

MEETING MINUTES



MINUTES OF: Arrow Surat Community Reference Group
 HELD AT: Toowoomba City Library
 DATE: 29 June 2017
 COMMENCEMENT TIME: 9.10am

Present:	<p>Leisa Elder – Vice President, External Relations and Tenure Management Peta Tucker – Community Relations Manager John Hughes – CSG Compliance Unit, DNRM Graham Clapham – Central Downs Irrigators Ltd Ian Hayllor – Gas Fields Commissioner Cr Nancy Sommerfield – Toowoomba Regional Council Scott Braund – Lot Feeders Association Lee McNicholl – Basin Sustainability Association Pat Weir MP – Member for Condamine</p> <p>Proxies: Michael Barker – Landholder Bores Team Lead as proxy for Simon Gossmann</p> <p>Presenters: Darren Marshall – Regional Coordinator for Weeds and Feral Animals, Queensland Murray Darling Committee Prof Andrew Garnett – Director, UQ Centre for Coal Seam Gas Dr Neil Huth – Research Scientist, GISERA (CSIRO)</p>
Apologies:	<p>Simon Gossmann – Groundwater Manager Carey Bradford – Capacity Planning Manager Mayor Paul McVeigh – Western Downs Regional Council Jody Monaghan – Dalby Chamber of Commerce & Industry Matthew Paull – Policy Director, APPEA Sarah Due – Regional Manager, Agforce</p>
Chair:	Leisa Elder – Vice President External Relations and Tenure Management
Secretariat:	Rita Hassan – Community Officer, Dalby
Disclosures:	None recorded

	Joint Meeting – ASCRG & AIFL Committee	ACTION/ SUGGESTIONS
ITEM 1	<p>Welcome – Leisa Elder</p> <ul style="list-style-type: none"> Leisa Elder welcomed attendees and introduced guest presenters. 	
ITEM 2	<p>Safety moment – Chris Wicks</p> <ul style="list-style-type: none"> Safe hands 	
ITEM 3	<p>Pest Management update – Darren Marshall (Regional Coordinator for Weeds and Feral Animals, Qld Murray Darling Committee)</p> <ul style="list-style-type: none"> Presentation on the feral animal control, monitoring and research that has been undertaken on Arrow's Theten and Broadwater properties. Baiting and aerial shooting are the most effective forms of control for wild pigs. An individual animal's home range extends beyond a property boundary; therefore pest control measure must be implemented on a community wide scale. It is difficult to measure success in control programs without monitoring first to understand populations and animal movements. The Arrow supported monitoring program used rubber jawed traps to capture pigs for tagging and collaring. These traps allow circulation to the captured limb therefore it is unlikely that the animal will try to bite through their limb to escape. Remote cameras triggered by movement are also used to capture index of abundance i.e. how many passes of the camera (not necessarily animal numbers). Nancy Sommerfield commented it would be interesting to compare wild pig numbers on properties which undertake control with those that don't. Darren advised that he has records to show this data. Scott Braund suggested that the CSG industry should get involved in funding fencing for properties. Darren advised that the initial impacts of fencing are good but lack of maintenance can make them ineffective. He also noted that not all landholders want fencing. Arrow is working on tackling wild pig problems on a community wide scale which is better than on an individual property basis. 	

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	<ul style="list-style-type: none"> Monitoring along with quick intervals between shooting and baiting provides best results. Darren is currently undertaking a pig collaring program on Arrow's Girraween property (Downfall Creek site) near Miles. The program includes tagging and blood sampling for diseases such as Leptospirosis and Brucellosis (which can also be spread to cattle and people). Scott Braund asked if Arrow understands how the Emergency Animal Disease Response Agreement (EADRA) will impact its operations. Note: the agreement brings government and livestock industry groups to collectively and significantly increase Australia's capacity to prepare for and respond to emergency animal disease incursions. Scott considers that EADRA may impact operations on Tipton noting that management is done on a lot/plan basis e.g. Lot 26 on Grassdale feedlot is 5,675 ha which covers 60% of Tipton. Lavinnia Fiedler advised that Arrow will look into the potential impacts of EADRA on the company's operations. Arrow currently has biosecurity plans for each of their properties. 	<p>Lavinnia Fiedler to investigate the potential impacts of EADRA on Arrow operations</p>
ITEM 4	<p>Arrow update – Leisa Elder</p> <ul style="list-style-type: none"> Tipton Expansion, Front End Engineering Design (FEED) phase has been announced (~\$750M). Arrow is in the process of complex negotiations in relation to collaboration with other proponents for the commercialisation of the majority of its Surat gas reserves. <p>Tipton Expansion – David Wolf</p> <ul style="list-style-type: none"> Also known as TIPEX, Tipton expansion is a development of the existing Tipton field (near Dalby) over the next four years. The project includes four new compressors, 90 wells and approximately 30kms of gathering. Once complete, the expansion will contribute to additional production of 48TJ/day through an investment of \$750M. FEED will test the assumptions made in the concept design. The first part of the project will see 60 wells drilled on existing well pads and about 30 infill wells. Multiwell pads will use deviated drilling to obtain an ideal underground spacing of 800m. Arrow will apply current technical knowledge to extend the pump life in order to reduce well workover frequency. Arrow will commence Area Wide Planning and incorporate landholder constraints towards the end of FEED and execution readiness phase. Lee McNicholl asked for the water production forecast and asked about estimated transmissivity around the wells – In the absence of Arrow hydrologist Simon Gossmann, Arrow took this question on notice. Chris Wicks noted that water produced in the early life of a well is higher, then declines over time. <p>Hopeland Seismic Survey & Proposed Community Engagement – Peta Tucker</p> <ul style="list-style-type: none"> Hopeland Seismic survey activity is proposed for August depending on contractor availability, with a community engagement session proposed for late July/early August. Notifications (via letter/mailout) will be carried out prior to any on ground activity. This will target landholders within an approximate 10km radius of the activity. An email will also go out to Committee members to update them in the lead up to the seismic survey activity. 	<p>Simon Gossmann to update on water production forecast and estimated transmissivity</p>
ITEM 5	<p>Arrow Operations update – Chris Wicks</p> <ul style="list-style-type: none"> Daandine CGPF - PSV (Pressure Safety Valve) level setting has been increased to allow for the plant to produce 67TJ/day, an increase from 60TJ/day. Tipton CGPF - Maintenance work has been carried out on 4 of the 6 units to upgrade the units, reducing downtime and improving production. Upgrades to the PLC unit (Programmable Logic Control) have improved monitoring and remote access. A new fuel compressor will be installed at Daandine. Meenawarra Pilot – All six wells are now on pump. Gas and water from the pilot is gathered to the Tipton system. The rehabilitation of Punchbowl and Hopeland dams has been completed. 	
ITEM 6	<p>Arrow Project update – Chris Wicks</p> <p>3PL well drilling program</p> <ul style="list-style-type: none"> Program to drill 4 new wells on the Longswamp and Plainview PLs is 	

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	<p>underway with the drill rig onsite in the next two weeks.</p> <p>PtL project</p> <ul style="list-style-type: none"> • A project is also underway with the twinning of 5 new production wells on existing pads in the Tipton production field. There will be additional dewatering involved with these deeper wells. <p>Plainview pilot</p> <ul style="list-style-type: none"> • The proposed Plainview Pilot consists of 5 appraisal wells on a single well pad, all targeting the Walloon Coal measures. • The pilot is located east of the Horrane fault. The fault is on the west side of the Condamine River. • Lee McNicoll asked about the cone of depression (depression of water levels) from these wells – Andrew Garnett clarified that the cone of depression around a well relates to the aquifer you are drilling into and is typically deep and narrow or low and shallow. • Graham Clapham asked which side of the fault is deepest. • Lee McNicholl asked how deep we need to drill to go through the fault. Arrow took both of these questions on notice. <p>Plainview pilot soil gas monitoring plan</p> <ul style="list-style-type: none"> • Investigates gas migration. • Includes 23 soil gas monitoring locations. • Soil gas monitoring sites are drilled approximately 7m deep using a track mounted rotary drill. • Monitoring holes are capped and manually checked every quarter or half yearly depending on results. • Four of the sites will be logged on a continual basis. • Posts at monitoring sites will remain above ground (about 1m). • Engagement for the soil gas monitoring has been positive with most landholder agreements completed. • Ian Hayllor asked why the bore holes are only 7m below ground level and not deeper (80m for example) to capture early migration. Chris advised that it was the consultant's advice to install them this way. Andrew Garnett advised that there would already be background thermogenic gas in this area. <p>Discussion regarding water substitution</p> <ul style="list-style-type: none"> • Scott Braund asked to understand what Arrow's policy is in relation to water substitution given nothing really changed in the draft GABORA water plan regarding CSG water take. Does Arrow favour replacing water through entitlement swap? • Chris Wicks noted that for the Condamine alluvium, Arrow's preference was for substitution of allocation to offset modelled impacts. He noted that Arrow does not have water entitlement to swap. • Graham Clapham noted that there is no legislation to stop landholders from taking Arrow water and continue using water from the alluvium at the same rate; however alluvium users would be against this happening. 	<p>Carey Bradford to provide feedback to questions regarding Horrane fault</p>
ITEM 7	<p>Groundwater monitoring – Michael Barker</p> <p>Baseline bore assessments (BBAs) – Dalby township</p> <ul style="list-style-type: none"> • Project to assess water bores inside a priority living area. • Program commenced in 2016, with letters of introduction provided in a large mailout, advertisement in the local newspaper, followed by phone calls to registered bore owners. • Letters were re-sent to bore owners who were not reached by initial methods. • Progress to date - 86 of the 176 registered bore owners have been reached; 57 baseline assessments have been carried out to date. This is considered a successful outcome considering the range of coverage across town. • Bores were found to be varying depths with varying information available from the landholder e.g. most did not have drill logs. • The program did not make any determinations on aquifer. None of the bores were deep enough to trigger 'make good'. <p>Plainview pilot baseline assessment proposal</p> <ul style="list-style-type: none"> • The Plainview pilot BBA program proposes to revisit 44 bores that are within 5km of the pilot to expand knowledge on this area. • Some landholders in previous years have refused access for the assessment to take place. Graham Clapham mentioned that he had received a phone call from a landholder who had concerns about participating in the BBA program – Graham advised the caller that it would be in his best interest to participate. • Ian Hayllor suggested that the Committee could endorse the value of these assessments through a letter to landholders signed by Committee Members. 	<p>Letter to be drafted to encourage landholder participation in BBA</p>

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	This method was supported by Committee Members.	
ITEM 8	<p>UQ Centre for Coal Seam Gas – Andrew (Alf) Garnett</p> <p>Centre overview</p> <ul style="list-style-type: none"> • Established December 2012 • Funded by UQ, Arrow Energy, APLNG, Shell (QGC) and Santos • Initially funded for 5 years (2012-2016), now in a second term (2017-2021) • Research is carried out under UQ policies on ethics and research integrity. • Research covers 4 broad themes: <ul style="list-style-type: none"> ○ Water ○ Geoscience (technical/economic improvements as well as reduction of footprint/impacts) ○ Petroleum Engineering (technical/economic improvements as well as reduction of footprint/impacts) ○ Social Performance (cumulative socioeconomic indicators, facts and trends) <p>Presentation on water themes</p> <ul style="list-style-type: none"> • Groundwater uncertainties have been investigated through leading edge research, building on the OGIA model; more fine scale than existing information available. • Research focuses on uncertainties in existing models e.g. measuring recharge which is currently predicted. • The problem with recharge measurement is that it is time variable over 10 years. So far the Centre has carried out 3 years of measurements with another 3 to go. • CSG water is measured and allocations are generally metered across a CMA (cumulative management area), however stock and domestic use is largely unknown. • Natural variability also exists within the system, within aquifers with different ion concentrations. • Researchers apply spatial statistics in the analysis of data. • Lee McNicholl suggested that the CSG Net Bore Monitoring Program should be supported to gather further data. • The UQ field monitoring program uses bore flow metering. Landholder participation in this is voluntary and confidential. Flow meters have been installed on 43 bores across the Surat CMA. Landholders receive a report on their bore every 6 months. • Results so far show a higher stock and domestic usage than currently shown in the OGIA model. • Motivation behind the research is to determine how much water the CSG industry is actually taking. • Early models ranged in predictions and were highly conservative, overestimating water take. • Influences on these estimates have been: <ul style="list-style-type: none"> ○ Gas Industry – tends to over estimate ○ Regulators – prudent/conservative approach ○ Academia – focus on worst case scenario and environmental impact ○ Modelling techniques – challenging, complex, very large scales needed • Time has shown that there have been less wells, and less water per well and less salt produced. • Ian Hayllor commented that from a community perspective, it is great to see that the actual water take has been less than predicted. • Scott Braund asked Andrew Garnett if the research by UQ CCSG will be included in OGIA modelling. Andrew Garnett confirmed that they work in consultation with OGIA. 	
ITEM 9	<p>GISERA (CSIRO) presentation – Neil Huth</p> <p>CSG development and cropping enterprises in the Surat Basin</p> <ul style="list-style-type: none"> • The footprint of the CSG industry is spread out, so GISERA have adopted a 750x750m measurement as the approximate size of the average footprint per well (i.e. includes gathering lines, access tracks, dams etc.) • Scott Braund asked whether a field operation will always have more intense footprint next to major infrastructure. Andrew Garnett responded that this would be the case due to nature of the process but economics research is looking to reduce this. <p>Soil erosion due to water impacts of CSG access tracks</p> <ul style="list-style-type: none"> • Rural roads are known to be a source of erosion and sediment into streams. • Water accumulation models show the flow paths of water; water will keep flowing where it wants to. 	

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	<p>Soil compaction impacts on agriculture</p> <ul style="list-style-type: none"> • Arrow has investigated mitigations in the area of soil compaction impacts. • Loss of growth is highest immediately after compaction; soils heal themselves naturally after about 5 years. <p>Farm design – signs</p> <ul style="list-style-type: none"> • Signs used in field layout and design can impact visual amenity on farms. • There is a current project within Arrow to consider options for reducing sign usage. • There is a standard around what signage is required; David Wolf is involved in an industry working group looking at making changes to the standard to improve visual outcomes. <p>Farm design – logistics</p> <ul style="list-style-type: none"> • Vehicle movements around well sites can add complications and time to farming practices e.g. spraying. • Small inconveniences add up over time and costs can accumulate due to impacts on machinery. • Overlapping of compaction and spray can also add to costs. • Lee McNicholl noted that GPS tracking has made farming more efficient and having to manoeuvre around wells undoes this benefit. <p>Relative benefit of compensation payments versus impacts of the CSG industry</p> <ul style="list-style-type: none"> • Relative benefit of compensation payment versus cost has been investigated to consider the impacts of variable cash flow and CSG impact. • Farmers need to consider where to best direct compensation funds i.e. different investment opportunities exist on and off-farm. • Land use changes have already been happening over time within the agricultural industry. • A thesis to investigate benefits is under examination. 	
ITEM 10	<p>Land Access Ombudsman – Michelle Jones</p> <ul style="list-style-type: none"> • Under legislation introduced on 30 May 2017, a Land Access Ombudsman will be appointed to facilitate the resolution of disputes about Conduct and Compensation Agreements (CCA) and Make Good Agreements (MGA). • The ombudsman provides both parties with an alternative to court action should disputes arise. • Ian Hayllor questioned the fact that the legislation is limited to only those landholders that have signed a CCA or MGA. • Leisa Elder noted that Arrow has always worked well with the GasFields Commission and we also support the third party options introduced. 	
ASCRG Committee only		
ITEM 11	<p>Minutes of previous meetings</p> <ul style="list-style-type: none"> • Minutes of the September meeting were reviewed. Moved by Graham Clapham that they be accepted without change, seconded by Peta Tucker, Committee endorsed. <p>Actions from previous meeting</p> <p>Arrow compensation for volunteers</p> <ul style="list-style-type: none"> • Arrow has considered compensation for committee representatives where they are not paid by an organisation to attend. • Graham Clapham believes it is reasonable for Arrow to provide volunteers with compensation which can go towards the organisation they are representing. • Ian Hayllor is agreeable to the idea but clarified that it needs to be a transparent figure. • Leisa Elder raised that the matter was considered and agreed some years ago at the request of landholders, and no members had since sought compensation. • Arrow agreed to consider it on a case by case basis noting some members had specific circumstances for or against compensation. • In these cases, compensation would be provided to the individual not the organisation. In response to an earlier question, the individual may choose to donate the amount to the body they represent. • Members were invited to contact Peta Tucker directly. 	
ITEM 12	<p>Brighter Futures round 1 recipients – Rita Hassan</p> <ul style="list-style-type: none"> • Arrow's community investment program which supports local organisations dedicated to developing stronger communities. 	

	<ul style="list-style-type: none"> • Focuses on three key areas of community interest: <ul style="list-style-type: none"> ○ Health and safety ○ Education ○ Environment • Applications are assessed by an internal committee that consider the projects based on capacity building merit (infrastructure funding is not part of Brighter Futures criteria) • 2 application rounds per year, April and September. • Round one recipient's include – Dalby Touch Association, Dalby's Delicious & DeLIGHTful Festival, Empire Theatre Projects, Dalby AFL Swans, Murilla Community Centre, Millmerran Pony Club, Chinchilla Netball Club, Dalby & District Campdraft and Cecil Plains Bush Nursing Service. 	
ITEM 13	<p>Planning for new agenda items of interest to the committee members – Peta Tucker</p> <ul style="list-style-type: none"> • Committee members were requested to provide ideas or areas of interest that they would like to see included in future meetings. • Lee McNicholl requested an update on Hopeland Seismic survey at the next meeting. He will also consult with the community he represents to determine what other issues may be relevant and provide feedback. • Ian Hayllor considers Arrow has done a good job in covering the range of issues relevant to communities over the years he has attended meetings. • Lee McNicholl would like to better understand the impact of drilling the Taroom coal measures. 	<p>Hopeland Seismic survey – ongoing updates at each meeting</p> <p>Modelling of drilling into Taroom coal measures to be shared at a subsequent meeting</p>
ITEM 14	<p>Any other business</p> <ul style="list-style-type: none"> • Leisa Elder noted that Arrow is a partner of UQ CCSG which works in some areas with GISERA (CSIRO). While we don't directly fund the CSIRO program, Arrow is keen to ensure their research is shared with stakeholders. 	
ITEM 15	<p>Agreed outcomes, actions and deliverables</p> <ul style="list-style-type: none"> • Investigate the potential impacts of EADRA • Update on the water production forecast and estimated transmissivity for Tipton expansion wells • Feedback to questions regarding Horrane fault <ul style="list-style-type: none"> ○ which side of the fault is deepest, Plainview Pilot area? ○ what depth do we need to drill to go through fault? • Letter to be drafted to encourage landholder participation in BBA • OGIA annual report update • Modelling of drilling into Taroom coal measures • Hopeland Seismic survey – ongoing updates at each meeting • Tipton Expansion – ongoing updates at each meeting 	
ITEM 16	<p>Next meeting</p> <ul style="list-style-type: none"> • Thursday 14 September 2017 – Dalby 	

There being no further business, the meeting was closed at 12.45pm.