



**NB: Note that minutes are paraphrased to an extent and may not exactly match actual statements.**

Project	Gloucester Coal Seam Gas Project	From	Michael Ulph
Subject	Community Consultative Committee	Tel	4910 7788
Venue/Date/Time	Thursday 19 February 2015 Gloucester Country Club, 10.00am – 12.30pm	Job No	21/17714
Copies to	All attendees		
Attendees	Ian Shaw [IS] – AGL Lands Officer Karyn Looby [KL] – AGL Community Relations Manager Rod Williams – Community Representative Ray Dawes – Barrington Gloucester Stroud Preservation Alliance Clr Karen Hutchinson – Great Lakes Council Ed Robinson – Lower Waukivory Residents Group Anna Kaliska – Mid Coast Water Clr Aled Hogget – Gloucester Shire Council Clr Tony McKenzie – Dungog Shire Council Michael Ulph [MU] – GHD (Chair) Alexandra Parker – GHD (Minutes)	Apologies	David Mitchell – Avon Valley Landcare Rebecca Connor – Gloucester Shire Council James Duggleby [JD] - AGL Toni Laurie [TL] – AGL Land and Approvals Manager Lisa Schiff – Great Lakes Council Clr David West – Mid Coast Water
	Observers / Presenters Alex Kennedy-Clarke [AK] – AGL Richard Clark - [RC] Former Engineering Advisor – NSW WorkCover Authority	Others not present	Lee McElroy – Port Stephens Council Dan Rose – CEO, Forster Local Aboriginal Land Council Paul Minett – Dungog Shire Council Jerry Germon – Community Representative

## Notes

## Action

1. Michael Ulph (Chair)  
*Welcome and Acknowledgement of Country*  
*Introductions for new committee attendees and observers*  
*Welcome along Richard Clarke –guest speaker*  
*Alex Kennedy-Clark – reporting on behalf of Toni Laurie*



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Meeting commenced at 10:10am

2. Meeting agenda

- Welcome, Apologies, Introduction
- Acceptance of last minutes and matters from the previous meeting
- Community Engagement update (*Karyn Looby*)
- Morning Tea break
- Caesium presentation (*Richard Clark*)
- Project Update(*Alex Kennedy Clarke*)
- Water update (*Alex Kennedy Clarke*)
- General business
- Next meeting & close of formal proceedings
- Lunch

3. Action items from the last meeting

MU: The next item is to look at the last minutes and the matters from the previous meeting. We have a few actions and as a result of a serious of questions those arose last time and were handed to me in writing. We have gone through those and AGL have provided a response to those. Let's do the action items first. I am tempted to do these by exception as we have quite a few here but I sent these through rather late last night. My apologies.

I apologise regarding the minute lateness. It took me a while to do these and as you can see there is quite a lot there and with the Christmas break. My apologies for the lateness of the minutes.

I'll go through these Action items

Action	Response
Page 9: Alex to seek advice from hydrogeological experts re location of the wells, for the next meeting.	The water monitoring bores are located in close proximity to the Waukivory Pilot wells, intersecting shallow aquifers, fault zones as well as deep coal seams and overlying aquitards. AGL's hydrogeologists consider that the location of the monitoring bores is adequate to monitor for any connectivity issues. The Surface Water and Groundwater monitoring plan has been reviewed and approved by OCSG, EPA and NOW.
Page 11. James Duggleby to speak at the meeting following the 3 month data collection period.	James is an apology for next meeting. Final results and report for November soil sampling will be available to be provided to the CCC and published on



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	AGL's website by the end of February.
Page 11: Alex to find results of soil sampling for the irrigation program.	Interpreted reports are done annually (annual status reports plus specialist technical reports such as the Waukivory reports). The soils reports are available from view Irrigation Program documents at <a href="http://www.agl.com.au/about-agl/how-we-source-energy/natural-gas/natural-gas-projects/gloucester-gas-project/irrigation-program">http://www.agl.com.au/about-agl/how-we-source-energy/natural-gas/natural-gas-projects/gloucester-gas-project/irrigation-program</a> .
Page 12: Find out if there is a break over Christmas.	Actioned before Christmas – correspondence to GCCC members.
Page 15: Karyn: Follow up to find out when applicants were notified regarding their grant applications.	Letters to decline (the application) were sent 15 December 2014.

KL: One letter sent on 15 December.

KL: Action item from Aled was spoken about with Aled at the end of last meeting.

Action	Response
Page 25. Request for information re caesium use.	Agenda item for CCC meeting of 19 February 2015.
Other questions handed to the chair.	As below
Q. Approx. how much water is produced with gas after the dewatering process?	Once the wells are on flow test, AGL will monitor the water production rates at each of the four wells. Water production rates will diminish as gas flows increase. The produced water volumes are one of the key data sets that will be obtained from the pilot, however expected volumes cannot be estimated at this time. Our bore licences are capped at 5 ML per well, per year.
Q. What was the maximum number of security personnel employed by AGL in Gloucester at any time over the past six months?	See next response.
Q. It is widely reported that AGL security personnel recently manhandled one or more members of the public in a public place, namely on Fairburn's Road. Are these reports correct? If so, can AGL advise the community what action, if any, has been taken to ensure that such incidents will not occur again?	AGL security employees help protect AGL staff and contractors, members of the public and equipment. The questions relate to our security operations and we do not share specifics on security arrangements. AGL does not permit unlawful activity. As far as AGL is aware, no unlawful activity was undertaken by AGL staff or contractors. There have been no charges



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And also, if correct, will AGL make a public apology to the person or persons who were so mistreated?	made against security staff, as all activity was conducted safely and lawfully.
Q. What is happening to the "leftover treated water or leftover contaminated solid waste" after the processing of the liquid waste from Waukivory Pilot Program?	The Waukivory Pilot Project remains suspended while the EPA investigation continues. AGL voluntarily suspended the project in January following the detection of traces of BTEX in samples from two wells and an above ground storage tank. On 5 January 2015, AGL advised the GCCC that AGL engaged Worth Recycling to manage the disposal of flowback water from the Waukivory Pilot. In answer to the above question the treated waste water is beneficially re-used for industrial applications.

CCC: The question was about the leftovers after use for industrial applications. What happens to the sludge or the contaminated solid waste taken out of the water?

MU: Ok, so the next question asks if it is disposed of at Newcastle. But we don't address the solid waste. Hold over to end of the questions.

Action	Response
Q. Is the solid waste being dumped somewhere in Newcastle?	No. The flowback water is treated and disposed of in accordance with NSW EPA guidelines to an EPA licensed facility.
Q. Is the water being discharged into the Hunter river?	Prior to the suspension of the Waukivory Pilot our flowback water was being treated and recycled for industrial purposes by Worth Recycling in Sydney. Prior to that, our flowback water was being transported for lawful treatment and disposal (in accordance with trade waste guidelines and a trade waste agreement) to TransPacific.
Q. What quality is the final treated water?	The flowback water AGL transports to licensed facilities complies with the relevant NSW trade waste guidelines. From there, the water was treated and provided to customers who use it in industrial processes.
Q. What analysis is done on the water? I.e. are all the necessary contaminants tested for?	AGL tests its flowback water to ensure that it meets all relevant trade waste criteria. The flowback water is treated to be able to replace normal drinking water in industrial processes.
Q. We would like complete details of the processes used in the disposal of the waste. There are scientists within the community	EPA licenced facilities have contractual agreements to treat wastewater.



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who are quite capable of making their own evaluation of the methodology undertaken.	
Q. Did AGL issue a "Protestor Protocol", i.e. directions that contractors and AGL employees have been asked to adhere to?	AGL has procedures in place to facilitate the delivery of a structured and coordinated response to a protest incident at an operational site.
Q. In dealing with protesters did AGL sanction the use of force on public lands? I.E. was there a directive to use force or worse still was there no direction given at all?	AGL does not permit unlawful activity. There were no charges made against security staff, as all activity was conducted safely and lawfully.

CCC: Mr Chairman that is the response but I feel it is a very unhelpful statement. I think it would be much better if AGL just said 'AGL asserts that all activity was conducted safely'. I imagine the statute of limitation has not expired and that charges may be laid. It is just much easier to stick with the facts. I am sure that AGL will assert that all activity was conducted lawfully. I'm quite sure there are people in this room who would assert something quite different. I'm just concerned that that is an unsustainable statement, and I think when we make unsustainable statements we tend to increase attention rather than diffuse it and it's been said a number of times here. It is not a statement I agree with but we are after all dealing with assertions.

MU: Indeed, alright thank you that is a well-made point. Did you want to respond to that? Or let that one go through to the minutes?

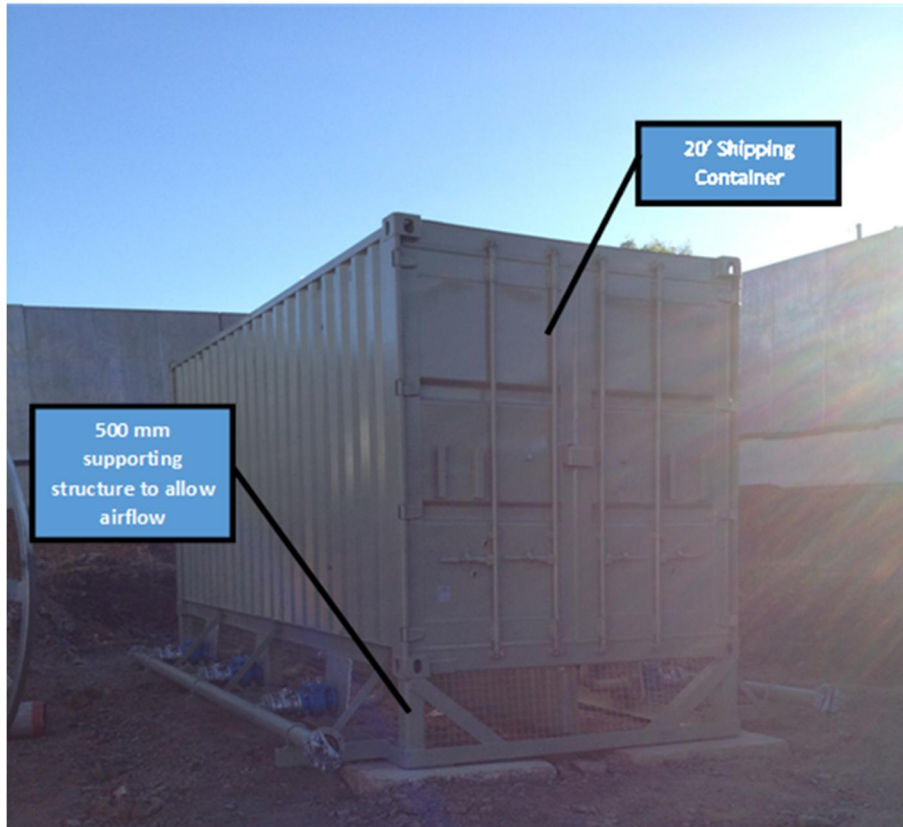
KL: Let it go through.

MU: Thank you.

Action	Response
Q. AGL needs to supply complete details of all monitoring that took place during and after the fracking, in particular air quality.	The reports are available on the AGL website, including pre and during the fracking period. The post report will be finalised and then also made publically available on our website.
Q. As there is considerable confusion re: flaring and container size, I would like to see AGL issue a statement relating to the changes in the flare containers and the justification for those changes.	The flare units (the actual item that combusts the gas) is a standard 20' shipping container. It has an additional 500mm of supporting structure and mesh below the flare unit so it does not sit directly on the ground and provides a mechanism for air flow into the unit (see picture below).

MU: There was a picture provided of the 20ft container with the valves on one side if you didn't receive that let me know and I can re send it.

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Action	Response
Q. as we have heard much about household chemicals, I would like to have AGL's definition of "household chemicals".	"chemicals and substances commonly used in domestic applications including detergents and food products."

MU: The last questions were forwarded by a CCC member from Groundswell Gloucester. That letter was attached in the email I sent last night. I have a copy of it here. It does have twelve questions and the responses here from AGL.

Action	Response
Questions forwarded by a CCC member in a letter from Groundswell Gloucester. (Letter attached)	
Response to Ms Julie Lyford, Chair Groundswell Gloucester sent 11 December 2014.	<p>The community has been thoroughly informed of AGL's Waukivory Pilot Program since 2011 including our plans to manage flowback water.</p> <p>Over the past 12 months, AGL has significantly increased the amount of</p>



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	<p>community information on our activities through community information and drop-in sessions, site tours, fortnightly community updates, regular newsletters, letterbox drops and doorknocking as well as at the Gloucester Dialogue and Community Consultative Committee. This has included informing AGL's intent to lawfully transport flowback water for disposal at an approved, EPA-licensed facility.</p> <p>Flowback water is hydraulic fracturing fluid that has been injected into coal seams during hydraulic fracturing. The hydraulic fracturing fluid is removed during the flowback process following hydraulic fracturing. AGL's fracturing fluid was more than 99% water at Waukivory and contained diluted concentrations of similar additives to a variety of household chemicals. We have publicly disclosed the ingredients we use in hydraulic fracturing fluid and shared this information in a number of forums including the Gloucester Dialogue.</p> <p>As part of our approval conditions for the Waukivory Pilot Program, a detailed, 1,000-page Review of Environmental Factors (REF) was submitted and thoroughly assessed by various government agencies. This has also been publically available on our website since October 2013. The document provides details around the construction of a double-compartmented, double-lined tank to store flowback water as well as the use of licensed contractors to lawfully transport the flowback water for disposal via road tanker. The REF further notes that this transportation will take place solely during our approved work hours, with truck movements coordinated to minimise traffic impacts on Fairbairns Road.</p> <p>All water use and disposal associated with our activities are managed in accordance with all laws, guidelines and codes of practice for the management of water and waste products.</p> <p>AGL regularly engages experts to get an independent and scientific view of community sentiment. We use the results</p>



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	<p>of this polling mostly for internal purposes and have no specific plans to release them, however, results from our May 2014 random survey indicate 61% of local respondents are neutral or favour AGL's activities in the Gloucester region.</p>

MU: Now there is a question we wanted to go back to, Anna that was a question about solid waste.

CCC: Sorry, if I may, just on the letter, one thing I want to bring up is that you'll notice the letter is dated the 1<sup>st</sup> of December.

MU: Yes.

CCC: It's now the 19<sup>th</sup> of February. The delay is just too long.

KL: A response, as it also says in the actions, the response was sent on the 11<sup>th</sup> December. So Julie Lyford received the response letter.

CCC: Did she?

KL: Yes she did.

CCC: I want to check that.

MU: This is a copy of that response.

KL: Yes it is

MU: OK

CCC: So that is a copy of that response?

MU: Yes so basically this is the response in relation to the questions. [Without the 'Dear Ms' or anything like that.

AKC: In the column on the left it says 'response to.'

MU: Ok so going back to the waste water question about what happens to the leftover solid waste after the water is taken away. Do you have a response on that one? The actual solid waste material?

AKC: I guess if you are referring to the sludge at the bottom of the tank. Is that what the question is?

CCC: The question is about when the flow black water is treated in the facility what happens to the waste? Because every water treatment produces waste. What happens to this waste?

AKC: Do you mean at the licence facility?

CCC: Yes that's what this question is, and I don't know who asked the question but the answer doesn't answer the question.

MU: So the leftover treated water. We understand what happens with that. Left over contaminated solid waste after the processing of the liquid waste. So yes I would say that's the sludge.

CCC: Yes that's correct.

AKC: In the water treatment facility.

CCC: There would most likely be residues in the tanks here too. Which I assume you mix with the water and transport to be processed as well. I'm curious as to what happens to the leftover sludge because it is very concentrated.

AKC: The sludge in the tank would also be disposed of to the licenced facility because it is still a liquid. Sludge is still considered to be a liquid waste and in terms of at the licenced facility that's however that licenced facility deals with their waste. That then is part of their process.

CCC: Mr Chairman, is that information available to us?

CCC: I think that would be a 'commercial in confidence', how that business operates.





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CCC: I don't really care if it's commercial in confidence or operational procedure or what I'm sick of that sort of crap Mr Chairman.

CCC: Well it's not AGL's responsibility.

CCC: Is it going to a landfill? How is it going to be contained? It's a simple question. It's a concern that a number of people have put to me in the past and I've been asked to it follow up.

CCC: It's got nothing to do with AGL because the company that's got the contract has to apply with EPA regulation, and any other regulations, state government puts on them to dispose of that property. It's not AGL's problem.

CCC: Mr chair I disagree with that, AGL being a good corporate citizen should ensure that the person that they have employed to take care of that should be doing the right thing. You just can't pass it off to somebody and expect that maybe they will do it, maybe they won't. Knowing the employees here I'd be shocked if they didn't follow through with that.

MU: Alright thankyou, Aled?

CCC: Mr Chairman we might be able to circumvent. Presuming because it is the EPA is a licenced facility the information maybe on public record.

MU: OK, Ian?

IS: Mr Chairman there has been a response, a review by the EPA and I believe probably all the members in this committee have received that. That everything was done in the transfer situation within the guidelines of the EPA, nothing done outside EPA approvals.

MU: So the question remains then from Ray is; what does that licence facility do with the waste afterwards? Is there a way we can that answer for Ray and for this forum or is it basically that we trust that subcontractor to do their job?

CCC: Basically you are going to need two responses one for Worth one for Transpacific for a start. One from every other place that received a contract across the country going forward.

CCC: Can I just make comment? There have been huge changes in the EP&A act as far as getting rid of any sort of soil, and I know this first hand because of a certain business in Stroud. They do under-road boring. As soon as they bore and hit water... they used to be able to go to landfill and take their soil. As soon as there is one drop of water on that soil now they cannot take it and none of our landfills accept wet soil anymore. There is only, and I'm not quite sure where it is, there is a commercial landfill that will take it, but your domestic landfills in all of our Shires do not take wet soil no matter where it's come from.

MU: Right, OK thankyou.

CCC: It's very difficult to get rid of wet soil.

CCC: It's usually got to be harvested, takes months and months and months and months.

CCC: It's a huge process, and a costly process.

MU: Ok I'm just interested in responding to Ray's question on the sludge. So Ian's told us that AGL has previously provided information that's come through the EPA.

IS: EPA have said they have investigated and have found there have been no, that there has been nothing done outside EPA requirement as far as the EPA licence.

KL: In response, we are taking this waste to a licenced facility that needs to follow EPA guidelines and it is being treated in accordance within those guidelines. Exactly what the process is I'm not privy to but it is being done within the guidelines and by the requirements of the state government.

CCC: Mr chair this is one of the weaknesses of the CCC process is that the government isn't here. We do have a representative of the dialogue here. Ray can I suggest that you contact one of the community representatives at the dialogue because the EPA is at the



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dialogue and they might be able to affectively give another avenue.

CCC: There's no dialogue anymore

CCC: We still have a dialogue

CCC: Really?

CCC: Yes, I was going to hopefully talk about that later.

MU: Yes we will just leave that to a bit later. Alright so there is another avenue if you like.

CCC: Thankyou Mr Chairman.

MU: So that was all the action items. Does anyone have any other commentary around those action items before we move forward?

Thankyou very much, I'd like to have someone move for the minutes that they are true and correct.

The last meeting minutes were moved by Ray Dawes and seconded by Rod Williams as a true and correct record.

CCC: Mr Chairman before business starts I'd like to thank AGL the kind gesture of supplying the birthday cake last year.

CCC: Mr chair before we get into the ordinary business I wonder if we might just suspend ordinary business for a moment. There are three very significant things that have happened basically in the last week. I thought I might just offer a bit of an explanation of those three things.

MU: I'll just check though as Karyn needs to leave to catch a plane. What time did you need to leave?

KL: 11 o'clock, no later than 11.

MU: OK so we have half an hour to do that. Just so we are conscious of time.

CCC: Ok I'll just put the idea to everybody. I think Karyn is involved and is absolutely crucial. The reason I have asked for this extraordinary suspension of business is because 3 very important things have happened. Yesterday as most people are probably aware Council voted to suspend the dialogue with AGL. Not to suspend the dialogue but to suspend the dialogue with AGL. Because of communication problems the council feels have developed during the process of the dialogue. They also asked the Minister to suspend AGL's licence. We did that specifically because we feel there are some outstanding questions that need to be responded to before council and the community can have confidence that AGL should restart its operations. The conditions for that suspension were that it remains suspended until such time that Lee (Shearer) finishes her report.

Lee is looking into all of these issues that happened over the last little while and especially the issue as to how BTEX has arisen and what the possible implications of it are. We met yesterday and she plans to be getting on with that job. But obviously there are a lot of technical things she needs to cover.

The second this is that we asked that the dialogue remains suspended until the Minister has had the time to respond to the log of community concerns submitted by Groundswell. That's a very significant document and we believe a very important document because it highlights some of the things council has been trying to represent for AGL and the government from the Dialogue.



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The third thing, we really need to be assured of the disposal of that water. At the moment, as far as we understand there is no destination for that water. There is no licenced facility in NSW that's willing to take it at this stage. We are very concerned about that. Because obviously we have wells under pressure with fracking water in them and we understand and we support, certainly I support at this stage that those wells be reactivated and that water be removed so we don't end up with any serious outcomes as a result of a break in the process, an unanticipated break in the process. That's council's position. I haven't got the full motion here. Sorry, in my rush this morning I forgot to take them with me but it will be available on the council website.

The second thing that's happened that the government has suspended AGL's activities and put in place a number of investigations and a major investigation into what's happened. I understand it is quite concerned about some of the results that are coming out, some of the technical results coming out and it doesn't understand why they have occurred; it is in the process of trying to understand.

The third thing that happened yesterday AGL itself announced it's undertaking a major review of the way it deals with the gas issue within the company itself with the head of Upstream Gas retired abruptly. His retirement was planned and he has been replaced.

So at the moment the elephant in room of course, is that everything is up in the air. I am concerned and I have been concerned about the progress of the CCC. I continue to turn up, we continue to have quite a tense relationship in the room. We don't appear to be doing much apart from firing questions and trying to respond as best we can.

As a community consultative committee, as a way of going forward, as a way of developing common ground and trying to identify what are real problems, I don't think we're doing a very good job. I think it would be a really good time now and a real opportunity for us as a committee to really examine the direction of our activities to make a suggestion about how we may move forward in a much more constructive way and get out of this adversarial position, accept some of the environment in which we exist look for opportunities to make a genuine contribution to AGL's ongoing attempts to develop this project in this community. That does not predispose that AGL will finally develop the project or predispose that it finally wont.

I just feel I've wasted, and it's through nobody's fault. It's basically through the way the system has been set up. I've wasted two and a half years coming to these meetings just to maintain the tension. It serves some political purposes, but really doesn't serve the purpose of disseminating the information to the community and getting the communities concerns fed back to AGL, and looking for ways we can address those concerns that's genuinely looking for ways AGL can perhaps modify its activities and modify its project so it can better meet community expectations and aspirations.

Now I understand there are some people who don't want it to go ahead under any circumstances and I understand there are people that do want it to go ahead in any circumstances. I can imagine that if it does go ahead that we will find some compromise that the government is satisfied with in the long term. I really hope that this committee will make a genuine contribution to that potential rather than just continue to act in the way it has.

We (Councillors) had some discussion with AGL last night. It was a very practical



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example of something we might have done six months ago to completely overcome what we find ourselves in now. But we didn't because we were stuck in adversarial process that was not designed to find answers it was just designed to try and maintain face and maintain position. So on that basis, I don't know if we can constructively do it today but I'd be very keen to see us as a committee sit down and genuinely look for ways to make this a more consultative and more constructive process.

CCC: Can I just respond?

MU: Alright, not just yet.

CCC: Can I just explain how we might, so people understand what I'm talking about. Very quickly.

MU: Very quickly.

CCC: Council made a statement about values and expectations. It's a very high level statement of values and expectations. Basically what it says is if any industry is going to come to our hunter valley these are the things that our community values. These are the things we understand our community values and this is how they expect to be treated. It is a very high level statement because it was designed so that it could gain broad level agreement from everyone.

What we need to do is we need to go to the next step and basically say 'what are the opportunities in those values and what are the threats?' And to start working more systematically through those particular issues. The first thing we have to do is identify those and the second this is to see if we can cover off on the threats and maximise the opportunities. That's exactly the sort of work that I think this CCC could be doing, not its whole work. Information transfer that we are doing at the moment is an important part of it but I think that we can be more creative than that and this forum is a great forum to be doing it in because of its a broad community representation.

MU: OK Thankyou Aled I think that this might call for an extraordinary meeting, to discuss these issues rather than right now without a lot of preparation or thought. I would normally ask for someone to put forward an agenda item but I appreciate that lots of these things unfolded yesterday and you needed to speak today. It's very pressing and time is of the essence. I feel a little bit glib, if it's the right word to push through with the agenda without giving your comments appropriate time.

CCC: I'm very happy for it to be held over.

MU: Without giving your comments and concerns appropriate time. However we do have this set up and what I have said before about giving people some time to think about it.

CCC: I really appreciate that you gave me the opportunity to do this this morning. I don't expect anyone to respond to it immediately because it is a big thing that I am suggesting and I'd be very happy for it to be held over.

MU: We know that in the term of reference of this forum there is supposed to be a review of membership as well that happens of a regular basis and we haven't done that for some time. I have put that on the agenda for today a review of membership. That could be held over for the same meeting.

I'll just ask if AGL has any immediate response to this. Conscious that we do have a guest speaker and we do have things to talk about. But is there any immediate response?

KL: I have seen what you are talking about, the example that you gave, and it may an



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interactive and worthwhile exercise. AGL wouldn't discount understanding further – through the workshop, to see if there is interest by the CCC. MU: So it seems to me, and I'll take advice around the room, that an extraordinary meeting to occur quite promptly, not in 2 months' time but more like within two weeks' time would be appropriate. What's the feeling around the room, Ray? Very quickly.

CCC: I think it would be beneficial; an extraordinary meeting would be one way to iron it out.

CCC: Yes look I agree, I think it needs to have some sort of guidelines. I don't think you can leave it and just talk about membership.

MU: No, membership is only one very small part of it. It's more about addressing Aled's statements and so on.

CCC: Maybe it needs and agenda.

MU: Absolutely.

CCC: I'm just...I need time to digest that. I'm not quite sure we are a conduit to the community and I think, particularly my friends here to my right do a superb job. I'm not quite sure, I take these CCC meetings very seriously, I'm on a few of them. I also think it's not a forum for us to tell the company how to do their work either. It's an information gathering; I'm not sure how Aled, his thoughts on how it needs to be changed. I don't know what can be changed. I have been here for 9 years, since the Lucas days. I'm not quite sure how anything can change other than AGL gives us different answers.

MU: Thankyou for that comment I appreciate that.

CCC: I think we do need to revisit what CCC is doing. Perhaps some parameters about, what info should be sought from? I don't think that the way an outside contractor deals with an item should be something that could be blamed on AGL or the information sought. I know by what you mean soil, 300 tonnes contaminated soil. That is damn hard to get somebody to take it. The EPA was on our backs for months and months. One where we took it to and they managed the disposal through that facility. That's not something that AGL can control. I think we really need to clarify. I think an extraordinary meeting would be good. Those things need to be clarified.

CCC: I'm really struggling. The reason I am struggling is because I am a community rep on both CCCs which I have from day dot, six and a half years. I find it's unbelievable that Gloucester council of the day, when it started back in the Lucas days said look 'we don't really know about this' that's why I came on the thing, because I didn't know about it either. Let's go on journey together, it's an open book, they were actually conducive to finding stuff out. There was a change of council and the whole persona I believe of Gloucester council changed at that point in time. Rightly or wrongly that's an observation I've made. I applied to go on dialogue; I was accepted as a community rep on good faith. It is interesting Gloucester Council chose to make the decision they did. I knew nothing about it; I was not consulted as a member of that dialogue. Some of the comments Aled's made I find hard to stomach. It's so ironic because I said to someone on the phone when I was driving up this morning that I will absolutely guarantee that council will look at CCC as surrogate dialogue and that's absolutely confirmed. Here we go again.

CCC: I object to being treated like a fool too.

CCC: I'm absolutely ropable with this whole scenario that councils playing out before the community at the moment. The council represents the whole community, not a subset of the community and that's the way it's playing out and I totally agree with the way this is set up with the original terms of reference. Ironically when I got the terms of



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reference of the dialogue it was almost a carbon copy because I had the terms of reference from the CCC from day one.

I would actually caution, I agree to have a special meeting. This has got to be nailed one way or the other. I totally agree with that. I would caution against possibly the CCC structure and purpose really deviating from what it was originally set up to do because you stepped out of the dialogue Aled. For you own reasons and we accepted that, we all had to, we didn't have a choice. Aled stepped out. Now I find it almost insulting that you come to the CCC making those same assertions because the Dialogue didn't work so now we are going to try and make the CCC work. I'm not the only one, I'm on both, I'm just putting it on the table what I'm hearing out there from other elements of the community not the subset that you and a fair chunk of council seem to be absolutely riveted to. The stuff that AGL are finding at the moment, some of it brought on by themselves and they are going to have to wear that. As a community rep I find it a bit frustrating that everyone is wearing it is the community. But, through all the checks and balances and the agencies. That's the other thing I'd caution about. As soon as we get agencies in here it's a Dialogue. That's the difference between this and the Dialogue. The agencies are all sitting around the table.

You had a chance there it didn't work now you are trying to screw this one over.

MU: Ok I think that we understand your point of view on that one. I'll just move on quickly.

CCC: Yes I'm probably the odd one I have got quite a narrow interest in the water, because we have water supply downstream and we haven't been consulted when the project was going to be approved. I think this Information giving and taking is very useful because we can ask questions. I think that the answers should be more open because sometimes we keep asking questions. The [answers] are not coming. An example is the flow back water disposal. We were asking where is it going and we didn't have an answer. Suddenly we learned from the media that it didn't go well for AGL with Hunter Water and Transpacific. They had to change the contractor. I would like to see more openness and more trust.

MU: Ok let's not have that meeting now but we will set a time for that.

Karyn and Alex and Ian how do you respond to that notion? Basically revisiting to look at the terms of reference and membership and get some feedback on how these members think this is working or not working and so on. How it is working and not working. Not to restart but to have a bit of a check to see how things are going.

IS: As the person who set up the CCC many long years ago I think refreshing reviewing is a necessary part of such a committee. I think the idea of an extraordinary meeting to do that. But probably with input from members prior to the agenda.

MU: Indeed.

IS: For that meeting, being quite blunt, so we have some guts to talk about during the meeting.

MU: Sure ok, I would call for subject headings and themes; I would then circulate that to get feedback, sort of a cross-flow so we have interaction across those, so people can put some thought to and some response to that and add some more depth to that so we can come into a meeting informed and ready to start. If that works.

I am conscious of time. Alright at the end of this meeting we will look to find a time for an extraordinary meeting. Thankyou Aled. We will more onto the next item. Karyn.

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#### 4. Community Engagement Update

- Gloucester Community Investment Program
    - Currently advertising the February funding round for the Gloucester Community Investment Program
    - We will accept applications for the next funding round during the month of February 2015.
    - The application form and guidelines can be found on the web [www.agl.com.au/Gloucester](http://www.agl.com.au/Gloucester), or by contacting the Gloucester office.
  
  - Gloucester Gas Project social impact and opportunities assessment
    - AGL is completing research to understand the profile of the community and the potential future social impacts of the planned Gloucester Gas Project development.
    - This will include how positive impacts might be maximised and negative impacts avoided or minimised.
    - An interactive workshop “Dialogue Café” will be held 4<sup>th</sup> and 5<sup>th</sup> March and invitations have been extended to all GCCC members.
    - The Dialogue Cafe will be conducted by consultants Creating Communities Australia on behalf of AGL.
    - The AGL fact sheet ‘assessing social impacts’ has been developed and is available on the Gloucester Gas Project website.
  
  - Wards River Community Information Session
    - More than 25 people attended the information session at Wards River on the 6<sup>th</sup> February.
    - AGL employees were on hand to answer questions and get feedback on our planned project activities
    - Some questions and answers are posted on YourSayAGL.
  
  - Gloucester community contribution
    - The Gloucester Gas Project has the potential to meet 15% of NSW’s natural gas demand from 2018.
    - In FY14:
      - we invested \$2.5M in the local community
      - 98 local suppliers
      - 21 employees – 62% local
    - AGL is committed to supporting a sustainable community – as our business grows we will continue to invest in our local community
    - Handout: Community Investment AGL Upstream Gas FY2013/14.
  
  - 2015 proposed community activities
    - AGL will endeavour to attend community events and activities on invitation from the event organiser
    - AGL participation at the event is an opportunity for AGL to support the local event and provide information on our project.
    - A calendar of activities for 2015 has been developed as part of the community engagement planning for 2015.
  
  - The next community newsletter is due for release in March 2015. The newsletter will be distributed by mailbox drop to postcodes 2415, 2422 and 2425.
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KL: You have all got the handouts for the community updates and I've given you our community engagement plan and community investment report and it shows our community contribution back into the local community FY14 and that's something we will be able to deliver on each year to show our community contribution.

What I did want to go through now, really quickly due to time I have left but perhaps you may like to go through at another time also, is the Gloucester Project Team got together to look at our 2015 year and proposed activities within the community. Of course in regards to activities and events we attend we only do so on invitation. We only ever attend or participate if we are invited by that community organisation. So we have gone through and brought up in the CCC that you really wanted to have some involvement and input into the discussion of what we are doing and participation within the community and what we are looking at. So I have put a calendar together here and you can go through and have a look, not now unfortunately because I have to go but we can come back in between meetings if you would like to in regards to those events.

For example we didn't attend a Tocal Field Day last year but a person in the community thought it might be a good idea for us to do so, so I've put that on the list. Last year we were invited to attend the Enviro Fair. Mid coast water thought it would be a very good idea to attend the Enviro Fair so if we are invited back this year we might go along and participate. I just wanted to give you an idea, that's what we have got planned so far. It's not guaranteed that we are going to attend but if there is anything blaringly that you say "oh my goodness I don't think you "we" should be there because of etc etc", please let me know. But yes we only ever attend activities if we are invited to attend.

Thankyou I am going to run.

MU: Ok, any other quick questions of Karyn before she leaves. Alright thankyou.

KL: I am still receiving RSVP's for the Social Impact and Opportunities Assessment. I've received about half of them back and I really do encourage you to attend it will be really great dialogue and workshop and everybody on the CCC has been invited.

CCC: Excuse me Mr Chairman could you ask Karyn to re send the email to me I've experienced some loss of email traffic in the last couple of months.

MU: Did you not email me saying you would like something to be sent again? Is that the same document?

CCC: I can't remember.

MU: Ok come to me I've got it and we will re send it to you again. Alright.

*Karyn Looby left 10:55am*

MU: Ok it is 10:56am so let's call it morning tea. During that morning tea break I will look at the calendar and see if we can circumvent a bit of time later trying to find time for an extraordinary meeting.

Morning tea break at 10:56am

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Meeting Resumed at 11:15am

MU: I've just looked at the calendar and it's looking pretty scary. We will find a date that works for us. At this point in the proceedings I would like to introduce Richard Clarke. There are copies in front of you that are photocopies of the same slides.

By way of introducing Richard. Richard has worked with the WorkCover authority in a

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couple of different roles and has been involved quite extensively and has some knowledge in the use of caesium in industry. If you wouldn't mind expanding on your CV as you start that would be great Richard. Please welcome Richard Clarke.

Guest Speaker – Richard Clarke – Caesium

RC: Thankyou Chair. Perhaps I'll start by saying my background and why I'm here. I've been a property owner and beef farmer for 15 years in the Gloucester area. The first 15 years, until last November my wife and myself ran a 500 acre property at Stratford with 150 beef cattle. In November we moved from Stratford to Barrington where our cattle are getting fatter.

That's my background in the area for 15 years. Most of you don't know me as Stratford is a different area to Gloucester. I have been a member of the Stratford coal CCC for over 10 years. I can be very vocal at that meeting but we seem to get on alright.

The matter of caesium. I observed the newspaper reports, late last year I happened to meet Ian in the park at one of the farmers open day. I said Ian you really need someone to tell you about caesium and what the problems are. As a vocal person with some experience on the other side as a former radiation safety officer, I had quite a bit of experience with drilling on a property at Gloucester, Stratford. Perhaps as a slight aside given the problems in Chinese food stuffs lately. When the holes were being drilled I had agreement with Stratford Coal not to use any gelatine as the lubricating fluid as gelatine is made from animal hooves and that could have foot and mouth disease. I think given the latest revelations from China regarding food security in general, although the Federal Government says its safe I don't think you can be sure of anything.

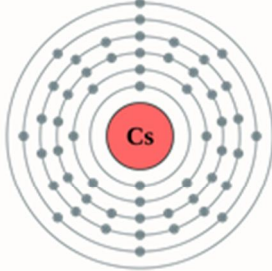
I have a background in doing things right at my property. Every person who came onto the property got a half hour induction and there were 80 inductions. That's my background in the property. I am a mechanical engineer with a separate degree in electrical engineering. A very varied career. I was health and safety manager at the University of Sydney for about 8 years. Everything from biological safety to slips, trips and falls. Included in that role was radiation safety officer. I did a course at Lucas Heights, a four week course, before becoming radiation safety officer. I carried out the radiation safety functions for the University of Sydney for about 6 years – that was in 1990. I'm not the latest full bottle in radiation but I know enough about it.

Later on in my career as consultant I worked with a Sydney consultant on review of the uptake of uniformity of radiation safety in Australia. RANZA we did a project for RANZA looking at every radiation authority around Australia and how they were going to unify and consolidate radiation safety standards. There is one for each state and territory and two for the Commonwealth so there are nine radiation safety authorities around Australia.

So that's my background. I do have other strings to my bow probably stronger. As a local resident who enjoys beef cattle and enjoys the friendship in the neighbourhood. I thought I might be able to talk to this committee about my views on caesium 137.

Overview. 1

- Caesium (Cs) is a moderately radioactive isotope.
- Commonly used in a wide variety of applications including atomic clocks, medicine, food sterilization and industrial processes such as density measurement.
- Used in drilling and mining industry for more than 40 years.
- Disclosed in Fracture Stimulation Management Plan, Waukivory Pilot Risk Assessment and Environmental Plans.
- Cs never comes in direct physical contact with fracturing fluid and is not injected into or left in wells.



> Presentation title  
 > Author  
 > Date (Verdana 10pt)

Energy in action. 

SLIDE 1 - On the screen, those are my words. They are slightly different to AGL. Most of this is mine. AGL put in on the PowerPoint. I'm rusty on PowerPoint, so AGL did this for me from my notes.

Caesium is naturally occurring and it's a bit like sodium and potassium. It's almost a metal. But if you remember high school physics and putting sodium into water and it goes "pzzzt". Caesium 137 will do the same but I don't think people try it. Caesium is probably slightly poisonous but that's not the main worry. Caesium didn't exist in the world till 1945. It came as a result of nuclear explosions. It also occurs, and that's where it's harvested from in nuclear reactors. That's where it comes from.

AGL say that caesium 137 is 'moderately radioactive'. I actually think it is a bit more than moderately, it is 'relatively highly radioactive'. It's emits gamma radiation and that would be the problem for any user of caesium 137, the gamma radiation. Gamma is electromagnetic radiation, it's not particles it's not atoms. It is just a high level radiation. Caesium 137 has a half-life of 30 years. That means half of it disappears in 30 years next 30 years another half disappears, in the next 30 years another half disappears so it goes down and down and down til eventually you get a miniscule amount.

I might add I got rapped over the knuckles during my course at Lucas Heights for saying 'yeah no troubles after about 10 half-lives it won't be a worry' well it will be a worry if you've got enough of it. Just because it has a fairly short half-life and does disappear it would probably mean if it leaked or if it a truck had an accident and turned over or something like that you'd probably want to be worried about it for 300 to 400 years.

MU: Richard can I just ask compared to other radioactive substances where does this half-life fit in? Are there other substances with longer half-life? Shorter half-life?

RC: Most of them are longer, some are a teeny bit short, micro seconds but this is a relatively short one. Uranium is in the millions of years for example. That's the problem with waste. We have stuff which can go fairly quickly and so if you're decommissioning a nuclear reactor some of the things finish in weeks, other in 3 or 4 centuries, others millions of years. The other side of the scale is if it has got a very long, millions of years

half-life, it's not going to be very radioactive.

MU: So uranium by comparison is less radioactive?

RC: It's radioactive but nowhere near as radioactive as caesium 137. But again it depends of quantity and what you do with it. Most natural uranium isn't a problem, it's only when it's concentrated, made beneficial that it's a problem.

That's "half-life". Don't worry too much about it. It'll be there for quite a while.


Gamma rays have medical uses, for radiotherapy, in cancer. It's a reasonable radioactive source. Gamma rays also have industrial uses. The main one we are talking about is density measurement. Bombard something with the gamma rays and they bounce back or they spread. And then you measure as they come back or spread. Particular we are looking at density of materials down a bore hole. Coal has a density of almost 1 exactly the same as water. Most rocks have a density of 1.5 or 2. If you put a density meter down a hole you can find out roughly where the coal is and where the non-coal is. It's also used above ground and I haven't checked but I suspect every coal preparation plant would have a density gauge associated with it to check when the coal comes through that it is coal not rock or ash.

That's the uses of Caesium. The downside is gamma rays in the level that we are talking about are cancer causing. At a very high level they can destroy cells but at the level we are talking about they are cancer causing.

### Measuring density.



2

- > Fully-sealed trace quantities of Caesium used in wireline densitometer.
- > Electric charge stimulates the isotope, releasing electrons.
- > Densitometer measures electrons as they pass through fluid, measuring thickness / viscosity.
- > At no time does the Cs-137 source come in contact with the fracturing fluid or any parts of the ground in the vicinity of a natural gas well.



Densitometer being used on Waukivory Pilot Project.

- > Presentation title
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SLIDE 2-

The next slide, the first slide was mine the next was prepared for this meeting by AGL.

The caesium is usually in a capsule. A sealed source, it doesn't come into contact with any materials. If it did come in contact with something you'd get a nice bubbling and that would be good for anyone. The second bit, electrons...that's not quite right... its close enough (*referring to slide*). Measures the electrons as they pass through. At no time does Caesium source come in contact with fracturing fluid. That's terribly important. It merely is a source of gamma rays. When the measuring device is above ground it has a container around it to keep the gamma rays in. It's only when it's

popped down the holes that the source is activated, well available.

MU: So this densitometer that's illustrated here in the image contains caesium and that densitometer goes into the hole

RC: Yes, Yes. It has to go down the hole. The source will be in there \*Points at image\* as it goes down the hole. It'll go right down the hole and hopefully come back up again.

Now this is going further from what I said earlier. At our property in Stratford 23 holes were drilled after much negotiation with the coal company for right environmental things done. We worked in cooperative way with the company. That worked well. If a calf went down and we weren't there we got a phone call. Some of them were local people to fix the calf up themselves so it worked fairly well. Twenty three holes drilled, each 200 metres deep, you will be drilling up to a kilometre deep. So it's slightly less.

MU: 200 metres deep?

RC: 200 metres deep. Drilled on the Clarkes property. I had to stay away a little bit. Most people who had holes drilled, it becomes the other people's site so one doesn't go on in working hours.

I deliberately didn't oversee the activity on the site during the working hours but I did respond to the company on number of matters. They were able to fix them. We had no safety concerns with the caesium 137 sources. The closest ones were just over 200 metres from the property.

They drove back and forwards in the back of the land cruiser ute, close to the house, no worries.



**Highly regulated.**

3

**Relevant regulations.**

- *Code of Practice for the safe use of sealed radioactive sources in bore hole logging (1989), National Health and Medical Research Council (RHS 28)*
- *Code of Practice for the Safe Transport of Radioactive Material, Australian Radiation Protection and Nuclear Safety Agency (RPS 2)*
- *Code of Practice for the Security of Radioactive Sources (2007), Australian Radiation Protection and Nuclear Safety Agency (RPS 11)*

**Certified users.**

- *All technicians certified to handle radioactive material.*

**No incidents.**

*"The EPA is not aware of any incidents or accidents involving caesium-137 and CSG in NSW."  
-Mark Gifford, NSW Environment Protection Agency, January 2015*

> Presentation title  
> Author  
> Date (Verdana 10pt)

Energy in action  
AGL

### SLIDE 3-

This slide is an AGL slide. Talking about their codes of practice. No incidents' - a little bit further into that. The majority of incidents with caesium 137 are medical ones, a ratio of probably 100 to 1. Looking at the data available from ARPANSA over an 8 year period till 2003. Governments are often a bit slow in reporting things.



MU: Sorry you just mentioned ARPANSA? Is that the Australian Radiation Protection and Nuclear Safety Authority?

RC: Yes. Aggregate the state incidents. The majority are that but I will report and one has to be honest about that, that round about one incident a year with bore hole logging occurs in Australia. The incident is usually that the thing gets stuck in the hole. Like everything there are risks associated with anything active you do. Whether the benefit outweighs risk or whether risk is acceptable.

CCC: Richard can I ask. In that situation where it is lost in the whole. What's the typical remedy?

RC: Concrete. You just concrete the hole.

CCC: In that situation will that be sufficient to alleviate any further sort of concerns?

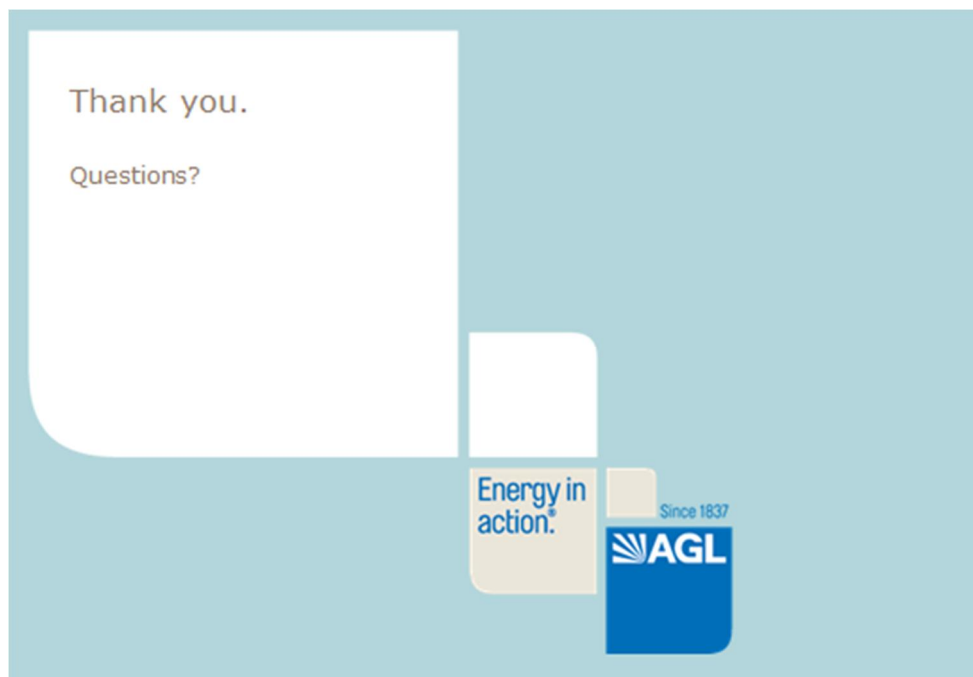
RC: As long as you don't actually go down there again. Eventually it will decay away. So it is not going to be a million year problem. If there was a physical approach to it.

CCC: If it's cemented in a test tube would that then affect water and things around it?

RC: I get to that in the next slide. The gamma radiation itself dies away. It only lasts a short time. It's like when you switch microwave oven off. The radiation stops as soon as it's out there. The enclosure of the source is probably good enough to last for 100 years or so without fracturing or degrading or rusting away. So as long as you don't actually go down there and grab it. It's not a problem.

CCC: Are they tagged or marked? Like gas lines are.

RC: That's the last slide, one of my slides. The industry is well regulated. Heavily regulated. Let's say I put my hand up as a former 40 year public servant. See public servants have got, not quite standard bureaucrats, we actually are concerned about matters we deal with. But whether the EPA has enough resources or not, I don't know. There are certainly regulations there.



SLIDE 4-



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The last slide which is my slide.

Caesium 137 is sealed. It doesn't pop out and it doesn't come in contact with outside material. The gamma rays don't persist they just change to heat, like your microwave.

Each CS source is registered to EPA and must be accounted for. In my time they actually wanted the name of the person not just the company. They wanted to screw down an actual person to account for the source. So it's double barreled, its registered and licenced, two separate things before you can use it. The users in my day use to wear a little badge which would show how much radiation they had. Again no reports of excessive radiation. CS is used widely in mining. There's probably 1000's of down hole bores each year in the mining industry in general. AGL is probably a minor user of them. From what I have seen they use industry people who do the coal mining type work as well.

That's the discussion. I won't say I'm a world expert on radiation. I will say I'm a local person, who has had radiation on site I've had training in radiation safety. I've worked in radiation safety and I've reviewed legislation on radiation safety. It's probably only a small component of my overall OH&S experience and qualifications. But I thought I'd talk to you today as a local person. Come up and talk to me, we are at Barrington or we are in town. Grab us if you want to hear anything.

MU: Thankyou, any questions of Richard?

CCC: Yes I do. The general public don't have same understanding as you and I about radiation. AGL should have said it was out there, we are using it for bore hole logging. Big deal, its bore hole logging and I could have explained it to people. Unfortunately the media grabbed it and ran away with it. I think AGL could have explained that a little bit better. But as a geologist you wouldn't even think about explaining because it's fundamental.

CCC: Richard I was fairly closely involved with the information that came out about this. The scenario somebody put to me was there was concern in QLD. There was caesium turning up in people's water tanks. The theory was it was being used for bore hole logging and regularly lost, then they would come along and frack and frack a hole where the caesium was lost and that would disrupt the capsule and then it would get into the water then somehow it was coming to the surface and getting into the air and raining down on people's houses. That's an interesting story and to this day I don't believe it's been proven. What you are saying to me is that you have real confidence in NSW that they have Codes of Practice in a regulatory environment that's in place would just not prevent that.

MU: Do you mean WOULD prevent it?

CCC: Yes would prevent it.

MU: Thankyou, just for the minutes.

CCC: You're also saying that the loss of these things. One in Australia every year down a hole. So you have got a high degree confidence in the way the regulatory structures are?

RC: Yes.

CCC: Good, I just heard a totally different story and now I feel much more comfortable now. So if I were to go to those three codes of practice and have a quick skim through those all the details about how people have to register the devices, control the devices, that's where all that detail is contained?



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RC: Yes.

CCC: Wonderful, thank you.

CCC: This thing with caesium 137. I have spent days searching for all these things and found all these things. It wasn't needed, because now I know, it's just a tiny thing. If there is a problem and we don't know and we waste time searching and finding information and now we have all this information but it was two months ago.

MU: Any further questions?

CCC: Quickly, backing up on what Aled said that water tank thing, is there likely to be any thread of basis to support anything like that?

CCC: Could caesium work its way into the atmosphere from contaminated water on the ground?

RC: Well of course it could, but it would be so diluted at that stage. We are not talking about huge amounts.

CCC: I think that's the point, it was just detected. It also struck me that after Fukushima, there was a huge plume of this stuff that started rotating around the world possibly. I know it reached the west coast of America. I'm just not sure the process of transfer of material.

RC: Certainly the nuclear tests would provide much more caesium 137. That would so outweigh anything that would happen from a bore hole.

CCC: So that would be one mechanism to get it into the atmosphere?

RC: Yes that would get the caesium into the atmosphere. A little anecdote I saw on the internet, if you want to see if a wine was made before 1945 you just check if it has caesium 137 in it. [If it does, it is younger].

IS: Mr Chairman, further to that comment. I heard a presentation by a member of ANSTO at Lucas Heights. One of the traces that they use in aging water is tritium. Which, if there's tritium in water it's no more than about 60 years old because that was from nuclear testing. That's just one of the traces that appears in extremely minute amounts but I don't know whether I should place on record that we won't take responsibility for Fukushima.

*Richard Clarke presentation finished at 11:49am*

MU: We will move on now to the project update. Alex Kennedy- Clark is again providing our project update.

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Project Update – Alex Kennedy Clark

AKC: As Aled mentioned there's been a lot of developments since the last meeting. So what I have tried to do for you today is really summarise that and give you the highlights of what has happened.

So just to start on the exploration update for the Waukivory Pilot. When we last spoke in early December we were still completing the wells.

Exploration Update

Waukivory Pilot Project

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The four wells have been successfully fracture stimulated and completed.

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Dewatering operations commenced in January.

On 27 January AGL voluntarily suspended the operations at the Waukivory Pilot.

*THPS (aka Tolcide)*

- In January we confirmed the latest water monitoring results show no detected levels of THPS (Tolcide) in groundwater around the Waukivory Pilot Project near Gloucester.
- All surface water results showed THPS levels at less than the limit of detection, with the exception of two; one from upstream of the site and another downstream. However, these results, at 57 and 59 parts per billion, fall within the margin of error limits for the laboratory tests.

CCC: How do you think they got there?

How did that THPS get to 59 and 57 parts per billion. I know it's very small amounts but we have never had that sort of reading south and north of the wells.

MU: Has it been tested for south and north of the wells before the project?

AKC: This on the THPS. There was a sample taken from the Avon River on the 12<sup>th</sup> of November just downstream from the pilot. Just a week after Waukivory 13 was fracture stimulated, that reported 59 parts per billion. At the moment. I guess they are just at really low limits of detection. We don't believe they are related to fracture stimulation that was happening at the time.

MU: One you say was upstream of the site?

AKC: One was upstream and one was downstream.

CCC: I heard that bloke Moraza talk about that and he tried to pass it off as just a measurement error. In your opinion was it likely to be a procedural error in the measurement?

AKC: No, not necessarily a procedural error. My understanding is that the limit of detection is 50 parts per billion with an accuracy of plus or minus 50. So it is just the actual limit of the detection of the laboratories and we are talking about levels of 59.

CCC: Perhaps you can explain that in a bit more detail to people that don't have the same level of understanding.

MU: Can I just ask around the room, do you grasp what Alex is saying?

CCC: Yes

CCC: Can I just ask a further question? Did we have baseline monitoring for this and did we get similar results? Is there ongoing monitoring? Because obviously this result is inconclusive and nothing to be particularly alarmed about. If there was a problem we would expect it to increase as commonly gone. So I presume all that was in place?

AKC: So one of the samples was actually taken before the fracturing had commenced so that is background monitoring. We are continuing to do monitoring.

CCC: That one of the samples that showed 50 plus? That was taken before?

AKC: Correct

CCC: So if it's upstream of the well, that was taken before well was done, is it assumed that it is something that has occurred naturally? I mean downstream the well could be a

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deeper matter but I just want to clarify upstream.

AKC: I guess THPS is a bactericide which has other applications.

CCC: Bacteria developed in the water.

AKC: A bactericide.

MU: Something that kills bacteria?

CCC: It kills the bacteria? Ok.

IS: So it is used in other applications yes. No doubt within this community.

CCC: So it could have been used by a farmer or someone?

AKC: It's not really up to us to speculate.

CCC: How many samples were taken before at that site, upstream and downstream sites? You were doing some testing before as a baseline.

AKC: Correct. I'm not sure exactly how many samples were taken. I think that it's part of the suite of analysis that we are doing.

CCC: That's one problem if you have unusual readings like that, it can happen. If you have lots of samples taken and you have monitoring problems for a while and you have a lot of results. You can clearly say this is an abnormal result. If you just have 1 or 3 or 4 you can't say that.

IS: Mr chairman there were extensive requirements under the conditions. There was testing done in a series prior and after. I think what we need to do is we can provide information.

AKC: This report. When we go through water report there is a report that's due the end of February that will summarize all of these reports and that's being compiled. The answers will come out in that.

The other issue that's been raised is the Monoethanolamine

*Monoethanolamine (MEA)*

- We are still awaiting the results of EPA inquiries into the two readings for MEA, 10 parts per billion (ppb) and 60 ppb from sampling carried out on 20 November at WKSW02 and WKMB02.
- Our baseline monitoring carried out in September and October 2014, prior to the hydraulic fracture stimulation activities being carried out, detected MEA at between two and four parts per billion. It is therefore our view that MEA is naturally occurring in the area.
- The EPA has stated publicly "the levels of this compound were extremely low and are highly unlikely to pose any risk to human health or the environment."

CCC: There is a significant difference in 60 parts per billion and two parts per billion. And if you take the extremes for both it's quite a significant difference. It's more than a standard unit of error. It might very well be naturally occurring. A spike of 60 smaller spike of ten. Ten could be very well be a natural variation and I'd be happy to accept that but 60 is quite significant compared to a baseline of two.

AKC: I guess we can't really comment at this point as it is under EPA investigation.

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CCC: That's ok.

MU: Ray did you say something about Monoethanolamine before, did you say sugar or something?

CCC: I may have I can't remember now.

MU: I thought you said something just then, a minute ago. Do we know what it actually is? Is it a long chain?

CCC: Viscosity.

AKC: It is used to provide viscosity for hydraulic fracturing fluid.

CCC: Perhaps Alex could explain it in laymen's terms. What is actually does. Does it make it thicker? Slipperier?

MU: Viscous means thicker doesn't it

CCC: What does it actually do? In general terms.

AKC: I think it just adds to viscosity.

CCC: Thicker.

CCC: Over here might not understand what viscosity means.

AKC: I'm sure he's seen enough fracking presentations by now to know what that means.

CCC: It's thicker, getting it thicker so the substance is evenly spread in water. More sticky.

MU: Ok thankyou, let's move forward.

AKC: I would also like to point of out that MEA is also a known constituent of mammal urine and is can be associated with agricultural land and bush areas.

The EPA has also stated publicly that the levels of this compound were extremely low and are highly unlikely to pose any risk to human health or the environment. That was a statement that the EPA has released even though they are still finalising their investigation.

On BTEX.

#### BTEX

- AGL voluntarily suspended pilot production testing at its Waukivory Pilot Project on 27 January in response to the detection of BTEX (Benzene, toluene, ethylbenzene and xylene) in samples of flowback water.
- The chemicals were detected in samples taken from two of the four wells and from an above-ground water storage tank.
- BTEX are natural compounds found in crude oil, coal and gas deposits.
- Four samples found BTEX concentrations in the range 12 – 70 parts per billion. The fifth sample found a BTEX concentration of 555 parts per billion.
- BTEX has previously been found in groundwater tests carried out before the commencement of the Waukivory Pilot Project at levels of approximately 30 – 60 parts per billion in the Gloucester Basin.



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- Even the 555 parts per billion detection, as found in one sample, is still below the level for environmental harm to freshwater aquatic life as published by the Australian and New Zealand Environment and Conservation Council (ANZECC) guidelines.
  - AGL can categorically state that none of the hydraulic fracturing fluids used at Waukivory contained any of the BTEX components. This has been confirmed by tests at a NATA-accredited laboratory and the certificate of analysis is available on our website.
  - The detection of BTEX in the flowback water is now the subject of investigations by the Environment Protection Agency and the Department of Resources and Energy.
  - All work on the Waukivory Pilot Project remains suspended until those investigations are complete.
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MU: Do we know what the threshold is Alex?

AKC: No sorry I don't off the top of my head.

MU: Ray?

CCC: No.

MU: Ok.

AKC: But it is below that number and I guess that is the key point.

CCC: Can I be cynical and say, can you categorically prove that?

AKC: This is also the subject of an EPA investigation and I'm sure that's one of the matters the EPA will be investigating.

CCC: I don't doubt your integrity but I do have severe reservations with having a rather appalling record across this project

CCC: Was any of the fracking fluid used on any more than one hole? Was fracking fluid that was used for the first frack, was that reused on the second, third or fourth fracks?

AKC: No.

IS: No it can't be.

CCC: Or on different holes?

AKC: No.

CCC: Always made fresh for every frack.

AKC: Correct. That's when you have to get the flow back water out. You need to pump it into each hole and have a fresh batch of the fluid pumped into it.

CCC: Yes but I mean, you fracked the first hole and you did that five times or several times. By the time you got to the last hole that fracking fluid that was used in the first hole that had already been pumped out couldn't have been reused for a second time?

AKC: No

IS: No

CCC: I've got another question. Because there were five samples and two were from wells and there I assume one was from the tank. This one with the high reading was it

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from the well or from the tank?

AKC: It was from the well.

AKC: As we've noted this is subject to a Department of Resources and Energy and an EPA investigation which is currently underway. As we heard from Aled earlier there was a presentation from the department about that yesterday. Those investigations are ongoing at the moment.

CCC: Just for the information. It was confirmed yesterday that both DRE and the EPA tested independently, and yes there are elevated BTEX levels at a number of locations. It was also very clear to us that the person conducting the investigation is a former senior police officer. She said she is going to be very highly focused on how to investigate and establish the facts of where this BTEX originated from. At the end of the investigation I as a councillor am confident that we have got someone who is capable of providing us with good information. So I am pretty confident.

MU: I'm pretty sure Lee's role was running the Hunter Local Command if not higher than that.

CCC: She was a Commissioner for North Coast.

CCC: Aled, can I just ask, what are your comments on allegations by other parties that she's not the appropriate person to conduct an investigation?

CCC: We did not select Lee. Council has expressed its confidence in Lee by suggested to the minister that that is one of the conditions under which the licence should be suspended. We are saying we are looking forward to that report; we have faith that she is going to work in good faith and provide us with good information. We expressed that to her collectively yesterday. We did talk about the allegations; she explained where they arose from. From my personal perspective I have no issue with that at the moment. My personal view is that I have a lot of confidence in Lee to conduct a thorough, independent and fact based investigation. That's what she intends to do, that's what she indicated.

CCC: Mr Chairman can I ask to Alex, finding 70 parts per billion in your core log. Do you have an opinion as to why there would be such a high spike in the water? It's a lousy question to ask you but I'm curious as to why that should happen. And if you understand why it happens it makes it so much better.

AKC: I think until this whole investigation is bedded down, and we are doing our own independent investigation alongside the department investigation. We can come back to talk about what our theories are around this.

CCC: Will you email member of the CCC? With that information.

AKC: I think it probably requires more than an email Ray.

MU: Alright, let's move on.

#### Water disposal

- Worth [Worth Recycling Pty Ltd] - As has been reported in the media, Worth are no longer taking our flowback water from Gloucester. They transported and treated our flowback water for a five day period from 5 January to 9 January.
  - We currently working to secure another EPA-accredited waste

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treatment facility to take and treat future flowback water.

- Currently no flowback water is being pumped due to the Waukivory suspension

CCC: Can I ask what the EPA sampling obviously approved, partial flowback. So that's just being stored in the aboveground tank?

AKC: Correct. That was approved in order for them to take their independent samples

CCC: In the tank at the moment.

AKC: Correct.

#### Further Exploration Pilot Programs

REF is currently being prepared for an exploration pilot in the Wards River area. We had a community information session around this at Wards River two weeks ago, and provided information to the community.

#### Stage 1 Project Update

##### Preliminary Draft Environment Management Plans (EMPs)

The project approval is subject to a number of conditions that AGL must comply with. Under those conditions AGL is required to prepare a construction environmental management plan incorporating a number of sub-plans that deal with specific environmental issues. The plans detail out how AGL (or its contractor) will manage environmental impacts during construction.

The preliminary draft Environmental Management Plans were made available for community feedback from Wednesday 4 February 2015 for two weeks, with submissions closing on Wednesday 18 February 2015. AGL will review community feedback and revise the EMPs.

MU: We emailed through to the CCC about those plans as well.

CCC: Mr chair can just I note that at this stage we did discuss this at council yesterday. There was a general feeling that the two week period was very a tight period for people to comment. We have had a very similar comment from Midcoast water. Just for Alex's and AGL's information I think we will be requesting to AGL that they extend that.

AKC: I guess I would also like to note that there is no requirement for us to put those documents on public exhibition. We actually did that as it was a request from the Gloucester Dialogue that we made those documents public. They are very preliminary drafts. Those documents will only be finalised once our construction contractors are appointed.

CCC: I'll probably just make a further point about our concern and where we are coming from, there are major implications for council and we did want to have some quality input into those plans. We were just not sure there would be another opportunity to do that.

AKC: I guess the fact that public exhibition has closed for the documents, doesn't mean we won't be communicating further with council.



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## Pipeline

The last few remaining easement agreements for the pipeline are being executed on 19 and 20 February 2015.

CCC: Does that mean they are in court?

AKC: No that means they are being signed.

The pipeline licence application has been finalised and submitted to the Department.

It is expected that a brief will be provided by the Department to the Minister by the end of this week.

The next step will be for the Minister to grant the pipeline licence.

## Water Update – Alex Kennedy Clark

AKC: So the water update you will see there is some text in Italics. This represents items to come in the future. Just for clarity.

### Period

From late December 2014 to present with upcoming items (to occur after 19 February 2015) shown in italics.

### General

- Water portal telemetry now live for groundwater and surface water data at Waukivory. Visit:  
<http://www.agl.com.au/about-agl/how-we-source-energy/natural-gas/water-portal>
- Water quality data sets required under our EPL are now published on AGL main website under:  
<http://www.agl.com.au/about-agl/how-we-source-energy/monitoring-data>  
(note these data reports are comprehensive and reports are split into Irrigation Program reports and Waukivory Pilot reports)

### Groundwater Investigation Program:

1. Groundwater monitoring program:
  - Ongoing quarterly (water level) monitoring program across whole network (Sep, Dec, Mar, and Jun).
  - December quarter monitoring update to be released in coming weeks.
  - *Next (regional) monitoring bore water sampling program will be in March 2015*
2. Waukivory Pilot Testing Program:
  - All monitoring bores and surface water gauge sites are operational and data available via Water Portal (including two new monitoring bores completed on the Avon River floodplain (east of the river and just north of the confluence with Waukivory Creek)
  - Fracture stimulation and flowback water quality monitoring occurred in

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December and January (as per the EPL and the Surface Water and Groundwater Management Plan).

- WKmb05 (deep groundwater monitoring bore) is operational.
  - *A quarterly report detailing water quality and level trends for Waukivory Pilot for the period 1 September to 31 December will be issued by the end of February 2015.*
3. New drilling programs and monitoring network expansion:
- New monitoring bore perforated and completed at Wards River.
  - *New monitoring on bore site towards Weismantels planned for drilling and completion later in 2015.*
4. Other investigation water studies:
- No new investigations.
  - Release of the following technical reports since December:
    - *2014 monitoring report for the Craven 06 flow testing program is due in coming weeks.*
5. Numerical modelling:
- Phase 3 numerical groundwater modelling ongoing – two models: local scale (fault) model and regional model (whole basin) under way.
    - *Local scale modelling mostly complete (Final draft report expected mid 2015 after initial Waukivory testing program results).*
    - *Regional model under way (Draft report expected mid-late 2015 after additional work programs).*
    - *Note that the timing for the numerical modelling is dependent on the recovery of flowback water and the commencement of the pilot testing program (NB minimum of 3 months of depressurisation and produced water data from the gas wells/monitoring bores is required for modelling purposes)*
    - *The GSC flood study is not an input to the groundwater modelling studies as it provides no useful data on groundwater flow processes*
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AKC: I'd just like to note here that the timing for the numerical modelling is dependent on the recovery of flowback water and the commencing of the Pilot Testing Program. We did a minimum of three months for depressurisation and water data from the gas wells and monitoring bores or modelling purposed. And also I'd like to clarify something that came up at the last meeting, the Gloucester Shire Council flood study will not be an input into the ground water modelling study as it does not provide useful data on ground water and flow processes.

Tiedman Irrigation Program:

- Approval to extend the program to 30 April 2015 granted.
  - Blended water irrigation ongoing with remaining small volumes.
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- Water and soil monitoring programs are ongoing (*next water sampling event is February and soil sampling event is May 2015*).
  - *Water and soil monitoring program reporting underway for current 6 months – reports due by end of February*

CCC: Is there any flow back water, reduced water being pumped up from the Waukivory Pilot at this stage?

AKC: No. We need to get all the flow back water out before we produce produced water. So not at this stage.

CCC: Is there no flaring currently either?

AKC: The wells are switched off, so no.

#### Extracted Water Management Strategy

- Desalination strategy for the GGP extracted water reannounced in late July (exploration produced water will continue to be blended and irrigated).
- Currently preparing Final Draft for Agency/Council review.

MU: Thankyou Alex. Any final questions of Alex?

CCC: The extracted water management stuff. You have got that the draft is in being prepared. Is there any time frame?

AKC: Not at the moment.

AKC: The only other thing I would like to mention which Aled obviously already mentioned. The fact that Mike Moraza retired effective yesterday. That's been in the media so just want to mention that. There will be, as was reported, a comprehensive review of the whole of the upstream gas business by Scott Thomas. He has been the Manager for AGL Macquarie and the integration of AGL Macquarie. Scott will be doing a review for the next three months. Also just to note that our new CEO Andrew Vessey is quite supportive of the upstream gas business and what we are doing and the potential that it has for future value for AGL and for Gloucester. The future potential gas supplies into NSW, into AGL's NSW gas customers.

CCC: Mr Chairman, since the matter of the CEO has come up. Has the CEO actually been to Gloucester?

MU: The new CEO?

AKC: Yes he has.

CCC: He has been here?

AKC: Yes.

CCC: Would have been very nice to have talked to locals while he was here.

IS: Mr Chairman it was a very brief visit to introduce him to staff.

CCC: I think I could have made myself available at short notice.

IS: I'm sure you will receive an opportunity at some stage.

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MU: Alright we will move on.

CCC: Can we request to Invite him to come to the CCC?

CCC: I'd be happy to put a motion to invite him.

CCC: I second that.

MU: Alright any discussion? All those for? Any against? Alright so the CCC would like to extend an invitation to the new CEO to address the CCC at an appropriate time.

MU: The next item was reviewing membership of the CCC but we will hold that over to the special meeting. I would like to acknowledge that we received a resignation over the Christmas break as you would be aware. So it is appropriate to look at membership at this time. I did respond to Gerald and thank him for his time and effort and his contribution to the forum.

Action: CCC invites the new CEO to address the meeting.

General business is the next item.

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#### 4. General Business

MU: I'd just like to start this by responding to something Aled said earlier. I don't think that these meetings are a total waste. I think that these people that put their time and effort into this, I'm sure that sometimes it might be frustrating with finding time and dealing with the tension. But the tension is a necessary part of this forum. I think robust discussion is important. I'm very pleased we remain civil while we do that.

I'd like to say that there is more than one council affected by this project. Gloucester is a major stakeholder in this but Dungog and others are also involved so we should keep that in mind. I'd just like to put on that on the record.

CCC: Can I respond. My apologies if I offended. That was not the intention. Yes obviously I really appreciate effort that everybody is putting in. I do think the discussions are frank. My frustration related to how we can be more creative and actually move things forward. My apologies. I meant absolutely no dispersions cast on anybody's intentions.

MU: Just around the room I will call for any general business.

CCC: Yes Mr Chairman. I would like to know what AGL have actually found out about the faults. The Waukivory project sits right over the top of one of their major headaches. Rick Evans may have found 20 flaws or 20 recommendations depending on what side of the fence you are sitting on. I am personally interested in the science.

MU: The geological faults we are talking about?

CCC: Yes.

MU: So you'd like more information about that?

CCC: What has AGL found out about that? And what information have they found out to address each of those recommendations made by Dr Rick Evans?

CCC: I heard Mr Moraza speak in Gloucester and he didn't even mention it. I found it in retrospect quite insulting to the community and I'll place that on record. He'd stand at a meeting and say that there are no problems. I have no respect for the man what so ever. If he said yes we have got problems and we will sort them out. Mike Rose for example has a different approach and I spoke to him and consequently I have a great

AGL: Waukivory Project: What has AGL found out about the faults? What information



deal of respect for Mr Rose.

MU: Rose?

CCC: Mike Roy sorry

CCC: There is no point in having the experiment if you don't learn anything from it. Just getting gas out of a hole doesn't interest me in the slightest. I want to know how the fracking has affected the faults and will it remain an ongoing problem?

AKC: Ray that is something we are very keen to find out about. One of the key recommendations from Rick Evans was that we conduct the Waukivory Pilot.

CCC: And that's the ideal place to put it. But you picked worst possible place to do it.

AKC: We need to complete the testing of Waukivory Pilot in order to be able to answer questions. That includes getting flow back water out and getting produced water out and understanding what the impacts are and that will be responded to when we have the data.

MU: Any further general business around the room?

CCC: One quick question that I am happy to just put on notice. Are there any likely material risks associated with not removing flow back water immediately or as planned? It's a question that we are going to be asked.

CCC: One thing that worries me is if flow back water is sitting in those tanks. How full are those tanks?

IS: We will have to take that on notice.

CCC: There is a Large amount of rain coming down, I don't think we will get an awful lot but I'd hate to see those tanks float down stream.

AKC: So are you worried about there not being enough water in the tanks?

CCC: Well yes. They might get washed away.

AKC: You are not worried about the overflowing?

CCC: No not that just floating down.

MU: Ok now the item that we adjourned to general business was finding time for our extraordinary meeting. Given that it is 12:30 now I will try and do this by email.

*No further business was raised.*

Next meeting

Extraordinary Meeting (19 March) 2015 10:00am-12:00noon

Next ordinary meeting April 16 2015 10.00am-12.00noon

*Meeting Closed at 12:36pm*

Michael Ulph

GHD – Stakeholder Engagement

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have you found out to address each of the recommendations made by Dr Rick Evans?

How has the fracking affected the faults and will it remain an ongoing problem?

AGL: Are there any likely material risks associated with not removing flow back water immediately or as planned?

AGL: If flow back water is sitting in the tanks. How full are the tanks?



ACTION ITEMS	
Action	Responsibility
Re-send Café Dialogue invitation to Ray Dawes.	Michael Ulph - Actioned
Invitation to be extended for new CEO Andrew Vessey to attend a future CCC meeting.	AGL
Waukivory Project: What has AGL found out about the faults? What information have you found out to address each of those recommendations made by Dr Rick Evans? How has the fracking affected the faults and will it remain an ongoing problem?	AGL
Are there any likely material risks associated with not removing flow back water immediately or as planned?	AGL
If flow back water is sitting in the tanks. How full are the tanks?	AGL
Organise extraordinary meeting time. 26 <sup>th</sup> March 10am TBC (NB: this became 19 March).	Michael Ulph