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THE GREEN CONNECTION

To: Jan Arkert

And to: Liz McDaid

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Re: KAROO DEEP DRILLING PROJECT

1. INTRODUCTION & EXECUTIVE SUMMARY

I have been asked to provide guidance on the following questions relating to the Karoo Deep Drilling (KDD) project being carried out by the Council for Geosciences (CGS):

- Are the activities conducted on site 'prospecting' within the meaning of the Mineral and Petroleum Resources Development Act (MPRDA), and if so would environmental authorisation be required?
- Is a water use license (WUL) required for water being used for the KDD project (which water is understood to be sourced from adjacent groundwater)?
- Is there appropriate legislation that requires waste water to be contained and disposed of in a suitable manner?

With regard to whether the KDD project activities constitute 'prospecting' for minerals within the meaning of the MPRDA, in my view they probably do not (although there is some uncertainty). Based on information available, the KDD project is a baseline geoscientific and geo-environmental programme that involves (among other things) a deep vertical research borehole and a wide range of scientific investigations *to better understand the impact any geo-resource exploration activities (minerals, gas, deep ground water, geothermal) could have on the Karoo environment*' etc. When the MPRDA definition of 'prospecting' is viewed in isolation, the activity does on the face of it appear to fall within its meaning. However, when regard is had to the purpose and context of chapter 4 the MPRDA relating to mining, it is evident that prospecting is one of several successive stages in the regulatory process governing mining of minerals. In the absence of any facts suggesting that CGS is intentionally searching for minerals with a view to ultimately winning or extracting minerals at the site

in question, it is in my view unlikely that a Court would regard the activity as prospecting for minerals. It follows that the NEMA EIA listed activities relating to prospecting would also not be triggered.

When regard is had to the purpose and context of chapter 6 the MPRDA relating to petroleum exploration and production, it is also evident that exploration is one of several successive stages in the regulatory process governing the exploration for and production of petroleum (including shale gas). In the absence of any facts suggesting that CGS is intentionally exploring for shale gas with a view to locating a discovery at the site in question, I am also of the view that the KDD project does not constitute exploration for petroleum. It follows that the NEMA EIA listed activity relating to exploration would also not be triggered. This conclusion would, however, need to be revisited should credible evidence come to light showing that the KDD project was designed and implemented to circumvent the moratorium on shale gas exploration and production,[1] or that the 'research' being conducted in relation to shale gas is substantially the same as would be conducted by persons exploring for shale gas with the intention of locating a discovery.

A question does arise regarding whether the CGS is acting within the scope of its statutory functions. The CGS's objects and functions are set out in the relevant enabling provisions of the Geoscience Act, which empowers CGS to (among other things) promote the search for, and exploitation of, any mineral in the Republic; and to study the distribution and nature of mineral resources and geo-environmental aspects of past, current and future mineral exploitation. It is not, however, the function of CGS to promote the onshore exploration for and production of petroleum (such as shale gas). This function falls to the Petroleum Agency of South Africa (PASA) under the relevant provisions in the MPRDA. It is possible that the CGS is acting outside of its statutory functions insofar as its research activities relate to petroleum resources (shale gas), although its broader functions could arguably enable it to perform geoscientific research activities that relate to shale gas (see paragraph 3.1 below for a more detailed discussion).

A water use license under the National Water Act (NWA) would be required for the taking water from adjacent groundwater, unless this water use is permissible under (among other things) a General Authorisation. A *General Authorisation for the Taking and Storage of Water* has been published, and CGS would not require a water use license for the taking water from adjacent groundwater if it has lawful access to the property on which the groundwater is accessed, and provided that no more than

[1] GN 54 of 1 February 2011: South African Agency for Promotion of Petroleum Exploration and Exploitation (Pty) Ltd (Petroleum Agency SA): Moratorium under section 49 (1).

40,000 cubic metres per annum is taken. However, water use licenses may be triggered by other water uses if the use is not permitted under a General Authorisation (for example if waste or water containing waste is discharged by CGS into a water resource through a pipe, canal or other conduit; if CGS is disposing of waste in a manner which may detrimentally impact on a water resource; or if it is removing, discharging or disposing of water found underground where this is necessary for the efficient continuation of an activity). Insufficient information is available to clearly determine whether such water uses are being conducted, and if so whether a water use license is required or whether the water use is permissible under a General Authorisation.

CGS has a legal obligation under the NWA to take reasonable measures to prevent water resource pollution, as well as a duty of care under NEMA to take reasonable measures to prevent significant degradation or pollution of the environment. Such reasonable measures include measures to contain or prevent the movement of pollutants.

In the event that CGS has established and is operating facilities or infrastructure for the treatment of wastewater, it would require NEMA environmental authorisation for this activity if the daily throughput capacity of such facilities exceeded 2000 cubic metres.

The Waste Act imposes various obligations on the generator of waste relating to the management, storage and disposal of general and hazardous waste, but it is unlikely (on the information available) that a waste management license would be triggered.

A more detailed overview and discussion of the relevant legislation is provided below.

2. BACKGROUND

In 2017, the CGS issued a notice regarding consultation with interested and affected persons in terms of sections 3 and 5 of the Geoscience Act, advising that it was conducting a 3-year scientific programme that would include a deep vertical research borehole near Beaufort West, coupled with a wide range of geoscientific investigations '*to better understand the impact any geo-resource exploration activities (minerals, gas, deep ground water, geothermal) could have on the Karoo environment*'.

It is stated in the notice that there is uncertainty regarding the mineral, gas or geothermal economic potential of the Karoo, and points to the potential threat of damage to its geo-environment (such as deep and shallow water resources, seismicity, soil chemistry, and gas emissions). It is stated further

that quantitative scientifically-based conclusions cannot be drawn on these matters with the currently available information, and that a vertical deep research borehole was therefore deemed necessary to be able to competently address these issues by providing the necessary information.

It is indicated in the notice that Beaufort West was selected because of its geo-resources and geo-environment (uranium, possible shale gas, deep groundwater and geothermal energy), the lack of any deep boreholes in the area (and therefore the lack of knowledge on deep geology), and the fact that there are no exploration licences in the municipal grounds. It is stated in the notice that the CGS research programme is not linked to any exploration activities.

The notice indicates further that the CGS program would run in three phases, namely:

1. Base line study at regional and local scales;
2. Drilling of a vertical deep borehole (down to 3500m), with "down the hole" geophysics, and including rock core and groundwater sampling;
3. Borehole result analyses, including detailed study of the core, gas and/or mineral analysis and on-going monitoring of any geo-environmental changes and impacts.

The project is currently in phase 3.

The CGS website[2] indicates that the KDD project is a 5-year geo-environmental baseline programme (as opposed to the 3-year duration indicated in the earlier notice), and repeats the notice statement that the project is '*designed to better understand the potential impact of geo-resource exploration activities (mineral, gas, deep groundwater, and geothermal) on the Karoo geo-environmen*t'. The website indicates further that '*particular focus is given to the looming shale gas exploration'*, and that Beaufort West was selected because it lies within the shale gas 'sweet spot'. It is stated on the website that shale gas is a natural gas consisting primarily of methane and 20% higher hydrocarbons, and that there is increasing exploration to find domestic gas feedstock (including investigating shale and coal bed methane reserves) to diversify the energy mix and [purportedly] reduce carbon emissions. The website mentions that South Africa has an estimated 390-485 trillion cubic feet in technically recoverable natural gas from shale reservoirs. It is stated further that:

[2] https://geoscience.org.za/index.php/projects-footer/754-the-karoo-deep-drilling-project (last accessed 9 June 2021).

> However, South Africa cannot make an environmental assessment of the Karoo's shale gas exploitation by hydraulic fracturing with the currently available Legal Framework. Thus, the Karoo Deep Drilling project will serve as a baseline study for future shale gas research work and play a vital role in review of petroleum regulations (Government Gazette, No. R. 466, 3 June 2015).[3]

A mining media report on the KDD project also makes reference to the DMRE's '*moratorium on shale gas exploration until evidence-based data and information on the potential impact of shale gas exploration, particularly on the environment, are available*'.[4]

3. DOES THE KDD PROJECT CONSTITUTE PROSPECTING AND/OR EXPLORATION?

3.1. Council for Geosciences (CGS)

The CGS was established by the Geoscience Act,[5] with its statutory objects being to:

(a) **promote the search for, and exploitation of, any mineral in the Republic**;
(b) undertake research in the field of geoscience;
(c) act as a national advisory authority in respect of:
  (i) geohazards related to infrastructure and development; and
  (ii) geo-environmental pollution brought about by mineral exploitation and by other activities; and
(d) provide specialized geoscientific services.[6]

The functions of the CGS are wide-ranging, and it is empowered by the Geoscience Act to:

(*a*) Undertake geoscientific research and related technological development;
(*b*) compile and develop a comprehensive and integrated collection of knowledge and information of geology, geochemistry, geophysics, engineering geology, economic geology, geochronology, palaeontology, geohydrological aquifer systems, geotechnical investigations, marine geology, geomagnetism, seismology, geohazards, environmental geology and other related disciplines;
(*b*A) **promote the search for, and the exploitation of, any minerals in the Republic**;
(*b*B) **bring to the notice of the Minister any information in relation to the prospecting for and mining of mineral resources which is likely to be of use or benefit to the Republic**;
(*c*) serve as the national custodian of geotechnical information, prospecting information and all other geoscientific information relating to the earth, the marine environment and geomagnetic space, all of which shall be lodged with the Council;
(*d*) study the:
  (i) **distribution and nature of mineral resources**; and
  (ii) **geo-environmental aspects of past, current and future mineral exploitation**;
(*e*) study the use of the surface and the subsurface of land and the seabed, and from a geoscientific viewpoint advise government institutions and the general public on the judicious and safe use thereof with a view to facilitate sustainable development;
(*e*A) review and evaluate all geotechnical reports in respect of geohazards that may affect infrastructure and development at prescribed tariffs;
(*f*) develop and maintain the National Geoscientific Library, the National Geoscientific Information Centre, the National Borehole Core Depository, the National Geophysical and Geochemical Test

[3] https://geoscience.org.za/index.php/projects-footer/754-the-karoo-deep-drilling-project
[4] https://www.miningreview.com/oil-and-gas/karoo-deep-drilling-geo-environmental-baseline-research-project/ (last accessed 9 June 2021).
[5] 100 of 1993.
[6] Section 3.

Sites, the National Geoscience Museum, the National Seismological Network and the National Geoscience Analytical Facility;

(*g*) conduct investigations and render prescribed specialized services to public and private institutions;

(*h*) undertake:

(i) research of its own accord;

(ii) research on behalf of the State or any other government institution, or on behalf of any person or institution, or support such research financially; or

(iii) **any reconnaissance operation, prospecting and other related activities with a view to attracting investment to the mineral resource sector**; and

(*i*) do anything that is necessary for or conducive to the achievement of the said objects.

Thus the CGS is empowered (among other things) to: promote the search for and exploitation of minerals in the Republic; bring any information in relation to the prospecting for and mining of mineral resources which is likely to be of use or benefit to the Republic to the notice of the Minister of Mineral Resources; and study distribution and nature of mineral resources, and geo-environmental aspects of past, current and future mineral exploitation. It is also empowered to undertake geoscientific research on its own accord, research on behalf of (among others) the State and other government institutions, as well as to undertake reconnaissance operations, prospecting (and related activities) with a view to attracting investment to the mineral resource sector.

It is relevant to note that the term 'mineral' is defined in the Geoscience Act as meaning '*a mineral as defined in section 1 of the Minerals and Petroleum Resources Development Act, 2002'*. The term is in turn defined in the MPRDA as meaning:

> …any substance, whether in solid, liquid or gaseous form, occurring naturally in or on the earth or in or under water and which was formed by or subjected to a geological process, and includes sand, stone, rock, gravel, clay, soil and any mineral occurring in residue stockpiles or in residue deposits, **but excludes**:
>
> (a) water, other than water taken from land or sea for the extraction of any mineral from such water;
> (b) **petroleum**; or
> (c) peat;

The term 'petroleum' in in turn defined in the MPRDA as meaning:

> …any liquid, solid hydrocarbon or combustible gas existing in a natural condition in the earth's crust and includes any such liquid or solid hydrocarbon or combustible gas, which gas has in any manner been returned to such natural condition, but does not include coal, bituminous shale or other stratified deposits from which oil can be obtained by destructive distillation or gas arising from a marsh or other surface deposit;

It is relevant to note that the CGS is not empowered to promote the search for and exploitation of petroleum in the Republic, bring any information in relation to the exploration for and production of

petroleum resources which is likely to be of use or benefit to the Republic to the notice of the Minister of Mineral Resources, or study the distribution and nature of petroleum resources, and geo-environmental aspects of past, current and future petroleum exploitation.

Assuming that shale gas properly falls within the meaning of 'petroleum' as defined in the MPRDA, at the very least some of these functions properly fall to the Petroleum Agency of South Africa (PASA). PASA is the designated agency established in terms of the MPRDA to perform various mandatory functions, including (among others) to '*promote onshore and offshore exploration for and production of petroleum*'[7] and '*bring any information in relation to the exploration and production of petroleum to the notice of the Minister*'.[8]

It is not known, however, whether PASA is involved in the project (for example it may be party to commissioning the CGS to undertake this project). It seems likely that the DMRE and CGS would assert that the project falls within the broader statutory functions set out in the Geoscience Act (such as studying the use of the subsurface of land from a geoscientific point of view to advise government and the public on the judicious and safe use thereof to facilitate sustainable development, conducting investigations and rendering specialized services to public institutions etc.).

3.2. Mineral & Petroleum Resources Development Act[9] (MPRDA)

The MPRDA conceptually distinguishes between reconnaissance, prospecting and mining for/of minerals (regulated through chapter 4 of the MPRDA); and reconnaissance, exploration and production for/of petroleum (regulated through chapter 6 of the MPRDA). It is relevant to note that the MPRDA definition of 'mineral'[10] excludes petroleum, and that the definition of 'petroleum'[11] includes gas.

Prospecting for Minerals

The MPRDA defines 'prospecting' as:

[7] Section 71(a).
[8] Section 71(f).
[9] 28 of 2002.
[10] "**Mineral**" means any substance, whether in solid, liquid or gaseous form, occurring naturally in or on the earth or in or under water and which was formed by or subjected to a geological process, and includes sand, stone, rock, gravel, clay, soil and any mineral occurring in residue stockpiles or in residue deposits, but excludes:
(a) water, other than water taken from land or sea for the extraction of any mineral from such water;
(b) petroleum; or
(c) peat.
[11] "**Petroleum**" means any liquid, solid hydrocarbon or combustible gas existing in a natural condition in the earth's crust and includes any such liquid or solid hydrocarbon or combustible gas, which gas has in any manner been returned to such natural condition, but does not include coal, bituminous shale or other stratified deposits from which oil can be obtained by destructive distillation or gas arising from a marsh or other surface deposit.

> …intentionally searching for any mineral by means of any method:
>
> (a) which disturbs the surface or subsurface of the earth, including any portion of the earth that is under the sea or under other water; or
> (b) in or on any residue stockpile or residue deposit, in order to establish the existence of any mineral and to determine the extent and economic value thereof; or
> (c) in the sea or other water on land

While this definition does not make specific reference to prospecting with the intention of identifying mineral resources capable of being won or extracted, our Courts typically take the view that where the plain wording of a relevant statutory provision is unclear, regard should be had to the purpose of the legislation and context of the legislative provision. For example, in the *Earthlife (Thabametsi)* case, Murphy J stated the position in relation to the NEMA s 2 environmental management principles as follows:

> NEMA, like all legislation, must be interpreted purposively and in a manner that is consistent with the Constitution, paying due regard to the text and context of the legislation.[12]

When viewed in isolation, it could be argued that CGS is intentionally searching for minerals by drilling the deep borehole, that this disturbs the surface and/or subsurface of the earth, and that it is thus 'prospecting'.

However, when regard is had to the purpose and context of chapter 4 the MPRDA, it is evident that prospecting is one of several successive stages in the regulatory process governing mining.

In the absence of any facts suggesting that CGS is intentionally searching for minerals with a view to ultimately winning or extracting minerals at the site in question, it is in my view unlikely that a Court would regard the activity as prospecting.

Exploration for Petroleum

The MPRDA defines 'exploration operation' as:

> …the re-processing of existing seismic data, acquisition and processing of new seismic data or any other related activity to define a trap to be tested by drilling, logging and testing, including extended well testing, of a well with the intention of locating a discovery

[12] *Earthlife Africa Johannesburg v Minister of Environmental Affairs and others* [2017] 2 All SA 519 (GP), at para 80.

This definition specifically makes reference to exploration activities 'with the intention of locating a discovery'. When regard is had to the purpose and context of chapter 6 the MPRDA, it is evident that exploration is one of several successive stages in the regulatory process governing petroleum exploration and production.

In the absence of any facts suggesting that CGS is intentionally searching for petroleum with a view to locating a discovery and ultimately producing petroleum (shale gas) at the site in question, it is in my view unlikely that a Court would regard the activity as petroleum exploration.

3.3. National Environmental Management Act[13] (NEMA)

As explained above, it is unlikely that the KDD project constitutes prospecting for minerals or exploration for petroleum (having regard to the purpose and context of the MPRDA and the relevant statutory provisions). As a consequence, it is unlikely that prior NEMA environmental authorisations relating to prospecting and mining (in relation to minerals) and exploration and production (in relation to petroleum) would be triggered.

However, if the KDD project activities fell within other listed activities, NEMA environmental authorisation would be required. For example, environmental authorisation would be required if the activity constituted the development of facilities or infrastructure for any process or activity which requires a permit or license (or and amendment of same) in terms of national or provincial legislation governing the release of emissions, pollution or effluent (such permits or licenses could include water use licenses under the National Water Act). Further information would however be required to clearly identify whether any other NEMA listed activities were triggered.

For the sake of completeness, some of the listed activities considered are set out below.

The NEMA EIA Regulations Listing Notice 1[14] lists the following activities relevant to mining:

> **Activity 20**
> Any activity including the operation of that activity which requires a **prospecting right** in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including:
> (*a*) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or
> (*b*) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;

[13] Act 107 of 1998.
[14] GNR.983 of 4 December 2014: Environmental Impact Assessment Regulations Listing Notice 1 of 2014.

but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.

Activity 21
Any activity including the operation of that activity which requires a **mining permit** in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including:

(*a*) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or

(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;

but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.

The NEMA EIA Regulations Listing Notice 2[15] lists the following activities relevant to mining and petroleum exploration and production:

Activity 17
Any activity including the operation of that activity which requires a **mining right** as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including:

(*a*) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or

(*b*) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;

but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.

Activity 18
Any activity including the operation of that activity which requires an **exploration right** as contemplated in section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including:

(a) associated infrastructure, structures and earthworks; or

(b) the primary processing of a petroleum resource including winning, extraction, classifying, concentrating or water removal;

but excluding the secondary processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products in which case activity 5 in this Notice applies.

Activity 20
Any activity including the operation of that activity which requires a **production right** as contemplated in section 83 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including:

(a) associated infrastructure, structures and earthworks; or

(b) the primary processing of a petroleum resource including winning, extraction, classifying, concentrating or water removal;

but excluding the secondary processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products in which case activity 5 in this Notice applies.

[15] GNR.984 of 4 December 2014: Environmental Impact Assessment Regulations Listing Notice 2 of 2014.

Thus activities requiring a prospecting right or a mining permit require prior environmental authorisation (following an EIA basic assessment process), while activities requiring a mining right, exploration right or production right require prior environmental authorisation (following a full Scoping and EIR assessment process). As mentioned above, it is unlikely that the KDD project triggers these requirements (for the reasons explained above).

Listing Notice 2 activity 6 triggers the requirement for prior environmental authorisation where there is development of facilities or infrastructure for any process or activity which requires a permit or license (or and amendment of same) in terms of national or provincial legislation governing the release of emissions, pollution or effluent, but excludes (among other things) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic metres or less. Depending on the activities being undertaken, this activity could potentially be triggered (further information would however be required in order to clearly identify whether this listed activity was triggered).

Various other listed activities could also be triggered, but again further information would be required to clearly identify whether such listed activities were triggered.

4. IS A WATER USE LICENSE REQUIRED FOR WATER SOURCED FROM ADJACENT GROUNDWATER

4.1. National Water Act[16] (NWA)

Water Use and Storage

Taking water from a water resource[17] requires a WUL unless it is a permissible water use under Schedule 1 of the NWA or is permissible in terms of a General Authorisation.[18]

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[16] 36 of 1998.

[17] A '**water resource**' is defined in the NWA as including a 'watercourse, surface water, estuary, or aquifer', while '**watercourse**' is defined as meaning '(*a) a river or spring; (b) a natural channel in which water flows regularly or intermittently;(c) a wetland, lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse; and a reference to a watercourse includes, where relevant, its bed and banks*'.

[18] In terms of s22(1) of the NWA, a person may only use water without a licence if that water use is permissible under Schedule 1, is permissible as a continuation of an existing lawful use, or if that water use is permissible in terms of a general authorisation issued under section 39, or if the responsible authority has dispensed with a licence requirement. Other water uses require a water use license (WUL), and include the following:

(a) **taking water from a water resource**;
(b) **storing water**;
(c) impeding or diverting the flow of water in a watercourse;
(d) engaging in a stream flow reduction activity contemplated in section 36;
(e) engaging in a controlled activity identified as such in section 37 (1) or declared under section 38 (1);
(f) **discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit**;

On the available facts, it seems unlikely that water sourced from adjacent groundwater would be a Schedule 1 permissible water use.

However, the water use would be permissible without a WUL under the revised *General Authorisation for the Taking and Storage of Water*[19] if CGS has lawful access to the property on which the groundwater is accessed, provided that no more than 40,000 cubic metres per annum is taken (and subject to other conditions such as abstraction rates). The water use would however have to be registered with the responsible authority if CGS is using more than 10 cubic metres of groundwater per day on average over a year must, or if it is storing more than 10,0000 cubic metres of water on the property concerned.

Thus if more than 40,000 cubic metres per annum of groundwater is being taken by CGS, a WUL would be required.

Other water uses

In addition to taking groundwater, the KDD project could also constitute other water uses. In particular, these could include:

- discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;[20]
- disposing of waste in a manner which may detrimentally impact on a water resource;[21]
- removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity.[22]

Additional information would be required to determine whether such water uses are applicable to the KDD deep drilling project.

(g) **disposing of waste in a manner which may detrimentally impact on a water resource**;
(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
(i) altering the bed, banks, course or characteristics of a watercourse;
(j) **removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity** or for the safety of people; and
(k) using water for recreational purposes.

[19] GN 538 of 2 September 2016: Revision of General Authorisation for the Taking and Storing of Water.
[20] Section 21(f).
[21] Section 21(g).
[22] Section 21 (j).

It should also be noted that some of the abovementioned water uses (if undertaken) may be permissible without a WUL under the *Revision of General Authorisation in terms of section 39 of the Act.*[23] In the context of this brief, this General Authorisation applies to:

- the discharge of waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit. If the KDD project is engaging in such an activity, it can discharge up to 2000 cubic metres of waste water per day on the property if it owns, lawfully occupies or has lawful access to the land on which the activity takes place. This General Authorisation sets waste water limit values that must be complied with (and imposes various other conditions), but <u>does not apply</u> to the discharge of wastewater into an aquifer or groundwater resource;[24] and

- removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity. Depending on the circumstances, up to 50 cubic metres[25] or 100 cubic metres[26] of water found underground may be removed by a person who lawfully owns, occupies or has access to the property concerned.

5. DOES CONTAMINATED WASTE WATER NEED TO BE CONTAINED AND DISPOSED OF IN A SUITABLE MANNER?

5.1. National Water Act and NEMA

As discussed above, a WUL is required for discharging waste or water containing waste into a water resource (through a pipe, canal… or other conduit),[27] and for disposing of waste in a manner which may detrimentally impact on a water resource.[28] A WUL is not however required if the water use is permissible under Schedule 1 or under a General Authorisation (although various conditions would in such cases be applicable, including in relation to the quality of water being discharged under any General Authorisation). As also explained above, further information would be required to clearly determine whether CGS requires a WUL, or whether its activities fall under a General Authorisation.

Notwithstanding the above, s19 of the NWA also has relevance. Section 19 imposes a legal obligation on CGS (as well as the owner of the land in question, if not CGS) to take all reasonable measures to

[23] GN 655 of 6 September 2013 (as subsequently extended).
[24] Section 2.2(b) and (c).
[25] Section 4.7(3).
[26] Section 4.7(1)(c).
[27] Section 21(f).
[28] Section 21(g).

prevent pollution of a water resource from occurring, continuing or recurring. These reasonable measures may include (among other things) measures to contain or prevent the movement of pollutants.

A similar (more general) duty of care is imposed by s28 of NEMA relating to activities that have caused or may cause significant pollution or degradation of the environment.

It is relevant to note that the development and related operation of facilities or infrastructure for the treatment of (among other things) wastewater requires NEMA environmental authorisation (where such facilities have a daily throughput capacity of more than 2000 cubic metres).[29] Again, further information would be required in order to be able to clearly determine whether the KDD project included the development and operation of facilities for the treatment of waste water that would have triggered NEMA Listing Notice 1 activity 25 or NEMA Listing Notice 2 activity 25.

5.2. National Environmental Management: Waste Act ('Waste Act')

The Waste Act imposes various obligations relating to (among other things) the management, storage and disposal of waste (waste typically must be disposed of to licensed facilities, whereas disposal of waste or water containing waste into a water resource is regulated under the NWA).

Various waste management activities require waste management licenses (WML) under the Waste Act, and also trigger environmental authorisation requirements under NEMA. The storage of general and hazardous waste in lagoons[30] requires a WML,[31] although it is relevant to note that the storage of hazardous waste in lagoons excludes storage of (among other things) wastewater. The failure to qualify the storage of general waste in lagoons appears to be a drafting error, as the listed waste management activities were previously amended to remove wastewater treatment facilities, which were instead listed under NEMA and require environmental authorisation if they have a daily throughput capacity of more than 2000 cubic metres (as discussed above).

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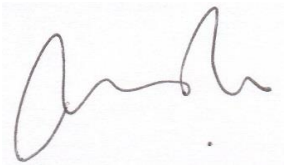
[29] NEMA Listing Notice 1 activity 25 requires a Basic Assessment authorisation process to be followed for the development and related operation of facilities or infrastructure for the treatment of (among other things) wastewater with a daily throughput capacity of more than 2 000 cubic metres but less than 15 000 cubic metres. NEMA Listing Notice 2 activity 25 requires a Scoping and EIR authorisation process to be followed for the development and related operation of such facilities with a daily throughput capacity of 15 000 cubic metres or more.

[30] "**Lagoon**" is defined as meaning '*the containment of waste in excavations and includes evaporation dams, earth cells, sewage treatment facilities and sludge farms*'.

[31] See GN921 of 29 November 2013, listed waste activities Category A 3(1) and Category B 4(1).

Further information would be required to be able to clearly determine whether any other WML requirements are triggered by waste water management activities related to the KDD deep drilling project.

Yours sincerely



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Adrian Leonard Pole