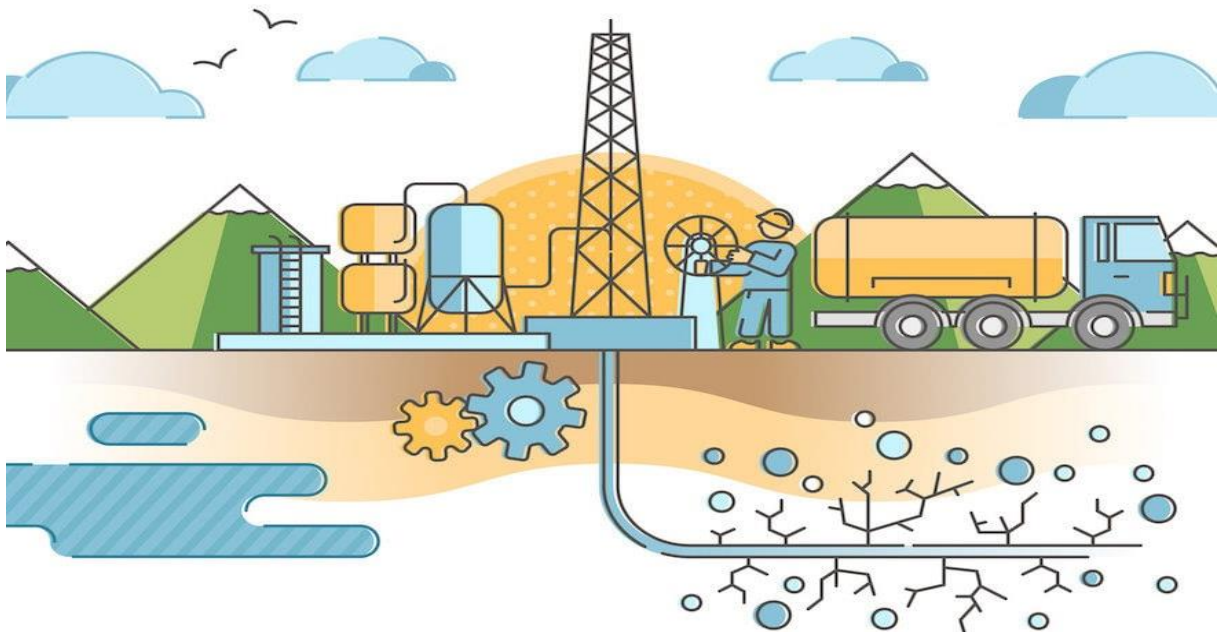


## Critical comments on the

### Proposed Regulations pertaining to the Exploration and Production of Onshore Oil and Gas Requiring Hydraulic Fracturing: as of July 11, 2022:

[https://www.gov.za/sites/default/files/gcis\\_document/202207/47112gon2273.pdf](https://www.gov.za/sites/default/files/gcis_document/202207/47112gon2273.pdf)

By Dr. Stefan Cramer, retired hydrogeologist



The new regulations are required to give the **investors a clear path** of the legal framework under which they can operate in the onshore environment of South Africa. They are also required to give the **competing water user of South Africa a clear signal** that their overriding concerns for clean and affordable drinking water are heard by Government. The new regulations solve **neither** of these two – competing - tasks!

1. The new regulations **do not address** the particular risks of onshore oil and gas exploration and production **to the scarce and sensitive groundwater resources** of South Africa.
2. The lack of understanding or recognition of the Karoo groundwater systems leads to a **huge deficit in protecting public / municipal water facilities**
3. The new regulations **do not protect private water facilities** at all.
4. With very few exceptions, the “new” regulations are not new, but mostly stating the obvious as contained in previous NEMA and other legislation. **They try to look tough and caring**, but rather give a **false sense of security** and try to paint the department as being strict, where it is not.
5. Some of clauses are outright nonsense and **show the absence of geotechnical or hydrogeological input** into these regulations.
6. In several places they **are contradictory in themselves** and will ultimately **lead to legal challenges** instead of clarity.

**Detailed comments** (Numbers refer to Chapter.Paragraph.Section)

2.4.a: A potentially wide-ranging prohibition of utilizing **potable water** for purposes of hydraulic fracturing is in place. While this laudable, the term is not defined in any legal way and will be open to abuse and mis-representation. It further allows the use of potable water “for the preparation of the slurry for cement mixtures on which tests will be conducted”. This phrase does not make sense and shows the poor technical input into these regulation.

2.4.c: Discharge or disposal of hydraulic fracturing fluids, process water or any other component of process water into surface waters or into groundwater is prohibited and was always under SA water legislation. But here – by implication – it is allowed for disposal **into the atmosphere** under the new regulations, for example **in the form of evaporation ponds or spraying from and into a retention dam**, a regular way of disposal for example in the US. In this way, the toxic components are transferred to the atmosphere and can be carried away and dispersed by the wind. Also great losses of valuable water to evaporation are not considered.

2.4.d: The disposal of sludge to landfill (with a water content of <40%) is allowed in the new regulations. They are silent on the **potentially toxic components** of typical fracking sludges.

2.4.g: “*The care and maintenance of exploration wells beyond eighteen months after pressure testing has ceased*” is prohibited. **That does not make sense at all** and shows the lousy editing of the guidelines.

2.5.d: Hydraulic fracturing is prohibited within **two kilometers of any government waterworks, including dams with a safety risk**. This regulations does not recognize the nature of municipal wellfields that abstract water from a much wider radius, does not **recognize the nature of most waterworks in the Karoo as private water abstraction facilities**. **The new regulation limit of two kilometers is arbitrarily defined and does not recognize Karoo groundwater hydrology. All municipalities must vehemently object at this clause!**

2.5.g: Hydraulic fracturing is prohibited “within two kilometers from the edge of a thermal or cold spring, including seismically active springs”. Again, the nature of Karoo hydrogeology is not taken into account. And the geological training of the authors must be questions when they talk about “seismically active springs”. That term does not exist. Springs are perhaps the result of seismic activity but are not seismically active themselves. What has happened to the once excellent SA groundwater community, are they absent from Government?

3.6.a: The obligation to consider environmental impacts is **not new and not exclusive** to hydraulic fracturing undertakings. They just make the document look good.

3.6.b: The **need for base line studies**: the same applies.

4.7.3 a: new regulation is the need for **baseline study of a minimum of 24 months**. This is slightly better than in previous regulations, where no minimum duration of base line studies was prescribed. From a groundwater protection point of view, even 24 months are hardly enough to describe the flow of groundwater and surface water, as the climate is widely more variable and groundwater flows must be modelled **over a much longer period** of time to describe them in sufficient detail.

4.13.1: The regulations require that the “results of the well examination tests must at all times demonstrate that the pressure boundary of the well is controlled throughout the life cycle of the well”. This is patently nonsensical. The term “life cycle of the well” is not defined. Nowhere in SA drilling history have wells been “controlled throughout the life cycle”, instead practically all wells

have been abandoned at one point in time. This regulation is unrealistic and gives a false sense of security.

4.14.3.1: The need to show “**confirmation of groundwater and aquifer isolation**” is to be applauded but lacks sufficient technical detail to be of any relevance here.

14.3.3: The same applies to the requirement to show “**measures to manage seismicity risks**”. The absence of technical detail makes this clause obsolete and unenforceable.

4.14.4: Requires that “The names of all drilling fluids must be submitted to the designated agency for approval prior to use.” Even in the US it is good standard practice to **disclose the fracking fluids to the public!**

5.16.5: The need to notify in writing, the designated agency, and the Minister responsible for water affairs **within one hour** of suspending hydraulic fracturing in the case of “well integrity issues or the risk to the environment” is **undefined, unrealistic and unnecessary**, as no official will be at hand at such short notice. This clause gives again a false sense of stringent measure to control the industry.

5.19.1: “All the assessment, monitoring, and reporting information .... must be **uploaded to the website of the holder** within 2 months of submission to the relevant authorities or within 1 month from approval and annually thereafter.” This public disclosure requirement is in conflict with earlier regulations that required disclosure **to the competent authority only**.

5.19.2: This broad requirement for public disclosure is immediately reduced in the following paragraph if “it may be shown to directly relate to the availability of **gas or petroleum’s commercial value of the holder’s acreage**”. Nearly all well information may be classified into this category, **thus rendering 4.19.1 useless**.

5.19.3: In another twist, this paragraph then requires total disclosure of nearly all sensitive information, including the composition of the fracking fluids without any loopholes and restrictions. The contradictions between the regulations will immediately make them **prone to legal battles and challenges**.

5.20.1: The need to decommission all exploration and production wells **within 60 days of final use** is unduly short and rather impractical. There is no need for such a short period. The regulations should rather **concentrate on procedures of decommissioning**.

5.20.4: This paragraph stresses the need for decommissioned wells to be monitored – but is **silent on the length of time** for which it must be monitored.

6.231 and 2 speak of offences and penalties of persons but omits **corporate responsibilities**.

