

# Narrabri Gas Project CCC

No.	Question	For Action	Complete
1	<p>a) How is the produced water from drilling operations to be disposed of given that it contains high levels of salt, toxic heavy metals and hydrocarbons and is radioactive?</p> <p>b) What tests are being done on the produced water for contaminants including radioactive elements? Tests in America have shown produced water to be 3000 times more radioactive than safe drinking water levels. Also unsafe radioactive readings have been found on roads in Queensland where produced water has been sprayed.</p>	Gov't	March 2015
2	<p>a) What effect will drilling operations have on the local bores in the area given the massive volumes of water used in drilling operations?</p> <p>b) What is Santos' plan to ensure farmers have enough water during drought?</p>	Santos	March 2015
3	How will local landholders be compensated for truck movements, pipelines and pipeline corridors, drop in bore levels, spread of weeds, infrastructure, flaring of toxic chemicals and other aspects of Santos's operations which affect them on their own properties or whether they are affected by Santos's operations on neighbouring properties?	Santos	March 2015
4	<p>a) Pilliga Forest, due to its location, size, density and geology is a major "raincatcher" and main recharge for the Great Artesian Basin. What tests are being done by Santos on the expected impacts on cropping and other farming in the area should drilling go ahead in the forest?</p> <p>b) What are the cumulative impacts of drilling a number of wells?</p>	Santos	March 2015
5	What plan does Santos have for a number of critically endangered species endemic to the Pilliga Forest which will be adversely affected by Santos' drilling operations?	Santos	March 2015
6	What compensation is being offered to farmers whose properties border the Pilliga Forest?	Santos	March 2015
7	I would be interested to know why Santos would spend \$36 million dollars building the four produced water holding ponds at Leewood when they don't have permission to go ahead with the Narrabri Pilliga Project. The exploration stage should not need this much produced water holding capacity. A smaller facility would have saved them a lot of money if the project is not approved and if it is approved it could easily be enlarged.	Santos	March 2015
8	I read in the paper that the NSW Government has banned the use of evaporation ponds. Why is the produced water in the Leewood Ponds allowed to evaporate?	Gov't	March 2015

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9	Is the Government doing or going to do background studies into the health of people living in and around CSG operations so as to be able to monitor the possible impacts of CSG operations on their health?	Gov't	
10	Have background studies been or being done on the level of methane in the air in and around the CSG project area?	Gov't	
11	What base line data is available to prove that Santos drilling into the Pilliga sandstone aquifers has not contaminated them? For 40 years I have relied for my drinking water on a spring that comes out of Pilliga sandstone. I am concerned about contamination.	Santos	March 2015
12	As the Narrabri CSG Project proposes to completely surround Brigalow Park Nature Reserve and extend throughout the known locations of this species in the northern Pilliga, what provisions are being made: a) To ensure that this species will have safe passage between the Reserve, the Pilliga and other patches of habitat during the Project production phase b) To provide a monitoring program to ensure the persistence of this species within the Project Area c) What responses are planned should this population decline? The isolated western population of the Black-striped Wallaby is highly restricted and relies on the use and access to these areas for its survival, removal of access between these areas is likely to lead to the decline of the viability of this population.	Gov't	March 2015
13	I am a farmer from the Warrumbungle Shire. For many years we (farmers) have lived under the Native Vegetation Act. We as farmers cannot do as you miners do. We cannot rip into the earth, destroy grasses, bushes, trees and of course the wild life which relies on them. This restriction has restricted the income we can achieve from our farms. We accept this as we realise that the environment is in the long run more important than money. a) I would ask of both Santos and the Government to explain why they should be allowed to damage the environment in the interest of making money? b) I would also ask both Santos and the Government who will pay me compensation should my water resource (I have bore water) be damaged during the drilling and aftermath of the drilling? If I have no water, I have not farm. I will produce no food. c) I would also ask why must I work under the Native Vegetation Act but the mining industry does not?	Gov't	March 2015
14	I'm still concerned about air pollution from your wells if you go into production. How much flaring will be done and how much pollution will occur in particles.	Santos (Received)	February 2015

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		directly 22/1/15)	
15	Where the produced water will be used and still concerned with the disposal process of the brine with the news the Newcastle facility has been fined for how it disposed of the AGL water and ESG water.	Santos (Received directly 22/1/15)	February 2015
16	Can you please supply information about the removal of Drilling fluids and other semi and solid material from the Drill sites and Storage Facilities in PEL 238 since August 2013 to 24 December 2014?	Santos	March 2015
17	I realise that a lot of Produced and Stored water located in the Ponds/Dams located at Bibblewindi Water Storage and the Tintfield Ponds/Dams located at Wilga Park was transferred with approval to the Leewood Storage Ponds. However drilling fluids from the Make-Over and the Drill Rig drilling Dewhurst 22 – 25 and Dewhurst 26 – 29 were transported out of the area, as was the “sloppier material/slurry” from the bottom of the Storage Ponds at Bibblewindi and Wilga Park. Can you please confirm the destination and amounts of each type of fluid removed from the area and the amounts returned, if any over the time frame from August 2013 to 24 December 2014?	Santos	March 2015
18	Last year at the Original Narrabri CCC, it was stated that the destination was Santos treatment facility in Queensland. On 30 May 2014, Mr R Campbell informed me that he had taken fluid to a Santos Facility at Roma in Queensland. a. Can you please confirm that Santos does in fact have a Treatment Facility for the treating of Drilling Fluids and other watery material/slurry, at this or any other location in Queensland; and b. What Santos does with the treated fluids and the by-products of the treatment?	Santos	March 2015

# Narrabri Gas Project CCC

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<b>Tabled:</b>	February 2015
<b>Tabled by:</b>	Tony Pickard
<b>Organisation:</b>	People for the Plains
<b>Questions submitted by:</b>	Katherine Marchment, Cumbalum NSW

## Question 1

- a. How is the produced water from drilling operations to be disposed of given that it contains high levels of salt, toxic heavy metals and hydrocarbons and is radioactive?

The disposal/reuse of produced water collected at part of the current Santos exploration activities will be assessed as part of the Leewood Stage 2 project. Based on preliminary conversations with Santos, it is understood that this project will involve the construction of a reverse osmosis (desalination) water treatment system at the Leewood facility, with reuse of the treated water for irrigation at this property. At this stage, the OCSG has not received the application from Santos for the Stage 2 Leewood Project. All environmental issues associated with the management, treatment and reuse/disposal of produced water for the Leewood Stage 2 project will be assessed by the OCSG once the application and relevant information is received. EPA, NOW and DPI will be consulted as part of this process.

- b. What tests are being done on the produced water for contaminants including radioactive elements? Tests in America have shown produced water to be 3000 times more radioactive than safe drinking water levels. Also unsafe radioactive readings have been found on roads in Queensland where produced water has been sprayed.

Environment Protection Licence No. 20350 includes the requirement to monitor water quality at eight produced water storage ponds. The licence specifies 40 physical and chemical parameters that must be analysed, but does not include radioisotopes. Isotopic analysis of impounded water can be requested at the discretion of the EPA, should monitoring data indicate radioactive elements in the impounded water pose potential health or environmental risks.

While the EPA carefully considers international and interstate experience in regulating CSG activities, its primary focus is on assessing and regulating in a site specific context, in response to the unique geology and hydrogeology at each site. Disposal of produced water must be undertaken in accordance with any approvals, consents or licence conditions which may apply and must not cause environmental harm.

## Question 2

- a. What effect will drilling operations have on the local bores in the area given the massive volumes of water used in drilling operations?
  - Drilling does not target aquifers which are screened in either the upper Orallo Formation or Pilliga Sandstone.

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- Drilling is undertaken in accordance with the strict standards set out within the *NSW Code of Practice for Coal Seam Gas Well Integrity*.
- As part of the Narrabri Gas Project, the volumes of water to be used in drilling would originate from treated produced water (under a Water Access Licence) and are not expected to exceed 3ML/day.
- The NSW chief scientist found that 'provided drilling is allowed only in areas where the geology and hydrogeology can be characterised adequately, and provided that appropriate engineering and scientific solutions are in place to manage the storage, transport, reuse or disposal of produced water and salts – the risks associated with CSG exploration and production can be managed' (NSW Chief Scientist 2014).

b. What is Santos' plan to ensure farmers have enough water during drought?

- Santos has no control over weather conditions or rainfall events. Farmers in the area will continue to manage their properties and farming and/or grazing activities in response to weather conditions as they currently do.
- There may be some opportunity for the beneficial reuse of treated produced water from Santos' Leewood facility for irrigation at Leewood, dust suppression, firefighting and/or potential third party irrigation subject to assessment and approval of the Leewood Phase 2 project.

## Question 3

How will local landholders be compensated for truck movements, pipelines and pipeline corridors, drop in bore levels, spread of weeds, infrastructure, flaring of toxic chemicals and other aspects of Santos's operations which affect them on their own properties or whether they are affected by Santos's operations on neighbouring properties?

- The Principles of Land Access was signed on 28 March 2014 by Santos, AGL, NSW Farmers, Cotton Australia and the NSW Irrigators Council at NSW Parliament House.
- The Principles of Land Access should give the community further confidence that Santos seeks respectful, long-term relationships with landholders, as Santos seek to move forward with plans for its Narrabri Gas Project.
- Santos is committed to locating well sites on private land only when landholders agree to host Santos activities. Santos has a long-standing position that it will not undertake drilling activities on private land without the voluntary consent of the landholder. These landholders will receive a compensation package and Santos will also agree on a management plan to ensure the landholder is clear about all aspects of work on their land and is satisfied the profitability and sustainability of their business will not be compromised.
- The Environmental Impact Statement (EIS) that will be prepared for the Narrabri Gas Project assessment and approval process will address the risks to the natural environment, cultural heritage and the existing social structure.

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- The EIS will also consider the tangible immediate and longer term benefits the project would provide.

## Question 4

- a. Pilliga Forest, due to its location, size, density and geology is a major “raincatcher” and main recharge for the Great Artesian Basin. What tests are being done by Santos on the expected impacts on cropping and other farming in the area should drilling go ahead in the forest?
  - The geology underlying the Pilliga scrub is not unique to the area and would not influence rainfall.
  - Whilst overlying the GAB, the Pilliga is not the ‘main’ recharge of the GAB. As discussed in the previous CCC, the major recharge for the GAB in this area stems from where the Namoi River intersects the outcrop of the GAB to the south of Narrabri.
- b. What are the cumulative impacts of drilling a number of wells?
  - The cumulative effects of drilling up to 850 wells as part of the Narrabri Gas Project will be modelled as part of the information prepared for the Environmental Impact Statement (EIS).
  - To minimise the likelihood of serious or irreversible damage to the environment, potential impacts will be assessed in this EIS with necessary mitigation measures implemented as required.
  - The NSW chief scientist found that ‘provided drilling is allowed only in areas where the geology and hydrogeology can be characterised adequately, and provided that appropriate engineering and scientific solutions are in place to manage the storage, transport, reuse or disposal of produced water and salts – the risks associated with CSG exploration and production can be managed’ (NSW Chief Scientist 2014).

## Question 5

What plan does Santos have for a number of critically endangered species endemic to the Pilliga Forest which will be adversely affected by Santos’ drilling operations?

- Extensive ecology surveys have been undertaken in the Narrabri Gas Project area over the last five years by field ecologists mapping vegetation communities, fauna habitat and threatened species in the forest and its surrounds.
- Terrestrial flora and fauna and their habitats in the project area and the presence and likelihood of occurrence of threatened and migratory species, populations and ecological communities have been comprehensively surveyed and mitigation measures are identified to reduce potential impacts.
- Field surveys were undertaken between November 2010 and September 2014 over a range of seasons.

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- The field surveys involved a range of survey techniques to collect data on both species diversity and abundance in the project area.
- Information from the field surveys, and incorporating data obtained through a comprehensive database and literature review, extensive mapping, modelling and analyses that have been undertaken will be used to assess the impacts of the project on terrestrial flora and fauna in the project area.
- The Environmental Impact Statement that will be prepared for the Narrabri Gas Project will include a comprehensive suite of information in relation to the potential impacts on the natural environment for consideration during the assessment and approval process with NSW State Government and the Federal Government considerations under the *Environment Protection and Biodiversity Conservation Act 1999*.

## Question 6

What compensation is being offered to farmers whose properties border the Pilliga Forest?

- Santos is committed to locating well sites on private land only when landholders agree to host Santos activities.
- Santos has a long-standing position that it will not undertake drilling activities on private land without the voluntary consent of the landholder.
- These landholders will receive a compensation package and Santos will also agree on a management plan to ensure the landholder is clear about all aspects of work on their land and is satisfied the profitability and sustainability of their business will not be compromised.
- The Principles of Land Access was signed on 28 March 2014 by Santos, AGL, NSW Farmers, Cotton Australia and the NSW Irrigators Council at NSW Parliament House.
- The Principles of Land Access should give the community further confidence that Santos seeks respectful, long-term relationships with landholders, as Santos seek to move forward with plans for its Narrabri Gas Project.
- Santos' *Working with Landholders Fact Sheet* has information on the compensation framework for landholders. This Fact Sheet is available from the Santos Narrabri Gas Project website: [https://narrabrigasproject.com.au/uploads/2014/08/Fact\\_sheet-Working\\_with\\_landholders\\_web.pdf](https://narrabrigasproject.com.au/uploads/2014/08/Fact_sheet-Working_with_landholders_web.pdf)

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<b>Tabled:</b>	February 2015
<b>Tabled by:</b>	Tony Pickard
<b>Organisation:</b>	People for the Plains
<b>Questions submitted by:</b>	Denise Murray, Narrabri

## Question 7

I would be interested to know why Santos would spend \$36 million dollars building the four produced water holding ponds at Leewood when they don't have permission to go ahead with the Narrabri Pilliga Project. The exploration stage should not need this much produced water holding capacity. A smaller facility would have save them a lot of money if the project is not approved and if it is approved it could easily be enlarged.

- Santos has constructed two double lined 300 megalitre ponds and associated infrastructure at Leewood, a freehold property located adjacent to the Newell Highway south-west of Narrabri.
- The ponds are designed to store produced water and brine from Santos' past and ongoing coal seam gas (CSG) exploration and appraisal activities within PAL 2, Petroleum Exploration Licence (PEL) 238 and Petroleum Production Lease 3 (PPL 3).
- The construction and operation of this infrastructure at Leewood was assessed under the Leewood – Produced Water and Brine Management Ponds REF (RPS, 2012) and approved by the NSW Division of Resources & Energy (DRE) on 19 March 2012.
- The primary purpose of the ponds and the future proposed Leewood Phase 2 activity (Produced Water Treatment and Beneficial Reuse Project, including construction of a Water and Brine Treatment Plant) is to enable Santos to continue its CSG exploration and appraisal activities within PAL 2, PEL 238 and PPL 3.
- It is proposed that the Water and Brine Treatment Plant will operate for up to five years.
- The further development of the CSG field will necessitate a larger water treatment facility and this will be subject to further assessment and regulatory approvals as part of the Narrabri Gas Project.

## Question 8

I read in the paper that the NSW Government has banned the use of evaporation ponds. Why is the produced water in the Leewood Ponds allowed to evaporate?

Refer to Question 1(a). Leewood Stage 1 has involved the construction of storage (or holding) ponds that are required as part of the produced water management process.

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## Question 9

Is the Government doing or going to do background studies into the health of people living in and around CSG operations so as to be able to monitor the possible impacts of CSG operations on their health?

The Government supports the NSW Chief Scientist and Engineer's recommendation/approach of conducting a health risk assessment before the project commences to identify any possible risks to human health and methods to minimise those potential impacts, and to monitor exposure levels. This is because there are insurmountable methodological difficulties that preclude conducting any epidemiological studies which would make any results uninterpretable.

### Chief Scientists Report

*Managing environmental and human health risks from CSG activities* (September 2014) - [http://www.chiefscientist.nsw.gov.au/\\_data/assets/pdf\\_file/0006/56922/140930-Final-Managing-Environmental-and-Human-Health-Risks.pdf](http://www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0006/56922/140930-Final-Managing-Environmental-and-Human-Health-Risks.pdf)

Chief Scientist's *Final Report* (September 2014) - [http://www.chiefscientist.nsw.gov.au/\\_data/assets/pdf\\_file/0005/56912/140930-CSG-Final-Report.pdf](http://www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0005/56912/140930-CSG-Final-Report.pdf)

The NSW Government recognises that some communities are concerned about the health impacts of coal seam gas activities. For this reason the Government asked the NSW Chief Scientist and Engineer, Professor Mary O'Kane, to undertake an independent review of coal seam gas related activities in NSW, with a focus on the impacts of these activities on human health and the environment.

In her initial report, the Chief Scientist noted that those studies which have been conducted on the impact of gas activities on human health are often inconclusive and do not provide firm evidence of correlations and causality with coal seam gas activities.

On 30 September 2014, the Chief Scientist released her Final Report of the Independent Review of Coal Seam Gas Activities in NSW and her report on managing environmental and human health risks from CSG activities.

The Chief Scientist noted that the most effective way of preventing community exposure to contaminants is to prevent as far as possible the release of contaminants into the environment in the first place.

The Government was pleased to see that through appropriate measures, the technical challenges and risks posed by the coal seam gas industry can, in general, be managed through strategic resource management, high technical standards, comprehensive monitoring, and improvements to environmental data collection and the publication of that data.

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The Government will adopt all the recommendations made by Chief Scientist in her Final Report.

In the meantime, the Government has been active in putting in place the most comprehensive regulatory controls for the coal seam gas industry in Australia to limit the impacts of these activities on surrounding land, the environment and the health of humans and wildlife. These controls include:

- a two-kilometre exclusion zone around residential and village areas
- banning the use of harmful BTEX (benzene, toluene, ethylbenzene and xylene compounds) chemicals
- banning evaporation ponds
- having an independent regulator, the Environmental Protection Authority, as the lead regulator of environmental and health impacts of coal seam gas activities in NSW
- introducing an Aquifer Interference Policy
- Codes of Practice for Well Integrity and Fracture Stimulation.

I would also refer you to the Independent Expert Committee on Coal Seam Gas and Large Coal Mining Development who have been charged with providing advice on chemicals, the environment and human health to the federal Environment Minister. You can find more information, including updates on this work by visiting [www.environment.gov.au/coal-seam-gas-mining/research/index.html](http://www.environment.gov.au/coal-seam-gas-mining/research/index.html)

## Department of Planning and Environment

The Department of Planning's Director General Requirements for the EIS for the Narrabri Gas Project is here -

[https://majorprojects.affinitylive.com/public/0611cb1cf6d40db8c566170614479580/01.%20Narrabri%20Gas%20Project\\_Secretary's%20Requirements.pdf](https://majorprojects.affinitylive.com/public/0611cb1cf6d40db8c566170614479580/01.%20Narrabri%20Gas%20Project_Secretary's%20Requirements.pdf)

## Tara Report in Queensland

The Queensland Government released a report on the impacts of increased coal seam gas activities in the Tara region. The report found no clear link between emissions from coal seam gas activities and health complaints from residents.

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## Question 10

Have background studies been or being done on the level of methane in the air in and around the CSG project area?

The EPA is undertaking a state-wide fugitive methane emissions study to better understand the contributions from various natural, industrial and agricultural sources. The study is being conducted by the CSIRO and will look at seasonal contributions from various sources.

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<b>Tabled:</b>	February 2015
<b>Tabled by:</b>	Tony Pickard
<b>Organisation:</b>	People for the Plains
<b>Questions submitted by:</b>	Simon Pockley, Coonabarabran

## Question 11

What base line data is available to prove that Santos drilling into the Pilliga sandstone aquifers has not contaminated them? For 40 years I have relied for my drinking water on a spring that comes out of Pilliga sandstone. I am concerned about contamination.

- Santos is currently undertaking a comprehensive groundwater monitoring program to ensure representative baseline information on groundwater conditions is in place before the commencement of the Narrabri Gas Project.
- This includes reviewing known groundwater dependent ecosystems (GDEs) including springs both within the Project Area and the surrounding periphery.
- To date, it has been found that the springs which emanate from the eastern edge of the GAB in this area are groundwater rejection springs (not discharge springs).
- A rejection spring occurs in a location where surface water runoff pools/ponds as it cannot penetrate (recharge) the underlying rock at a fast enough rate to dissipate.
- The reviews of the potential GDEs are undertaken in accordance with the NSW Aquifer Interference Policy, which prescribe minimum guidelines on the degree in which these GDEs can be affected from groundwater abstraction (aquifer interference activities).
- The Santos Water Portal provides up to date results of our extensive surface and groundwater monitoring programs. It includes detailed results from water monitoring locations and other useful information about Santos' water strategy and the project. The Santos Water Portal can be accessed at <http://www.santoswaterportal.com.au/>

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**Tabled:** February 2015  
**Tabled by:** Tony Pickard  
**Organisation:** People for the Plains  
**Questions submitted by:** David C. Paull, Coonabarabran

## Question 12

As the Narrabri CSG Project proposes to completely surround Brigalow Park Nature Reserve and extend throughout the known locations of this species in the northern Pilliga, what provisions are being made:

- To ensure that this species will have safe passage between the Reserve, the Pilliga and other patches of habitat during the Project production phase.
- To provide a monitoring program to ensure the persistence of this species within the Project Area.
- What responses are planned should this population decline?

The isolated western population of the Black-striped Wallaby is highly restricted and relies on the use and access to these areas for its survival, removal of access between these areas is likely to lead to the decline of the viability of this population.

The Narrabri CSG Project is required to undertake a thorough assessment of the impacts of the development on the biodiversity values of the Pilliga, including impacts on Black-striped Wallaby, and to describe measures that will be undertaken to avoid, mitigate and offset these impacts. This will include addressing the need for monitoring programs where necessary. This assessment will be reviewed by DPE and OEH to ensure that measures proposed to avoid, mitigate and offset impacts to biodiversity are appropriate and able to be implemented should the project be approved.

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<b>Tabled:</b>	February 2015
<b>Tabled by:</b>	Tony Pickard
<b>Organisation:</b>	People for the Plains
<b>Questions submitted by:</b>	Richard Savage, Coonabarabran

## Question 13

I am a farmer from the Warrumbungle Shire. For many years we (farmers) have lived under the Native Vegetation Act. We as farmers cannot do as you miners do. We cannot rip into the earth, destroy grasses, bushes, trees and of course the wild life which relies on them. This restriction has restricted the income we can achieve from our farms. We accept this as we realise that the environment is in the long run more important than money.

- a. I would ask of both Santos and the Government to explain why they should be allowed to damage the environment in the interest of making money?
- b. I would also ask both Santos and the Government who will pay me compensation should my water resource (I have bore water) be damaged during the drilling and aftermath of the drilling? If I have no water, I have not farm. I will produce no food.
- c. I would also ask why must I work under the Native Vegetation Act but the mining industry does not?

The Narrabri Gas Project is a State Significant Development under Part 4 of the Environmental Planning and Assessment Act 1979. To undertake this project, Santos must obtain consent from the Department of Planning and Environment. In order to obtain consent, Santos must undertake a rigorous assessment of the environmental impacts of this project, which includes impacts on native vegetation and fauna habitat. Santos must also demonstrate how it will avoid, mitigate and offset impacts to native vegetation as part of its environmental assessment for the project. Further details of the environmental assessment requirements for this project can be found on the Department of Planning and Environment website.

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**Tabled:** February 2015  
**Tabled by:** Tony Pickard  
**Organisation:** People for the Plains  
**Questions submitted by:** Kate Schwager, Wee Waa

**Note: Information below was provided directly to Kate Schwager in response to her email of 21 January 2015.**

## Question 14

I'm still concerned about air pollution from your wells if you go into production. How much flaring will be done and how much pollution will occur in particles.

### Flaring

- In the exploration and appraisal phase of a project, a portion of the produced gas from pilot wells is diverted to the local fuel gas skid for conditioning prior to being used within the well site power generators, with the balance flowing to the low pressure gas gathering network and flared.
- As part of the production phase of a project, there will be a submission for approval for a high-pressure gas transmission pipeline to take the gas to market.
- Flared gas is wasted gas which cannot be sold to fuel homes and businesses.
- Some very limited flaring is necessary at times for operational and safety reasons, however only a very small proportion of the methane is flared over the life of a gas project, almost all is captured within the gas pipelines.
- When a gas field is in production, the commercial imperative is to utilise as much gas as possible, meaning flaring will be kept to a minimum.
- In terms of emissions, the two main by-products of natural gas combustion are carbon dioxide and water vapour, making it an extremely clean fuel when compared to coal and petroleum, which have higher carbon dioxide emissions, in addition to other by-products. The burning of gas produces virtually no ash or particulate matter.
- Emissions from the Santos exploration and appraisal activities in PEL 238 and the future proposed Narrabri Gas Project will be monitored in accordance with the requirements of the NSW Environment Protection Authority (EPA).
- These matters will be assessed as part of the Narrabri Gas Project (the Project) EIS.

## Question 15

Where the produced water will be used and still concerned with the disposal process of the brine with the news the Newcastle facility has been fined for how it disposed of the AGL water and ESG water.

### Produced Water and Brine

- We estimate that following treatment and desalination about 80% of the water we extract will be able to be reused.

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- We are currently finalising plans for a water treatment facility at Leewood to treat water from our exploration program as well as legacy brine from previous operations.
- During the exploration phase of our work, the treated water will be reused for construction activities and dust suppression and also to irrigate a portion of the Leewood property.
- Irrigation activities will be in compliance with our licence conditions and other regulations which also apply to other irrigators in the region.
- During exploration and appraisal, the salt will remain in a liquid form as brine. It may be stored at Leewood or disposed of at a licenced facility.
- While exploration and appraisal is underway, Santos will work with industry experts to investigate and develop salt handling technologies and facilities prior to the project moving to production.
- Santos will strictly adhere to all regulatory guidelines set out by the NSW Office of Coal Seam Gas (OCSG) and the EPA for dealing with salt as a by-product.
- If the Project is approved and reaches the production phase, additional treatment facilities would be installed to support the production phase and treat brine produced during exploration.

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**Tabled:** February 2015  
**Tabled by:** Tony Pickard  
**Organisation:** People for the Plains  
**Questions submitted by:** Tony Pickard, Narrabri

## Question 16

Can you please supply information about the removal of Drilling fluids and other semi and solid material from the Drill sites and Storage Facilities in PEL 238 since August 2013 to 24 December 2014?

- Santos adheres to strict conditions that are carefully regulated by the EPA when disposing of waste.
- Waste from the Narrabri Gas Project is tested on site and the analysis determines its classification according to EPA conditions.
- This classification then determines the appropriate handling and disposal procedures.
- Santos has a contractual agreement with Transpacific – which is an EPA-registered and licensed water treatment operator – to treat and dispose of this waste in accordance with strict regulatory requirements.

## Question 17

I realise that a lot of Produced and Stored water located in the Ponds/Dams located at Bibblewindi Water Storage and the Tintfield Ponds/Dams located at Wilga Park was transferred with approval to the Leewood Storage Ponds. However drilling fluids from the Make-Over and the Drill Rig drilling Dewhurst 22 – 25 and Dewhurst 26 – 29 were transported out of the area, as was the “sloppier material/slurry” from the bottom of the Storage Ponds at Bibblewindi and Wilga Park.

Can you please confirm the destination and amounts of each type of fluid removed from the area and the amounts returned, if any over the time frame from August 2013 to 24 December 2014?

- Santos adheres to strict conditions that are carefully regulated by the EPA when disposing of waste.
- Waste is disposed of at an appropriately licenced facility.
- It is a significant administrative task (that would consume a very large amount of staff time) to compile a complete list of types, destinations, quantities and amounts of waste returned for the timeframe requested.
- This request is considered a substantial and unreasonable diversion of Santos resources.
- Information on a specific waste movement may be provided if details of the specific activity, date or source location can be advised.

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## Question 18

Last year at the Original Narrabri CCC, it was stated that the destination was Santos treatment facility in Queensland. On 30 May 2014, Mr R Campbell informed me that he had taken fluid to a Santos Facility at Roma in Queensland.

- a. Can you please confirm that Santos does in fact have a Treatment Facility for the treating of Drilling Fluids and other watery material/slurry, at this or any other location in Queensland; and
  - b. What Santos does with the treated fluids and the by-products of the treatment?
- Santos adheres to strict conditions that are carefully regulated in New South Wales by the EPA when disposing of waste and all waste is disposed of at an appropriately licenced facility.
  - Licenced waste facilities have conditions that they must adhere to as legislated by the relevant State Government entity in that State, whether it be New South Wales or Queensland.
  - Namoi Waste Corp has been contracted by Santos on a number of occasions to transport consignments of waste from the Narrabri operations to a licenced facility at Chinchilla in Queensland.
  - There have been no consignments of waste material from the Santos operations at Narrabri in New South Wales to Roma in Queensland by Namoi Waste Corp.