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3 May 2013

Ms Sophie Dunstone
Committee Secretary
Senate Standing Committee on Environment and Communications
Parliament House
CANBERRA ACT 2600

Dear Ms Dunstone,

Re: Submission to inquiry into the water resource trigger proposed in the *Environment Protection and Biodiversity Conservation Amendment Bill 2013* and answers to questions on notice

The purpose of this submission is to supplement the oral submissions that I made to the Committee when I appeared by telephone on 17 April 2013 at the inquiry into the *Environment Protection and Biodiversity Conservation Amendment Bill 2013* (the Bill).

I am a barrister and a senior lecturer in environmental regulation at The University of Queensland.[1] I hold a BSc in ecology, an LLB, LLM and PhD. The topic of my PhD was, "How to evaluate the effectiveness of an environmental legal system".[2] I have acted as a barrister in litigation under the EPBC Act[3] and involving Queensland's mining, planning and nature conservation laws. I have published several articles regarding the EPBC Act[4] and in 2006 I was asked by the Australian State of the Environment Committee to evaluate the effectiveness of the Act.[5]

The Bill proposes to amend the *Environment Protection and Biodiversity Conservation Act* 1999 (Cth) (EPBC Act) to create a new matter of national environmental significance (MNES) for coal seam gas (CSG) and large coal mining developments which are likely to have a significant impact on a water resource in ss 24D and 24E. The new trigger will form part of the existing referral, assessment and approval system under Parts 3 and 6-9 of the Act. The Bill also proposes to amend s 46 of Part 5 of the Act to prohibit the creation of an

[1] This submission does not represent the views of The University of Queensland.
[2] My thesis is published as McGrath C, *Does environmental law work? How to evaluate the effectiveness of an environmental legal system* (Lambert Academic Publishing, 2010), available at http://www.envlaw.com.au/delw.pdf
[3] Including: *Booth v Bosworth* [2001] FCA 1453; (2001) 114 FCR 39; (2001) 117 LGERA 168 (the Flying Fox Case); and *Minister for the Environment and Heritage v Queensland Conservation Council Inc* [2004] FCAFC 190; (2004) 139 FCR 24; (2004) 134 LGERA 272 (the Nathan Dam Case).
[4] Including: McGrath C, "Bilateral agreements – are they enforceable?" (2000) 17 *Environmental and Planning Law Journal* 485; McGrath C, "The Queensland Bilateral" (2002/2003) 8(38) *Queensland Environmental Practice Reporter* 145; McGrath C, "Key concepts of the Environment Protection and Biodiversity Conservation Act 1999 (Cth)" (2005) 22(1) *Environmental and Planning Law Journal* 20; and McGrath C, "Flying Foxes, Dams and Whales: Using Federal Environmental Laws in the Public Interest" (2008) 25(5) *Environmental and Planning Law Journal* 324.
[5] McGrath C, "Review of the EPBC Act", paper prepared for the 2006 Australian State of the Environment Committee, Department of Environment and Heritage, Canberra, available at http://www.deh.gov.au/soe/2006/emerging/epbc-act/index.html

approval bilateral concerning the new trigger, thereby ensuring that Commonwealth oversight is maintained for it.

In summary, I support the Bill's proposed new trigger and the prohibition to enter approval bilaterals with States under the EPBC Act for two main reasons:

1. The new trigger will make an important contribution to the key function and benefit of the EPBC Act in practice of providing an appropriate level of oversight of State government approvals impacting on the environment. The enormous and rapid development of CSG in particular, and the associated impacts on groundwater systems such as the Great Artesian Basin, is a major new pressure on the Australian environment and is legitimately of national environmental significance requiring a response from the Commonwealth. In Australia's federal system of government the Commonwealth has a legitimate oversight role in protecting the community from environmental degradation. Experience under the EPBC Act since its commencement has shown that it can play an important role in overseeing State government decisions. The need for Commonwealth oversight for water resources affected by CSG development was illustrated by the recent reports on ABC Four Corners concerning the poor decision-making processes followed in relation to two major CSG projects in Queensland.

2. The new trigger is unlikely to cause significant additional costs or delays for industry. The current system in the EPBC Act of initial screening of referrals[6] and assessment bilaterals is operating efficiency and does not significantly add to the cost or timeframes for approval of projects under Commonwealth, State and local government laws. It is important in this context to recognize that State and local government approvals are far more numerous than EPBC Act approvals and their requirements are typically far more extensive, costly and time-consuming than those imposed by the EPBC Act even with the new trigger.

The main aspect of the Bill that I do not support is the unnecessary limitations in ss 24D and 24E to applying the new MNES to constitutional corporations, the Commonwealth or a Commonwealth agency, actions taken for the purposes of trade or commerce, and actions taken in a Commonwealth area or a Territory. However, these limitations will not materially impact on the operation of the new trigger because, in practice, all large CSG and mining operations are undertaken by trading corporations such as Rio Tinto, Xstrata, and Santos, which will be captured under it.

I will address the reasons why I support the Bill in more detail below after commenting on other submissions to the Committee.

Comments on other submissions to the Committee

I note that the Committee has already received many submissions from industry, the community and government bodies and I have had the advantage of reading many of those. I note in particularly that:

- I support the submission of the Australian Network of Environmental Defenders Offices (ANEDO) of 4 April 2013 (submission No. 46) and the recommendations made by it;

[6] Under sections 74B, 75 and 77A.

- I do not agree with the concerns raised by the NSW Irrigators Council (submission No. 1) regarding the constitutional validity of the trigger or the test of "significant impact".

- I do not agree with the submission of the Association of Mining and Exploration Companies (AMEC) of 4 April 2013 (submission No. 20) that current state and territory-based regulatory arrangements are adequate.

- I disagree with the submission of the Australian Petroleum Production and Exploration Association (APPEA) of 7 April 2013 (submission No. 47) that current regulatory systems are adequate and that the "introduction of a water trigger adds duplication and inefficiency for no benefit at a time when clarity and investor certainty are required."

- I disagree with similar criticisms of the Bill made by the Business Council of Australia (BCA) submission of April 2013 (submission No. 48) and that the "Bill is fundamentally bad law born of a poor regulation-making process."

- I disagree with the AGL Energy submission of 10 April 2013 (submission No. 202) that there is "no scientific evidence or economic rationale to support the need for the Proposed Amendments", "The Proposed Amendments [unnecessarily] duplicate State Government processes", "There is no need for the Proposed Amendments, given that the Federal Government already has the power to regulate the impact of CSG projects on water resources under the existing regime of the EPBC Act," and "There is considerable uncertainty in the drafting of the provisions of the Bill".

- I disagree with the criticisms of the Bill made by the Minerals Council of Australia (MCA) in it submission of 12 April 2013 (submission No. 222) suggesting that the new MNES is an "unnecessary encroachment of Commonwealth powers into State jurisdictions, raising concerns of sovereign risk – clear Constitutional responsibility for the management of waters rests with the States" and the other criticisms made by the MCA.

- I disagree with the submission of the Australian Coal Association (ACA) of 12 April 2013 (submission No. 224) that the Bill adds unnecessary duplication to state processes.

I note that a common feature of the submissions of the AMEC, APPEA, BCA, MCA and ACA is the lack of evidence that they provide to support their claims of adequate state processes and extra costs and delay being imposed by the EPBC Act.

Need for Commonwealth oversight

Last month the Queensland Premier, Campbell Newman, was reported to call for the Commonwealth to remove itself from regulating activities in the States:

> "CAMPBELL Newman has rejected the concept of 'co-operative federalism', saying intergovernmental relations should start with every state's right to seek a competitive advantage over each other, using lower taxes and less regulation to attract business and secure investment."[7]

[7] McKenna M, "State against state: Campbell Newman's federalism" *The Australian*, 12 April 2013, http://www.theaustralian.com.au/national-affairs/state-politics/state-against-state-campbell-newmans-federalism/story-e6frgczx-1226324307482.

This Committee recently criticized previous submissions by the Queensland Premier calling for "competitive federalism".[8] The Premier's concept of States' rights reflects the reserve powers doctrine that was rejected by the High Court nearly a century ago as the wrong basis upon which to interpret the division of powers in the Constitution.[9] It reflects a very narrow and misguided view of Australia's federal system of government.

Similarly, the MCA's submission that "clear Constitutional responsibility for the management of waters rests with the States"[10] reflects the reserve powers doctrine that was rejected a century ago.[11]

In Australia's federal system of government the Commonwealth has an important and legitimate role in overseeing State government decisions, including decisions concerning the environment. This role is reflected in the EPBC Act, which has a key function and benefit in practice of providing an appropriate level of oversight of State government approvals impacting on the environment. Two examples from the operation of the Act since 2000 illustrate the importance of the Commonwealth's role: refusal of the Traveston Crossing Dam proposed by the Queensland Government in 2009[12] and refusal of cattle grazing in the Victorian high country proposed by the Victorian Government in 2012.[13] In both of those cases the EPBC Act played a crucial role in stopping highly damaging projects that had been approved by State governments.

The need for Commonwealth oversight of the impacts of large mining and CSG projects was highlighted on ABC Four Corners on 1 April 2013 concerning the poor decision-making processes followed in relation to two major CSG projects in Queensland, the Santos GLNG and the QCG QCLNG projects.[14]

The evidence presented in the ABC Four Corners program on 1 April contradicts the submissions made to the Committee by AGL Energy on 10 April 2013 (submission No. 202) at least in relation to the adequacy of Queensland's assessment of groundwater impacts of large CSG projects. AGL Energy submitted to the Committee:

> *2. Duplication of State Government environmental approvals processes*
>
> The Proposed Amendments represent an unnecessary expansion of the Commonwealth's jurisdiction because it is additional to rigorous State Government environmental approvals processes that project proponents must adhere to. AGL owns or has significant interests in CSG exploration or development sites in New South Wales and Queensland, so can comment with good authority on the environmental approvals processes in both States.
>
> Mandatory environmental approvals processes in both States require CSG project proponents to undertake full assessments of the likely impact of projects on surface and ground water. Significant CSG projects in Queensland are governed by the *State Development and Public Works Organisation Act 1971* and the *Environmental Protection Act 1994*. ...
>
> The Government has not demonstrated any deficiencies or weaknesses in current environmental approvals regimes which need to be addressed through the Proposed Amendments. Nor has it demonstrated any way in which the Proposed Amendments strengthen (as opposed to merely duplicate) existing processes in such a way as to lead to superior environmental outcomes that outweigh the

[8] Environment and Communications Legislation Committee, *Environment Protection and Biodiversity Conservation Amendment (Retaining Federal Approval Powers) Bill 2012* (Australian Senate, March 2013).
[9] In *Amalgamated Society of Engineers v Adelaide Steamship* (1920) 28 CLR 129 (the Engineers' Case).
[10] Submission No. 222.
[11] In *Amalgamated Society of Engineers v Adelaide Steamship* (1920) 28 CLR 129 (the Engineers' Case).
[12] EPBC 2006/3150.
[13] EPBC 2011/6219.
[14] The program may be viewed at http://www.abc.net.au/4corners/stories/2013/04/01/3725150.htm. Similar reports appeared in the *Courier Mail* on 11 February 2013, pp 1-3. Note: Those decisions were taken by the former Labor Government, not the current Premier's government.

> increased regulatory compliance costs faced by project proponents, and the long term impact on the economy and community.

Contradicting this submission by AGL Energy, in the ABC Four Corners program[15] on 1 April 2013 a former employee of the Queensland Coordinator-General's Office, Simone Marsh, spoke of how she attempted to raise serious concerns about the lack of information on ground water impacts from the CSG components of the Santos GLNG project but was over-ruled apparently due to pressure to approve the project. Similar issues and poor decision-making were also evident in relation to the CSG components of QCLNG project. The ABC summarised her points as follows:

> Senior environmental specialist Simone Marsh was part of the Queensland Government team that approved Santos's $18 billion and Queensland Gas Company's (QCG) $20 billion LNG projects in 2010.
>
> She told Monday night's Four Corners program that the final stages of the three-year approval processes were rushed and the environmental impacts not properly assessed.
>
> 'All the scientific arguments in the world wouldn't have changed things in that situation,' she said.
>
> 'They had decided they wanted to go ahead with the projects and there was nothing stopping it.'
>
> In 2010, during the final stages of the three-year approval process - after assessing the environmental impact statements (EIS) and supplementary materials ahead of the Coordinator-General's report - she repeatedly raised concerns about the lack of key information in the documents.[16]

I attach as Appendix 1 a transcript of the Four Corners program with Ms Marsh's interview highlighted. She said of the concerns that she raised with the Queensland Coordinator-General's office regarding the lack of groundwater information in the Santos GLNG environmental impact statement (EIS):

> SIMONE MARSH: I was taken into a meeting room, sat down and told that there wasn't going to be a chapter on groundwater and I was ... stunned.
>
> I said "What are you talking about? What do you mean there's not going to be a chapter on groundwater? It's one of the biggest issues for the project".
>
> And he just repeated the words that there was not going to be a groundwater chapter in the Santos Coordinator General's report and wouldn't give me any reason why or why not.
>
> …
>
> MATTHEW CARNEY: On the 28th of May, the Coordinator General at the time, Colin Jensen, delivered his report on the Santos project.
>
> There was no ground water assessment, only a half a page dealing with policy and legislation. But surprisingly the Coordinator General said "he was not convinced that there was sufficient detail...to determine impacts on environmental values."
>
> After reviewing Santos' Environmental Impact Statement and its supplementary, the Coordinator General called on Santos to provide 10 key reports, including comprehensive water management plans for the next phase of approval.

The fact that critical information on the groundwater impacts of the GLNG project are self-evident in the Coordinator-General's report in 2010 on the environmental impact statement for it. The Coordinator-General stated in relation to groundwater:[17]

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[15] I note that I was interviewed for and appeared in that program regarding legal issues.

[16] Karen Michelmore and Connie Agius, "'Critical information missing' from LNG approvals" (ABC, 1 April 2013), http://www.abc.net.au/news/2013-04-01/key-information-missing-from-lng-approvals/4603026

[17] Extracted from the *Coordinator-General's evaluation report for an environmental impact statement Gladstone Liquefied Natural Gas—GLNG project Under Part 4 of the State Development and Public Works Organisation Act 1971* (May 2010), available at http://www.dsdip.qld.gov.au/assessments-and-approvals/gladstone-liquefied-natural-gas.html.

7.2 Gas field development reports

As discussed in previous sections, **I am not convinced** that there is sufficient detail in the draft EIS and SEIS on the design construction layout and location of the gas field infrastructure, in order to determine with some degree of accuracy the impacts on environmental values in the gas fields. The content of the EIS and SEIS is furthermore not sufficient to provide the necessary detail required by the legislation in applications for environmental authorities for petroleum and gas tenures.

Addressing the field development program that is intended for the gas fields is a major activity since it is clear from the SEIS that activity to date is mainly desktop research and reported on in the SEIS Attachment D5. Despite the constraints mapping which has been presented, there is no field development plan showing positions of the infrastructure, and the details of the disturbance which may be occasioned on regional ecosystems.

Further assessment of the additional material that DERM requires, indicates to me that a series of reports must be prepared as assessment material, to me and to DERM during the course of the process for obtaining and implementing the environmental authority for the gas fields.

The matters on which **I shall require** reports are the following:

1. With the application for environmental authority

- Gas field cumulative impacts assessment report
- Ecological constraints Planning
- Coal seam gas water management plan
- Brine Management Plan
- Environmental Offsets program

2. Prior to commencement of petroleum gas field activities

- Water quality monitoring program
- Regional groundwater model
- Groundwater and springs impact assessment
- Operational plans
- Water quality and soil monitoring plan

Despite the lack of such critical information, the Queensland Coordinator-General recommended approval of the proposed project.

By way of context, it should be noted that the Coordinator-General's report is the final step in the EIS process under the *State Development and Public Works Organisation Act* 1971 (Qld) (Figure 1) and concludes the Coordinator-General's formal oversight of the project. The process the Coordinator-General followed in recommending approval of the Santos GLNG project while critical information was missing is clearly a very poor decision-making process.

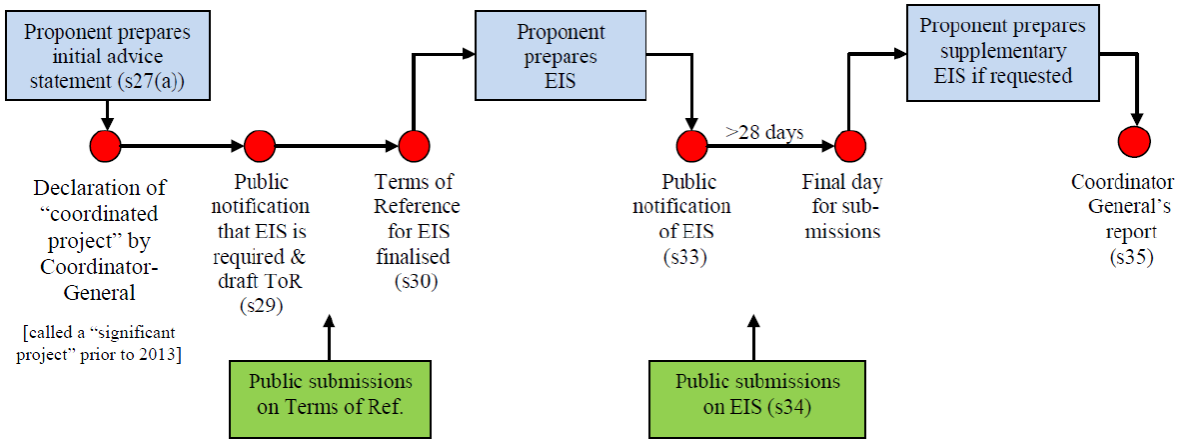

Figure 1: EIS process under the *State Development and Public Works Organisation Act* 1971 (Qld)

The evidence of the poor decision making process in the Santos GLNG project indicates that there is a need for Commonwealth oversight for water resources affected by CSG development, which the Bill proposes to provide.

New trigger unlikely to cause significant additional cost or delays

In addition to appropriately responding to a need for federal oversight, the new trigger proposed by the Bill is unlikely to add significantly to costs and delays for projects. I note in this regard that there is a contradiction in the submissions to the Committee that claim there is no need for the trigger (because State processes are adequate) while also claiming that the new trigger will add to costs and delays. If State assessment processes are doing a good job of assessing groundwater impacts of CSG and mining projects, then there should be little additional costs or delay in providing that information to the Commonwealth to review.

It should be noted in this context that the current system of screening referrals and assessment bilaterals under the EPBC Act is very efficient. The initial screening of referrals under sections 74B, 75 and 77A as alternatively: clearly unacceptable; controlled actions; not controlled actions; or not controlled actions if taken in a particular manner, is a very efficient way of quickly disposing of actions that do not require further approval. For example, the interim report of the Hawke Review noted that from the commencement of the EPBC Act on 16 July 2000 to 30 June 2008 there were 2,696 referrals of which:

- 603 actions (22%) were found under section 75 to be controlled actions and required approval under the EPBC Act;
- 447 actions (17%) were found under section 77A to be not a controlled action provided the action was taken in a particular manner;
- 1,518 actions (56%) were found under section 75 to be not a controlled action and accordingly did not require approval under the EPBC Act.
- One action was found to be clearly unacceptable under section 74B.[18]

Generally, the timelines of decision-making under the Act are in accordance with the statutory requirements[19] and, therefore, the majority (76%)[20] of referrals are decided within a few weeks of being made. It is only the 22% of referrals that are determined to be controlled actions that proceed through the assessment and approval stages.

Wandoan Coal Mine case study

The Wandoan Coal Mine provides a good case study of a typical, large project assessed under the EPBC Act and State laws. Appendix 2 shows a timeline of the assessment of the mine under the EPBC Act and State laws. Note that:

- The mine began its approval process under State laws in May 2007;
- The project was referred under the EPBC Act in June 2008;[21]
- It was assessed concurrently under the EPBC Act and State laws under an assessment bilateral;

[18] Hawke A, Bonyhady T, Burgman M, Stein P and Warnock R, *Independent Review of the Environment Protection and Biodiversity Conservation Act 1999: Interim Report* (Department of the Environment, Water, Heritage and the Arts, 2009), p 56.

[19] The Auditor-General, *Performance Audit: Referrals, Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999* (Audit Report No.38 2002–03, Australian National Audit Office, 2003).

[20] Combining the 17% determined to be not controlled actions if taken in a particular manner and the 56% determined to be not controlled actions for 2000-2008 in Hawke et al, n 18, p 56.

[21] EPBC referral No. 2008/4284.

- It was approved under the EPBC Act in March 2011 – a process that took nearly 3 years; and
- It still has not received approval under all State laws as at 20 April 2013 – a process that has taken nearly 6 years and has not yet finished.[22]

The 14-volume EIS prepared for the Wandoan Coal Mine is also noteworthy in illustrating the State-level requirements for consideration of impacts of a large mine including impacts on groundwater.[23] The potential for serious groundwater impacts lead to many objections from affected landholders and this was considered in detail in later proceedings in the Queensland Land Court which delayed the approval process for 18 months.[24] Decisions under the EPBC Act cannot be challenged on their merits in such a way. In these circumstances, adding consideration of groundwater under the EPBC Act for a large mine such as this will be unlikely to add additional time or expense to the assessment provided that the State-level assessment is adequate. If the State-level assessment is inadequate, it is entirely appropriate that the EPBC Act will add whatever additional costs and delay are required to ensure that adequate assessment is made of the impacts of the project.

The Alpha Coal Mine is a similar example where Commonwealth approval under the EPBC Act was granted in 2012, some 12-18 months ahead of State-level approvals (despite the erroneous criticisms of the Queensland Premier accusing the Commonwealth of delaying the project).[25] The Alpha Coal Mine is currently the subject of an objections hearing in the Land Court of Queensland and set for a three-week trial in September 2013 in which groundwater impacts is one of the major issues in dispute.[26] That mine is unlikely to be approved at a State-level until sometime in 2014 if at all.

The process for the Wandoan Coal Mine and the Alpha Coal Mine approvals are typical of large projects and this means that in practice the EPBC Act is not materially delaying projects proceeding beyond the time taken for State-level approvals.

Conclusion

I support the Bill's proposed new water trigger and the prohibition to enter approval bilaterals with States under the EPBC Act. The need for Commonwealth oversight for water resources affected by CSG development, in particular, was illustrated by the recent reports on ABC Four Corners concerning the poor decision-making processes followed in relation to two major CSG projects in Queensland.

I do not request that this submission be kept confidential and I consent to it being published.

Kind regards

Dr Chris McGrath

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[22] See Xstrata Coal's website at http://www.wandoancoal.com.au/EN/PROJECT/Pages/ProjectApprovals.aspx

[23] The EIS is available at http://www.wandoancoal.com.au/EN/PublicationsandMedia/Pages/EnvironmentalImpactStatement.aspx

[24] *Xstrata Coal Queensland Pty Ltd & Ors v. Friends of the Earth - Brisbane Co-Op Ltd & Ors, and Department of Environment and Resource Management* [2012] QLC 013.

[25] See McGrath C, "Federal 'green-tape' myth for Alpha mine" (The Conversation, June 2012), available at https://theconversation.edu.au/federal-green-tape-myth-for-alpha-mine-7499

[26] I note that I am counsel for one of the objectors raising groundwater impacts.

Appendix 1

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GAS LEAK!

By Matthew Carney and Connie Agius

Updated April 3, 2013 10:36:00

Monday 1 April 2013

The coal seam gas industry promotes itself as a cleaner carbon-fuel alternative; but how do we know this is true? Until now much of the information used to back this claim has come from the industry itself.

The problem is this "cleaner-greener" claim doesn't always square with experience on the ground. Next on *Four Corners* reporter Matthew Carney talks to farmers who've seen rivers bubble with methane, their bore water polluted with chemicals, while the reserves of ground water on their property have dropped alarmingly.

It's been sold as the cleaner-greener carbon fuel but is coal seam gas as clean as it claims...

http://www.abc.net.au/4corners/stories/2013/04/01/3725150.htm

He also looks at the latest research that suggests the coal seam gas industry might be a much bigger greenhouse gas emitter than previously thought.

VIDEO: Interview with Simone Marsh, Senior environmental specialist (Four Corners)

But why weren't these problems picked up in the development approval process? The answer is simple: according to one insider, the approval process is significantly flawed. *Four Corners* reveals what really happened when two major companies applied to develop thousands of square kilometres of southern Queensland for coal seam gas. Using hundreds of pages of confidential documents, the program reveals that the companies didn't supply enough basic information for an informed decision to be made about environmental impacts. Despite this, various government agencies permitted the developments to go ahead, allowing the companies to submit key information at a later date. A decision which shocked some who were involved:

"It was quite frightening that they would consider approving such a project without the basic information that a normal mining project would have been asked to submit, given that this was like six hundred times the size of your standard, large mine."

This same insider claims pressure was applied to the bureaucracy to fast track approval for coal seam gas development. This allegation would deeply concern many farmers who have seen their land used for coal seam gas sites and raises significant concerns about the future expansion of the industry across Australia.

GAS LEAK!, reported by Matthew Carney and presented by Kerry O'Brien, goes to air Monday 1st April at 8.30pm on ABC1. *It is replayed on Tuesday 2nd April at 11.35pm*. **It can also be seen on ABC News 24 on Saturday at 8.00pm, ABC iview and at abc.net.au/4corners**.

Hide transcript

Transcript

"Gas Leak!" Monday 1 April 2013

(Pale brown river water bubbles furiously)

KERRY O'BRIEN, PRESENTER: Rivers alive with methane.

GEORGE BENDER, FARMER: Never seen it before.

(Water flares when set alight by a stove lighter)

KERRY O'BRIEN: Water you can set fire to.

The industry says it's all perfectly safe.

(Aerial shot of a gas field rig)

MIKE ROY, HEAD OF GAS OPERATIONS, AGL CAMDEN: The last thing I want to be associated with is an industry that's going to be toxic or poison. It's just not that.

KERRY O'BRIEN: But others disagree.

SIMONE MARSH, SENIOR ENVIRONMENTAL SPECIALIST: I think the truth is that it's not an ecologically sustainable activity.

KERRY O'BRIEN: Behind the scenes in the great coal seam gas debate. Welcome to Four Corners.

The CSG industry is worth many billions and growing massively, particularly down the eastern half of Australia.

For cash strapped, revenue hungry governments, it's a welcome bonanza but the politics are tricky. There's the promise of jobs in declining rural centres and big export dollars.

But many farmers and environmentalists - not always natural allies - are not only concerned but deeply angry. The biggest concern is focused of mining on water tables and water quality, and how that in turn will affect prime agricultural land and town water.

Under pressure, the New South Wales government has banned CSG activity within two kilometres of cities and country towns, and the Federal Government now plans to assess future CSG projects for their impact on water.

The industry is adamant that CSG mining is safe and that new government controls will stifle growth, investment and jobs.

But just how serious has government oversight of the coal seam gas industry been so far?

Tonight's program features a whistleblower from inside the Queensland Government process that evaluate two major CSG projects. She describes what sounds like a deeply flawed assessment system.

The reporter is Matthew Carney.

(Scene of a peaceful river, then close up on strange bubbling in its centre)

MATTHEW CARNEY, REPORTER: At the head of the Murray Darling Basin, the Condamine River is bubbling gas.

It's mostly methane and it's seeping up all over this area from the coal seams deep underground.

The Condamine River runs through one of Australia's most developed coal seam gas fields in the Tara area of Southern Queensland.

Some see this as an alarming sign that permanent damage has been done to the structures below.

The coal seam gas industry, backed by the Queensland Government, says it's natural and has nothing to do with the wells that have been drilled and fracced in the area.

But it's started to happen in at least three different locations along the river.

Old timers like George Bender have never seen anything like it.

GEORGE BENDER, FARMER: Never seen it before.

MATTHEW CARNEY: And other farmers in the area have seen it?

GEORGE BENDER: A lot yeah, all the other farmers said they'd never seen it like that before.

MATTHEW CARNEY: So is it natural then?

GEORGE BENDER: Well, if it was natural wouldn't it be there all the time?

(Very high aerial shot of the area)

MATTHEW CARNEY: George's property is in the heart of Australia's coal seam gas industry, which is growing at a phenomenal rate.

The $50 billion industry is sinking up to 40,000 wells with a network of pipes gathering lines and roads that crisscross the landscape.

(Aerial image shows network of CSG infrastructure)

Massive holding ponds - these ones five kilometres long - contain water sucked from the underground.

With the growth has come more evidence that Australia's greatest underground water source - the Great Artesian Basin - is being depleted and contaminated.

(Geographical image of Australia)

On his 2000 acres, George Bender grows cotton, sorghum and runs beef cattle.

In three years George will lose his bore water. And without water, his farm could be no more.

(George Bender inspecting his crops)

The Queensland Water Commission says the coal seam gas industry is the cause.

GEORGE BENDER: Well there won't be any water. We won't have any stock water when the drought comes, and the surface water dries up there won't be any water.

We're not the only landholders in this position. There's quite a few.

(indicating data on documents) We've got two stock water bores in the immediate affected area...

MATTHEW CARNEY: The Water Commission has identified 85 wells that may run dry.

GEORGE BENDER: ..26063 in the Walloon coal measures...

MATTHEW CARNEY: Bore 26063 and bore 83627 are on George's property.

GEORGE BENDER: The licence number there...

MATTHEW CARNEY: George has three coal seam gas wells that sit on the edge of his property. To get the gas to flow, the water in the coal seams has to be drained out first.

In George's case the water table in the coal seams under his property will drop by up to 105 metres.

GEORGE BENDER: They should have told us the truth in the first place 'cause they would have known that they were going to draw down the water in the Walloon coal measures and that's what's... that's what's so upsetting to us. They didn't tell us the truth in the first place.

MATTHEW CARNEY: And you think they knew back then?

GEORGE BENDER: Oh well, common sense just tells you it's going to happen, the way I see it anyhow.

MATTHEW CARNEY: George Bender's family have farmed on this land for five generations. And George and his wife Pam feel farmers are being sacrificed for a new industry which may only last a generation.

GEORGE BENDER (to his wife): Any drawdowns whatsoever...

PAM BENDER: I've got five children and they love the farm and it's hard (teary).

MATTHEW CARNEY: You don't think they'll be able to continue?

PAM BENDER: I'm scared. I'll be honest with you. I am scared.

What's going to be left? Nothing. They've taken everything.

MATTHEW CARNEY: The coal seam gas companies have pledged to compensate by making good. But many farmers can't see how they can fix the water table.

In the longer term, the Queensland Water Commission says another 528 bores will be affected. The drawdown will be much worse further west - predicting up to a 700 metre drop.

But the industry says that's just the worst case scenario and more than 20,000 bores will remain unaffected, while they'll fix the damaged ones.

RICK WILKINSON, AUSTRALIAN PETROLEUM, PRODUCTION AND EXPLORATION ASSOCIATION (APPEA): The obligation is for those gas companies to talk with the impacted areas and make that good - that's either by deepening the bores, finding different water aquifers to deal with, ah, and bringing and keeping the farmer whole.

MATTHEW CARNEY: Farmers turned activists Brian Monk and his son David have eight wells near their Tara property. They're operated by Queensland Gas Company, or QGC, which is owned by British Gas. There's also a pipeline that runs down the side of their farm.

(Brian and David Monk get out of their care next to a work site cleared of bush with a big white pipe)

BRIAN MONK, FARMER: Well this is how you leave a permanent scar on this country because this will never recover, ever. They pulled all the bottom up to the surface.

(Shot of cleared stretch with no soil on it)

MATTHEW CARNEY: Brian Monk says the coal seam gas companies have been allowed to take as much water as they want from the aquifers below and clear the native vegetation.

BRIAN MONK: We're not allowed to clear it. The farmer on the other side of our boundary line here, he's not allowed to clear it. But this foreign company can actually come in here and devastate 50 metres wide, 500-odd kilometres long - whereas genuine Australians that actually own the land are not allowed to.

MATTHEW CARNEY: Brian says the damage has already been done. The water table has been lowered and he believes that's brought methane and poisonous chemicals like hydrogen sulphide and toluene into his bore.

BRIAN MONK: This is the bore that we used basically for washing dishes, showering and cattle. Now it is absolutely useless.

And you can see the gas bubbling through it...

(David Monk fills a clear container with the bore water, which bubbles)

MATTHEW CARNEY: QGC says it's naturally occurring because its wells are not operational. The Government has done three reports on this bore and concluded it's safe and not flammable - a finding Brian Monk finds absurd.

BRIAN MONK: We're going to basically light the unlightable gas.

(Water in the bore flares when lit with a lighter)

The evidence now is everywhere. You can walk around our property, put a pick in the ground and read methane.

(Sensor beeps accelerate over the container of water)

MATTHEW CARNEY: The evidence of large scale methane seepage from gas wells and pipes is starting to gain a scientific basis.

At this muddy campsite on the edge of the Tara gas fields, these scientists from the Southern Cross University are challenging the notion that CSG is cleaner and greener than other fossil fuels.

(Scientists indicates gas wells on a chart on his laptop)

DR DAMIEN MAHER, RESEARCH SCIENTIST, SOUTHERN CROSS UNIVERSITY: This is kind of the first independent data that's been collected in Australian coal seam gas fields, despite them being operated for you know, a number of years.

This research hasn't been undertaken yet so it is very preliminary, but at least we're starting to bring some data to the table.

MATTHEW CARNEY: They've already released research that has found the level of methane in air is up to three times higher than areas without coal seam gas.

RICK WILKINSON: What the petroleum industry does do is look for methane seeps to help it identify where the coal seam gas is and where there may be shallow coal.

This is well before any activity of coal seam gas. So I'm not surprised to see the variations at all, but I think the Southern Cross University paper was fundamentally flawed and the peer review showed that.

MATTHEW CARNEY: But it's basic research that the gas companies and the Government have failed to do.

So they have come back to do more research, and have fitted their car with a unique spectrometer that can take measurements every second.

DR DAMIEN MAHER: We are sampling the gas from front of the vehicle as we drive. It comes into our instrument here and we can monitor the concentrations of methane, carbon dioxide and also the carbon stable isotope value - which is like a chemical fingerprint of those gases.

So this is hooked up to our GPS...

MATTHEW CARNEY: They match the readings to the gas wells and pipelines accurately with a global positioning system.

(GPS monitor pans out to show locations in Queensland)

DR DAMIEN MAHER: So that's for the state of Queensland.

MATTHEW CARNEY: The industry has always maintained that gas leakage is negligible but that's not what the scientists are finding. They're heading into the middle of QGC's Kenya gas field.

DR DAMIEN MAHER: So the concentrations have kind of increased from about 1.76 up to around 1.8, even though it's kind of quite windy and starting to rain outside, which tends to mix up the atmosphere a bit more.

MATTHEW CARNEY: After we drive through, we stop to review the data.

DR DAMIEN MAHER: We've picked up a number of sources, so we see the methane kind of pop up and down as we pass some of the wells. Right at the moment it's slightly elevated, which indicates we have got a nearby source of methane.

MATTHEW CARNEY: The scientists say it's critical to work right through the night - they get their highest readings because it's usually cooler and less windy.

DR ISAAC SANTOS, SCIENTIST, SOUTHERN CROSS UNIVERSITY: The concentrations are going up pretty sharply now, about 100 parts per billion - it's a very detectable signal.

MATTHEW CARNEY: They say their work demonstrates the urgent need for comprehensive baseline surveys to be done.

DR ISAAC SANTOS: There is a leakage here clearly. (indicates on computer read out) The concentrations are clearly going up very sharply, so it's a hotspot, definitely.

(The scientists push through a bushy area)

MATTHEW CARNEY: The scientists have also been collecting radon samples at five locations. Radon is a naturally occurring gas found in the soil that can act as a tracer for the leaking methane and other gases.

DR ISAAC SANTOS: Alright, it's looking great. No water, no animals. All the information seems to be here. Concentrations are going up and down through the night.

MATTHEW CARNEY: In a separate, peer-reviewed study just released, the scientists say the radon has provided more evidence that leaking methane is coming from the soil around the coal seam gas wells.

DR ISAAC SANTOS: We have found significant correlations between the radon concentrations in the atmosphere and number of nearby wells so that makes us believe that the wells are related to these enhanced concentrations.

MATTHEW CARNEY: If this research proves to be correct and more methane is being released into the atmosphere, it could be a game changer for the coal seam gas industry.

It could make the greenhouse footprint for CSG much higher than oil or coal

And if the carbon tax is imposed on this, then that could undermine future profits.

The industry rejects this but acknowledges further research needs to be done.

MATTHEW CARNEY: The CSIRO have done a report, they say there's no baseline study. They're calling for baseline study.

RICK WILKINSON: I'm not surprised that anyone would call for additional science, additional technology. There's always researchers who are calling for that - and we would welcome that. We've got nothing to hide.

MATTHEW CARNEY: All of this raises some basic but fundamental questions about whether proper baseline studies have been done on the water table and environmental impacts, which leads to another important question.

Why has the coal seam gas industry been allowed to proceed at such a rapid pace?

Tonight Four Corners can reveal why.

Simone Marsh played a critical role in the approval process of Australia's largest coal seam gas developments - Santos' $18 billion project and QGC's $20 billion project in Southern Queensland.

She was a key insider and she's telling her story for the first time.

SIMONE MARSH, SENIOR ENVIRONMENTAL SPECIALIST: I think the truth is that it's not an ecologically sustainable activity.

Obviously they didn't want to say that. They wanted approval to come in and conduct that activity. They didn't want anyone to understand what the long-term, um, impacts were going to be and the long-term costs associated with this activity.

MATTHEW CARNEY: Four Corners asked Santos and QGC for an on camera interview but they declined.

Rick Wilkinson is the industry spokesperson.

RICK WILKINSON: I think it's right and proper that there should be whistleblowers, and if something is not right then they should raise it. But I'm confident, from what I've seen, that the right processes were followed. And there were many checks and balances on the way through.

MATTHEW CARNEY: Simone Marsh's job for the first half of 2010 in the Queensland Department of Infrastructure and Planning was to assess the environmental impact of these massive billion-dollar Santos and QGC developments.

They were deemed state significant projects to be overseen by Queensland's Coordinator General.

SIMONE MARSH: It was an impossible task. Firstly, the information wasn't there so you can't do an assessment without the basic site information, the baseline studies and an understanding of where the infrastructure was going to be laid, and which environmentally sensitive areas were going to be impacted.

MATTHEW CARNEY: This is a remarkable claim but it is backed up by 900 pages of documents obtained by Four Corners through the Right To Information legislation in Queensland.

The documents detail an approval process that was rushed, made with insufficient information, and put commercial considerations above environmental ones.

Simone Marsh's first task was to access the Santos project. She was surprised to find only a concept, with little hard data on where the wells or pipelines were going or potential environmental impacts.

SIMONE MARSH: It was quite frightening that they would consider approving such a project without the basic information that a normal mining project would have been asked to submit, given that this was like 600 times the size of your standard large mine.

And for a large mine, you would normally have the boundaries clearly articulated. You would have done all the baseline studies beforehand.

MATTHEW CARNEY: In particular, Simone was shocked that no assessment was going to be done on the impacts to ground water for the Santos project.

SIMONE MARSH: I was taken into a meeting room, sat down and told that there wasn't going to be a chapter on groundwater and I was... stunned.

I said "What are you talking about? What do you mean there's not going to be a chapter on groundwater? It's one of the biggest issues for the project".

And he just repeated the words that there was not going to be a groundwater chapter in the Santos Coordinator General's report and wouldn't give me any reason why or why not.

MATTHEW CARNEY: But a document from the 4th of May 2010 offers some explanation. It's a brief sent by the Department of Planning and Infrastructure to the Coordinator General.

It states:

"As advised previously, not all the 'usual' information is available."

And goes on: "This has been difficult and uncertain without the full suite of information normally available. We are mindful of the CG's (Coordinator General) Report being able to provide a 'bankable' outcome.

SIMONE MARSH: They're after a bankable outcome, which is not anything to do with an environmental impact assessment process. They basically just want an approval.

That's all they want is an approval with some conditions that the companies can live with.

MATTHEW CARNEY: When Simone Marsh learnt the timeframes for the Santos assessments were going to be cut short, she decided to act and wrote this email to her superiors listing 26 concerns.

(Camera pans down Simone Marsh's long email)

SIMONE MARSH: I wrote that email to make sure that the deputy's Coordinator Generals, the assistant Coordinator Generals and the project directors were aware that the information I had been preparing and that I had been drafting and sending through to the project directors was not making it into the final report.

And that key information that- and conclusions that I had drawn from the material that I could access was being altered or ignored, and that the proponents themselves were having a large role in dictating the information that went into the report and into the conditions as, as well.

MATTHEW CARNEY: Three days before the Santos report was due, Simone made one last attempt with this document to warn about the potential damage to the water table.

The next day there was this response.

"I have significant concerns with the words proposed by Simone."

MATTHEW CARNEY: On the 28th of May, the Coordinator General at the time, Colin Jensen, delivered his report on the Santos project.

There was no ground water assessment, only a half a page dealing with policy and legislation. But surprisingly the Coordinator General said "he was not convinced that there was sufficient detail...to determine impacts on environmental values."

After reviewing Santos' Environmental Impact Statement and its supplementary, the Coordinator General called on Santos to provide 10 key reports, including comprehensive water management plans for the next phase of approval.

Rick Wilkinson was head of the Santos LNG coal seam gas unit at the time and says the reports were submitted.

MATTHEW CARNEY: Santos didn't provide fundamental data to make those assessments.

RICK WILKINSON: They did provide the fundamental data. I disagree with that statement very strongly...

MATTHEW CARNEY: So you're disagreeing with the Coordinator General, are you?

RICK WILKINSON: I... at that particular point he can raise questions about what data, further data he needs. The supplemental addresses those particular issues. And then he has many options to condition the data - so that if the data is not provided to his satisfaction, the EIS is not approved, you can't go onto the next step.

(Shots of other RTI Act documents)

MATTHEW CARNEY: Simone Marsh was not the only public servant under pressure. The Right to Information documents show her colleagues also did not have enough data or the time to make proper assessments.

This document dated May 4th:

"We were given less than 4 weeks to deal with 10,000 pages of documents...Once again I am faced with a physically impossible request..."

Or this one that simply states: "Under pressure!"

But that pressure was about to be ramped up. Simone was now going to assess Queensland Gas Company's, or QGC's, $20 billion dollar project.

SIMONE MARSH: We were only given a matter of days to prepare conditions for that report. We were actually not given any time to do any reading or assessment of the material. We were just instructed to write conditions for QGC, which is, again, unbelievably bad.

RICK WILKINSON: I'd be very surprised if that's the case. We provide the data to to the Government, to the bureaucracy; how they manage their internal workings is their business. I'd be very surprised if there's any justification behind that.

MATTHEW CARNEY: So there was no pressure from the industry, is that what you're saying?

RICK WILKINSON: I'm not aware of any pressure, other than to provide the data which we had to provide to them, and meet their timelines.

MATTHEW CARNEY: The final straw for Simone Marsh came when she was instructed to write the Greenhouse Gas assessment for the QGC project in half a day.

It was a brief with complex calculations and projections.

SIMONE MARSH: I had tears rolling down my cheeks at work that day. I remember that day very clearly because I'd never actually cried at work before.

And I finished the... The project director said to me 'Just do what you can' and that's what I did, and I packed up all my belongings at the end of that day that I could carry - I left materials in the drawers - and I didn't go back.

MATTHEW CARNEY: Simone Marsh has been on stress leave since. Two of her supervisors are now working with the coal seam gas industry.

Chris McGrath is a barrister who has represented all sides in planning and development cases. He's assessed the Right to Information documents and says both the Santos and the QGC Coordinator General reports could be tested in court.

CHRIS MCGRATH, BARRISTER: For him to sign off on this project in my view was a bad decision, a flawed decision, but you can still have... it can still be lawful.

MATTHEW CARNEY: He says there's a fundamental conflict of interest in the approval process when the Coordinator General's office becomes involved.

CHRIS MCGRATH: The Coordinator General's main aim is the economic development of the state - and don't get me wrong, there's- it's fine for components of government, for that to be their-a major concern or a drive, that's fine.

But you shouldn't also put them in charge of the environmental impact assessment process. That should be separated out so that you try and have some independence.

RICK WILKINSON: I think it's a balance between economic growth and a sustainable development. When you look around towns like Roma and Chinchilla, Miles, Dalby, those places are getting new families moving in, infrastructure, new airports. The unemployment rate in Dalby, according to the mayor there, is below two per cent.

MATTHEW CARNEY: When it came time for the Federal Government to assess the projects, Tony Burke, the Minister for the Environment, got the Santos and the QGC projects independently examined by Geoscience Australia.

It found that parts of the companies' Environmental Impact Statements were "insufficient or inadequate".

TONY BURKE, FEDERAL ENVIRONMENT MINISTER: There was no moment more significant than the direct briefing that I had in my office with GeoScience Australia.

MATTHEW CARNEY: And what did they say to you?

TONY BURKE: Well it was the opposite of what the companies had said.

So some of the companies had said to me that there was no connectivity, that each aquifer itself was water tight - and the information that came from GeoScience Australia was essentially, they said 'We're not sure, there might be and if there is then you have a very significant potential impact'.

CATHERINE TANNA, MANAGING DIRECTOR, QGC (speaking at a meeting): This project is good for the environment, good for people and good for Australia...

MATTHEW CARNEY: With further conditions, the QGC and Santos projects were approved.

CATHERINE TANNA: We have binding commitments with LNG customers...

MATTHEW CARNEY: QGC, supported by the Federal Government, announced the project was the single biggest investment ever made by its British owners.

CATHERINE TANNA: We estimate that the project will increase economic activity in Queensland by $A32 billion.

MATTHEW CARNEY: But there's much more to Simone Marsh's story. She has boxes of other documents she will take to Queensland's top crime fighting body, the Crime and Misconduct Commission.

She's received support from Campbell Newman, the Premier of Queensland, who also wants an investigation.

Queensland is not alone in the rush to develop coal seam gas. The New South Wales Government says by 2025, CSG could contribute a billion dollars to the economy, with about 3,000 wells planned.

But the same lack of baseline data is an issue.

(Aerial shots of the country near Camden)

On the edge of Sydney's suburban sprawl near Camden, AGL has a gas field of 89 wells. About 80 per cent of them have been fracced and it's been in production for more than a decade.

The project runs along the Nepean River.

(Shot of a man kayaking on the Nepean River)

John Ponsonby has been fishing in this part of the river since he was a kid.

JOHN PONSONBY, CAMDEN RESIDENT: I've gotta say, I really enjoy the solitude of it. You can hear the bellbirds in the background and very often there's a sea eagle that nests in that tree up there. So it's just a really beautiful environment and I just love it. And you can come down here if the dirt's on the world and go home as happy as a lark.

MATTHEW CARNEY: When the wells were fracced, John noticed the river would suddenly rise and fall, bubble with gas and fish would disappear.

AGL says it's a natural occurrence.

JOHN PONSONBY: I'm concerned really from the health aspects of it. I just think it's disgraceful that governments can agree to foster this on people with absolute stealth, no consultation.

MATTHEW CARNEY: Scientist Dr Gavin Mudd did a study into AGL's environmental record and discovered there's been no monitoring of the water table for a decade.

DR GAVIN MUDD, SENIOR LECTURER, MONASH UNIVERSITY: If the statutory obligations don't require groundwater monitoring, then all AGL can say with respect to the groundwater is they have no data.

They can't say there's impact, they can't say there's no impact - there's no data. So in that sense that's a big deficiency.

MATTHEW CARNEY: AGL maintains its operations are safe and says it doesn't need to monitor the water table because there is little risk.

DR GAVIN MUDD: Sure the risks may be minimal, but if that's true then drill some groundwater bores, get good data and prove that. It's not hard. It's straightforward. We know how to do that.

But we need good data to basically prove that there's no impact. We can't have no data and then turn around and say there's no impact.

MATTHEW CARNEY: The community was outraged when AGL revealed late last year that it had failed to continuously monitor air emissions from its gas plants.

(Community meeting, people sitting in a circle)

The residents were worried about the release of toxic gases.

JACQUI KIRKBY, SCENIC HILLS ASSOCIATION: This is a system that's supposed to have checks and balances and yet they were in breach for four years without a single authority picking it up.

It wasn't picked up in the so-called "independent" external audits. It wasn't picked up by any of the agents, any of the Government departments that were supposed to be monitoring.

MATTHEW CARNEY: AGL says it was a minor licence breach but an internal Environment Protection Authority brief obtained by Four Corners says it was "a serious matter because it undermines community confidence in the industry".

Despite this, AGL has asked the EPA to review the need to continuously monitor air emissions because of the "considerable cost" involved.

(Man speaking to a large audience at a community forum)

So when AGL proposed to expand its operations with 66 new wells and frac them under the streets and houses of south west Sydney, there was open revolt.

AGL fronted up at community forums to tell their side of the story.

COMMUNITY MEMBER: What I don't want to see is coal seam gas mining going ahead now, and in 40 years time finding out it's this generation's asbestos.

(Applause)

MIKE ROY, HEAD OF GAS OPERATIONS, AGL CAMDEN: We know it's not toxic. We have that information. That information is available. It has to comply with Australian standards.

MATTHEW CARNEY: After 11 years of operation, AGL has announced it will monitor the water table, air emissions and, leaking or fugitive gas.

MIKE ROY: The last thing I want to be associated with is an industry that is going to be toxic or poison. It's just not that.

And it is up to us. We have to communicate this to the community so we get a high level of confidence. And I don't expect for a minute that we are going to be able to change everybody's mind but at least we can get the facts out there and...

MATTHEW CARNEY: AGL said there would be no impact but the residents don't believe them.

COMMUNITY MEMBER: Why don't we have right as residents to demand that this doesn't happen? Why not go to a remote area?

(Applause)

I do not want mining under my home or any peoples' homes in this area.

(Applause)

(inaudible due to applause) I don't care about inquiry, I just want to say No.

(A large group of protestors demonstrating)

PROTESTORS CHANT: Where is Barry? Where is Barry?

MATTHEW CARNEY: In the face of losing support in four key electorates, New South Wales Premier Barry O'Farrell responded.

PROTESTORS CHANT: Shame, Barry, shame! Shame, Barry, shame!

(Shot of Barry O'Farrell speaking in NSW Parliament)

BARRY O'FARRELL, NSW PREMIER: Madame Speaker...

MATTHEW CARNEY: He declared a two kilometre exclusion zone for coal seam gas around residential areas. He also announced an independent review of all CSG activities.

BARRY O'FARRELL: We put together the toughest regulatory regime in the country and today we've added to it by making it even tougher to inject some common sense alongside the science...

MATTHEW CARNEY: The new regulation effectively put an end to AGL's plans.

(Shot of abandoned AGL gas site)

But not every community has been a winner.

About 320km north, in the New South Wales rural town of Gloucester, the locals are warming up for a fight.

(Large audience packed into a community hall)

Hundreds have packed into a local hall to hear the latest on AGL's moves to build at least 110 wells, plus a spider web of roads and pipes across the landscape. It's due to begin production in 2016.

JOHN ROSENBAUM, GLOUCESTER MAYOR (speaking at community forum): We're sitting on the edge here...

MATTHEW CARNEY: The New South Wales Government's new restrictions provide little comfort here - the impending development isn't included because it's already been approved.

JOHN ROSENBAUM: Gloucester is not included - or any other small village of less than 1,000 people in any rural area are going to be treated as second class citizens. I believe...

(Audience boos)

Where is the fairness in that?

(Applause)

MATTHEW CARNEY: As a local mayor, John Rosenbaum feels a special obligation to try and protect the valley he's called home for 40 years.

He is worried about the cumulative impacts of potentially hundreds of coal seam gas wells, plus two new coal mining proposals.

JOHN ROSENBAUM: That's what this area's looking at, an industrialisation of our valley. That's the real outcome of all this in the future if it's allowed to grow, with the possibilities of damage to our natural beauty.

MATTHEW CARNEY: The uncertainty of the long-term impacts of coal seam gas has already had a deeply personal effect on John and his wife Diana.

(John and Diana Rosenbaum packing things into boxes)

JOHN ROSENBAUM: Are you sure you are going to keep all these books?

DIANA ROSENBAUM: Yes. They all have memories. They are all full of memories.

MATTHEW CARNEY: The couple have recently moved from their family farm of 40 years after selling their land to a mining company.

JOHN ROSENBAUM: Our dreams were to build a new home and then of course the industry came along and that's... yeah, a whole new ball game for us.

(Looking at a photo album) These are all of the farm...

After the properties were sold around us, the coal seam gas actually developed at the back of our farm, the first exploration wells. I've been living with this for nearly eight years. It just got too much.

So we walked away.

MATTHEW CARNEY: And it still haunts you, that decision?

JOHN ROSENBAUM: Oh yes, yeah. Yeah, it will... for a long time.

MATTHEW CARNEY: Tell me why.

JOHN ROSENBAUM: Ah... The memories, my children... (crying) I'm sorry.

MATTHEW CARNEY: It's okay.

The emotional turmoil that's accompanied the arrival of coal seam gas isn't confined to farmers.

KAREN O'BRIEN, OWNER, HILLVIEW HERB FARM (speaking to a tour group of elderly ladies): So Gloucester is surrounded by state forests and national parks, and very cold in the winter

WOMAN 1: And isn't it sad that they are going to try and mine so much.

WOMAN 2: It is sad isn't it - really, really sad, so terribly wrong.

WOMAN 1: Yes.

KAREN O'BRIEN: So what I'm going to do now is pass some thyme honey and some paddle pop sticks around for the adventurous to try...

MATTHEW CARNEY: Karen O'Brien runs a herb farm and welcomes 150 busloads of tourists each year.

KAREN O'BRIEN: I don't need to say this but please don't double dip, okay?

(ladies laughing, trying honey)

MATTHEW CARNEY: She says if the tranquillity and beauty of the area is put under threat, so too is the region's $30 million tourism industry.

KAREN O'BRIEN: They put four pilot wells in and I had to ring every day about the noise of the trucks. I had a few coach drivers who told me that I would have to go- instead of talking personally to them, I would have to get a microphone, I would have amplify my voice.

I'm also concerned if we have that amount of movements of trucks, will anyone want to come here with that noise surrounding them?

MATTHEW CARNEY: AGL says its track record shows it can "comfortably co-exist" with other land users without harm to the environment or to human health.

It's not only locals concerned about the possible detrimental effects.

Professor Philip Pells has worked as a consultant for the mining industry for 40 years. But he says he's never seen anything like the groundwater study underpinning the AGL project.

PROFESSOR PHILIP PELLS, CIVIL ENGINEER: I don't think I've ever seen something drawing such broad-ranging and significant conclusions on such a limited amount of information and with no numerical modelling.

I've never seen it.

MATTHEW CARNEY: Professor Pells' main concern is the project's potential impact on the groundwater system.

(Aerial shot of green hills around a stream)

Gloucester is different from other coal seam gas regions: What is beneath the ground in one patch of land is completely different in the next - so a study of the entire area is needed.

But again, it hasn't been done.

PROFESSOR PHILIP PELLS: It's a very complicated geology and therefore it's very difficult to get an accurate picture of the geology and what controls the groundwater systems.

MATTHEW CARNEY: Professor Pells has studied AGL's report, which found there was no evidence of natural connectivity - or movement - between shallow and deep groundwater systems.

He ran the numbers through his own computer.

The data indicated that even after one year there could be impacts to ground water, which could diminish base flows to the rivers - particularly in times of drought. After 10 years, the impacts could be "substantial".

PROFESSOR PHILIP PELLS (indicating a graph on the screen): The groundwater system has now substantially depressurised.

We took their conceptual model exactly how they presented it - with their geometry, with their parameters - and we put it in standard software that you can buy from the US of A, or anywhere you like, and we ran the model.

And it simply shows that they are connected. And I'm just disappointed that a conclusion was reached which clearly isn't supported by their own model.

The big issue is that the groundwater regime feeds into the rivers. If that water is now no longer- is now going downwards, in a downwards direction towards depressurisation, then it's not feeding the river - so we are losing base flow to the rivers and that's a big ticket item.

MATTHEW CARNEY: But it's not only the quantity of water flowing in the nearby rivers that is of concern, it's the quality too.

The gas project is located in the Manning District drinking water catchment area - a source of water for 75,000 people downstream.

ALED HOGGETT, CHAIRMAN, MIDCOAST WATER: The risks are that we have a catastrophic failure associated with this development and that essentially knocks out our water supply system, even temporarily, in the local area and we find ourselves in a position where we can't supply water to our 75,000- to 75,000 people who rely on us. That's the potential risk.

MATTHEW CARNEY: Aled Hoggett is the chairman of MidCoast Water, which supplies drinking water to residents in the Gloucester, Greater Taree and Great Lakes areas in New South Wales.

(Aled Hoggett and colleague collecting river water samples)

MidCoast Water wasn't consulted before the New South Wales Government approved the AGL project in February 2011.

AGL and the New South Wales Planning Department both say there is no risk because the drinking water is sourced more than 40 kilometres downstream.

ALED HOGGETT: For us to be included so late in the process and for that absolutely critical issue of catchment management and drinking water supply to be completely overlooked, I'd suggest that's probably a fairly serious failure of the process.

MATTHEW CARNEY: About 70km downstream at Mt George, the Manning River is the heart of Ken Squires' pristine beef farm.

The farm survives on the clean water he pumps directly from the river into his cattle troughs and house tank.

(Ken Squires leading a herd of cattle across a bridge)

KEN SQUIRES, BEEF FARMER: The importance of this river, it's unsurpassed for us because it's our lifeblood. We actually rely on water out of this river every day. We can take it to our house, we can take it to our storage tank at the old bales.

(Shots of black cattle feeding near the river)

If our river gets polluted there's no option for us but to say ta-ta to our lifestyle. We've just got to give it up, we've got to get out of here.

MATTHEW CARNEY: Like many in the area - and others battling coal seam gas across the country - Ken Squires feels let down by governments and their planning processes that have let an industry proceed without sufficient assessment.

While others have walked away, Ken Squires says he won't be giving up without a fight.

KEN SQUIRES: I have no doubt whatsoever that the Government and AGL, if AGL is the company that comes through here, will have a ridgie-didge fight on their hands.

There is no doubt in the world about that. We just don't want it. It is unacceptable and why should a farm such as this one be devastated by people who just want nothing but their own interests?

They just want their money, what they can get and then when it's done, they're gone.

KERRY O'BRIEN: One of those sticky issues that isn't just going to fade away.

We did invite QGC, Santos and AGL to participate in this program, as well as the Queensland Government.

All declined an on-camera interview.

The three companies have provided written responses, which are on our website.

Next week on Four Corners, an evocative and powerful story about organ donation, with a very personal twist featuring prominent ABC broadcaster Mark Colvin, who has just recieved a new kidney from a live donor.

Until then, good night.

END OF TRANSCRIPT

Show background information

Tags: oil-and-gas, environmental-management, mining, government-and-politics, environmental-health, greenhouse-gas, mining, rivers, water, murraydarling-basin, environmental-impact, land-management, water-management, water-supply, australia, nsw, qld

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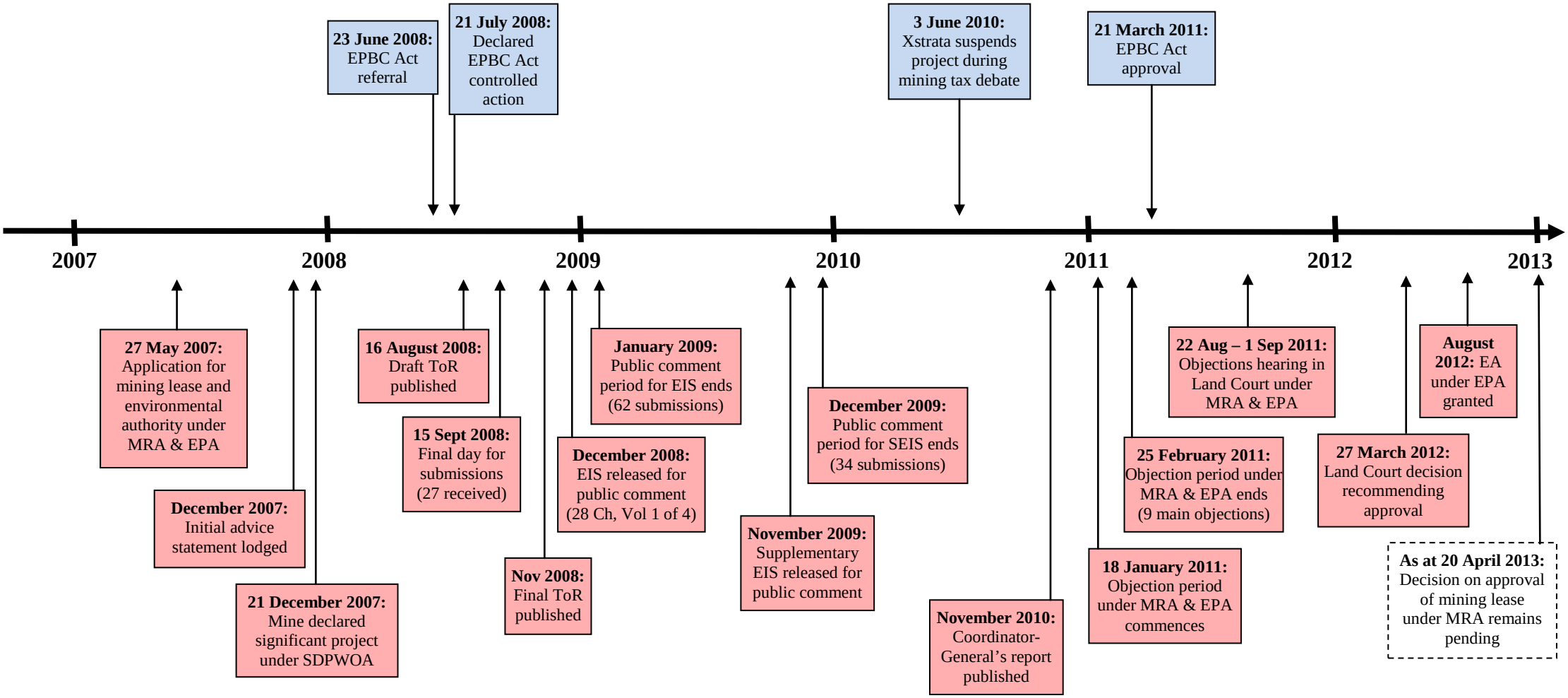
Appendix 2: Timeline of approval process of the Wandoan Coal Mine [remains unresolved after 5 ½ years as at 20 April 2013]



Acronyms:
EA: environmental authority
EIS: environmental impact statement
EPA: *Environmental Protection Act* 1994 (Qld)
EPBC Act: *Environment Protection and Biodiversity Conservation Act* 1999 (Cth)
MRA: *Mineral Resources Act* 1989 (Qld)
SDPWOA: *State Development and Public Works Organisation Act* 1971 (Qld)
ToR: Terms of reference

Step in Commonwealth approval process

Step in Queensland Government approval processes