

Balancing South Africa's future Water needs

Deal, Le Roux.

TREASURE KAROO ACTION GROUP

**we see our key input in this forum
as restricted to issues relating
exclusively to water**

**accordingly, no comment on ancillary
issues, which in our view, must be
restricted to an appropriate forum.**

WRC “if the exploration and development of unconventional gas mining were to go ahead, how would the various stakeholders make sure that it is done in a responsible and sustainable manner?”

preserving water for future needs

- 👉 we believe that to give effect to the requirement of sustainability and responsibility the WRC must restrict it's findings to the absolute mechanics of water consumption, known conditions in SA and the overlay of documented water and related SGM issues in the US

‘... [I]n the future (short- to long-term), it *is* envisaged that South Africa’s water problems may intensify. Issues such as water for all, quality of life, and a *sustainable environment* are an essential part of the country’s national priorities and require considerable attention.’

how we view the WRC and DWA

👉 custodians and guardians of South Africa's water

arms length evaluation

- ✎ WRC must be able to advise DWA without being influenced by aspects unrelated to water

WRC comment integrated into SEA

- ✎ WRC findings intrinsic to SEA. Weighting could logically be determined by a comparison of the importance of water for human consumption and agriculture compared to the needs of mining development

South Africa will be short of 3-billion cubic metres of water by 2030

(17% of expected demand),

"some tough trade-offs ... between domestic water use, agriculture and ...activities such as mining and power generation"

‘... [c]urrently, South Africa is still under threat of a *lack of sufficient water*, while water quality and availability issues are becoming *more acute*.’

shale gas mining and water

- ❄ water impact must be measured across the entire process – not just during the hydraulic stimulation, including extra water demand in the treatment and disposal of produced water and waste material

unanswered questions about water

❄ where will the water be sourced?

unanswered questions about water

- ❄ What are the implications of drilling through shallow aquifers and stimulating deeper formations given the known complex geological properties of the Karoo basin?

unanswered questions about water

- ❄ where and how will flowback water be treated and brine, tailings and other waste disposed of?

baseline water studies

- ❄ what is a realistic radius?
- ❄ studies to include seasonal fluctuations?
- ❄ who will conduct?
- ❄ who will store the data?
- ❄ will there be random sampling to verify results?
- ❄ who will pay?

can we realistically quote the US experience?

insofar as water consumption, water treatment and waste water disposal is concerned we believe that the US experience is relevant.

unique South African conditions must be taken into account in the extrapolation of US experiences.

can we realistically quote the US experience?

insofar as aquifer pollution is concerned the industry is not prepared to concede, beyond a handful of inescapable cases, that such events have occurred.

we believe that there are many more such cases concealed from the public by non-disclosure agreements.

US courts are presently scheduled to hear hundreds of cases alleging water contamination.

can we realistically quote the US experience?

government data reviewed by PSE Health in 2012, shows that 6-7% of new wells drilled in Pennsylvania in the past three years, have compromised structural integrity.

in 2012 Harvard School of Law, stated “FracFocus is not an acceptable regulatory compliance method for chemical disclosures.”

US courts are presently scheduled to hear hundreds of cases alleging water contamination.

how does the US deal with fracking waste water?

Pennsylvania has banned it's treatment and disposal within the state

New York legislature is considering a bill to criminalise the possession, handling, storage or disposal of fracking waste within the state

New Jersey passed a bipartisan fracking waste ban by 30 votes to 5

Ohio draft bill to ban disposal wells

comments from the NJ ban

“Toxic waste from fracking should not be allowed anywhere near New Jersey’s waterways,” said Doug O’Malley, interim director of Environment New Jersey. “The New Jersey Senate chose drinking water over gas drillers today, and we urge Gov. Christie to sign this bill into law.” “Fracking is a potent source of toxic waste,” said O’Malley. “That is the last thing New Jersey needs.”

unique SA considerations that would impact on water use

post production monitoring, enforcement and liability

oil & gas operators agree that all well casings will fail in x years

valid concern over broad contrasts in technical, administrative and operational efficiency across the spectrum of drilling contractors and their principals

how does the WRC proceed in the best interests of SA?

- ❄ conduct an independent, government-funded scientific overview of sgm related water issues across the US and other countries
- ❄ scientifically apply the findings to South Africa within the scope of the WRC mandate in cooperation with other state entities
- ❄ publish the data sources, findings and conclusions and invite stakeholder comment and participation under the WAT indaba forum

in conclusion

It is our view, based on

- ❄ the water challenges facing South Africa;
- ❄ the established water challenges in the shale gas mining industry in the US;
- ❄ the lack of scientific middle ground in connection with water and shale gas mining; and
- ❄ the dichotomy between US and SA geology, laws and enforcement ability

that, any conclusion at this time, by the WRC, leaning towards support for shale gas mining in SA, would be premature.

The ultimate question for the WRC at some point?

- ❄ Is the WRC prepared to inform the national government that, it is the conclusion of the WRC, that the water resources of South Africa, are and will be sufficient to accommodate the introduction and impact of full production of shale gas mining over South African provinces, and that such an activity can proceed without a material impact on water via pollution or other related causes?