10 July 2013

NSW Planning Assessment Commission Determination Report
Apex Exploration Drilling Project Modification 2 – for extension of time
Wollongong LGA

1. Background

In September 2009 Apex Energy NL was granted approval to drill and operate 15 coal seam gas exploration boreholes in an area above the Illawarra escarpment between Stanwell Tops and Bulli Tops. The project was expected to have a life of 3 years and a condition of approval was included to limit the drilling and operation of gas wells to a 3 year period. A modification was approved in 2011, to allow for an additional exploration well, bringing the total number of boreholes to 16. For a variety of reasons, none of the approved boreholes have been drilled to date.

Since the project was originally approved in 2009 there have been a number of changes, particularly relating to policy and legislation relevant to this proposal. In particular, part of the proposed site has been declared a National Park; also during the Commission's consideration of the proposal the NSW Government announced new more stringent rules for coal seam gas activities and requested consideration of the science of coal seam gas activities and impacts, from the NSW Chief Scientist.

Public awareness and concern regarding the risks associated with coal seam gas activities has also grown over this period. Adding to this, further scientific work conducted since 2009, both interstate and internationally has identified some anomalies potentially linked to coal seam gas activities.

2. Proposed modification

On 20 August 2012 the Proponent submitted this modification application to extend the expiry date of the approval, "for three years from commencement of drilling of the first borehole".

3. Referral and Nomination

The modification was assessed by the Department of Planning and Infrastructure and was referred to the Commission for determination, as it meets the terms of the delegation from the Minister for Planning and Infrastructure.

Ms Gabrielle Kibble AO, Chair of the Planning Assessment Commission nominated Mr Paul Forward (Chair) and Mr Bob McCotter to constitute the Commission for the modification.

4. Director-General's Environmental Assessment Report

The Director-General's Environmental Assessment Report considered the following issues:

- Commencement of Drilling and Operations;
- Environmental Impacts;
- Water;
- Biodiversity;
- Bushfire Risk;
- Dharawal National Park; and
- Socio-Economic Impacts.

The Department found that since the project was originally approved, an area of the proposed site has been made a National Park, two boreholes where proposed in this area

COMMISSION SECRETARIAT
Level 13, 301 George Street SYDNEY, NSW 2000
GPO BOX 3415, SYDNEY, NSW 2001
TELEPHONE (02) 9383 2100 FAX (02) 9299 9835
pac@pac.nsw.gov.au

and the Department recommended these should be deleted from any approval. Aside from this, the Department's assessment concluded that there would be no further environmental impacts than those that have already been considered and assessed in the original approval and modification and that the proposal is in the public interest and should be approved. Nonetheless, the Department did not agree with the potentially open-ended extension sought by the Proponent and recommended conditions allowing the drilling and operation of wells for 3 years from the date of approval of this modification.

5. Site Visit

On 13 February 2013 the Commission met with the Proponent who escorted the Commission to an existing borehole site in the area and indicated the approximate location of a number of the proposed borehole sites.

6. Public Meeting

The Commission held a meeting at the Helensburgh Workers Sports and Social Club on 13 February from 2 pm. Thirty three people registered to speak at the meeting including the Proponent, Wollongong Council representatives, the local member for Heathcote, a range of special interest groups and members of the local community. Three of the registered speakers withdrew or did not attend, a list of speakers at the meeting is included at Appendix 1.

Aside from the Proponent, all speakers raised concerns or objections to the proposal.

6.1. Issues raised at the meeting included:

6.1.1. Uncertainties and risks

- in relation to the Coal Seam Gas industry, the technologies and methods used and the potential short term and long term environmental and health impacts;
- regarding the Coal Seam Gas industry's ability to meet environmental standards and prevent spills, contamination and leaks;
- regarding the application, including the location, type and depth of boreholes proposed, technologies proposed and the management of impacts;
- so the precautionary principle should be applied in this instance;
- a staged, trial or probational approach was also suggested where only one hole to a certain depth could be drilled with new holes or lower depths to be allowed only if the Proponent could demonstrate safe and successful management of all previous stages.

6.1.2. Suitability of the site

Appropriateness of allowing Coal Seam Gas activities in drinking water catchment areas generally and Sydney's drinking water catchment Special Areas (declared under the *Sydney Water Catchment Management Act 1998*) in particular was a key concern. It was suggested that the Special Areas account for approximately 2% of the land area of NSW but supply drinking water for 60% of the NSW population. Inconsistent rules, noting that people are not allowed to enter the Special Areas for recreational purposes, but that the Proponent and its contractors would be allowed (if approved) to enter to undertake clearing, drilling, water extraction and coal seam gas extraction activities, the impacts of which are not well understood.

6.1.3. Water impacts, including:

- surface and groundwater;
- loss of quantity from pumping out, from cracking, pressure induced movement and by connecting aquifers;
- quality, including from a range of contamination and associated health risks; and
- that the long term security of water supply outweighs any short term gain of gas supply.

6.1.4. Health impacts, particularly:

- from methane emissions;
- from water contamination;
- symptom clusters around other Coal Seam Gas operations; and
- social and psychological, and associated impacts on productivity.

6.1.5. Flora and Fauna impacts

Particularly threatened species and upland swamps, as well as the Dharawal National Park, from surface disturbance and contamination.

6.1.6. Legal and process concerns

- that the exploration licence, and consequently the proposal, expired before the modification was lodged;
- that a new application is required in accordance with contemporary information and legislation;
- that the modification should be referred to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development;
- Coal Seam Gas extraction operations is the ultimate purpose of the proposal and it would be more efficient to consider the whole proposal, not just the exploration;
- inadequate conditions, e.g. words, such as “minimise” and “if possible” considered to render many of the conditions meaningless; and
- the taxpayer costs of assessing the application.

6.1.7. Greenhouse Gas Emissions, including:

- from burning of the gas;
- from fugitive methane emissions, both in the short term and if the infrastructure is not maintained in the future;
- that the planet can’t afford to burn 80% of known fossil fuel resources; and
- that 100% renewable energy is achievable in Australia within the next ten to twenty years and thirty years globally.

6.1.8. Reliability of the Proponent and the application, including:

- financial viability;
- inexperience and problems with other operations; and
- errors in documents submitted with application.

6.1.9. Need for the project

- the demand for gas was questioned, including that it is not needed as a transitional energy source and that alternative sources (such as Bass Strait) can provide sufficient supply; and
- the proposed location was questioned, noting the importance of Sydney’s drinking water catchment.

6.1.10. Consideration of future generations, including:

The long term integrity of the infrastructure, permanent impact, even after decommissioning the wells will remain in the ground.

6.1.11. Other Issues, such as:

- Requirements for industry best practice.
- Bushfire risks and additional risks to Rural Fire Service volunteers.
- Concerns about future operations, with some contamination considered inevitable.

7. Other Meetings and Correspondence

7.1. Meeting with SCA Officers

On 18 February 2013 the Commission met with Sydney Catchment Authority officers. The Commission noted the concerns raised at the public meeting relating to potential impacts on Sydney's drinking water catchment, including potential impacts during any future operations. The SCA officers advised that it had not considered future operations as it is not part of this application. Nonetheless the SCA indicated that it was currently working on a number of studies considering the broader impacts of mining and potential coal seam gas activities. The SCA noted that it had a new Board and that this new Board had not yet had the opportunity to consider or provide a view on this proposal.

7.2. Meeting with Department of Planning and Infrastructure Officers

On 18 February 2013 the Commission also meet with officers from the Department of Planning and Infrastructure. The Commission sought clarification on whether the proposal had been referred to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development. The Department confirmed that the previous modification for the 16th borehole had been referred to the Interim committee, however the current application had not been referred.

The Department also noted that the risks associated with this exploration drilling were considered to be very low and that it had not considered the suitability of any future operations as that was not part of the application.

Following these meetings and in light of the significant concerns the Commission had heard at the public meeting regarding risks and potential impacts on Sydney's drinking water catchment the Commission determined to seek the views of the new SCA Board before determining the application. On 21 February 2013 Mr Paul Forward wrote to the Chairman of the Sydney Catchment Authority Board, noting that the new Board had not provided a view on the proposal and providing the Board with an opportunity to comment on the proposal.

7.3. Meeting with representatives of the Sydney Catchment Authority Board

On 6 May 2013 the Commission met with the then Chairman of the Board Mr Robert Rollinson, Board Member Mark Bethwaite AM and an accompanying SCA officer. The SCA noted that there was significant public debate regarding Coal Seam Gas, but that its position is based on facts rather than public opinion. The SCA noted that the Special Areas are highly significant and protected by legislation. Nonetheless boreholes such as those proposed in this application have been permitted in the area for a very long time, for coal mining purposes. The impacts of these boreholes can be fairly well managed and must meet certain requirements. The SCA also noted that much of the area in question had been mined – largely board and pillar, with minimal subsidence impacts.

The SCA indicated that the boreholes proposed in this application could generally be managed in the same way as those undertaken for coal mining. Nonetheless the SCA noted that the impacts of any proposed coal seam gas extraction for operational purposes would have different surface disturbance impacts and would be incompatible with the SCA requirements for protection of the catchment. The SCA was clear that setting aside any potential impacts associated with the range of techniques that might be used for extraction (such as fraccing), the surface infrastructure alone could reasonably be expected to cause unacceptable surface disturbance impacts. The SCA indicated that there was a strong argument for adopting a precautionary approach to activities in the catchment.

The SCA undertook to provide additional written comments on the application.

7.4. Correspondence from the Sydney Catchment Authority

On 31 May 2013 the Commission received correspondence from the Chairman of the SCA Board Mr Mark Bethwaite AM. The correspondence is attached at Appendix 2. The SCA concludes that:

> *"Given the real and potential risks to the Special Areas and Sydney's water supply, SCA's strong position is that coal seam gas activities should be excluded from the Special Areas."*

The Commission referred this advice to the Proponent on 4 June 2013 for consideration and any comments. The Commission also noted that the draft *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) Amendment (Coal Seam Gas Exclusion Zones) 2013* (SEPP Amendment) was exhibited earlier in the year and that it would be seeking an update from the Department of Planning and Infrastructure on the status of the draft amendment.

7.5. Correspondence from the Department of Planning and Infrastructure

On 13 June 2013 the Director-General of the Department of Planning and Infrastructure wrote to the Commission (see Appendix 3) advising that the SEPP Amendment was likely to be gazetted shortly and would apply to a request to modify a project approval made, but not finally determined. It was noted that boreholes Al09, Al12B and Al18 would be within the SEPP Amendment's 2 kilometre exclusion zone around residential zones and Al04B was potentially prohibited as it was on, or very close to, the boundary of the exclusion zone.

7.6. Correspondence from the Proponent

On 17 June 2013 Apex Energy NL responded to the Commission on the matters raised in the SCA Chair's correspondence. The response is attached at Appendix 4. The response notes that there is a significant level of community concern about the coal seam gas industry, that consideration of the application should be evidence based and that it would be assisting the NSW Chief Scientist and Engineer in the current review of Coal Seam Gas activities.

The Proponent indicated that there has been and will continue to be considerable activity within the Sydney Water catchment Special Areas and that the processes and procedures it would implement for drilling, would be of the highest environmental sensitivity, developed in consultation with the SCA.

The Proponent cited a draft 2012 literature review on Coal Seam Gas impacts on water resources, undertaken by the Sydney Catchment Authority, drawing particular attention to:

- the fact that Petroleum and Coal Seam Gas exploration in the Sydney Basin and the Special Areas commenced in 1963;
- the Illawarra Coal Measures appear to have the lowest water/gas ratio (0.7 ML/PJ) of all currently gas producing wells in NSW and Queensland;
- the areas of existing and proposed underground mines represent approximately 40% of the Woronora and 25% of the Metropolitan Special Areas, while the proposed exploration encroaches on only a fraction of the headwaters of the Woronora and Metropolitan Special Areas.

The Proponent also noted that the NSW Parliamentary Inquiry into CSG repeated expert evidence presented to the inquiry by the SCA about the low risk the APEX drilling posed to the water supply. The Proponent concluded by putting the proposal into context with the other drilling which occurs for coal mining in water catchment Special Areas.

8. Consideration and Findings

The Commission has carefully considered the modification application, the Department's Assessment report, recommendation, submissions made and the correspondence sent to the Commission from the Sydney Catchment Authority, the Department of Planning and Infrastructure and the Proponent.

The Commission also heard a range of views at the Public Meeting in February 2013. The Commission has noted those views in this report, but does not agree or accept all those views and concerns expressed. The Commission's findings and determination are as follows.

The coal seam gas extraction industry is relatively new to NSW. The Commission acknowledges that the coal mining industry has used coal seam gas extraction techniques for some time, and that exploration is thought to have commenced some 50 years ago. Nonetheless, standalone coal seam gas activities (those not associated with coal mining), only occur at a handful of sites in NSW at present.

The impacts of coal seam gas activities are being questioned in a range of studies in NSW, Australia and internationally. It appears that the potential risks of coal seam gas activities are still being established and that there is some uncertainty regarding the potential impacts of the suite of coal seam gas extraction techniques which could be applied within various geological formations. The Proponent referred the Commission to a draft literature review undertaken by the Sydney Catchment Authority in 2012 (Sydney Catchment Authority, 2012) which, amongst other things, compares the impacts of mining and coal seam gas operations in the drinking water catchments. The study found that groundwater inflow rates into underground coal mines are significantly higher than the rate of produced water from the Camden Coal Seam Gas fields. The Commission does not dispute that the water impacts of coal mining may prove to be greater than those associated with coal seam gas activities. Nonetheless, the Sydney Catchment Authority also advised the Commission that it is increasingly concerned about the water losses associated with current mining operations. Consequently a finding that Coal Seam Gas Operations may have fewer groundwater and subsidence impacts is not accepted as a reason to support the proposal.

Chief Scientist and Engineer reviewing coal seam gas activities

As the Proponent noted in its submission, the NSW Chief Scientist and Engineer has been asked to review coal seam gas activities in NSW. The terms of reference for the review include: "*2. identify and assess any gaps in the identification and management of risk arising from coal seam gas exploration, assessment and production, particularly as they relate to human health, the environment and water catchments*." The Chief Scientist's Office has indicated that further research is being undertaken to better understand underground connectivity and potential cumulative impacts on groundwater and drinking water.

The terms of reference reflect many of the concerns voiced at the public meeting in relation to this application. The Commission expects that this work will take some time to complete and considers that while this work is being conducted, and until conclusive findings can be made, it would be inappropriate to approve any coal seam gas activities in Sydney's drinking water catchment Special Areas – a part of the state's most valuable water catchment areas.

Policy on coal seam gas currently evolving

A number of changes have occurred since the project was originally approved in 2009 and even since the Commission held the public meeting in February. Firstly, as the Department noted in its assessment report, some areas of the project site have been protected as National Park and consequently two boreholes are no longer permissible. Since the Commission held the Public Meeting in February the NSW Government announced that it would be prohibiting coal seam gas activities within 2 kilometres of residentially zoned land.

The Department has since advised the Commission that this will prohibit a further 4 of the proposed boreholes. Consequently, in the time since the proposal was originally approved 6 of the 16 proposed boreholes are, or would soon be, prohibited. Of the 10 proposed boreholes that would remain, 7 are within the Metropolitan and Woronora Special Areas, declared under the *Sydney Water Catchment Management Act 1998*. A further site is on the boundary of the Woronora Special Area. This leaves 2 sites approximately 1 km apart and both approximately 1 km from the Woronora Special Area.

The Commission accepts that the impacts of the proposed exploration wells have been found to be approvable in the past. However new, more stringent policies have been introduced since those approvals were given and the Commission is very mindful of the special significance of the Sydney Catchment Authority's Special Areas. The Sydney Catchment Authority now opposes coal seam gas activities within its special areas and the NSW Government has requested further work on coal seam activities in water catchments – to inform future policy in this area. The Commission acknowledges the ongoing development of government policy relating to coal seam gas activities in water catchments, and has come to the view that the current investigations of the Chief Scientist and Engineer need to be considered by Government. Consequently the Commission has taken a cautious approach and has therefore determined to refuse the modification application.

9. Conclusions

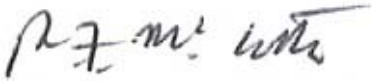
The coal seam gas extraction industry is relatively new to New South Wales. There are still some uncertainties surrounding the risks and potential impacts of coal seam gas activities; and policies relating to coal seam gas activities are currently evolving. The Sydney Catchment Authority has advised that coal seam gas activities should be excluded from Special Areas. As noted by speakers at the Public Meeting, the Special Areas only account for a very small portion of NSW and coal seam gas activities are currently occurring, or being explored and considered in a number of other areas across the state. The Commission acknowledges the significance of the Special Areas and agrees that development in the Special Areas should be considered with additional caution. Consequently the Commission considers that the findings of the Chief Scientist and Engineer's review and subsequent policy conclusions from Government are needed, before these activities can be contemplated in the Special Areas.

The Commission has found that it would be inappropriate to approve the proposed coal seam gas activities in Sydney's drinking water catchment Special Areas:

- while the NSW Chief Scientist and Engineer's review (requested by the NSW Government) is underway; and
- before the Government's resulting policy conclusions are formulated.

Having regard to these findings and conclusions, the Commission has determined to refuse the application.

Paul Forward
Member of the Commission



Bob McCotter
Member of the Commission

References

Sydney Catchment Authority 2012, *Literature Review, Coal Seam Gas impacts on water resources, December 2012, Draft Revision 4*. NSW Government viewed 5 July 2013, http://www.sca.nsw.gov.au/__data/assets/pdf_file/0010/29188/CSG-Impacts-on-Water-Resources-Draft-Revision-4.pdf

Appendix 1
List of Speakers

PLANNING ASSESSMENT COMMISSION MEETING
APEX EXPLORATION DRILLING PROJECT – EXTENSION OF TIME MODIFICATION

Date: Wednesday 13 February 2013, 2pm
Place: Helensburgh Workers Sports and Social Club, 24 Boomerang Street, Helensburgh

Speakers:

1. Wollongong City Council - Manager, Environmental Strategy & Planning
   Ms Renee Cambell,
2. STOP CSG WOLLONDILLY, Mr David Eden
3. STOP CSG ILLAWARRA, Ms Jess Moore
4. Illawarra Local Aboriginal Land Council, Ms Sharralyn Robinson
5. Rivers SOS, Ms Caroline Graham
6. Doctors for the Environment Australia and Public Health Association of Australia
   Ms Nimna De Silva and Prof. Melissa Haswell-Elkins
7. Ms Brenda Petty
8. Mr Lee Evans, MP
9. Beyond Zero Emissions, Mr Gregory Knight
10. Magnum Gas & Power Ltd (as joint venture of Apex Energy NL), Mr Tom Fontaine
11. Southerland Climate Action Network, Mr Jonathan Doig
12. Cr Greg Petty
13. Cr Jill Merrin
14. Ms Toni Reddell
15. Ms Lindsay Tuggle
16. Mr John Rainford
17. Mr Chris Williams
18. Mr Patrick Goodchild
19. Ms Shirley Gladding
20. Ms Sue Benham
21. Ms Natasha Goodwin
22. Mr Adrian Ingleby
23. Mr Lyle Davis
24. Ms Kate Foot
25. Mr Peter Townsley
26. Mr Warwick Erwin
27. Mr Peter Lamb
28. Ms Bronwyn Williams and Caitlyn
29. Mr Glenn Lacelles-Smith

Appendix 2
Correspondence from the Sydney Catchment Authority

SYDNEY CATCHMENT AUTHORITY

PO Box 323 Penrith NSW 2750
Level 4, 2-6 Station Street
Penrith NSW 2750
Tel 1300 722 468 Fax 02 4725 2599
Email info@sca.nsw.gov.au
Website www.sca.nsw.gov.au

Ref: D2013/43685

Mr Paul Forward
Member of the Commission
Planning Assessment Commission
GPO Box 3415
SYDNEY NSW 2001

Dear Mr Forward

Apex Coal Seam Gas Exploration Drilling Project – extension of time modification

I refer to our meeting held on the 6 May 2013 and your subsequent request that Sydney Catchment Authority (SCA) provides a clear statement of its position in relation to coal seam gas.

SCA opposes coal seam gas activities within its Special Areas. SCA considers that coal seam gas activities within its Special Areas are inconsistent with its role, objectives and functions as defined in the *Sydney Water Catchment Management Act, 1998*.

SCA has the primary function of protecting the quality and quantity of water in the Sydney drinking water catchment. The catchment is over 22,000 square kilometres and extends north of Lithgow to south of Braidwood. The parts of the catchment immediately adjacent to water storages are classified as Special Areas. They are lands declared under the *Sydney Water Catchment Management Act 1998* for their value in protecting the quality of the raw water used to provide drinking water to Sydney, the Illawarra and the Blue Mountains and for their ecological integrity.

The establishment of Special Areas around Sydney's major water storages has preserved these lands as largely intact native vegetation communities and have thereby protected them from many land uses and developments which would otherwise impose a higher threat to water quality. The ongoing management of these areas for water quality purposes therefore depends on the effectiveness of the controls. Having established this low hazard environment adjacent to Sydney's major water supply storages, it is essential to ensure that water quality benefits are not diminished.

Past, present and foreseeable land uses are putting pressures on the Special Areas. Water quality is being impacted and the integrity of ecosystems is being compromised. The Metropolitan and Woronora Special Areas are already experiencing major pressures from longwall coal mining. The resulting subsidence impacts including loss of surface flows to the subsurface, loss of standing pools, adverse water quality impacts, and impacts on aquatic ecology are of increasing concern to the SCA.

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SCA is very concerned that the opening of the Special Areas to coal seam gas activities will exacerbate these pressures and their cumulative environmental consequences will significantly compromise the integrity of the Special Areas.

SCA's major specific concerns with coal seam gas exploration and production/extraction operations in the Special Areas are:

- The risks to water quality are inadequately understood. The opening up of the Special Areas for coal seam gas activities prior to understanding these risks and how they can be managed may have significant impacts on water quality. In addition to the risks outlined below, other risks are:
    - the potential for dewatering of flooded mine workings to increase gas production
    - the extent of surface impacts associated with drilling and construction of gas gathering systems
    - the extraction of gas from un-mined coal seams below existing mine workings, resulting in drilling or coal seam depressurisation to enhance connectivity between the existing mine voids and the targeted underlying coal seams, and
    - hydraulic fracturing in the un-mined areas and particularly from the undisturbed seams underlying existing mine workings.
- The production of potentially polluting underground fluids (irrespective of whether or not subsurface fracturing is utilised). Coal seam gas extraction invariably draws liquid to the surface. Even without subsurface fracturing, that liquid may contain naturally occurring pollutants or chemical elements. Where coal seam fracturing to enhance gas extraction is utilised, this requires the injection of a number of chemicals into subsurface formations. This gives rise to risks of contamination of groundwater. Groundwater is a source of Sydney's water supply. In addition, these chemicals will be discharged to the surface in the production liquid. Accordingly, whether subsurface fracturing is utilised or not, the liquid produced in the gas extraction process will require isolation/storage and disposal. Escape of these chemicals into the groundwater or surface waters within the Special Areas represents a serious and unacceptable risk to water quality. Given the risk a precautionary approach is warranted.
- The ecological integrity of the Special Areas would be compromised. The Special Areas contain many threatened species and endangered ecological communities. The Woronora and Metropolitan Special Areas are unique as much of the native vegetation is intact and largely undisturbed. Coal seam gas exploration and production/extraction have the potential to impact terrestrial, aquatic and subsurface ecosystems. The main impact arises as a result of the clearing of vegetation. Clearing is required at well heads; for the construction of access tracks; the construction of pipes to connect wells; and the installation of energy, communication and monitoring equipment.

Secondary ecological impacts occur at the edges of cleared areas. Changes to surface and groundwater drainage patterns can also have ecological consequences.

SCA therefore considers coal seam gas activities within the Special Areas would or have the potential to compromise a number of its principles for managing mining and coal seam gas impacts (a copy of which has been provided to your office). The relevant principles are:

- Coal seam gas activities must not result in a reduction in the quantity of surface and ground water inflows to storages or loss of water from storages or their catchments.
- Coal seam gas activities must not result in a reduction in the quality of surface and ground water inflows to storages.
- The ecological integrity of the Special Areas must not be compromised.
- Information provided by proponents, including environmental impact assessments for proposed mining and coal seam gas activities, must be detailed, thorough, scientifically robust and holistic. The potential cumulative impacts must be comprehensively addressed.

Given the real and potential risks to the Special Areas and Sydney's water supply, SCA's strong position is that coal seam gas activities should be excluded from the Special Areas.

Yours sincerely

for Ross J Young

Mark Bethwaite AM
Chairman

Appendix 3
Correspondence from the Department of Planning and Infrastructure

NSW GOVERNMENT | Planning & Infrastructure

Office of the Director General

RECEIVED
17 JUN 2013
BY:

13/09573

Mr Paul Forward
Member
Planning Assessment Commission
GPO Box 3415
SYDNEY NSW 2100

Dear Mr Forward

I refer to your letter of 4 June 2013 concerning a modification application seeking an extension of time for the operation of the Apex Gas Exploration Project approval.

As you are aware, the key activity under this approval (the drilling and operation of petroleum wells) cannot now be carried out due to the expiry of a time period specified within a condition of approval.

You have asked for my advice regarding the status and terms of the proposed *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) Amendment 2013* (the SEPP Amendment) and its relationship to the proposed modification. I can inform you that the SEPP Amendment has been signed by the Executive Council and will be gazetted shortly. A full copy of the SEPP Amendment is enclosed for your information. You should be aware however that the SEPP has not been public pending its gazettal, particularly as it also addresses other amendments to the Mining SEPP relating to the Government's new Gateway process.

In summary, the SEPP Amendment will prohibit the "carrying out of coal seam gas development" in, or within two kilometres of, residential zones throughout the State. Associated transitional provisions make clear that this prohibition applies to a request to modify a project approval made but not finally determined prior to the commencement of the amendments. The result is that, if the PAC's determination is made after the commencement of the SEPP Amendment, then its provisions will apply to the modification application.

Based on a review of available information from Apex about the locations of its currently approved gas wells, the Department understands that five of the 16 wells will be located in the SEPP's two kilometre exclusion zone around residential zones in the Wollongong LGA. These wells are known as AI09, AI12B, AI15, AI17 and AI18 (see attached map). I note that the Department has already recommended that two of these wells are removed from the project approval as they are now located within the Dharawal National Park (AI15 and AI17). A further well, AI04B, is located very close to, or on the boundary of, the exclusion zone, and could also be prohibited under the SEPP Amendment.

I trust the above information is of assistance.

Yours sincerely

SHaddad

Sam Haddad
Director General

13/6/2013.

Bridge St Office 23-33 Bridge St Sydney NSW 2000 GPO Box 39 Sydney NSW 2001 DX 22 Sydney
Telephone: (02) 9228 6111 Facsimile: (02) 9228 6191 Website planning.nsw.gov.au

Appendix 4
Correspondence from the Proponent (Apex Energy NL)

APEX ENERGY NL

ACN: 097 997 914

17 June 2013

Attn Mr Paul Forward
Member of the Commission
Planning Assessment Commission
Pitt Street
Sydney NSW 200

By email to megan.webb@planning.nsw.gov.au

Dear Mr Forward and Commissioners,

Re: Letter from SCA re Apex activities in Sydney water catchment "Special Areas"

We are responding to the PAC letter of 4 June in relation to the Apex CSG Exploration Drilling Program and Modification Application to Part3A for extension of time, which is currently before the Commission for Determination.

Firstly, we note your comments in the letter about concerns raised by speakers at the Commission's public meeting in Helensburgh in February, particularly in relation to CSG activities in Sydney's drinking water catchments. We are very much aware of these voiced concerns, many of which continue to be raised by highly visible action groups, which have in turn influenced wider community perceptions against the CSG industry. The volume of "noise" surrounding CSG, particularly in NSW, has made it extremely difficult to engage in learned debate with opponents on the few real issues. Apex, the industry and government recognise that the general public now have distorted perceptions about the industry, and we are working to rectify that in various ways. We also recognise that it will take some time win back public confidence. The Commission, as we are sure you are aware, has a highly significant role to play by taking a pragmatic, scientific and evidence based assessment of facts when considering applications for CSG activities, and to project those findings to the public in making determinations. We appreciate the opportunity to participate in your process and assist where we can.

As you would also be aware, the NSW Chief Scientist and Engineer has been requested to undertake a review of CSG activities in the state. She has specifically been requested to review CSG in water catchments. We shall be assisting Professor O'Kane and her team in a science based assessment, with their initial report back to the Premier by July.

We would also like to mention that the regulatory approvals process, particularly for resource projects, is rightly extensive and transparent, allowing for government agencies, interest groups and the public to be included in assessment of proponent information through direct interview, formal recommendation and the public exhibition process. There are a number of points in the public process which provide an avenue for interested parties to make submissions, both written and verbally. Those submissions are then responded to and are placed on public record. For the Illawarra Exploration Drilling Program, we have already been through that process now three times. Whilst we highlight that our current

5th Floor. 44 Bridge Street. Sydney 2000. NSW Australia
Tel +61 2 9251 0223
info@apexenergy.com.au
www.apexenergy.com.au

Modification Application is only for an extension to the timeframe of the approved Part3A, and is not requesting changes to the approved Project, we also acknowledge the visibility and concerns raised about CSG, and most recently focused on Sydney water catchments. We consider it constructive that the Commission address these concerns to their own satisfaction, even though volumes have been written on most subjects already. So long as the assessment is based on facts, and that the considered findings are conveyed in the Determination. The Department of Planning and Infrastructure is the principal assessment agency for Major Project approvals. In their recommendation to the Commission on the Apex Modification application, they commented on many of the points raised by agencies and the public. Their Assessment Report can be found at;
https://majorprojects.affinitylive.com/public/672da2c34ca2e101056182e225c2d570/Apex%20Gas%20Exploration%20MOD%202%20-%20Director-General%20Assessment%20Report.pdf

Also, the Apex response to public submissions on this Modification application can be found at;
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5550

In relation to the Sydney Catchment Authority (SCA) correspondence to the Commission, which you provided to us. We appreciate the opportunity to make comment.

The opening statement by the SCA in relation to their position on coal seam gas:

SCA opposes coal seam gas activities within its Special Areas. SCA considers that coal seam gas activities within its Special Areas are inconsistent with its role, objectives and functions as defined in the *Sydney Water Catchment Management Act, 1998*.

We are not overly surprised by their stance. Whilst this statement specifically relates to CSG, we believe they would likely make the same statement about many activities. Under their role, objectives and functions for water catchment Special Areas, they would far prefer that there was no access and no activity of any type within those areas. Unfortunately this is not a perfect world, and there has been, is, and shall continue to be considerable activity within those areas. Already within the Special Areas there are expressways, extensive coal mines, drilling for various purposes, septic tanks, cemeteries, farming and industrial activities, and yes, coal seam gas extraction undertaken by the coal mines. We believe that it would be impractical to ban all these activities. Rather we would expect that rigorous assessment of potential risks posed by any of these activities be undertaken, and appropriate procedures and protections be implemented commensurate with the real risks and probability of occurrence of each event to ensure, with high degree of certainty, that the water and ecological integrity of in the Special Areas is not compromised.

The processes and procedures which Apex proposes to implement for all of its drilling activities, not only within the Special Areas, we believe are of the highest environmental sensitivity of any drilling activities within Australia. Whilst we believe that operations undertaken under the Petroleum (Onshore) Act would be the most stringent in Australia, we believe Apex has, and intends to exceed those Regulations and Policies. Apex has worked closely with the SCA over a number of years to develop those processes and procedures, and we believe Apex demonstrated their practical application in the drilling of an exploratory core hole at Oakdale in the Burragorang in February/ March 2012.

In relation to the list of specific concerns raised by the SCA in their letter, we suggest that the majority of those have been addressed in the Environmental Impact Assessment for the Project, and the Environmental Management System and underlying Management Plans. These are extensive documents incorporating many professional inputs, and including significant contribution and consultation with the SCA. We are always happy to work with the SCA to improve on those. Space here does not practically allow us to re address each of those issues individually, however, we would definitely be available to discuss them further with the Commissioners, or if requested, would be pleased to provide further written information. We will definitely be discussing those matters with the SCA.

The SCA makes mention of their six principles for mining and CSG activities within the Special Areas. This can be found on their web site at;

www.sca.nsw.gov.au/the-catchments/coal-seam-gas/sca-mining-principles

We believe that it is worthwhile presenting some extracts from that below;

Eighty three percent of Special Area land close to the water storages is under a mining production or exploration title. There are active mines in the Special Areas and close to the SCA's water supply infrastructure works.

The NSW Department of Planning and Infrastructure, Planning Assessment Commission and the Department of Trade and Investment, Regional Infrastructure and Services are responsible for assessing and approving mining and coal seam gas activities. The SCA is involved in the assessment process for mining and coal seam gas activities because of its obligations to protect water quality and quantity, and its infrastructure.

The SCA has regulatory powers to control access to Special Area land … These powers allow the SCA to place obligations on third parties to conduct their operations to protect water quality and quantity and to maintain ecological integrity.

The set of principles detailed below underpin SCA decision making in relation to mining and coal seam gas activities located within the Sydney drinking water catchment or otherwise potentially affecting the SCA's water supply infrastructure.

The SCA opposes any mining or coal seam gas activities under or near its water storages, unless it can be demonstrated that there is an acceptable and very low risk of water being lost through these activities.

1. **Protection of water quantity**
   Mining and coal seam gas activities must not result in a reduction in the quantity of surface and groundwater inflows to storages or loss of water from storages or their catchments.
2. **Protection of water quality**
   Mining and coal seam gas activities must not result in a reduction in the quality of surface and groundwater inflows to storages.
3. **Protection of water supply infrastructure**
   The integrity of the SCA's infrastructure must not be compromised.
4. **Protection of human health**
   Mining and coal seam gas activities must not pose increased risks to human health as a result of using water from the drinking water catchments.
5. **Protection of ecological integrity**
   The ecological integrity of the Special Areas must be maintained and protected.
6. **Sound and robust evidence regarding environmental impacts**
   Information provided by proponents, including environmental impact assessments for proposed mining and coal seam gas activities must be detailed, thorough, scientifically robust and holistic. The potential cumulative impacts must be comprehensively addressed.

Apex only recently came across the following report on the SCA web site;

Sydney Catchment Authority
Literature Review - Coal Seam Gas impacts on water resources
December 2012 draft document Version 4 currently under peer review
http://www.sca.nsw.gov.au/__data/assets/pdf_file/0010/29188/CSG-Impacts-on-Water-Resources-Draft-Revision-4.pdf

We believe the above document to be an excellent and comprehensive overview of CSG in Australia, and in particular places in perspective current and past activities within the Woronora and Metropolitan water catchment areas in the Illawarra. Apart from some minor amendments which we shall notify them of, the report addresses most of the issues raised in the SCA letter to the Commission and addresses the SCA Principles above in relation to CSG activities in the Special Areas. The document in particular addresses water issues including quantities, quality, aquifers and potential for adverse effects,

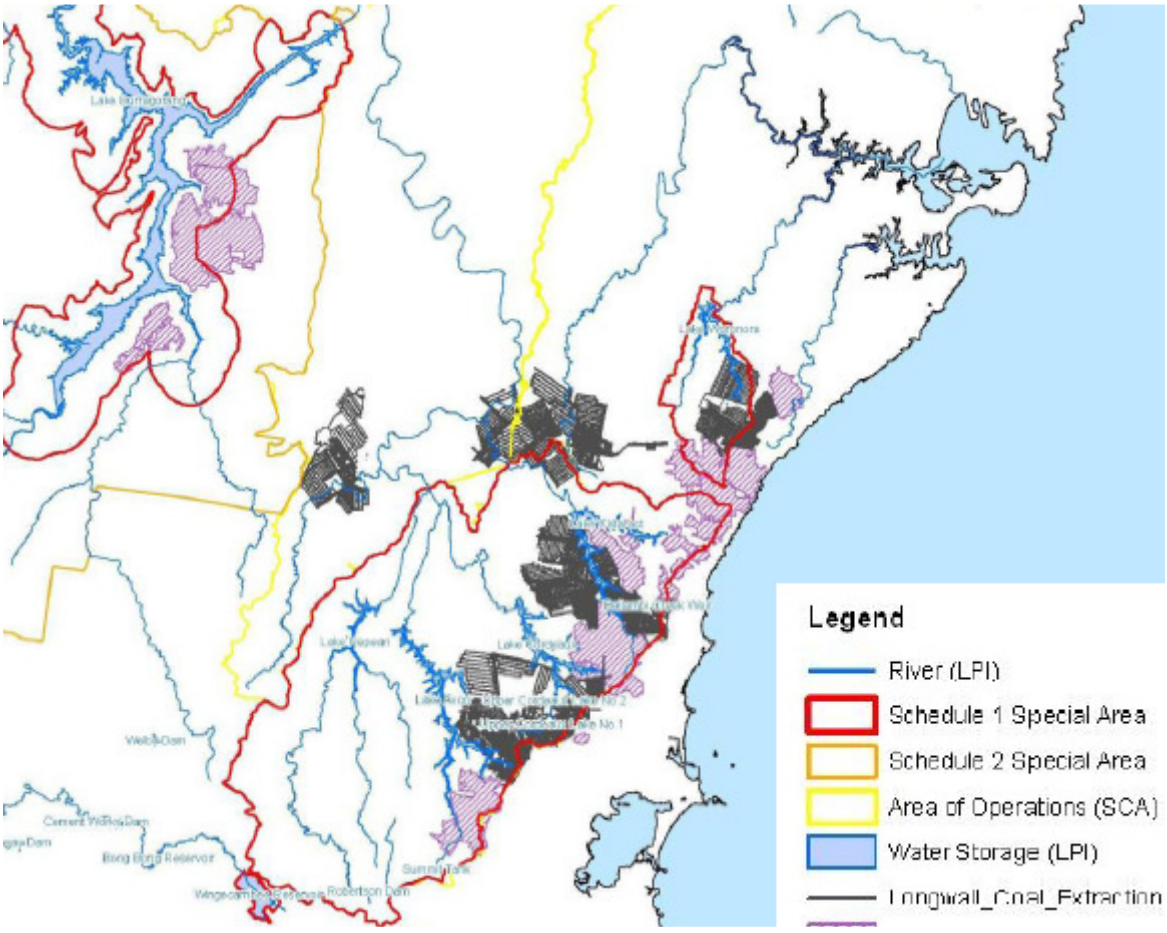
specifically in the Special Areas. It makes comparison with other CSG areas on the east coast of Australia. It places many of the generalisations about the industry in context, and highlights that the Illawarra Special Areas are quite different in many respects, and acknowledges that the potential risks in the Special Areas may be considerably lower than elsewhere.

We present several extracts from that SCA document FYI;

Extract Page 56
Petroleum and CSG exploration is the Sydney Basin and the SCA Special Areas commenced in 1963. The majority of the CSG exploration wells were drilled in the 1980s (Table 14). Since 1999, exploration and exploitation of coal seam gas has dominated over conventional petroleum exploration (Blevin et al. 2007).

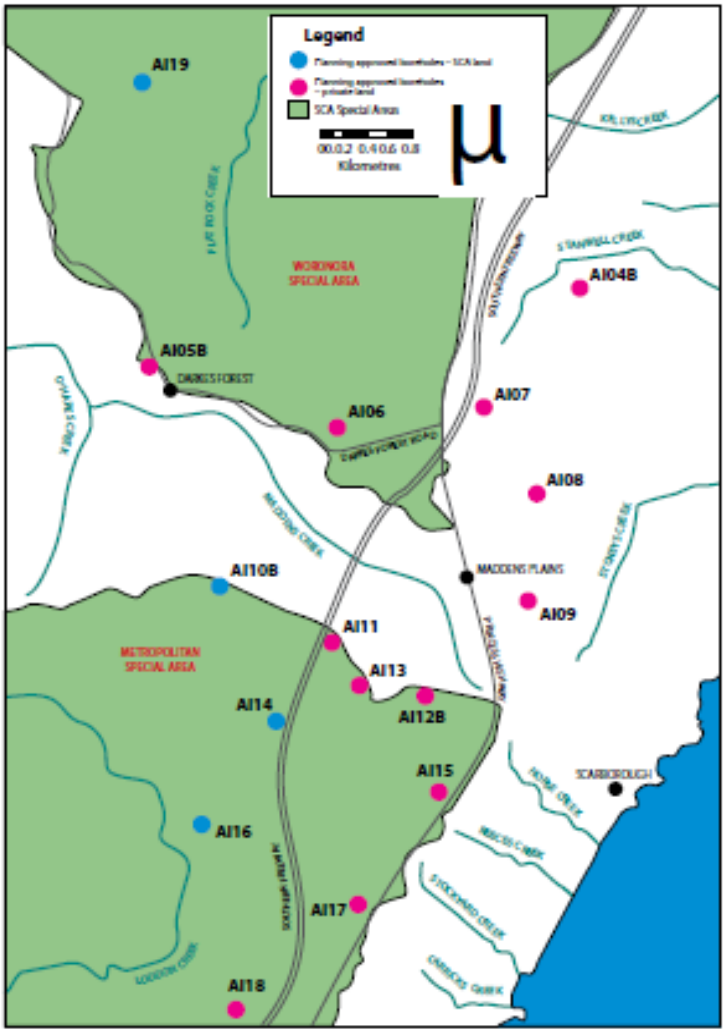
Extract Page 68
The Illawarra Coal Measures appear to have the lowest water/gas ratio (0.7 ML/PJ) of all currently gas producing coals in NSW and Queensland (Figure 47).

Extract - As shown in Figure 27 (below) extensive areas in the Southern Coalfield have been and are proposed to be under-mined. It has been estimated that areas of existing and proposed underground mines represent approximately 40% of the Woronora and 25% of the Metropolitan Special Areas.



Note from comparison of the above and below maps that the Apex Exploration Project encroaches on only a fraction of the headwaters of the Woronora and Metropolitan Special Areas.

Apex Coal Seam Gas Exploration Boreholes - Darkes Forest SCA Special Areas



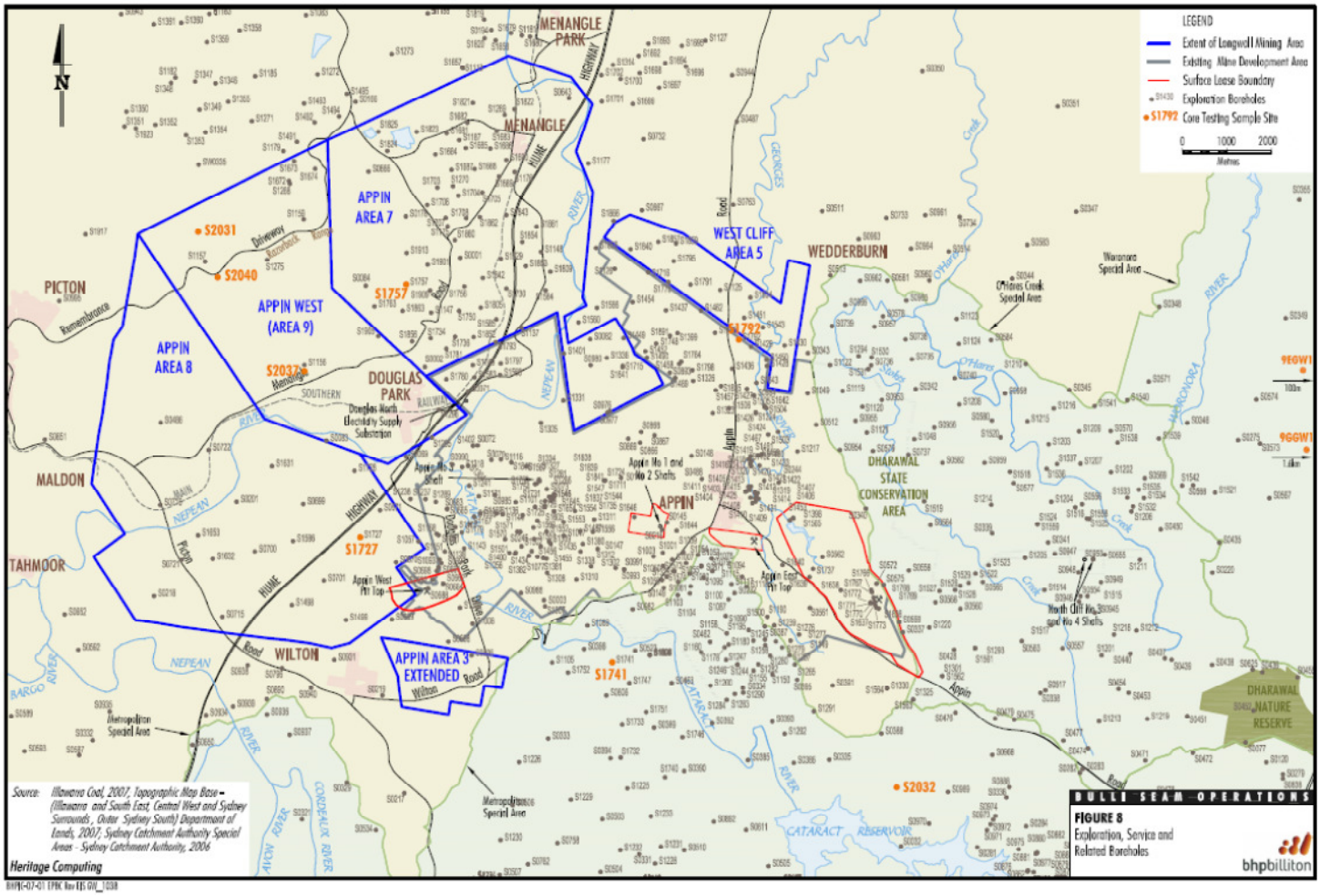
Parliamentary Inquiry

It may also be of interest that in the course of taking evidence for the Parliamentary Inquiry into coal and CSG, which reported in May 2012, the Apex Exploration Project in water catchments held considerable interest, and the SCA was extensively queried. As the SCA placed on record when giving evidence, [in relation to exploratory boreholes for Apex] "the drilling activity is **similar to, if not the same as**, the drilling activity which is undertaken for coal exploration around those areas and has **occurred for at least the last 50 years**" **[Ref 1].** The SCA also made reference to in excess of 1,500 boreholes having been drilled in the Special Areas in the Illawarra.

The Parliamentary Committee in its Report noted considerable community concern presented to them about the broader CSG Industry, and in part, the Apex proposed drilling activities in **SCA Special Areas** in the Illawarra **[Ref 2],** and supposed threat to Sydney's water supply. The Committee repeated expert evidence presented to the Inquiry by SCA, specifically about the **low risk the Apex drilling posed** to water supply, **and the Committee concluded that no Recommendations were necessary** as to further review or regulation of the specific activities within the catchment areas. The Committee did make 35 Recommendations in relation to aspects of the broader CSG Industry.

Reference 1 – Parliamentary Inquiry - Hansard 12 Dec 2011 – Page 24
http://www.parliament.nsw.gov.au/prod/parlment/committee.nsf/0/b3a0f891e72068d3ca2579650012e22a/$FILE/111212%20Sydney%20-%20Uncorrected.pdf
Reference 2 - NSW Parl Inquiry into CSG - Drinking Water Catchments - Sections 4.51 to 4.60 pages 51 to 53
http://www.parliament.nsw.gov.au/Prod/parlment/committee.nsf/0/318a94f2301a0b2fca2579f1001419e5/$FILE/Report%2035%20-%20Coal%20seam%20gas.pdf

In conclusion, and to place in context the volume of drilling which takes place for a coal mine, the following map is of Westcliff Colliery and surrounds, to the west of Apex Illawarra PEL's. It shows intensity of exploration and gas extraction boreholes drilled, including in water catchment Special Areas, and being indicative of other mined areas.



We trust that the scientific support and research that we have mentioned here, along with volumes of additional and available technical and scientific analysis resulting from decades of mining and drilling history in the Sydney drinking water Special Areas, will be considered by the Commission in making your Determination. If there are any particular topics on which the Commissioners would like further information or comment we would be pleased to provide it, or direct you toward where you can find it.

Yours faithfully

Stephen O'Keefe
Director, Apex Energy NL