consistent background and peak gas readings were observed. The gas constituents were generally Methane (C1), Ethane (C2), Propane (C3) with some Butane (C4) and Pentane (C5). Carbon Dioxide levels were negligible and no water was encountered during drilling of the well.

The Glyde 1 well was rotary drilled with compressed air. This proved to be efficient with high penetration rates and low drill bit wear confirming that the formation in the Glyde Sub-Basin was conducive to low cost drilling operations in a repetitive production drilling scenario. The efficient vertical drilling results confirmed that effective directional drilling could be carried out in the Glyde 1 lateral well. Cuttings samples were taken for further analyses of both gas and organic carbon content.

Gas flares were noted at the surface from the Barney Creek Shale Formation during reintroduction of compressed air after drilling downtimes. The Glyde 1 well was geophysically logged with the Barney Creek Shale Formation showing high gamma readings and log responses similar to other organic-rich shales. Numerous open natural fractures were also observed on resistivity-imaging tools during the logging. This provided Armour Energy with further confidence that the Barney Creek Shale Formation is the source rock and main contributor to the gas flows at the original GR-9 location that was drilled in 1979.

## **Glyde 1 Lateral Well**

The Glyde 1 lateral well was commenced from a vertical depth of 280m within the Glyde 1 well and deviated through a 250 metre vertical radius to a near horizontal inclination where it progressed past the historic GR-9 well to a measured depth of 840 metres. The Glyde 1 lateral well was drilled under balanced using compressed air and then logged.

The lateral well encountered a gas bearing formation and continuous gas flows to surface from 648 metres measured depth to the final 840 metres measured depth at a vertical depth of circa 500 metres. No water flow was observed from this interval.



**Figure 3: Gas Flare during Testing at Glyde 1 Lateral Well  
Measured Well Depth of circa 670m**

The gas constituents from this interval were 77% Methane (C1), 11% Ethane (C2), 11% Propane (C3), 0.6% n-Butanes (C4), 0.2% n-Pentanes (C5) with negligible Carbon Dioxide. This analysis is based on gas chromatography during drilling of the interval.

Flow tests were performed on the prospective intersection of the middle-Proterozoic aged Barney Creek Shale and the Coxco Dolomite Formations in this interval.

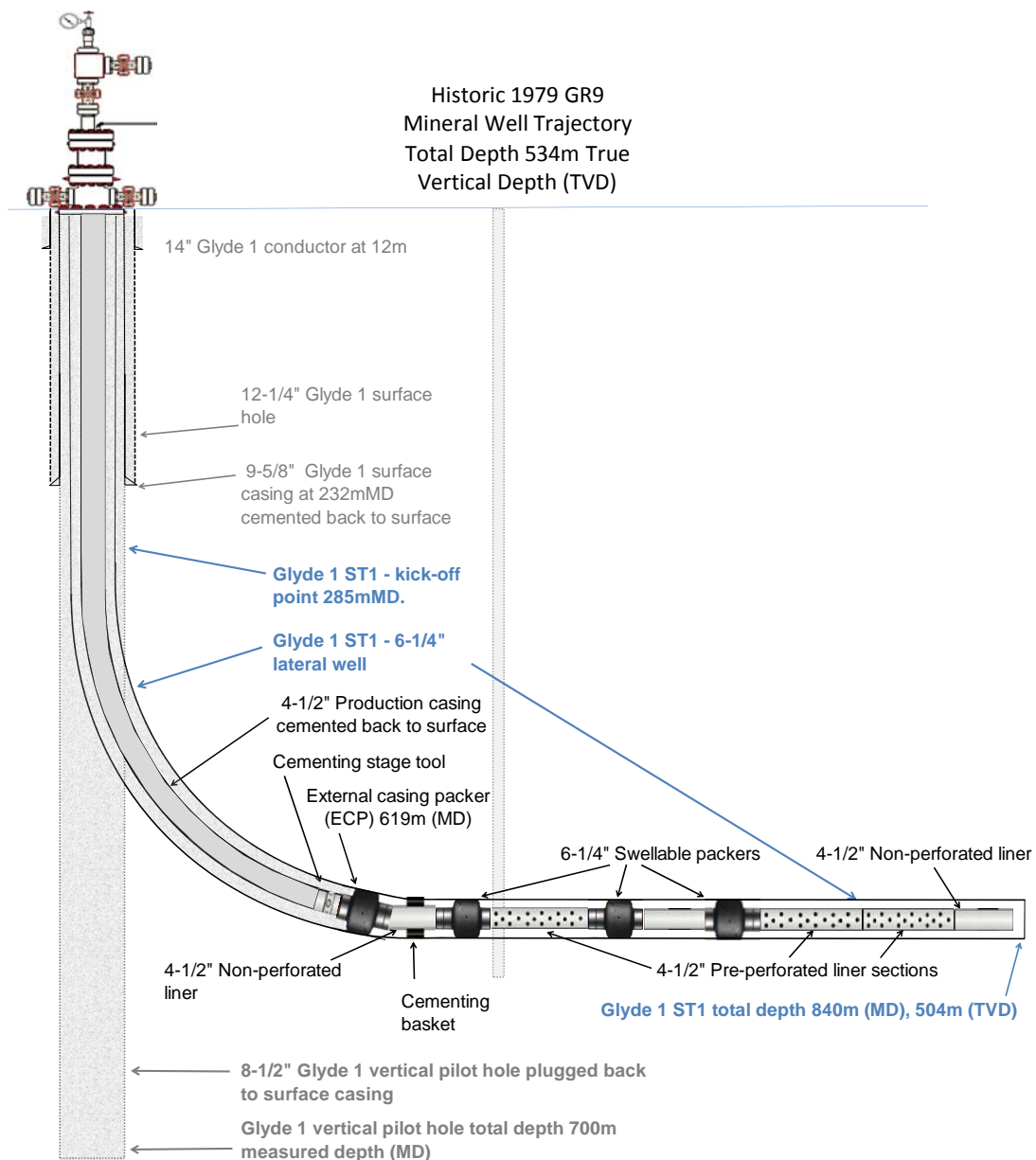
After 45 minutes of testing the total flow on a 16/64 inch choke from the Glyde 1 lateral well was 606 thousand standard cubic feet per day equivalent (mscf/d) at 412 psi pressure. A 30 minute surface shut in pressure of 554 psi was observed after flowing on a 16/64 inch choke.

After 10 minutes of testing with a full open choke of 64/64 inch, the Glyde 1 lateral well was flowing at 3.33 million standard cubic feet per day equivalent (mmscf/d) at a pressure of 125 psi.

The well was terminated at a measured depth of 840m on 13 August 2012 with the well orientated close to a horizontal trajectory at a vertical depth of circa 500m. Gas concentrations remained high throughout the drilling of the dolomites and dolomitic shales encountered until drilling was terminated. A full suite of logs was then collected from the well.

The well was then cased with solid casing through the vertical and curved sections of the well in conjunction with two separate stages of perforated casing which were installed along the near horizontal lateral section of the well (Figure 4).

The solid casing section of the well was then cemented into place and a temporary cement plug placed inside the solid casing as per regulatory requirements for temporary suspension of the well while awaiting final completion, cleanup, and production testing. Armour Energy intends to production test the well in conjunction with future rig mobilisations to drill and test additional Glyde Basin targets.

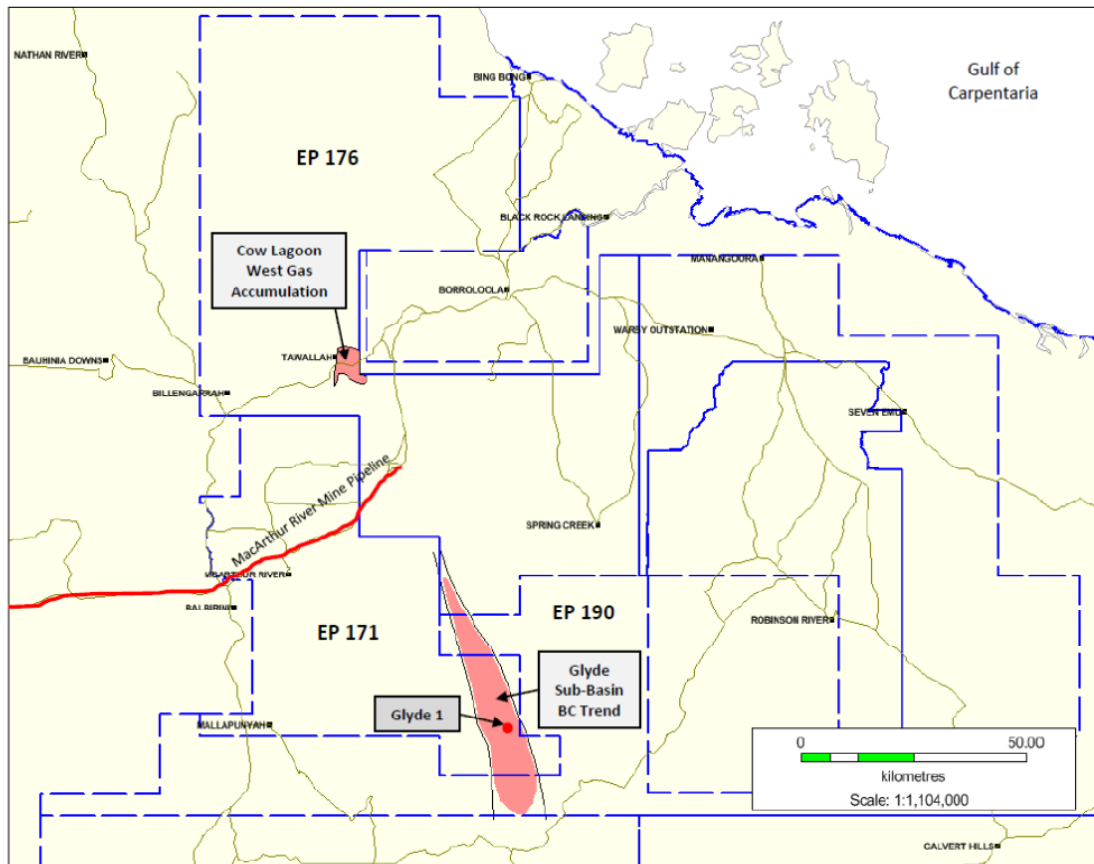


**Figure 4: Configuration of the Glyde 1 lateral well after casing and cementing awaiting completion and production testing**



## Glyde Sub-Basin Resource Assessment

The Glyde Sub-Basin extends for approximately 50km in a North South direction in the region (Figure 5) and has been the source of repeated gas shows through previous minerals exploration drilling. The base of the Barney Creek Shale Formation in the region is typically 500 metres to 700 metres deep and provides potential for shallow, low cost, production wells.



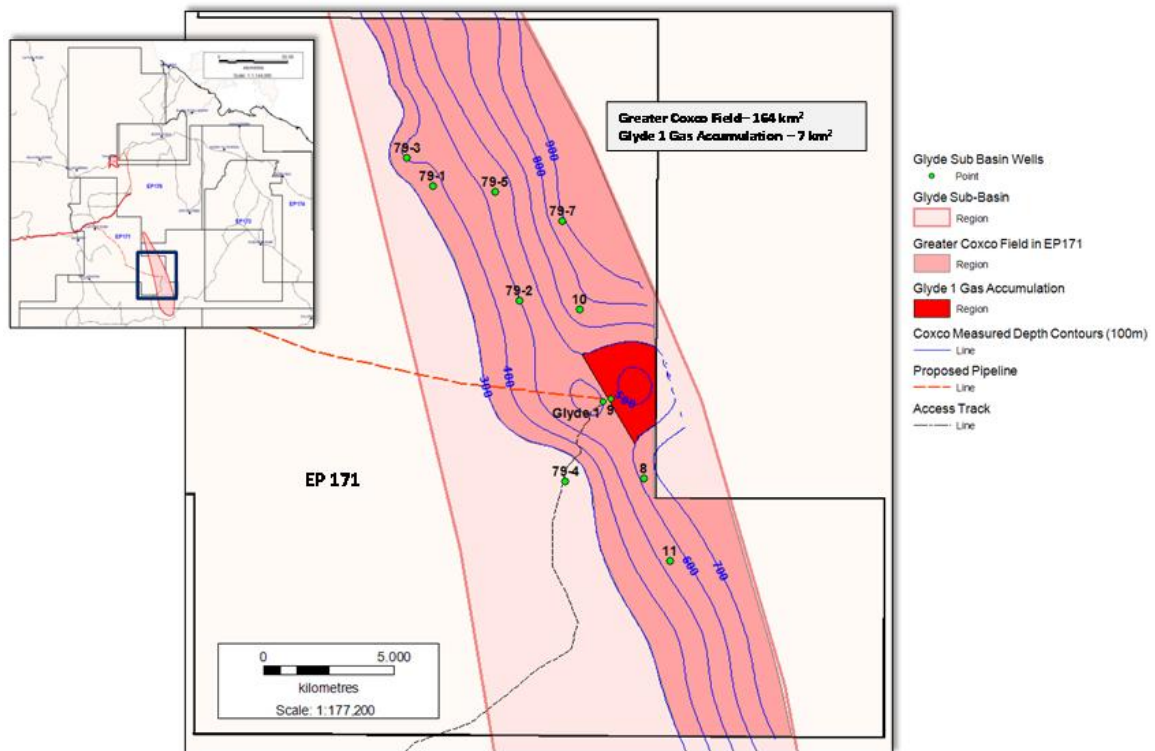
**Figure 5: Glyde Sub-Basin and Glyde 1 Lateral Well Location**

Evaluation of drilling and flow testing data from the Glyde 1 lateral well and Glyde 1 vertical well, along with mineral hole data collected by Amoco during the late-1970s to early-1980's, has indicated the Glyde 1 lateral well penetrated part of a covered fault bounded structural high (see Figure 6).

On 30th October 2012 Armour Energy reported that a resource assessment of the Glyde 1 lateral well had been completed and the gas resource potential of the Coxco Formation in the EP 171 portion of the Glyde Sub-Basin had been estimated as a mean prospective gas resource of 130.7 billion standard cubic feet (BCF), in accordance with the Society of Petroleum Engineers, Petroleum Resources Management System (SPE-PRMS).

Armour Energy has reported the discovery and gas accumulation around the Glyde 1 lateral well to the Northern Territory Department of Resources (NT DOR) as required by the Northern Territory of Australia Petroleum Act, 1994.

The presence of a 132metre thick zone of highly carbonaceous, naturally-fractured, gas-charged, Barney Creek Shale, as intersected by the Glyde 1 vertical well also provides further substantiation of the estimated Mean Prospective Resource of 11.2 TCF for the Barney Creek Formation in EP 171, as prepared by MBA Petroleum Consultants effective 20th March 2012 (Armour Energy, Replacement Prospectus, Independent Expert’s Report, 20th March 2012, pg. 109-146).



**Figure 6: Greater Coxco Field and Glyde 1 lateral well gas accumulation in EP 171, Glyde Sub-Basin**

### Additional Targets Identified

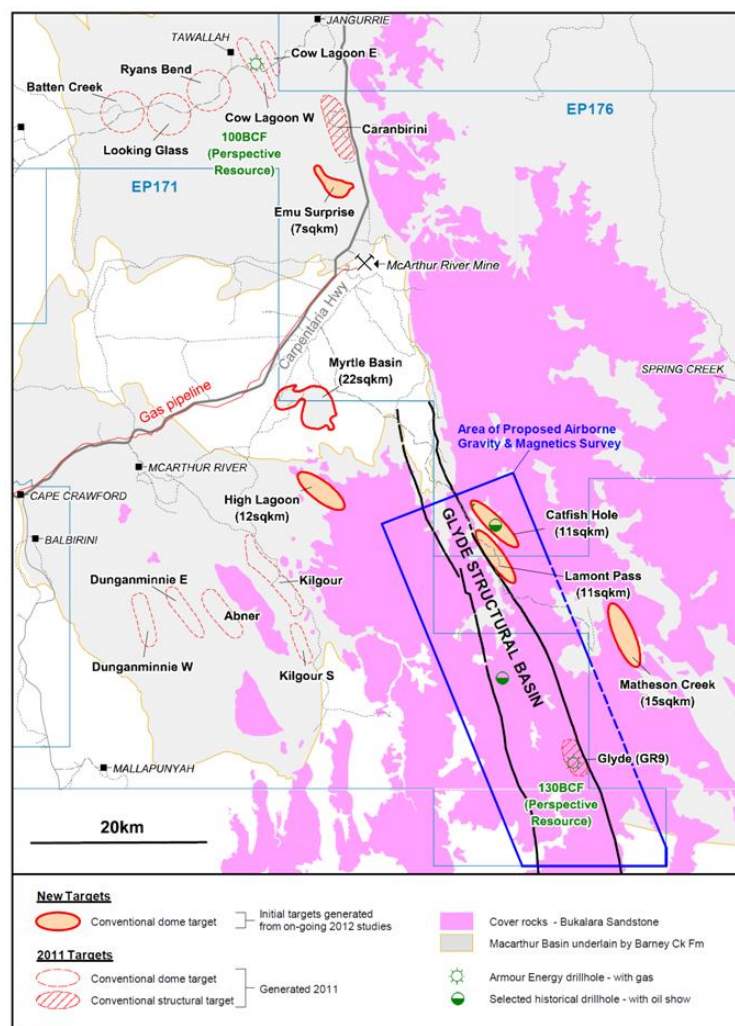
After further review of existing mineral well drilling data and detailed geological interpretation, Armour Energy has identified several additional conventional exploration targets in or adjacent to the Glyde Sub-Basin. The targets extend along the Emu Fault and related structures in EP 171, 176 & 190 (see Figure 7).

Armour Energy has made application to the NT DOR for approval to conduct an 830km<sup>2</sup> airborne gravity and aeromagnetic survey of the Glyde Sub-Basin. The survey will be carried out as soon as practical.

The Company is also reviewing high-resolution imagery to identify structures similar to Glyde and is planning a localised resistivity survey across the Glyde well area to gain further understanding of this gas bearing structure and provide orientation data for investigation of additional targets.

Armour Energy considers that positive results from the resistivity survey could provide a strategic tool for further confirmation of additional targets as they are identified and defined by the airborne gravity and aeromagnetic survey. The Company is liaising with prospective service providers with a view to completing the campaign early in 2013.

The proposed detailed surveys, backed by sophisticated data processing, will allow the Basin structure to be further defined and assist with identifying potential for additional gas targets. These will be identified and prioritized as a basis for seismic and drilling campaigns in 2013 and beyond.



**Figure 7: Location of new exploration targets in EP 171, 176 & 190**

### **Termination of Drilling Contract**

On 5th September 2012 Armour Energy advised that the drilling agreement between Armour Energy and Armour Energy's drilling contractor in the Northern Territory had been terminated and that in connection with this termination Armour Energy had suspended its drilling campaign in the Northern Territory.

Armour Energy terminated the agreement on the basis that the contractor was unable to satisfactorily remedy matters relating to the performance of its obligations under the agreement.

As noted in Armour Energy's press release dated 24 August 2012, Armour Energy had previously suspended the contractor in accordance with the terms of the drilling agreement due to unsatisfactory performance. The contractor has disputed both the suspension and termination of the agreement.

Armour Energy is negotiating another drilling contract and in the meantime is reassessing existing targets and upgrading the resource status.

### **Research and Development Tax Incentive**

Armour Energy has successfully applied and received payment of \$111,000 for eligible 2011 expenditure that qualifies under the Commonwealth's Research and Development (R&D) tax incentive.

Armour Energy has engaged a financial consultant to assist it in preparing and reviewing the relevant documentation to support Armour Energy's eligible expenditure under the Commonwealth's R&D tax incentive for the financial year ended 30 June 2012. The extent of the R&D tax incentive available to the Company is currently being assessed, but is expected to be substantial.

### **Native Title Agreements Entered Over Key Gas Targets in the South Nicholson and Isa Super Basins, North Queensland**

On 25<sup>th</sup> October 2012 Armour Energy advised that the Company has been successful in finalising negotiations and subsequently executing Native Title agreements with the Waanyi People and the Garawa and Gangalidda Peoples in relation to ATP 1087 in the Carpentaria Basin region of North Queensland.

Armour Energy is the preferred tenderer for ATP 1087 and the completion of the required Native Title agreements marks a significant milestone in the process of completing the granting of this key exploration tenement for the Company.

Following the grant of the tenement, Armour Energy is planning to commence the ATP 1087 exploration program in April 2013 to coincide with the North Queensland dry season, or earlier if weather permits. The exploration program is being designed to commence the delineation of substantial gas resources across a 3,000km<sup>2</sup> fairway within the tenement area.

Previous assessment of the tenement's resource potential carried out for Armour Energy by independent consultants (MBA Petroleum Consultants) determined a mean technically recoverable Prospective Resource estimate for ATP 1087 of 22.5 TCF of gas and 242 Million barrels of associated liquids. The P90 (90% Probable Case) prospective resource estimate for the area was 9.4 TCF of gas and 59 Million Barrels of associated condensate.

The main evidence for prospectivity in the Basin is the very strong and consistent gas shows in the drilling mud across a 125 metre section of the Lawn 4 formation in the Egilabria 1 well, which was drilled by Comalco in the 1990s in what is now ATP 1087. The Lawn 4 formation is interpreted to contain up to 8% Total Organic Carbon and a gas charged brittle shale suitable for lateral drilling and hydraulic fracturing to stimulate gas production. This result was supported by similar results in the Beamesbrook, Desert Creek and Argyle Creek wells across the tenement.

The Lawn 4 formation is of a similar geological age and characteristic as the Barney Creek Shale in the Northern Territory Exploration Permits held by Armour Energy. The Barney Creek Shale has been proven to be the source rock of the Glyde River gas discovery made by Armour Energy in August 2012. The Glyde 1 lateral well flowed gas at a rate of 3.33 million standard cubic feet per day equivalent (mmscf/d) at 125 psi pressure after 10 minutes on a 1 inch choke.

Armour Energy is also the preferred tenderer for ATP 1107 which is located immediately south of and adjacent to ATP 1087. ATP 1087 and ATP 1107 cover the south Nicholson Basin and underlying Mt Isa Super Basin which extends westward into the Company's Northern Territory applications.

Armour Energy will complete modelling of the gas resource potential in the area based on existing exploration data and the exploration program across the next 3 years will be based around the rapid and efficient delineation of proven and probable reserves. The Company is also investigating local market opportunities in excess of 65PJ of gas fired energy per annum along with the potential for export LNG opportunities.

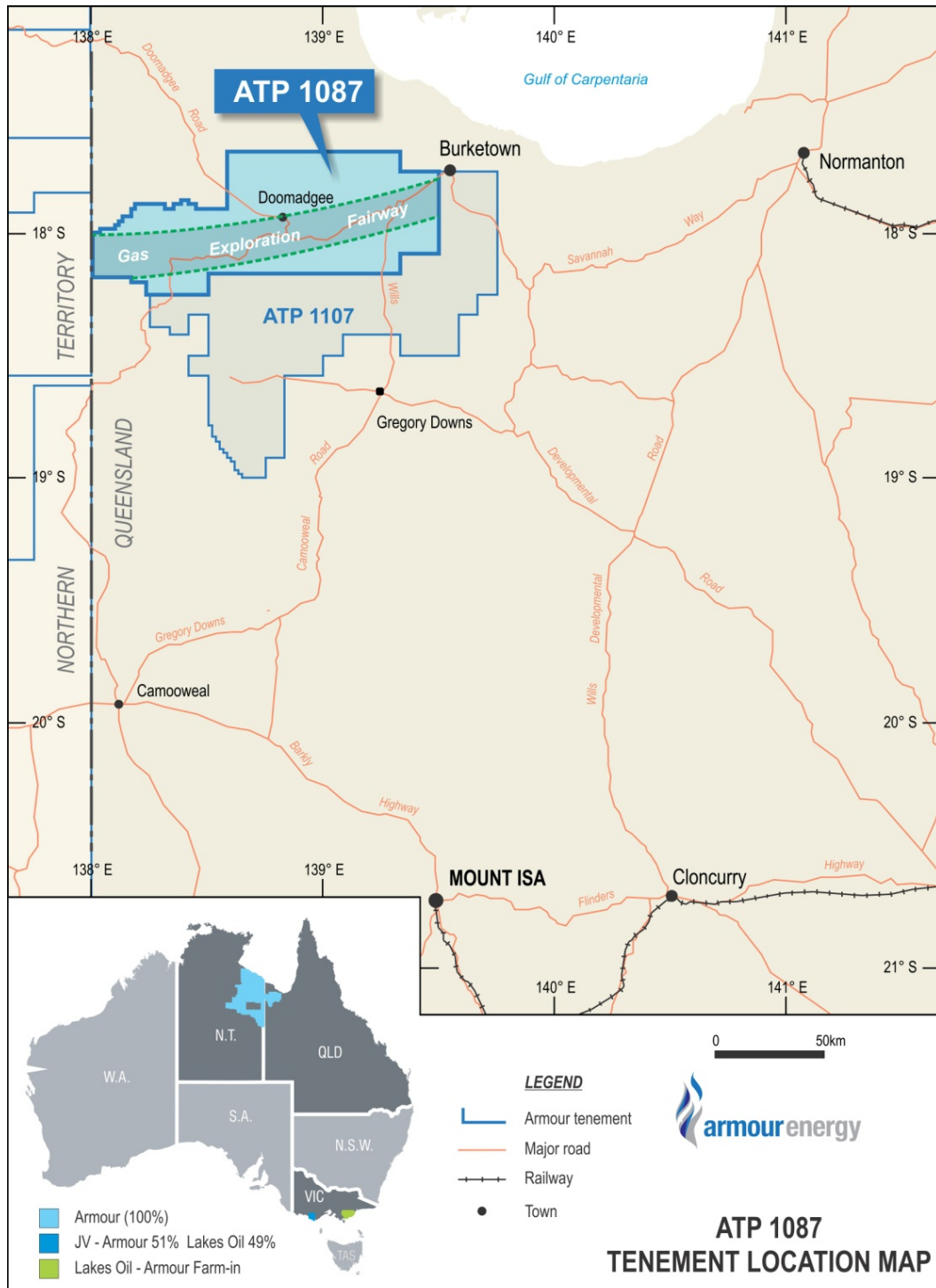
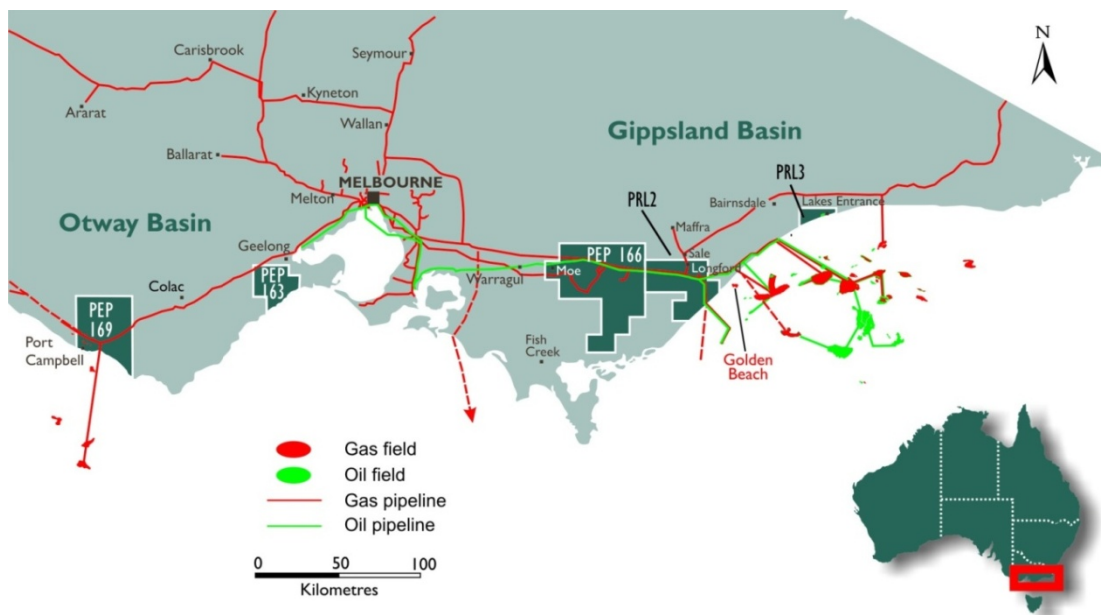


Figure 8: Location Map – ATP 1087 and ATP 1107 in Queensland

### Holdgate 1 Well Drilled in PEP166, Gippsland Basin Victoria

Armour Energy funded the drilling of the Holdgate 1 Well by Lakes Oil which was drilled late in the second quarter of 2012 and completed early in the third quarter with Lakes Oil as operator. This has earned Armour Energy a 25% interest in PEP166. Armour Energy retains an option to extend this interest to 51% and operatorship of PEP 166. (Figure 9)



**Figure 9: Location of PEP169 Otway Basin and PEP166 Gippsland Basin.**

Holdgate 1 was the second well funded by Armour Energy and drilled by Lakes Oil following the drilling of the Lakes Oil Moreys 1 well in the second quarter of 2012 where Armour Energy had earned 51% ownership and operatorship of PEP169 in the onshore Otway Basin, Victoria (Figure 9). The Moreys 1 well was considered a tight gas and condensate discovery well due to indications of tight gas during drilling and recovery of hydrocarbons during drill stem testing in the Eumeralla Formation however confirmation of this will still require fracture stimulation at a later stage.

The overall objective of the Holdgate 1 well was to explore for oil and gas plays on the Greater Baragwanath Anticline in PEP 166 which is part of a large surface anticline extending 60 kms across PEP 166 and into the adjacent PRL 2 where Armour retains a further farm in option.

Holdgate 1 was drilled with two targets with the primary objective being the Strzelecki Group, in which Lakes Oil has encountered “tight gas” in previous wells drilled in the onshore Gippsland Basin, with the secondary objective being the underlying Rintouls Creek Sandstone/Tyers Conglomerate.

Holdgate 1 well was spudded on 23rd May 2012. The drilling of the well was completed after reaching a total depth of 2752 metres on 2nd July 2012. A full logging program was run from 2280m up to the casing shoe at 427m including Formation Micro-Imaging/Sonic Scanner (FMI/SS) and Sidewall Coring Tool with the Gamma Ray (GR) run to surface.

### **Preliminary Results from Holdgate 1**

The top of the Strzelecki Group was encountered at 126metres depth and consisted of thick, inter-bedded felspathic and quartzose sandstones, claystones, shales and minor coals.

From 787m-2752m, the Strzelecki Group indicated sandstone lithologies that include quartzose and volcanogenic elements. This is a variation of the typical Strzelecki sandstone lithology which is dominantly volcanogenic (felspathic).

Continuous C1 - C3 background gas readings (up to C5 across some intervals) were noted across large intervals within the Strzelecki Group, typical of a tight gas well.

Residual oil was identified in shale cuttings from 1720m. Additional analyses will be conducted from sidewall cores. A weak dull yellow bulk crush was noted across several intervals in recovered cuttings.

The thermal maturation levels obtained from cuttings indicate that the top of the Strzelecki Group down to about 2700m is mature for gas generation.

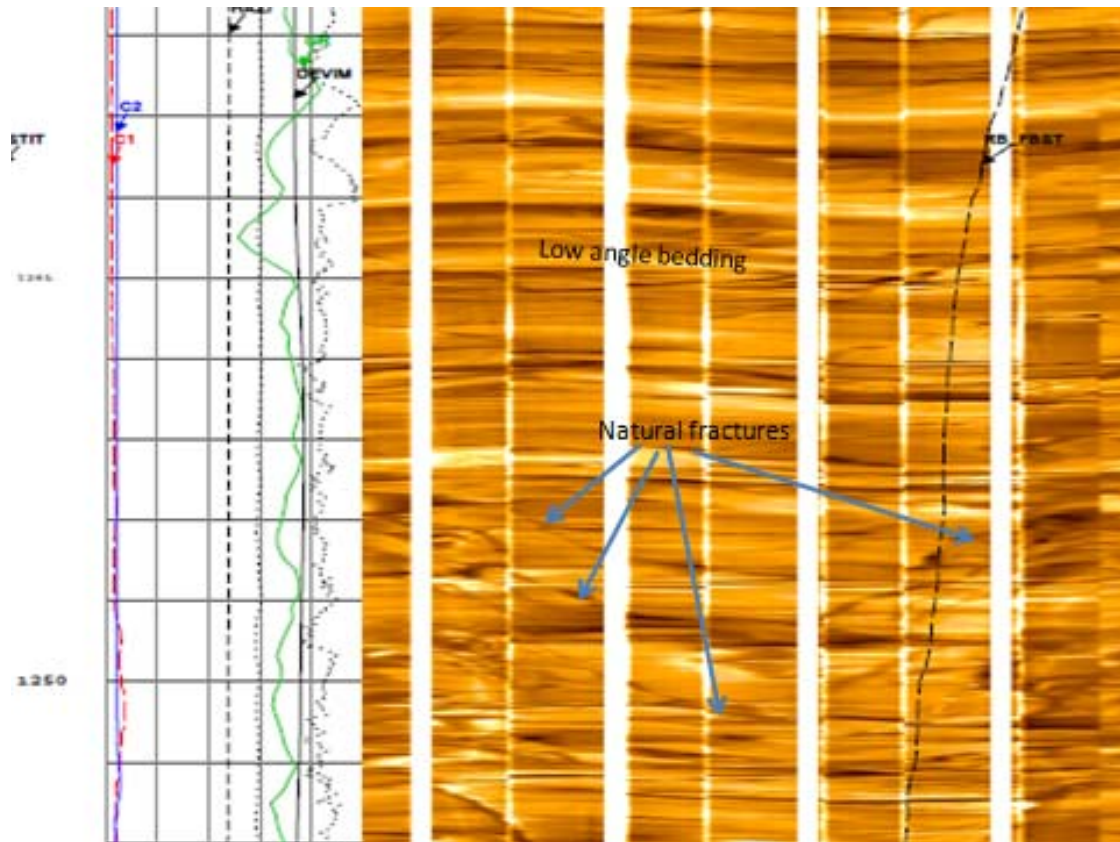
Preliminary evaluation of the drilling and log data by US tight gas specialists indicates that there are a number of zones of interest with tight gas potential. Overall the porosity ranged from 3-10%. This is still a preliminary analysis without the benefit of any of the core analysis as yet to help further calibrate this work.

The FMI imaging log indicates there are abundant natural fractures throughout the drilled section. See part of the imaging log below (Figure 10).

From the interpreted index of brittleness, the shaley intervals in the well appear to be in the brittle range, indicating better fracture generation potential. This will need to be calibrated with core analysis. Both Armour Energy and Lakes Oil are continuing to evaluate all data collected from this well.

The Holdgate 1 wildcat has been deemed a tight gas discovery well by the company based on the presence of continuous gas in the Strzelecki Group and the identification of numerous tight gas zones from preliminary log evaluation conducted by independent U.S. based tight gas specialists. However, confirmation of this will still require fracture stimulation at a later stage.





**Figure 10: Part of the Holdgate 1 Formation Micro- Imaging Log at 1250 metres.**



On behalf of the board  
 Karl Schlobohm  
 Company Secretary

*The resource estimates covering EP 171 and EP 176 in the Northern Territory used in this release were, where indicated, compiled by MBA Petroleum Consultants, and detailed in the Independent Expert's Report, Replacement Prospectus dated 20 March 2012 for Armour Energy (Chapter 9). Raymond L Johnson Jr., General Manager Exploration and Production for Armour Energy, is qualified in accordance with the requirements of ASX listing rule 5.11 and has consented to the use of the resource figures in the form and context in which they appear in this release.*

*Raymond L Johnson Jr, General Manager Exploration and Production for Armour Energy is qualified in accordance with the requirements of ASX listing rule 5.11 and has consented to the use of the resource figures in the form and context in which they appear in this announcement.*



## **About Armour Energy Limited**

Armour Energy is focused on the discovery and development of world class gas and associated liquids resources in an extensive and recently recognised hydrocarbon province in northern Australia. This region has only recently had its shale potential identified by Armour Energy. The domestic and global demand for gas, combined with the new shale extractive technologies and experienced personnel, provides Armour with an extraordinary opportunity to define and ultimately develop a new liquids rich gas province.

Armour Energy's permit areas are characterised by low population densities, cooperative stakeholders and aspects of the natural environment suited to the exploration and development of a future gas and liquids province. Armour places considerable importance on close liaison with traditional owners and all stakeholders and this approach has led to speedy grant of its key tenements in the Northern Territory. The Company intends to continue to invest this effort.

Armour Energy is focusing on the exploration of the McArthur, South Nicholson and Georgina Basins in the Northern Territory and Queensland, and in the onshore Gippsland Basin in Victoria in joint venture with Lakes Oil, for gas and associated petroleum liquids.

The Board of the Company includes four past Directors of Arrow Energy, and the same expansive approach to exploration and development that drove Arrow's evolution is planned for Armour Energy. The CEO Mr Philip McNamara has been involved in the development of large coal projects, including most recently as managing Director of Waratah Coal, where he was instrumental in securing \$5.5 billion of financing for the proposed development of the Galilee Basin coal projects. The Company's technical team includes a range of industry experts and seasoned professionals who have been selected to support the Board and the CEO in our goal to build Armour Energy into a significant gas exploration and development company.

Further information regarding Armour Energy Limited, its projects, management team and a copy of its Prospectus are available on the Company's website at [www.armourenergy.com.au](http://www.armourenergy.com.au)