

s.73 Irrelevant information

From: Chris Lees <Chris.Lees@ministerial.qld.gov.au>

Sent: Tuesday, October 11, 2022 8:35 PM

To: Pita Norris <Pita.Norris@rshq.qld.gov.au>

s.73 Irrelevant information

Subject: Re: RSHQ media response - CSG well corrosion

Thanks pita I'll give you a buzz about it tomorrow

s.73 Irrelevant information

Cheers

Sent from my iPhone

On 11 Oct 2022, at 8:18 pm, Pita Norris <Pita.Norris@rshq.qld.gov.au> wrote:

Good evening team

Below is our planned response to the questions sent by the ABC in relation to CSG well integrity and bacterial corrosion – I've pasted them below the response for easy reference. Our response is due back by the end of the day tomorrow, but I was planning to send this back at about 2pm. Don't hesitate to call if you have any queries.

Regards, Pita

Response:

Resources Safety and Health Queensland (RSHQ) audits and inspects operator's compliance with the [Code of Practice For the construction and abandonment of petroleum wells and associated bores in Queensland](#) and the [Qld petroleum well regulation three-year plan](#). These focus on well integrity – including bacterial management - of active operating plant. Since 2020, less than 1% of Queensland's wells have self-reported integrity issues. RSHQ will continue to work with operators to address risks which may cause harm to resources workers.

Questions:

Are the regulators aware of bacteria causing corrosion of coal seam gas wells? What action are they taking to address the issue?

How wide spread is the problem?

Is there any independent monitoring of both active and decommissioned coal seam gas wells to independently assess the potential broader impact of the problem? Can you provide details?

How will decommissioned coal seam gas wells be monitored beyond the life of the industry?

How can regulators assure tax payers, that remediating possibly corroded decommissioned CSG wells in the future, will not end up costing them?

From: Jan Martin <Jan.Martin@resources.qld.gov.au>

Sent: Monday, 10 October 2022 2:41 PM

To: Wendy Chan; Pita Norris

Subject: Media query re CSG well corrosion - whose issue?

Hi Wendy and Pita

I understand this was an RYI request by Lock the Gate so I'm checking if it's any or all of the Department of Resources, RSHQ or DES who should be responding to this?

Jan Martin
Media Manager
Strategic Communication and Engagement | Business and Corporate Partnership
Department of Resources

P: s.73 Irrelevant
E: jan.martin@resources.qld.gov.au
A: Level 4, 1 William Street, Brisbane Qld 4000
Connect with us on [Facebook](#), [Twitter](#), [YouTube](#) and [LinkedIn](#)

From: s.73 Irrelevant information <[redacted]@abc.net.au>
Sent: Monday, 10 October 2022 10:51 AM
To: Media DES; Resources Media
Subject: CSG well corrosion

Hi,

I'm working on a story about coal seam gas (CSG) well integrity, and the issue of bacterial corrosion.

My questions below relate to the attached RTI document.

As always, I would love to speak to a human about the subject – failing that, could I please get a response by the end of Wednesday the 12th of October.

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ABC

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National Regional Reporter
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Email: s.73 Irrelevant <[redacted]@abc.net.au>
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My pronouns are he/him

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From: Chris Lees

Sent: Wednesday, October 12, 2022 10:39 AM

To: Pita Norris <Pita.Norris@rshq.qld.gov.au>; Stephanie Kamicic <Stephanie.Kamicic@ministerial.qld.gov.au>

s.73 Irrelevant information

Subject: RE: RSHQ media response - CSG well corrosion

Hey Pita just a couple of suggested small changes to the response
Here you go

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Since 2020, less than 1% of Queensland's wells have reported integrity issues.

RSHQ will continue to work with operators to address risks which may cause harm to resources workers.

From: Pita Norris <Pita.Norris@rshq.qld.gov.au>

Sent: Tuesday, 11 October 2022 8:18 PM

To: Stephanie Kamicic <Stephanie.Kamicic@ministerial.qld.gov.au>; Chris Lees <Chris.Lees@ministerial.qld.gov.au>

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Subject: Media query re CSG well corrosion - whose issue?

Hi Wendy and Pita
23-135

File A

Page 4 of 18

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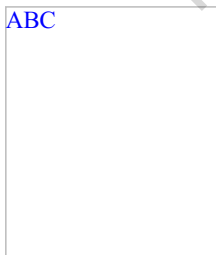
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Department of Resources

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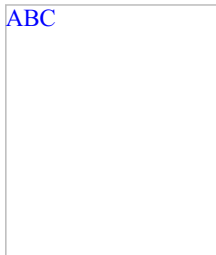
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Date : 13/10/2023 12:01:04 PM

From s.73 Irrelevant information @gmail.com

To : "Resources" Resources@ministerial.qld.gov.au

s.73 Irrelevant information

Published on Resources Disclosure Log
RTI Act 2009

Subject : Corroded Surat Basin Coal Seam Gas Wells - Microbiologically Influenced Corrosion (MIC)

Attachment : image002.jpg;

Dear Honourable Scott Stewart MP, Minister for Resources,

I write to you today to seek clarity and disclosure on recent information that has come to hand in regards to **widespread corrosion occurring in coal seam gas wells across the Surat Basin.**

We are lead to believe that Microbiologically Influenced Corrosion (MIC) is occurring within numerous gas wells, especially affecting those that are single cased, across the Surat Basin and throughout the Great Artesian Basin.

And when I say numerous, I am lead to believe that this could be in the **order of thousands.**

It appears bacteria have caused well corrosion in the shallow depths to such an extent that up to 2/3 of single casing wells may have failed, **causing leakage of gas and cross-formation connectivity pathways for groundwater**, risking the mixing of salty poor quality aquifers with good quality systems.

This not only risks significant groundwater contamination, and depletion/drawdown from the more pressurised overlying aquifers, but also

the release of untold fugitive emissions to the surface, exacerbating global warming GHG emissions.

The information circulating about the potential well integrity failures ties in with recent landholder reports that QGC have turned off wells in some of their gasfields without explanation.

It also ties in with a [press release by Saltel Industries](#) in 2019, which described them being approached in 2016 by one of Australia's leading natural gas producers, to tailor a mechanical repair solution for corrosion occurring at shallow depths in their CSG wells, caused by bacteria growing under specific pressure and temperature environments. It was noted that "this problem seems to be systemic in the region".

We would like to know if it is true that the impacted resource company(ies) have applied to the Queensland Government to utilise a biocide that may contain **BTEX chemicals** in order to 'treat' the bacteria.

And if so, whether the Queensland Government has given the resource company(ies) the approval to utilise this biocide.

From the research I have done, it appears MIC is a prolific and systemic problem for oil and gas projects around the world.

It appears the worst and most damaging bacteria is Sulphate Reducing Bacteria (SRB) which converts sulphate into hydrogen sulphide (H₂S), a toxic rotten egg smelling acidic gas, which produces a significant safety hazard to humans.

It is the presence of this hydrogen sulphide that rapidly corrodes the steel casing. It also plays a role in the biogenic sulphide corrosion of concrete.

It appears the toxic chemicals used to 'treat' the SRB can only control them inside the well casing but not the inaccessible external casing, as they have limited penetration capabilities.

While the bacteria may be controlled by biocides in some localised accessible areas, they cannot be controlled in the natural aquifer system once introduced. Also once in the shallow subterranean water system, they can exponentially grow as they are not being controlled by the adequate presence of counteractive methanogenic bacteria.

In one [research paper](#) I have read, it would also appear that without appropriate research and monitoring programs in place, in order to stop biofilms at an early stage of establishment, the bacteria prove to be extremely difficult to treat once they take hold.

There is also mention of enhanced resistance to biocides in produced water settings.

Coal seam gas is a relatively young industry. There is still so much scientifically unknown about the industry and its ongoing and future potential impacts. It would appear the cracks, quite literally, are beginning to appear.

If the recent information that is coming to hand is correct, then this is truly alarming and deeply troubling for all landholders and regional communities who essentially rely on good quality and safe groundwater from overlying shallow alluvial aquifers and the Great Artesian Basin for their daily lives and sustenance, including for their livestock.

I write to you for full disclosure on the extent of well integrity failure across the Surat Basin including the following information:

1. How many wells are known to be affected? And how many more are potentially affected?
2. Which gas companies and what locations does this affect so far?
3. Is there an expedited and increased direct well integrity monitoring program being enacted and led by the Queensland Government (RSHQ)?
4. How often are workovers typically carried out by resource companies?
5. What is the biocide in question and what is its chemical make-up/constituents?
6. How is its use regulated?
7. Is the biocide being used in the corroded/leaking wells? If so, what mitigation measures are in place to prevent the biocide leaking into the good quality shallow aquifers overlying the coal seams?
8. Are landholders and local councils being notified of:
 - a. The well integrity failures on and under their properties/districts?
 - b. The potential risk to their groundwater/town water supplies?
 - c. The chemicals being applied to the wells on their properties/across their districts?
 - d. Any reactive monitoring programs in place?
9. Are there plans in place for an increased and substantially comprehensive water quality monitoring program of the good quality aquifers, adjacent to the coal seams which are intrinsically relied upon by rural Queensland residents?
10. Are microbiological water tests being carried out in the surrounding good quality aquifers, in order to determine if the anaerobic bacteria has spread, which would have the potential to affect non-gas industry underground water infrastructure, including stock & domestic, irrigation and town water bores and pipelines?
11. Has there been consideration of the risk to livestock accessing potentially contaminated water and how this might be managed?
12. Did the Queensland Government carry out, or commission the carrying out of, research into the risk of MIC prior to approving the CSG tenures across Queensland, considering the widespread knowledge within industry of its existence and associated issues within the global oil and gas sector?

Time is of the utmost essence, before untold environmental damage occurs and catastrophic irrevocable threats to regional Queensland's water security unfold.

Please provide full disclosure of the extent and comprehensive details of the well integrity failure occurring across the Surat Basin, including responses to the queries raised above.

It is the Queensland Government's general environmental duty (GED), which applies to everyone in Queensland, to disclose this information to the people of Queensland, especially those directly impacted, as per the Environmental Protection Act 1994:

[duty to notify of environmental harm](#) – to inform the administering authority and landowner or occupier when an incident has occurred that may have caused or threatens serious or material environmental harm.

It is also pertinent to be reminded that access to clean and safe drinking water is a basic human right and must be safeguarded at all costs. The necessity to protect our State's groundwater, for our current population and for the purposes of intergenerational equity, trumps all other interests.

I look forward to your timely response and we request a meeting as soon as practicable to understand the responses to the above and who is taking responsibility for the government response.

Kind regards

s.73 Irrelevant infor

On behalf of concerned citizens of the Darling Downs and beyond.

s.73 Irrelevant information

Published on Resources Disclosure Log
RTI Act 2009

Date : 13/10/2023 2:17:08 PM

From : s.73 Irrelevant information

To : "Resources" Resources@ministerial.qld.gov.au

Subject : Urgent meeting to discuss the need to protect our prime agricultural land and groundwater

Attachment : October 2023 - Minister Scott Stewart MP.docx;Corroded Surat Basin Coal Seam Gas Wells - Microbiologically Influenced Corrosion (MIC) t copy.docx;

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Mobile

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Email

s.73 Irrelevant information

[13 October 2023](#)

Hon Scott Stewart MP
Member for Townsville
Minister for Resources

resources@ministerial.qld.gov.au

Dear Minister Stewart

I writing to request an urgent meeting with you to discuss the need to protect prime agricultural land from Coal Seam Gas. Our farming community is also increasingly concerned about corroded Surat Basin Coal Seam Gas wells - Microbiologically Influenced Corrosion (MIC)

The Darling Downs is among the richest, most fertile soil plains in the world. Its black soils are classed as vertosols as they can crack and swell depending on moisture.

According to Agtrend data, the Toowoomba region has officially been identified as having the largest agricultural economy in Queensland, valued at almost \$1.36 billion. But that wealth is under threat.

I recently organised, together with s.73 Irrelevant information a local farmer, and Associate Professor, David George a 'Soil Symposium' with leading experts on the black floodplain soils in Cecil Plains. The forum was attended by around 200 farmers and addressed threats and opportunities of national significance.

The forum brought together leading experts from across the nation including: Professor Peter Dart, The University of Queensland; Associate Professor Snow Barlow, Melbourne University; Mark Ogge, Principal Advisor, Australia Institute; Ms Revel Pointon, Managing Lawyer, Environmental Defenders Office; Ms Laura Harmes, Ecology researcher University of Queensland; Dr Madeline Taylor, Macquarie Law School; Scenic Rim Mayor, Cr Greg Christensen; Professor Matthew Currell, RMIT University; Adjunct Professor, David George, Griffith University; Dr Hannabeth Luke, Southern Cross University; students from St Mary's College Toowoomba; together with landowners from both the Darling Downs and the Liverpool Plains.

The event attracted interest from several prominent representatives including Senator David Pocock, Independent Senator for the ACT; Mr Pat Weir MLA, Member for Condamine; Mr Kerry Shine, Toowoomba Regional Council, and Mr Bill Cahill, Toowoomba Regional Council.

As someone who has lived and worked in the Darling Downs for many years, I understand the vital role that agriculture plays in supporting our communities and maintaining our way of life.

I am committed to protecting prime agricultural land from the impacts of fossil fuels and ensuring food security for our region, which is why I brought together experts from across Australia to make this a national priority.

There are very limited pockets of such high quality prime agricultural land like those of the Darling Downs. These lands need to be protected and kept off limits to the extractive resources industries which severely damages our productive capacity and our nation's food and water security now and into the future.

The Symposium provided information and education, and gauged consensus on how to enhance protection for our most productive prime agricultural land, to provide food security for both our domestic food supply and primary export markets and to safeguard the economic benefits of our agricultural industries.

As you know our farmers will be on the frontline of the challenges of soil, water, climate change, natural disasters, and ecological concerns. Droughts will worsen and become more frequent. I am concerned about decreasing crop yields, costing the nation about \$1.8 billion in GDP. That loss will have a huge impact on our local economy in Toowoomba.

I am most concerned that recurring disasters and a warming climate will have huge impacts on our state economy, setting the taxpayer back billions over coming years.

The latest Intergenerational Report predicts a poorer, hotter, and less productive Australia. The IGR is sending a warning that if temperatures rise "up to 3 degrees Celsius or over 4 degrees Celsius" labour productivity and crop yields will be hit, costing the economy "between \$135 billion and \$423 billion in today's dollars" over the 40-year period.

The report highlights the stark reality for our agricultural industry and our economy if we do not take immediate action.

We are at a defining moment in history. With major concerns of environmental sustainability, climate change, global food security, and water security.

Our food bowl and associated industries are crucial to the longevity of our state economy.

Australian agriculture domestically feeds some 20 million people. Our exports are sufficient to feed another 40 million. We can do a lot of that from the Darling Downs.

Yet, we know that Australia will be one of the most adversely affected areas in the world from climate change leading to a decline in agricultural production.

A degrading environment, poor trade terms, peak fossil fuels and climate change will have major consequences for our economy and food security, not only in Australia but globally.

We need to value our agricultural industry with a State Agricultural Policy and strategy that protects our truly prime agricultural land, some 2.86% in Qld and groundwater.

We need to do this to face and overcome the greatest challenges of our time – climate change but also the very real subsidence issues and groundwater contamination from widespread corrosion in CSG wells.

Protecting our environment and preserving our agricultural land is crucial for the future of our communities and our nation, but also our responsibility as a wealthy nation to help feed a growing world population.

We need legislative commitments to protect prime agricultural land to ensure that our region remains productive, sustainable, and liveable for generations to come, and that our own food and water security is not compromised.

The Intergenerational Report is clear, CSG on prime agricultural land belong to history.

Agriculture, in regional Queensland, and the nation is part of our economic **future**.

I would welcome the opportunity to meet with you, to seek your guidance on how to progress a path forward to protect our prime agricultural land, groundwater, and a sustainable economy for the future.

Looking forward to hearing from you.

Kind regards

s.73 Irrelevant i

Community Advocate

s.73 Irrelevant info

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It appears the worst and most damaging bacteria is Sulphate Reducing Bacteria (SRB) which converts sulphate into hydrogen sulphide (H₂S), a toxic rotten egg smelling acidic gas, which produces a significant safety hazard to humans. It is the presence of this hydrogen sulphide that rapidly corrodes the steel casing. It also plays a role in the biogenic sulphide corrosion of concrete.

It appears the toxic chemicals used to 'treat' the SRB can only control them inside the well casing but not the inaccessible external casing, as they have limited penetration capabilities.

While the bacteria may be controlled by biocides in some localised accessible areas, they cannot be controlled in the natural aquifer system once introduced. Also once in the shallow subterranean water system, they can exponentially grow as they are not being controlled by the adequate presence of counteractive methanogenic bacteria.

In one [research paper](#) I have read, it would also appear that without appropriate research and monitoring programs in place, in order to stop biofilms at an early stage of establishment, the bacteria prove to be extremely difficult to treat once they take hold.

There is also mention of enhanced resistance to biocides in produced water settings.

Coal seam gas is a relatively young industry. There is still so much scientifically unknown about the industry and its ongoing and future potential impacts. It would appear the cracks, quite literally, are beginning to appear.

If the recent information that is coming to hand is correct, then this is truly alarming and deeply troubling for all landholders and regional communities who essentially rely on good quality and safe groundwater from overlying shallow alluvial aquifers and the Great Artesian Basin for their daily lives and sustenance, including for their livestock.

I write to you for full disclosure on the extent of well integrity failure across the Surat Basin including the following information:

1. How many wells are known to be affected? And how many more are potentially affected?
2. Which gas companies and what locations does this affect so far?
3. Is there an expedited and increased direct well integrity monitoring program being enacted and led by the Queensland Government (RSHQ)?
4. How often are work overs typically carried out by resource companies?
5. What is the biocide in question and what is its chemical make-up/constituents?
6. How is its use regulated?
7. Is the biocide being used in the corroded/leaking wells? If so, what mitigation measures are in place to prevent the biocide leaking into the good quality shallow aquifers overlying the coal seams?
8. Are landholders and local councils being notified of:
 - a. The well integrity failures on and under their properties/districts?
 - b. The potential risk to their groundwater/town water supplies?
 - c. The chemicals being applied to the wells on their properties/across their districts?
 - d. Any reactive monitoring programs in place?

9. Are there plans in place for an increased and substantially comprehensive water quality monitoring program of the good quality aquifers, adjacent to the coal seams which are intrinsically relied upon by rural Queensland residents?
10. Are microbiological water tests being carried out in the surrounding good quality aquifers, in order to determine if the anaerobic bacteria has spread, which would have the potential to affect non-gas industry underground water infrastructure, including stock & domestic, irrigation and town water bores and pipelines?
11. Has there been consideration of the risk to livestock accessing potentially contaminated water and how this might be managed?
12. Did the Queensland Government carry out, or commission the carrying out of, research into the risk of MIC prior to approving the CSG tenures across Queensland, considering the widespread knowledge within industry of its existence and associated issues within the global oil and gas sector?

Time is of the utmost essence, before untold environmental damage occurs and catastrophic irrevocable threats to regional Queensland's water security unfold. Please provide full disclosure of the extent and comprehensive details of the well integrity failure occurring across the Surat Basin, including responses to the queries raised above.

It is the Queensland Government's general environmental duty (GED), which applies to everyone in Queensland, to disclose this information to the people of Queensland, especially those directly impacted, as per the Environmental Protection Act 1994:

duty to notify of environmental harm – to inform the administering authority and landowner or occupier when an incident has occurred that may have caused or threatens serious or material environmental harm.

It is also pertinent to be reminded that access to clean and safe drinking water is a basic human right and must be safeguarded at all costs. The necessity to protect our state's groundwater, for our current population and for the purposes of intergenerational equity, trumps all other interests.

I look forward to your timely response and we request a meeting as soon as practicable to understand the responses to the above and who is taking responsibility for the government response.

Kind regards

s.73 Irrelevant informa

On behalf of concerned citizens of the Darling Downs and beyond.