

25 September 2023

Director Petroleum Operations
Department of Environment, Parks and Water Security
PO Box 3675
Darwin NT 0801
[REDACTED]

Re: Groundwater monitoring results- Beetaloo Sub -basin Drilling, Stimulation and Well Testing Program Amungee NW1 ORI10-3

While not a requirement of the conditions of approval for the *Beetaloo Sub-basin Multi-well Drilling, Stimulation and Well Testing Program Exploration Permit (EP) 98 & 76 Environment Management Plan ORI10-3*, consistent with the conditions of approval of other Tamboran EMPs for petroleum exploration activities, exceedances of the 75th percentile of background concentrations have been provided for the Amungee NW1 site.

A summary of observed groundwater quality results greater than the 75th percentile of background concentrations have been provided in Table 1.

In addition to the statistical analysis provided herein, a full compilation of water quality monitoring results across Tamboran’s activities has been provided with this report.

Table 1 Groundwater quality monitoring result reporting summary

Data required	Tamboran response
The title of the current plan the relevant approval condition the submission of quarterly groundwater data is intended to satisfy.	Beetaloo Sub-basin Multi-well Drilling, Stimulation and Well Testing Program Exploration Permit (EP) 98 & 76 Environment Management Plan ORI10-3
Details of the relevant approval condition the notification of any groundwater monitoring results above the interquartile range is intended to satisfy.	Self-reporting – unrelated to approval conditions.
Information to demonstrate that the reporting has occurred within the timeframe specified in the relevant condition.	Groundwater monitoring results that have been collected during the period are submitted to DEPWS quarterly. The monitoring frequency of the groundwater program aligns with the <i>Preliminary Guideline: Groundwater monitoring bores for exploration petroleum wells in the Beetaloo sub-basin</i> . The preliminary guidelines require quarterly groundwater samples to be collected from impact monitoring bores

Data required	Tamboran response
	upon completion of hydraulic stimulation. Monitoring result exceedances have been provided within 5 days of becoming aware of the results.
Statement on whether the analytical results are within or outside of natural variability of baseline groundwater quality.	The analytical results from the Amungee NW1 Gum Ridge impact monitoring bore (RN043018) have recorded several results outside of the interquartile range.
Highlighting the data that are above the respective interquartile range for the relevant groundwater parameter/s.	Eleven (11) chemical parameters measured in the impact monitoring bore were identified to exceed the 75 th percentile of background concentrations (Table 1). The results of the statistical analysis, identifying the analytes that exceed the 75 th percentile, is provided separately to this summary.
A summary and an analysis of causes for elevated groundwater monitoring results and actions taken to ensure that protection of groundwater is maintained.	The 75 th percentile exceedances observed from both impact monitoring bores are considered to be: <ul style="list-style-type: none"> • Within the natural variability based on the hydrogeological conceptualisation of the Cambrian Limestone Aquifer and the low absolute concentrations where exceedances occur. • Indicative of some influence on the groundwater quality due to the drilling of the Amungee NW2 well. These changes are subtle and likely to be in the immediate vicinity of the well only. Results of groundwater monitoring confirm no material deterioration in groundwater quality associated with Tamboran's activities.
The outcome of the risk review undertaken as a result of the notification, including an updated assessment of the occurrence likelihood and whether this changes the risk ranking.	The observed exceedances are assessed as being associated with exploration well drilling. This was anticipated as lost circulation conditions are commonly encountered while drilling through the Cambrian Limestone Aquifer, in both water bores and petroleum wells. The absolute concentrations where exceedances occur do not materially change the groundwater quality. There is no change to the risk ranking associated with the activity.

If you require any further information, please do not hesitate to email me.

Kind regards

[Redacted Signature]

per [Redacted Name]

