Santos QNT Pty Ltd

EP161 – Drilling EMP Annual Groundwater Monitoring Data Review

20 May 2025 – Final

1. Introduction

Santos is the operator of Exploration Permit 161 (EP161) in the Northern Territory, Australia. EP161 is the subject of shale gas exploration targeting formations of the Beetaloo Sub-basin and is located approximately 120 km east of Daly Waters on the Carpentaria Highway and 600 km south-east of Darwin.

The Santos *Environment Management Plan: McArthur Basin Drilling Program STO2-7* (Santos, 2021) (the Drilling EMP) was approved on 21 February 2021. The Drilling EMP included exploration drilling activities at the Tanumbirini and Inacumba sites (Figure 1).

This report satisfies Condition 7 of the approval which requires:

An interpretative report of groundwater quality based on the groundwater monitoring required to be conducted at the well site(s) in accordance with Table 6 of the Code. The interpretative report must be provided annually within three months of the anniversary of the approval date of the EMP and include:

- *Demonstration that there is no change to groundwater quality or level attributable to conduct of the regulated activity at the well site(s);*
- *Interpretation of any statistical outliers observed from baseline measured values for each of the analytes;*
- *Discussion of any trends observed; and*
- *A summary of the results inclusive of descriptive statistics.*

The Code is in reference to the *Code of Practice: Onshore petroleum activities in the Northern Territory* (DENR, 2019). It is referred to as the “Code” throughout this report. The *Preliminary Guideline Groundwater Monitoring Bores for Exploration Petroleum Wells in the Beetaloo Sub-basin* (DENR, 2018) is referred to as the “Guideline” throughout this report.

This report includes monitoring data acquired up to and including the monitoring event in December 2024. In summary, the interpretation and discussion of the observed outliers and trends identifies:

- Water levels in the control monitoring bore (CMB) and impact monitoring bore (IMB) remain within the range of background variability following execution of the regulated activities at the Tanumbirini site.
- There has been no impact to the beneficial use of the Gum Ridge Formation aquifer with respect to Livestock drinking water following execution of the regulated activities.
- There was a statistically significant increase in the dissolved methane concentration in the IMB between May 2021 and December 2021, but the concentration subsequently decreased. The dissolved methane concentration increased in the CMB from a starting concentration of less than the laboratory limit of reporting (LOR). It decreased to less than the LOR and exhibited a gradual rising trend to a local maximum of concentration reported of 9 µg/L in September 2024, decreasing to 3 µg/L in December 2024. The maximum reported dissolved methane concentration (48 µg/L in the IMB) at the Tanumbirini well site is an order of magnitude less than maximum concentration observed in pastoral bores elsewhere on Tanumbirini Station. The absence of propane and ethane is indicative that the methane is most likely not thermogenic in origin and therefore unlikely to come from the reservoir via the exploration

wells. CSIRO has previously identified that dissolved methane in the Gum Ridge Formation (during sampling events completed between in October to November 2018) was biogenic. The CMB and IMB are completed in the Gum Ridge Formation and based on the information available the dissolved methane is likely attributed to biogenic methane.

- Changes in major ion and trace element chemistry and the temperature response in the IMB are indicative of a subtle influence of the drilling process on the groundwater quality. Similar changes were observed following the drilling of the CMB and IMB. No influence of the hydraulic fracture stimulation was observed.
- No drilling activities or fracture stimulation activities have been performed at the Inacumba site.
- There is a small but consistent correlation between analysed batches of samples and trace parameter concentrations across all results. This is expected where all analyte concentrations are extremely low. The correlation represents the variability in measurement accuracy which is consistent between batches of samples analysed by the laboratory.
- Decreases in concentrations of several parameters over 2024 may be indicative of local recharge to the Cambrian Limestone Aquifer following the 2023 wet season.

Condition 6(i) of the Drilling EMP requires the interest holder to Provide to DEPWS the following:

- Results of groundwater monitoring (excluding continuous electrical conductivity monitoring) from the Inacumba Unit at the Inacumba well site in accordance with the Code and the Guideline every quarter for three years from the approval of the EMP;
- Results of continuous water level monitoring using water level loggers installed at the monitoring bores in the Inacumba Unit at the Inacumba well site, every quarter for three years.
- Results of groundwater monitoring (excluding electrical conductivity monitoring) from the Gum Ridge Formation at the Tanumbirini well site, in accordance with the Code and the Guideline for the period the well sites are operational.

No drilling activities or fracture stimulation activities have been performed at the Inacumba site. Quarterly monitoring at of the Inacumba Unit at the Inacumba well site commenced in October 2019 and the EMP was approved in 2021. Three years of quarterly monitoring has therefore been completed.

The Tanumbirini well site is no longer operational as the exploration wells are shut-in and not operational. Three years of quarterly monitoring has been completed since the approval of the EMP at the Tanumbirini well site.

In accordance with The Department of Lands, Planning and Environment (DLPE) email received by Santos on 3 April 2025, Santos will reduce the groundwater monitoring to annual sampling having already sampled for a minimum of three years since the approval date of the EMP. If drilling or hydraulic fracture stimulation (HFS) activities recommence at the Tanumbirini or Inacumba well site, the monitoring frequency will then return to quarterly

Santos therefore proposes that this is the last annual report under the Drilling EMP. Annual reporting will recommence if and when requested by the department or required by the EMP.

2. Exploration activities

The locations of Santos activities on EP161 are shown on Figure 1.

Santos drilled the Tanumbirini 2H and Tanumbirini 3H exploration wells between May and November 2021. 'Tanumbirini 2' and 'Tanumbirini 3' are used throughout this report to refer to the vertical wells and their associated horizontals. Key dates associated with the drilling activities are summarised in Table 1, and are shown on Figure 2 and on the graphs in Attachment C.

The wells were drilled using mud rotary methods. The wells were initially drilled using water-based drilling fluids (mud) until lost circulation was encountered in the Cambrian Limestone Aquifer. At this point the drilling fluid was swapped to bore water with no drilling additives until the aquifer had been sealed off from the well. Water for drilling was sourced from RN040930, the CMB at the Tanumbirini site.

The wells underwent HFS in December 2021, flowback commenced immediately thereafter and continued to December 2022, when the wells were shut-in and remote monitoring commenced. HFS of the wells was approved under *McArthur Basin Hydraulic Fracturing Program NT Exploration Permit (EP) 161 STO3-8* (HFS EMP).

No drilling or hydraulic fracturing activities have been performed at the Inacumba site to date. Monitoring bores were installed at the Inacumba site in 2018 and 2019.

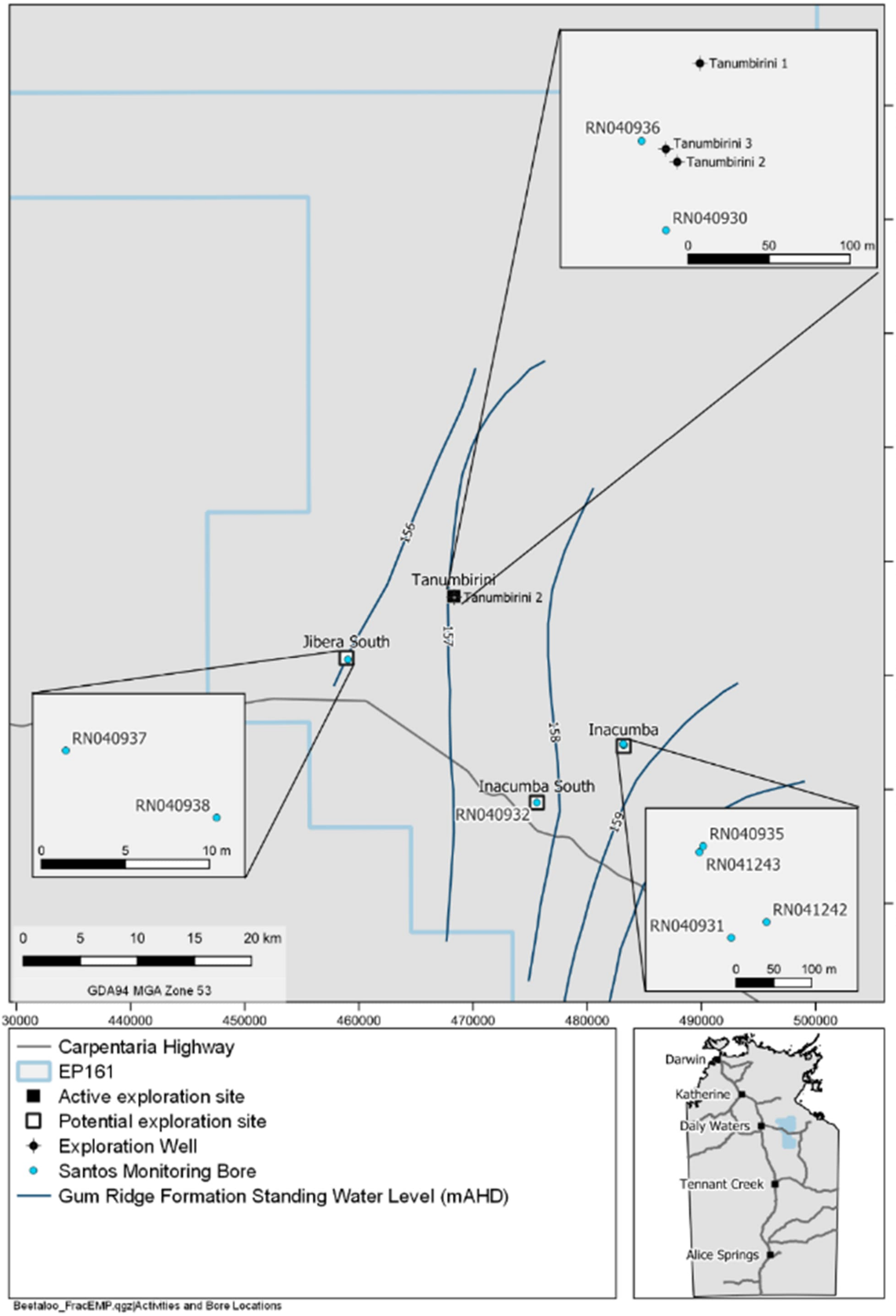
Santos has installed groundwater monitoring bores at the Jibera South and Inacumba South locations. No exploration activities have been approved or performed at these locations.

Table 1 Key dates of the EP161 exploration activities at Tanumbirini

Date	Event
11-May-21	Tanumbirini 2H start drilling (spud)
17-Aug-21	Tanumbirini 2H complete drilling (rig release)*
23-Aug-21	Tanumbirini 3H start drilling (spud)
19-Nov-21	Tanumbirini 3H complete drilling (rig release)*
1-Dec-2021	Hydraulic fracture stimulation (frac) start
19-Dec-2021	Hydraulic fracture stimulation end
19-Dec-2021	Flowback start
3-Dec-2022	Flowback end (shut-in). Remote monitoring starts.

* drilling and well construction would have been completed several days prior to rig release

Figure 1 Activity and monitoring bore locations



3. Tanumbirini

This review focusses on the groundwater monitoring data acquired during the regulated activities performed on the Tanumbirini 2 and Tanumbirini 3 exploration wells. Data from prior to May 2021, when drilling commenced, was used to establish baseline groundwater conditions.

Monitoring Activities

In December 2018 and in accordance with the Guideline a CMB (RN040930 – 43 m from Tanumbirini 2) was installed at the Tanumbirini site, and the IMB (RN040936 – 16 m from Tanumbirini 3) was installed in July 2019. Water level contours for the Gum Ridge Formation (GRF) were prepared using data collected by Santos (RDM Hydro, 2021) and indicate groundwater flow directions in the vicinity of Tanumbirini are from east-southeast to west-northwest (Figure 1). Both bores are installed to enable monitoring of the full thickness of the GRF. The Anthony Lagoon Formation aquifer is not present at the Tanumbirini well pad.

Water level, temperature and conductivity (LTC) sensors were installed in the monitoring bores in September 2020 (prior to the approval of the Drilling EMP), replacing the previously installed sensors. A barometric pressure sensor was also installed at the site at this time. During background monitoring the sensors record every four hours. Condition 6 of the HFS EMP approval required *groundwater level/pressure monitoring at each impact monitoring bore established, using a logger to record water level for 2 weeks prior to, during, and 4 weeks after completion of hydraulic fracturing operations at each well pad. Data logging should record at a minimum of every 4 minutes for the duration of the recording period.* Accordingly, the datalogger, the recording interval in RN040930 and RN040936 was increased to four minutes from 29 September 2021 (62 days prior to the start of the HFS) to 2 February 2022 (45 days after the end of the HFS activity). It was then returned to a four-hourly recording interval.

The original LTC logger installed in RN040930 failed in October 2022 and was replaced in January 2023. No logger data is available for the intervening period. RN040930 was equipped with a dedicated electric submersible pump which is used for purging and sampling, at a pumping rate of 17 L/s. This bore was used for water supply throughout the regulated activities. The pump was replaced with a lower capacity sampling pump in December 2022.

RN040936 was constructed with sealed sub-surface headworks in a “gatic” in accordance with the Bore Work Permit. Prior to the commencement of the 2021 drilling program, an electric submersible pump was installed in the bore to allow baseline water quality monitoring. Because of its close proximity to the exploration wells (16 m from Tanumbirini 3, in accordance with the Guideline) and to allow the drill rig to operate, the pump was removed from the bore and the headworks sealed, therefore water quality monitoring could not be undertaken during drilling activities. The LTC sensor remained in the bore for the duration of the drilling campaign. The sampling pump was reinstalled during rig-down (at the end of drilling) and prior to the commencement of HFS activities and has remained available for sampling since.

Routine water quality monitoring of the bores commenced in July 2019. The suite of analysis is compliant with Table 6 of the Code and exceeds the requirements of the Guideline. RN040930 had been monitored 27 times and RN040936 had been monitored 10 times prior to the commencement of drilling in 2021. RN040930 has continued to be monitored for water quality at a quarterly interval. RN040936 was monitored on 16 March 2021, approximately 1 month before the drilling rig mobilised to site, and quarterly monitoring recommenced on 17 November 2021, after the completion of drilling of Tanumbirini 3, but prior to the HFS. Quarterly monitoring has continued through 2022, 2023 and 2024. A sample could not be collected from RN040930 in January 2023 due to a pumping equipment failure, however a sample was collected in February 2023 during a return visit. Samples were not collected in January 2024 as the mobile generator could not be brought to the bores due to inundated access tracks. The second quarter of 2024 monitoring event could not be undertaken in April as flooding did not allow access to the site, however that event was ultimately undertaken in May 2024. Monitoring in the first quarter of 2025 was rescheduled several times due to adverse weather and ground conditions, and ultimately could not be undertaken in the required quarter. The most recent monitoring event was undertaken in May 2025, but the data was not available for inclusion in this report. Fourteen samples have been collected from RN040930 and thirteen samples have been collected from RN040936 (two on the same day) since the start of the regulated activities.

Water level, temperature and electrical conductivity monitoring

The timing of sampling relative to exploration activities can be seen on Figure 2. The downhole sensor responses are described and interpreted as follows.

RN040930 (CMB)

- Groundwater extraction for water supply from RN040930 started on 6 April 2021. Extraction was initially during daytime hours only until the commencement of Tanumbirini 2 drilling. The pumping frequency then reduced and become more intermittent. Extraction increased to fill storages prior to the HFS. During the HFS, extraction was effectively continuous. There has been infrequent, short-duration extraction only since the completion of the HFS in late December 2021.
- There are diurnal water level fluctuations of 2 mm to 12 mm in RN040930 due to barometric pressures changes.
- A water level drawdown of approximately 0.05 m (5 cm) was recorded within the bore during pumping of RN040930.
- There was a long-term *rising* trend of 0.2 m over the period of extraction, which appeared to cease approximately a month after extraction ceased and then stabilised. Water levels have more recently started to decline. This is roughly consistent with regional water level trends as observed in Northern Territory Government (NTG) monitoring bores (accessed via the Water Monitoring Portal) screened in the Cambrian Limestone Aquifer around the Beetaloo Basin. These trends are shown on Figure 3 (data was downloaded on 5 May 2025), which also show water level rises associated with the significant rainfall of the 2023/2024 wet season.
- The logger failed in October 2022 and was replaced in January 2023. There is no logger data available from the intervening period. The Guideline does not mandate the use of water level and conductivity sensors.
- There was a rise in temperature of 0.2 °C during extraction, followed by a longer-term rise in the overall water temperature. Following extraction the temperature stabilised and then declined very gradually. The increased temperature indicates that the extracted groundwater is potentially coming from deeper in the bore than the sensor and pump intake (roughly 130m below ground). The increase in temperature in October 2022 is likely an artefact due to the replacement sensor being installed marginally deeper than the original sensor. The declining temperature trend has continued.
- The EC showed a correlation to the amount of pumping, with EC increasing in proportion to the amount of extraction. This may relate to differential depressurisation of discrete fractures within the limestone, and a change in the relative proportion of water provided by each fracture to the bore. The drop in the logger EC between October 2022 to January 2023 is related to a different calibration of the replacement sensor. The laboratory measured EC has shown negligible change over the monitoring period.

RN040936 (IMB)

- The overall water level response was similar to RN040930, but the overall rising trend was smaller, with a maximum increase of less than 0.05 m (5 cm). The water level returned to the pre-activity water level in about June 2023 and was relatively stable until December 2023 when it started to decline. The declining trend correlated with a period of increasing barometric pressure. From June to September 2024, the water level was again effectively stable, which correlated to a relatively stable maximum barometric pressure. It is acknowledged that the barometric pressure sensor may be failing, and the correlation is artificial.
- The influence of ongoing extraction over approximately 2 months can be seen as a small (~1 cm) decline in water level.

- Shortly after the start of drilling of Tanumbirini 2, there was a drop in water level, much like if the bore were being pumped (which lasted about a day), and then a flat signal.
- A small decrease in temperature (<0.05 °C) after the start of drilling of Tanumbirini 2 and a declining temperature after the start of drilling of Tanumbirini 3. These changes in temperature may be related to the influence of drilling fluids which were cooler than the aquifer water due to the former being stored on the surface.
- Step changes in the temperature response are due to changes in the logger depth. These changes are only 0.4 °C in total.
- There has been a long-term declining temperature trend. The cause of this is unknown.
- The temperature and electrical conductivity in RN040936 are subtly affected by pumping in RN040930.
- Perturbations in the logger EC signal suggest the potential ingress of surface water during the 2023/2024 wet season. Short-duration, small decreases the logger temperature can be seen at the start of the perturbation.
- There is a small (~1 cm) seasonal influence of barometric pressure on the water level trend.

Water quality monitoring

For each of RN040930 and RN040936, Attachment A includes a summary table that contains:

- A statistical summary of all groundwater quality results,
- The results of samples collected immediately prior to and after the start of drilling, and
- The p-value of the t-Test comparing the analyte results from pre the start of drilling and post the start of drilling.

A Before After/Control Impact (BACI) approach has been used to assess the potential effects of drilling activities on groundwater quality.

Gross alpha was the only parameter that exceeded its ANZECC (2000) livestock drinking water guideline value. It was exceeded in both the RN040930 and RN040936 including baseline water quality. Therefore, this exceedance is not related to drilling activities. Gross beta activity also exceeded the ANZECC (2000) livestock drinking water guideline value in one baseline water quality result from RN040930.

The groundwater quality results have been graphically presented as box-and-whisker plots (Attachment B). The statistics were calculated on all data up to and including 16 March 2021 (baseline data – prior to the start of drilling), with those results from samples collected post 16 March 2021 shown as individual symbols. The box-and-whisker plots were used to identify those parameters which exceeded the range of background variability in at least one sample. Where a parameter was identified to exceed the range of background variability, a timeseries chart was prepared (Attachment C), with results from other sites where Santos has installed monitoring bores provided for comparison (control sites). The timeseries charts for a parameter are scaled based on the maximum concentration across all of the sites. The trends identified in these charts are described in Table 2.

The timeseries charts mostly show no consistent trend in parameter concentrations. In some cases the baseline maximum is exceeded in the first sample collected after the drilling commenced, others the middle or the last. Sometimes the concentrations have decreased to less than the baseline maximum by the end of drilling. There appears to be correlations in the many of the parameter concentrations across all of the monitoring sites. This is most likely related to laboratory measurement uncertainties rather than changes in the aquifer as the monitoring bores are separated by distances of 10-20 km and show the same variations in concentrations. Laboratory measurement uncertainties are greatest when the concentrations are less than ten times the limit of reporting (i.e. the values are very low concentrations).

Since there is bias in the selection of the pre-activity maximum concentration, a statistical assessment was made using a Student t-Test to test whether there was a significant difference in the results before and after the start of exploration activities on Tanumbirini 2 and Tanumbirini 3. An F-Test was used to determine whether the homoscedastic (statistically similar variance) or heteroscedastic (statistically different variance) formula for the t-test was used. Where a concentration was reported as less than the limit of reporting, the limit of reporting was assumed to be the sample concentration. The statistical significance was assessed to a 95% confidence. The results of the analysis are included in the statistical summaries in Attachment A. The bores and parameters where the p-value was less 0.05 (95% confidence that there is a significant different between the pre- and post-drilling data) are identified in Table 3. The parameters identified are generally consistent with those in which the maximum baseline concentration was exceeded. For some of the analytes, there was a statistically significant *decrease* in the reported concentration, i.e. water quality improved following exploration activities, as identified in Table 3.

The observed variability in major ion and trace element concentrations suggest a possible, but subtle, influence of the exploration activities on the groundwater quality in the vicinity of the wells. This influence is likely to be related to the drilling of the wells through the following mechanisms:

- **Drilling mud**: there were increases in potential indicators of the presence of drilling mud such as potassium, chloride, pH, alkalinity and barium.
- **Drill cuttings**: Mobilisation of ions and elements associated with the increased surface area of the cuttings relative to in-tact formation, and through the oxidation of the minerals from the oxygen rich drilling mud that had been stored in open tanks on surface. Wallis and Pichler (2018) and Poulsen et al. (2020) refer to these mechanisms in the literature. A similar influence on water chemistry could be seen in the evolution of the baseline water chemistry observed in most of the monitoring bores where declining trends in parameters were observed following drilling of the water bore itself, until a relatively stable baseline had been reached (RDM Hydro, 2022).

There were no significant changes to the groundwater chemistry that can be attributed to the regulated activities.

Figure 2 Tanumbirini - LTC timeseries monitoring data

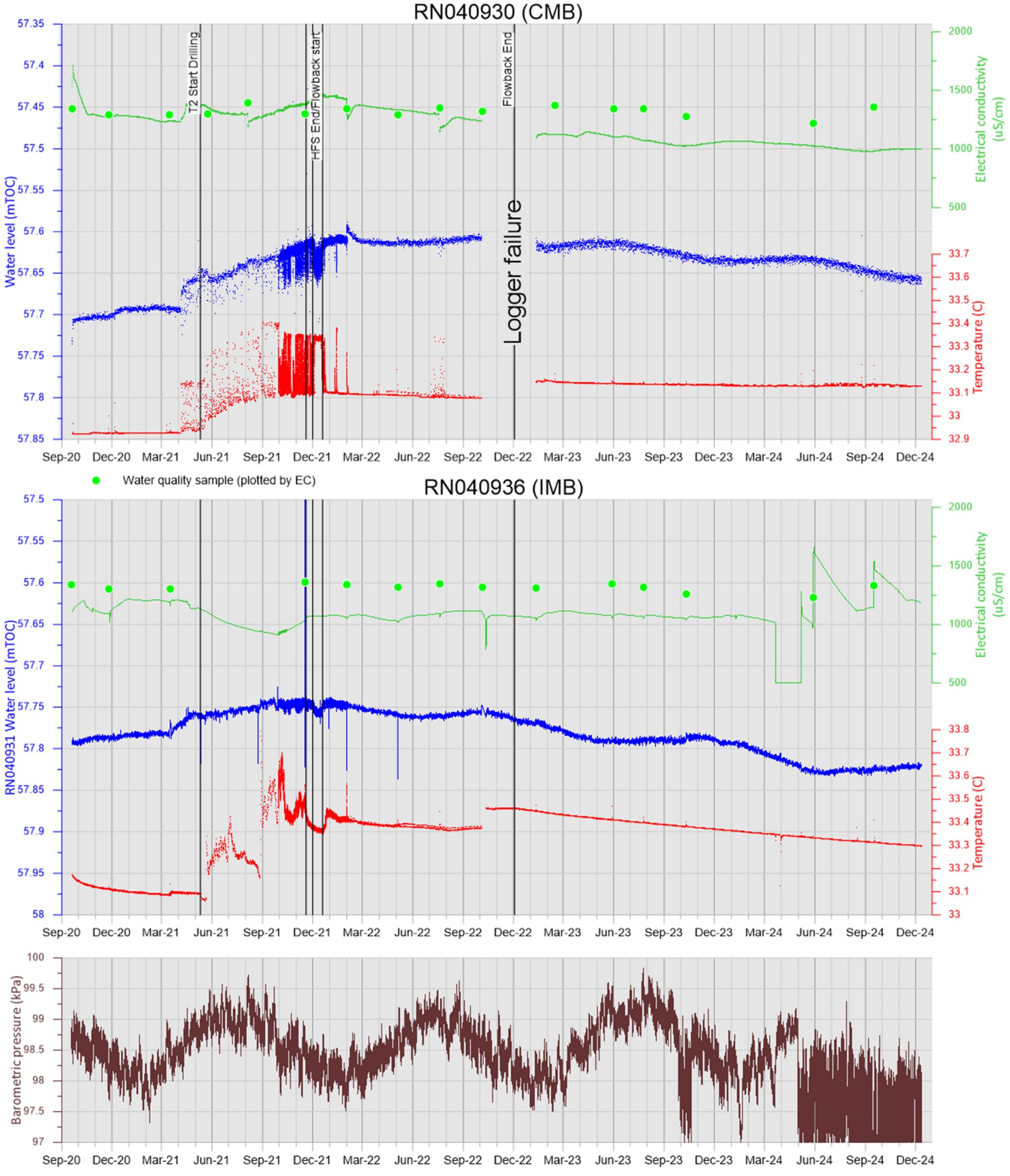


Figure 3 Regional groundwater level monitoring of the Cambrian Limestone Aquifer

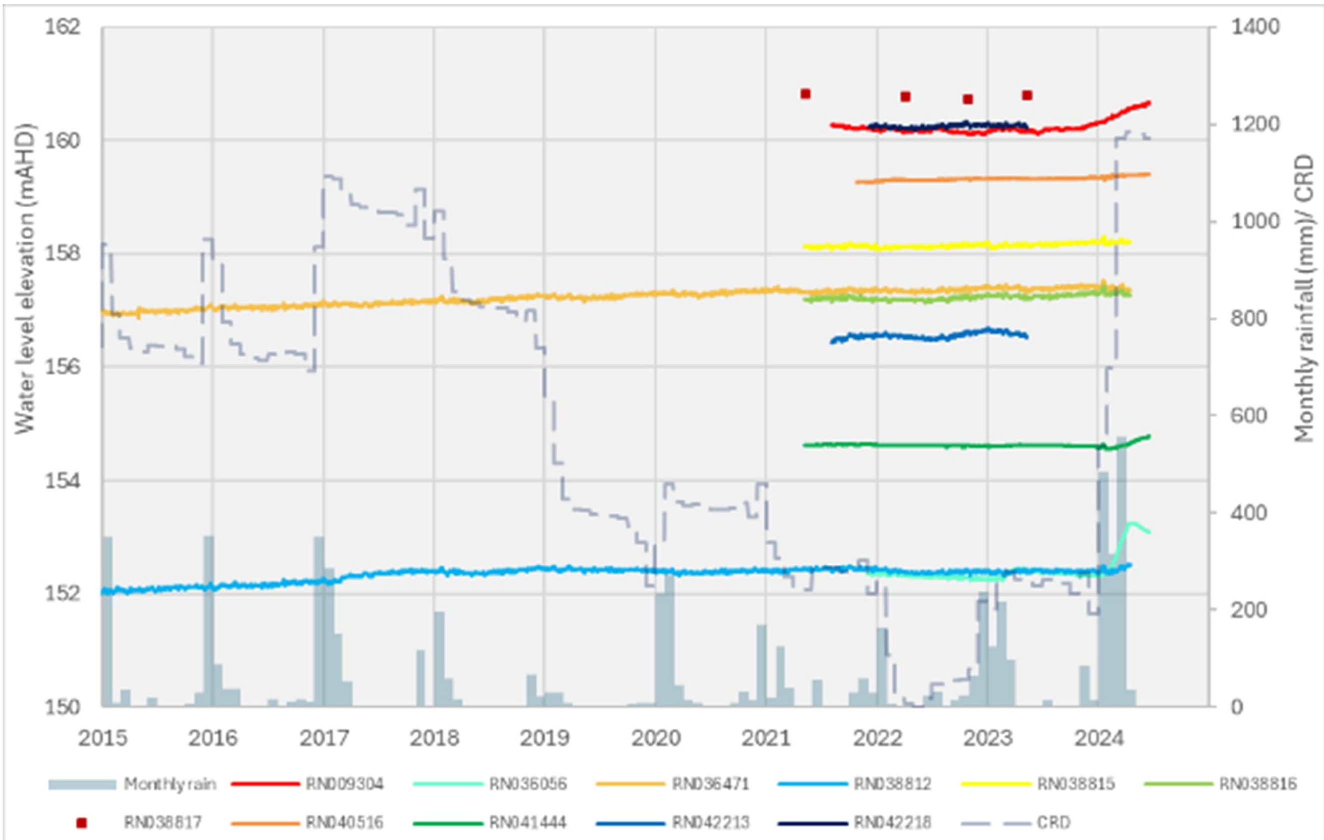


Table 2 Tanumbirini - Description of trends in parameters exceeding the baseline maximum concentration

Parameter (and fraction) exceeding baseline range in natural variability	Bore(s) in which exceedances were reported	Description
pH - Lab	RN040930 (CMB) RN040936 (IMB)	Although the laboratory pHs of the CMB and IMB were marginally different prior to activities, since late 2021 they have effectively shown the same trends since, with only minor variations in reported concentrations. The trends show some oscillations, generally between pH 7 and pH 8, with some very slight exceedances of the pre-activity maxima during the activities. The most recent concentrations were less than the historical maxima and within the previous observed range. Similar trends in pH were observed across the other Santos monitoring sites.
Chloride		Both the CMB and IMB chloride concentrations increased marginally during activities and exceeded their pre-activity maxima, and then varied around the pre-activity average, with the most recent samples reporting concentrations amongst the lowest reported for these bores (109 mg/L and 111 mg/L). The chloride concentration in RN038580 rose very slightly after the start of drilling but declined to less than the pre-activity concentrations after the start of the flowback but has increased again and followed the same trend as the CMB and IMB. The concentration was consistent between January 2023 and January 2024 (113 mg/L) but reduced to 105 mg/L in September 2024. Chloride results from Jibera South, Inacumba and Inacumba show similar trends across all aquifers for the earlier data, but pumps have bee removed from most of these bores. The recent data for RN041242 at Inacumba shows similar long term trends to those observed from Tanumbirini.
Sodium		The sodium concentration remained consistent in the CMB and IMB throughout the drilling and first six months of flowback. In July 2022 there was a slight rise in the sodium concentration in both the CMB and IMB, with the sodium concentration remaining slightly higher through the second half of 2022. The concentrations declined through 2023 and 2024, but rising later in 2024. The most recent concentrations of 75 mg/L and 76 mg/L for the CMB and IMB respectively. Similar rising trends in sodium concentrations are observed in the results from results from Jibera South, Inacumba and Inacumba South prior to pump removal. The chloride content in RN041242 declined during 2023 and 2024, and similar to Tanumbirini, rose to 76 mg/L in the most recent sample.
Potassium		The potassium concentration in the CMB increased to its maximum reported value in the first sample after the start of drilling, but then deceased to within the background range, although on a slight rising trend to the end of the HFS. The IMB showed a similar rising trend through the drilling and HFS activities. The potassium concentration in both bores decreased in the first two samples following the HFS but show an upward trend in the two subsequent samples, followed by more recent declining trends through 2023 and stability through 2024. While the most recent sample from the CMB increased from the previous concentration to 14 mg/L it remains below its historical maximum. The IMB did not exhibit the same rise, The potassium concentration in RN038580 increased marginally from January 2023 (12 mg/L) to January 2024 (13 mg/L) but decreased to 11 mg/L in May 2024 before rising to 12 mg/L in September 2024. Samples from the other sites and all aquifers show similar rising trends through 2022, with the most recent data from RN041242 showing similar declining trends to the bores at Tanumbirini through 2023 and a slight rise through 2024.
Calcium		Calcium concentrations effectively remain consistent in both the CMB and IMB from once the bore chemistry stabilised after drilling and through the drilling activities. Consistent with calcium concentrations from the other sites (Jibera South, Inacumba and Inacumba South), calcium concentrations were reported to decrease from after the start of the flowback, prior to increasing from May 2022 to greater than the pre-activity maxima. Since October 2022 calcium concentrations have declined to ~130 mg/L, less than the concentrations reported pre-activity. RN038580 reported similar trends to the CMB and IMB through the activities and although it did not exhibit the declining trend through 2023, the concentration decreased in 2024 when it became consistent with the CMB and IMB. A declining trend is also observed in the data from RN041242 (Inacumba) through 2023 with increasing concentrations through 2024. The most recent calcium concentration was 163 mg/L, which remains less than the maximum concentration of 179 mg/L reported in October 2022.
Magnesium		The magnesium concentrations in the IMB, CMB and RN038580 reported effectively flat trends following the establishment of baseline conditions in Q1 2019 and very slightly declining trends from the start of drilling through to the July 2022 samples. The October 2022 samples reported relatively higher concentrations in all Santos monitoring bores, with the IMB exceeding its pre-activity maximum (60 mg/L compared with 59 mg/L). Concentrations declined marginally in both he IMB and CMB during 2024, but have subsequently increased to approximately background concentrations, and to less than the pre-activity maxima. Relatively greater concentrations were reported from the other Santos sites in October 2022.Tthe concentration in RN0421242 has also declined (similar to Tanumbirini) from October 2022 to September 2024, but has subsequently increased to its maximum concentration (72 mg/L).
Methane (dissolved)		Dissolved methane concentrations in the IMB reported steadily declining trends from the peak in February 2022 of 48 µg/L to January 2023 (15 µg/L), however in May 2023 the reported concentration increased to 25 µg/L, but subsequently declined to 10 µg/L prior to increasing to 15 mg/L in May 2024. The concentration from the IMB decreased to through 2024 to 11 mg/L in December 2024 (most recent sample). The CMB dissolved methane concentrations have always been less than the IMB. It exhibited a similar increasing trend to a peak following the HFS following which it decreased to <LOR. The CMB concentration has exhibited a gradually rising trend since October 2022, with the most recent concentration reaching a local maximum of 9 mg/L in September 2024 but decreasing to 3 mg/L in December 2024. The IMB and RN038580 reported dissolved low methane concentrations prior to the commencement activities. Prior to the activities, the CMB had previously only reported concentrations <LOR. RN038580 concentrations showed a declining trend from November 2019 through to August 2021 (during drilling activities) to a local minimum concentration of 2 mg/L. Thereafter the concentration slowly increased to 6 mg/L in May 2022, prior to declining again in July 2022 to 4 mg/L and rising to 6 µg/L in January 2023. The January 2024 reported 1 µg/L, its lowest reported concentration to date, however the concentration increased through 2024, with a final concentration of 5 mg/L in September 2024. No sample was collected in December 2024 (not a compliance bore). Results from other Santos monitoring sites, where there have been no exploration activities, show variable methane concentrations. RN040938 showed an increase trend from <LOR to a peak of 37 µg/L, followed by a decrease over 6 months to 10 µg/L. All results from the most recent samples (October 2022 or 2023) were <LOR. RN041242 has historically reported dissolved methane <LOR in all samples. The sample from September 2024 reported 4 mg/L, but the concentration decreased to <LOR in December 2024.
Boron (dissolved)		The CMB reported a maximum concentration (0.21 mg/L) in the first sample following the start of drilling, as compared with its pre-activity maximum of 0.19 mg/L. The concentration decreased to 0.19 mg/L (May 2021) and 0.18 mg/L (November 2021) before increasing again to 0.2 mg/L in February 2022. Through 2022, the concentration gradually decreased, but started to increase again in 2023, reaching 0.22 mg/L in May 2023, but reporting decreasing concentrations from July 2023 (0.18 mg/L) and October 2023 (0.11 mg/L). The boron concentration has increased through 2024 with the most recent sample reporting 0.19 mg/L. In the IMB, the pre-activity maximum reported boron concentration was 0.19 mg/L. The dissolved boron trend in the IMB was similar to the CMB, with the IMB reporting a maximum concentration of 0.2 mg/L in May 2023, before declining to 0.13 mg/L in October 2023. Similarly to the CMB the concentration increased through 2024, with a concentration of 0.19 mg/L in the most recent sample (same as the CMB). In RN038580, the dissolved boron concentration decreased from a pre-activity maximum of 0.19 mg/L to 0.13 mg/L in February 2022 but increased to follow the same trends as the CMB and IMB from May 2022. The samples from January 2023 and 2024 both reported 0.18 mg/L before falling to 0.14 mg/L in 2024 prior to increasing to 0.16 mg/L in the most recent sample (September 2024). All of the Santos monitoring bores show similar trends in concentrations to the bores at the Tanumbirini site. RN040931, at Inacumba, reported concentrations of dissolved bore greater than 0.2 mg/L from September 2020 onward, until the pump was removed from the bore.
Copper (dissolved)		Following stabilisation of background concentrations (after December 2019) the dissolved copper concentrations were <LOR in the CMB and IMB. The first sample after the end of drilling (December 2021) reported the presence of dissolved copper in both the CMB (0.004 mg/L) and IMB (0.001 mg/L). Since those samples, dissolved copper concentrations in the CMB and IMB were <LOR, except for the IMB reporting a maximum concentration in May 2022 of 0.014 mg/L. RN038580 has consistently reported a dissolved copper concentration <= LOR. Dissolved copper concentrations from the other Santos monitoring bores are generally <LOR, however concentrations >LOR have been intermittently reported.
Lithium (dissolved)		The CMB (0.084 mg/L) and IMB (0.078 mg/L) reported dissolved lithium concentrations greater than their historical maxima in May and February 2023 respectively. Concentrations have since declined to 0.065 mg/L in both the CMB and IMB in September 2024 but increased marginally to 0.068 mg/L in December 20204. These concentrations are similar to their initial concentrations. RN038580 reported 0.062 mg/L in the September 2024 sample. RN041242 concentrations show similar trends to the Tanumbirini bores. The Dissolved lithium concentration from RN040931 was generally greater than 0.4 mg/L
Strontium (dissolved)		The dissolved strontium concentrations in the CMB and IMB have generally moved in concert, declining from roughly 0.8 mg/L pre-drilling, and gradually rising to a local maximum of 0.82 mg/L in January 2021. There was some variability in the trends between the CMB and IMB through 2022. Both bores reported maximum concentrations in May 2023 (CMB = 0.905 mg/L, IMB = 0.861 mg/L), but declining to less than 0.75 mg/L through 2024 but increasing to 0.78mg/L in the CMB and IMB respectively. Strontium is not sampled in RN038580 as it is not a compliance monitoring bore. Similar trends are observed from the other Santos monitoring bores where there have been no exploration activities. The dissolved strontium concentration in RN040931 was consistently less than 0.2 mg/L from January 2020 to the last sample collected in October 2021.
Boron (total)		The CMB reported a total boron concentration (0.27 mg/L) during the drilling of Tanumbirini 2 exceeding its pre-activity maximum (0.22 mg/L) in August 2021. The concentration decreased to 0.16 mg/L in November 2021 (prior to HFS) but increased again to 0.2 mg/L in February 2022 and then declining to 0.14 mg/L in October 2022 but rising to 0.18 mg/L in January 2023. Through 2023 and 2024, the total boron concentration declined, with a reported concentration of 0.12 mg/L in the CMB in September 2024, a local minimum, but increased to 0.18 mg/L in December 2024. The IMB total boron concentration showed a declining trend through the activities to January 2021, but then increased to its maximum reported concentration (0.28 mg/L) in July 2022. The concentration decreased to 0.17 mg/L in October 2022 but rose to 0.21 mg/L in January 2023. It declined in concentration through 2023 and rose gradually through 2024, with a reported concentration of 0.16 mg/L in September 2024 and 0.18 mg/L in December 2024.

Parameter (and fraction) exceeding baseline range in natural variability	Bore(s) in which exceedances were reported	Description
		RN038580 reported total boron concentration in February 2022 (0.21 mg/L) that exceeded its pre-activity maximum (0.19 mg/L). The concentration then declined but increased again to 0.21 mg/L in January 2023. It was reported as 0.16 mg/L in January 2024 rising to 0.19 mg/L in September 2024. Total boron concentrations in the other Santos monitoring bores show similar variability in trends across the bores and site.
Barium (total)		In the IMB, the total barium concentration exceeded the pre-activity maximum (0.049 mg/L) in the November 2021 (0.05 mg/L) and the two samples collected in February 2022 (0.086 mg/L and 0.055 mg/L). The total barium concentration remained greater than the pre-activity maximum but had a declining trend from May 2022 until July 2023 when it decreased to 0.044 mg/L, less than the pre-activity maximum. It has remained around 0.045 mg/L since, with the most recent (December 2024) total barium concentration reported at 0.045 mg/L. The CMB reported some variability in total barium concentration through the activities (0.044-0.04 mg/L), but the concentration did not exceed the pre-activity maximum (0.049 mg/L) and showed a marginally increasing trend since the end of activities, rising from 0.047 mg/L to 0.049 mg/L between February and October 2022. The concentration in the CMB declined through 2023 and most of 2024 to 0.042 mg/L (September 2024), but increased to a high of 0.058 mg/L in December 2024. RN038580 has reported a relatively consistent trend of dissolved barium, with the most recent (September 2024) concentration reported as 0.043 mg/L. Total barium concentrations are regularly greater at Jibera South and Inacumba South as compared with Tanumbirini.
Chromium (total)		Prior to activities commencing the total chromium concentration in the CMB showed some variability, between <LOR and a maximum of 0.003 mg/L. It was <LOR thereafter except for the sample from August 2021 when it reported 0.02 mg/L, until May 2024 when it reported its maximum concentration of 0.01 mg/L. The CMB total chromium concentration has shown a rapidly rising trend since January 2024, with the concentrations through 2024 effectively increasing to 0.011 mg/L in December 2024. Prior to activities commencing, the IMB reported total chromium <LOR. The November 2021 sample reported 0.002 mg/L total chromium. The concentration reduced to <LOR in February 2022 and has remained <LOR 2022, 2023 and 2024 including the most recent sample from January 2024. Most other Santos monitoring bores report total chromium that fluctuate between <LOR and =LOR. The maximum reported total chromium concentration was 0.017 mg/L from an anomalous sample collected from RN040938 at Jibera South.
Electrical Conductivity (field)		The field EC in the CMB has been on a gradually rising trends since 2022 and exceeded the pre-activity maximum in the most recent sample. Field ECs in the IMB and RN038580 have shown similar rising trends.
Iron (dissolved)	RN040930 (CMB)	The dissolved iron concentration in the CMB has historically fluctuated between <LOR and roughly 1 mg/L. The reported concentration in October 2023 was <LOR, but in the September 2024 samples, the concentration has increased in both the CMB and IMB to ~1.45 mg/L. This is a lower concentration than the IMB background and RN038580. The concentration in the CMB declined to 0.49 mg/L in December 2024. The maximum reported concentration across Santos monitoring bores was from RN041242 of 21.9 mg/L.
Copper (total)		The total copper concentration in the CMB peaked at 0.031 mg/L in the last sample prior to drilling and exhibited a declining trend during the drilling and HFS program. The concentration was <LOR in May 2022, but then spiked up to 0.16 mg/L in July 2022, and reduced to 0.043mg/L in October 2022 and was reported <~LOR through 2023 and early 2024. In 2024, the concentration was reported as 0.003 mg/L and 0.002 mg/L in May and September respectively, and decreased to <LOR in December 2024. The total copper concentration in RN038580 ha consistently been <LOR. Total copper concentrations in other monitoring bores have generally been <LOR, except on some occasions where low (less than 5 times LOR) have been reported.
Electrical conductivity at 25°C		The electrical conductivity (EC) of the groundwater in the Gum Ridge Formation at the Tanumbirini site is approximately 1,300 µS/cm, with the three bores showing slight variations over time, generally in concert with each other. The maximum reported EC in the IMB was 1,360 µS/cm, as compared with its maximum prior to the start of activities of 1,340 µS/cm and minimum of 1,280 µS/cm. The concentration decreased over 2023 and early 2024 but increased marginally in the September 2024 sample to 1,330 µS/cm and then 1,340 µS/cm in December 2024. The maximum reported EC in the CMB was 1,410 µS/cm prior to activities starting, and 1,390 µS/cm during activities. The most recent EC was 1,310 µS/cm. The EC of RN038580 has generally mimicked the trend in the CMB and IMB. The most recent reported EC (September 2024) was 1,320 µS/cm (September 2024). Bores at other sites also reported slight variations in EC over time and in concert with each other suggesting potential variations in the laboratory sensor calibrations
Total Dissolved Solids @180°C		The TDS concentrations reported from the IMB have mostly varied in concert with the CMB. The maximum reported pre-activity TDS from the IMB was 878 mg/L, with a maximum concentration of 920 mg/L reported from the first sample collected following drilling in November 2021. The reported TDS from the IMB decreased to 826 mg/L after the completion of the HFS (July 2022), but increased to a local maximum of 877 mg/L in January 2023. It declined during 2023 and 2024, and then increased slightly in the December 2024 sample to 861 mg/L. The December 2024 concentration in the CMB was 880 mg/L TDS and generally shows a similar trend to the IMB. The most recent concentration (September 2024) in RN038580 was 816 mg/L TDS. This bore shows a similar trend to the CMB and IMB. The concentration in RN041242 shows a similar trend to the IMB and CMB.
Bicarbonate Alkalinity as CaCO3		The dominant major anion in the groundwater in the Gum Ridge Formation is bicarbonate. The maximum bicarbonate concentration in the IMB (435 mg/L) was reported from the November 2021 sample, compared with a pre-activity maximum of 420 mg/L. The bicarbonate concentration decreased to a minimum post-activity concentration of 377 mg/L in May 2022, but then increased to 419 mg/L in July 2023, with an October 2023 reported concentration of 401 mg/L. The May 2024 sample reported 373 mg/L but the concentration then increased in the September 2024 sample to 434 mg/L. The concentration declined to 399 mg/L in December 2204 Concentrations in the other Santos monitoring bores show similar temporal trends. The most recent concentration from the CMB was 397 mg/L (December 2024) and 422 mg/L in RN038580 in September 2024.
Magnesium		Magnesium concentrations in the IMB (and CMB) have been relatively stable fluctuation between approximately 53 mg/L and 63 mg/L. The October 2022 sample from the CMB reported its maximum concentration (60 mg/L). The magnesium concentration exhibited a slight declining trend through 2023 and 2024, although it increased marginally between May (52 mg/L) and September 2024 (55 mg/L). The most recent concentration in the IMB was 55 mg/L. Magnesium concentrations in other Santos monitoring bores have moved in concert with the IMB, albeit at different absolute concentrations.
Nitrate		The nitrate concentration in the IMB and CMB was <=LOR prior to and through the activities at Tanumbirini. The IMB sample from May 2023 reported 0.09 mg/L and has since declined to <LOR. Nitrate concentrations in other Santos monitoring bores are generally <LOR, except for RN040937 at Jibera South and RN040932 at Inacumba South, where low concentrations of nitrate were consistently reported.
Nitrite	RN040936 (IMB)	The nitrate concentration in the IMB and CMB was <LOR prior to and through the activities at Tanumbirini. The IMB sample from May 2023 reported 0.13 mg/L and has since declined to <LOR. Nitrite concentrations in other Santos monitoring bores were <LOR for all results.
Reactive Silica		The reactive silica concentration in the IMB exhibited a very slight rising trend from 22.9 mg/L in March 2021 to 25.1 mg/L October 2022. It reported decreasing concentrations through 2023, with a final reported concentration of 23.5 mg/L in October 2023 but increased again through 2024 to 25.2 mg/L in September 2024 decreasing slightly in December 2024 to 24.7 mg/L. The maximum pre-activity concentration was 24.9 mg/L. The CMB reported similar concentrations and trends from the end of the HFS. Reactive silica concentrations show more variability between the Santos monitoring bores than most other parameters.
Gross alpha		The pre-activity maximum reported Gross alpha concentration in the IMB was 0.82 Bq/L with a local maximum concentration (0.93 Bq/L) reported in July 2022. The concentration in the IMB then reduced to 0.66 Bq/L in January 2023, but then increased through 2023 to 1 Bq/L in October 2023. It subsequently reduced again to 0.45 Bq/L in May 2024 before rising slightly to 0.53 Bq/L in September 2024 and declining to 0.35 Bq/L in December 2024. The CMB reported an increased concentration during drilling to a maximum of 0.91 Bq/L in August 2021, but the decreased and changing in concert with the IMB and RN041242 since. The most recent concentration in the CMB was 0.36 Bq/L. Gross alpha shows some variability in reported concentration magnitude in all monitored bores, with the direction of change mimicking those reported from the IMB.
Gross beta		The gross beta concentration in the IMB reported a declining trend from a 0.39 Bq/L peak in July 2020 (prior to the start of drilling) to 0.24 Bq/L in November 2021, after the completion of the drilling activities. In the first sample following the HFS (February 2022) the concentration increased to 0.36 Bq/L, decreased to 0.31 Bq/L in May 2022 and then increased to its reported maximum of 0.44 Bq/L in July 2022 prior to declining to 0.34 mg/L in October 2022. Concentrations have since declined further, with the September and December 2024 samples reporting a concentration of 0.22 Bq/L. Gross beta concentrations show some consistencies in concentration trends between the monitoring bores but are less correlated than many of the other parameters where this occurs.
Aluminium (dissolved)		The dissolved aluminium concentration in the IMB has historically been <LOR. The result from May 2023 was reported as 0.02 mg/L. The CMB and RN041242 also reported concentrations >LOR from May 2023. With the exception of an early sample from each of the CMB and RN038580, all reported dissolved aluminium concentrations were <LOR.
Barium (dissolved)		The pre-activity maximum reported concentration of dissolved barium (0.05 mg/L) was only exceeded in the IMB (0.051 mg/L) in November 2021 declining to 0.040 mg/L in May 2022, increasing to 0.049 mg/L in July 2022 and then decreasing. In May 2024 the concentration was reported at 0.049 mg/L again, but in the more recent samples the concentration has declined to 0.045 mg/L (September 2024) and 0.044 mg/L (December 2024). A similar trend was reported from the CMB, reaching a maximum of 0.048 mg/L during activities compared with a pre-activity maximum of 0.05 mg/L. The most recent (December 2024) dissolved barium concentration from the CMB was 0.045 mg/L and from RN0385850 was 0.040 mg/L. Barium is ubiquitously present in the groundwater samples collected across the Santos monitoring bores. The maximum reported dissolved barium concentration (0.137 mg/L) reported from RN040938 at Jibera South is approximately 4 times greater than the concentrations reported from the Tanumbirini site. Similar temporal trends are observed in the dissolved barium concentrations reported from RN041242 compared with the IMB and CMB.
Aluminium (total)		Total aluminium was reported <LOR in the IMB in all samples prior to activities starting. One of the samples collected in February 2022 reported 0.02 mg/L whereas the other reported <LOR (0.01 mg/L).

Parameter (and fraction) exceeding baseline range in natural variability	Bore(s) in which exceedances were reported	Description
		The CMB reported total aluminium in the August 2021 sample (0.02 mg/L), but had previously had a reported concentration of 0.03 mg/L. Both the IMB and CMB have reported <=LOR since February 2022 except for July 2023 when they reported LOR (0.01 mg/L). RN038580 generally reports <LOR except for somewhat random concentrations >LOR, including prior to activities. Results have been <LOR since May 2022. Significantly higher total aluminium concentrations have been reported from the other Santos monitoring bores, generally from the first sample collected, where the concentration may be influenced by the presence of solids resulting from the drilling of the bore. Concentrations are generally <=LOR.
Lithium (total)		The pre-activity maximum total lithium concentration reported from the IMB was 0.076 mg/L from May 2020. The concentration then decreased to a minimum of 0.058 mg/L in November 2020, before rising to 0.074 mg/L in the last sample collected prior to the start of activities. Through the activities and 2022, the concentration fluctuated between 0.066 mg/L and 0.075 mg/L, mostly reported around 0.07 mg/L. The concentration rose in 2023 to a maximum of 0.081 mg/L in May, before declining again. The most recent concentration was 0.065 mg/L (December 2024). A similar overall trend in the total lithium concentration from late 2022 through 2024 was observed in the CMB with May, September and December 2024 concentrations of 0.067 mg/L reported from the CMB. The concentration in RN038580 decreased to its lowest reported concentration (0.058 mg/L) in January 2024 but increased again to 0.061 mg/L in September 2024.
Molybdenum (total)		Prior to activities commencing, the IMB reported total molybdenum <LOR. The November 2021 sample reported 0.003 mg/L total molybdenum. The concentration reduced to <LOR in February 2022 and has remained <LOR throughout 2022, 2023 and 2024, including the most recent sample from December 2024. The CMB total molybdenum concentration has remained <LOR since March 2020 when it stabilised post the drilling of the bore. The concentration reported from RN038580 has been <LOR since May 2022. Most other Santos monitoring bores report total molybdenum <LOR. RN040931 at Inacumba consistently reports total molybdenum in the range 0.002-0.004 mg/L. RN040938 at Jibera South reported a maximum dissolved molybdenum concentration of 0.02 mg/L prior to declining to <=LOR.
Strontium (total)		The total strontium concentration in the IMB has moved in concert with the concentration in the CMB. Pre-activity maximum concentrations were reported in September 2020 (IMB 0.876 mg/L and CMB 0.859 mg/L). Minimum concentrations were then reported in the next sample, collected in November 2020. The concentrations increased in both bores prior to the start of drilling but remained less than the pre-activity maxima. Concentrations remained relatively stable during drilling and then increased to a maximum of 0.887 mg/L / 0.861 mg/L in the IMB/CMB respectively in May 2023. In the next sample, concentrations in both bores dropped to <0.77 mg/L where they have remained until December 2024, when they were reported at 0.778 mg/L in the IMB and 0.805 in the CMB. Similar concentrations and trends in total strontium are observed across all monitoring bores.

LOR - limit of reporting; <LOR – less than the LOR; =LOR – equal to the LOR; >LOR – greater than the LOR; <~LOR – less than or roughly equal to the LOR
CMB = RN040930; IMB=RN040936

Table 3 Parameters with a significant difference between pre- and post-activity concentrations

Bore	Parameter	Comment
RN040930 (CMB)	Electric Conductivity - Field	
	Total Dissolved Solids @180°C	
	Chloride	
	Potassium	
	Fluoride	Post-activity mean concentration less than pre-activity mean
	Reactive Silica (dissolved)	
	Gross beta	Post-activity mean concentration less than pre-activity mean
	Methane	
	Arsenic (dissolved)	Post-activity mean concentration less than pre-activity mean
	Iron (dissolved)	
	Nickel (dissolved)	Post-activity mean concentration less than pre-activity mean
	Uranium (dissolved	Post-activity mean concentration less than pre-activity mean
	Zinc (dissolved)	Post-activity mean concentration less than pre-activity mean
	Arsenic (total)	Post-activity mean concentration less than pre-activity mean
	Lead (total)	Post-activity mean concentration less than pre-activity mean
	Nickel (total)	Post-activity mean concentration less than pre-activity mean
	Uranium (total)	Post-activity mean concentration less than pre-activity mean
	Zinc (total)	Post-activity mean concentration less than pre-activity mean
RN040936 (IMB)	Electrical Conductivity - Field	Post-activity mean concentration less than pre-activity mean
	Sodium	Post-activity mean concentration less than pre-activity mean
	Potassium	
	Calcium	Post-activity mean concentration less than pre-activity mean
	Magnesium	Post-activity mean concentration less than pre-activity mean
	Reactive Silica (dissolved)	
	Methane	
	Barium (dissolved)	
	Boron (dissolved)	
	Iron (dissolved)	Post-activity mean concentration less than pre-activity mean
	Manganese (dissolved)	Post-activity mean concentration less than pre-activity mean
	Nickel (dissolved)	Post-activity mean concentration less than pre-activity mean
	Uranium (dissolved)	Post-activity mean concentration less than pre-activity mean
	Arsenic (total)	Post-activity mean concentration less than pre-activity mean
	Barium (total)	
	Boron (total)	
	Iron (total)	Post-activity mean concentration less than pre-activity mean
	Manganese (total)	Post-activity mean concentration less than pre-activity mean
	Nickel (total)	Post-activity mean concentration less than pre-activity mean
	Uranium (total)	Post-activity mean concentration less than pre-activity mean
	Zinc (total)	Post-activity mean concentration less than pre-activity mean

4. Inacumba

There have been no drilling or HFS activities at Inacumba. The Inacumba site is approximately 20 km to the east of Tanumbirini (Figure 1).

Monitoring Activities

Monitoring activities target two formations at the Inacumba site.

Gum Ridge Formation (GRF)

A CMB (RN040931 – up hydraulic gradient of the proposed well locations) was installed in the Gum Ridge Formation (GRF) at the Inacumba site in December 2018 and a future IMB (RN040935 – down hydraulic gradient of the proposed well locations) was installed in July 2019. Both bores are installed across the full thickness of the Gum Ridge Formation (GRF) in accordance with the Guideline.

Water level, temperature and conductivity (LTC) sensors were installed in the monitoring bores in September 2020, replacing previously installed sensors that were found to provide unreliable data. The sensors record at four hourly intervals. The LTC sensor in RN040931 was removed from the bore in December 2022. Data acquisition from the LTC sensor in RN040935 failed at the end of May 2023 and was reinstated at the end of July 2023 but failed again in October 2023, hence there is no logger data since this date, however manual water level measurements have been made.

RN040931 was equipped with a dedicated electric submersible pump which is used for purging and sampling, at a pumping rate of ~0.5 L/s, however the bore cannot sustain this pumping rate. Routine water quality monitoring of RN040931 commenced in late July 2019. The suite of analysis exceeds the requirements of the Guideline and is compliant with Table 6 of the Code. RN040931 was sampled 27 times. A sample could not be collected in February 2022 as the site was not accessible due to wet weather. The pump was removed from the bore in December 2022 and the last sample available for RN040931 was collected in October 2022.

RN040935 was constructed as a future IMB with sealed sub-surface headworks in a "gatic" in accordance with the Bore Work Permit. There is no pump installed in this bore and no water quality samples have been collected.

Inacumba Aquifer (IA)

Santos, working with the NTG (Tickell, 2020), identified a previously unrecognised stratigraphic interval, informally called the Inacumba Unit. The Inacumba Unit comprises a red-brown siltstone overlying a clean limestone. The Inacumba Unit has been encountered at the Tanumbirini and Inacumba exploration sites, where it is up to ~200 m thick, but is not known further west. A CMB (RN041242) and a IMB bore (RN041243) were installed in the Inacumba Unit aquifer (herein referred to as IA) in September 2019.

Water level, temperature and conductivity (LTC) sensors were installed in the monitoring bores in September 2020. The sensors record at four hourly intervals. The LTC sensor in RN041242 failed in August 2023 and was replaced in September 2024. The LTC sensor in RN041243 failed in August 2022 and was replaced in January 2023.It failed again at the end of May 2023. There is no data available for the periods of failure, however manual water levels were collected.

RN041242 was equipped with a dedicated electric submersible pump which was used for purging and sampling, at a pumping rate of 17 L/s. Routine of water quality monitoring of RN041242 commenced in October 2019. The suite of analysis exceeds the requirements of the Guideline and is compliant with Table 6 of the Code. RN041242 has been sampled 16 times. A sample could not be collected in January 2022 as the site was not accessible due to wet weather. The pump was removed from the bore in December 2022 and was replaced with a smaller pump in April 2023, thus a sample was not collected in January 2023. A sample could not be collected in January

2024, April/May 2024 and the first quarter of 2025 because the site could not be accessed due to antecedent wet weather.

RN041243 was constructed as a future IMB with sealed sub-surface headworks in a "gatic" in accordance with the Bore Work Permit. There is no pump installed in this bore and no water quality samples have been collected.

Water level, temperature and electrical conductivity monitoring

There have been no drilling or HFS activities at the Inacumba site. The downhole sensor responses are described and interpreted as follows.

- There is a slight seasonal fluctuation in water level that lags behind but follows barometric pressure
- The following diurnal variations in water level (approximate) can be observed:
    - RN040931 (GRF) – 0.05 m (5 cm)
    - RN040935 (GRF) – 0.025 m (2.5 cm)
    - RN042142 (IA) – 0.07 m (7 cm)
    - RN042143 (IA) – 0.07 m (7 cm)
- There was an approximately 0.05 m decline in overall water levels in the GRF and 0.1 m decline in the IA between 2020 and 2023. Water levels have potentially increase by approximately half the decline since, however this is within the accuracy range of the measurements.
- The temperature and conductivity response in RN042142 indicate that pumped water is coming up the bore from deeper in the formation, and that the deeper water may be more saline than shallower water within the same geological formation. This is indicative of fracture dominated flow.
- The electrical conductivity measured by the sensor in RN040931 was roughly 250 µS/cm greater than the field measured electrical conductivity. Both sets of data show similar effectively flat trends. The offset is likely to relate to a different calibration on the downhole sensor. The field measured electrical conductivity is considered the more reliable measurement as the portable meter is routinely calibrated each field visit.
- The LTC sensor in RN040931 was removed in December 2022. Manual water levels were measured with an electronic dipmeter during the quarterly monitoring showed a stable water level. The discrepancy between the logger water levels and the manually measured water levels is likely to be due to different reference points, and is approximately 2 cm.
- The LTC sensor in RN041242 failed in August 2023 and was replaced in September 2024 (with a level-temperature sensor). There is no data available for the period of failure.
- The LTC sensor in RN041243 failed in August 2022 and was replaced in January 2023. It failed again in late May 2023 and has not been replaced. There is no data available for the periods of failure.
- The Guideline does not mandate the use of water level and conductivity sensors.

Figure 4 Inacumba Gum Ridge Formation (GRF) - LTC timeseries monitoring data

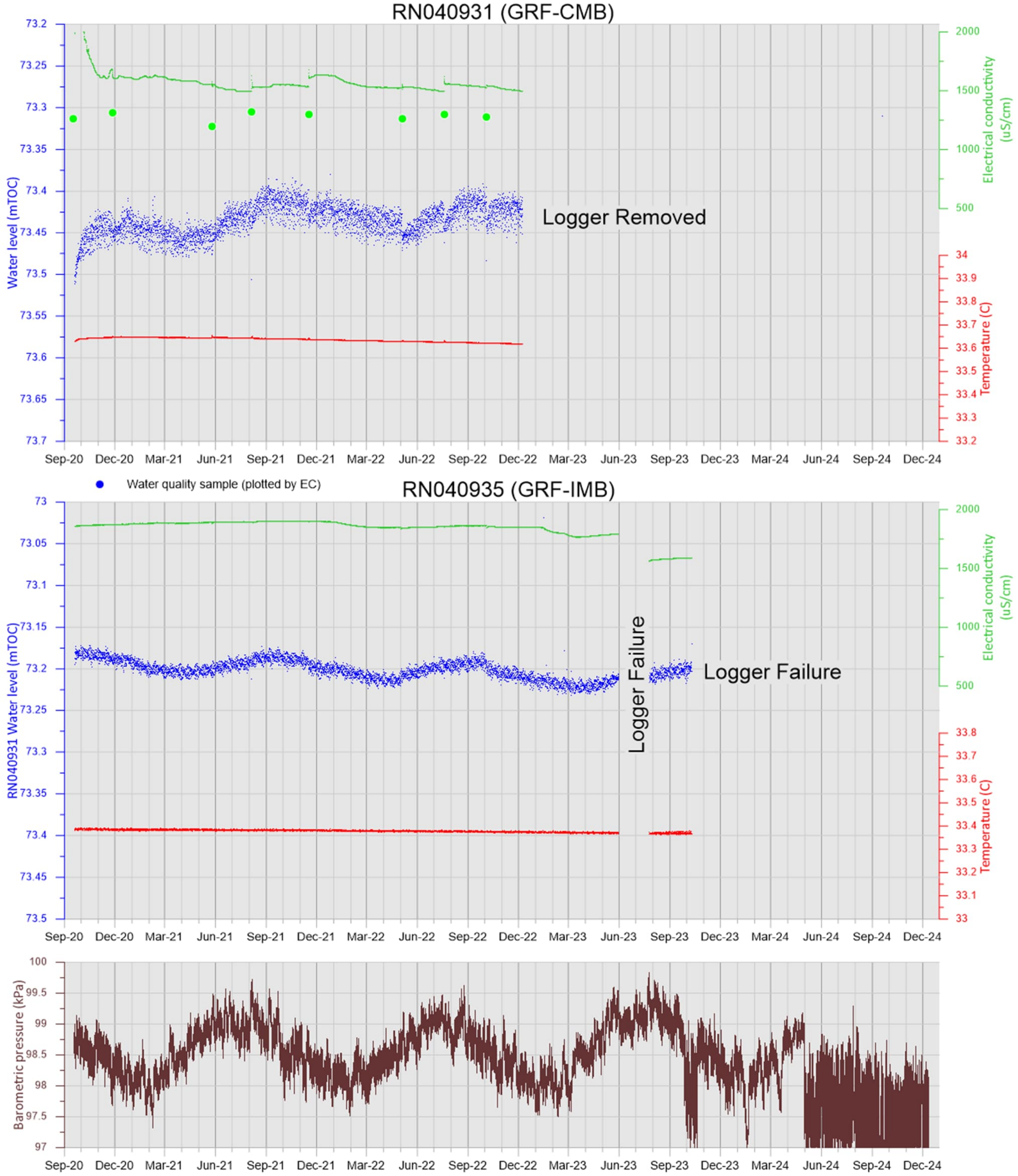
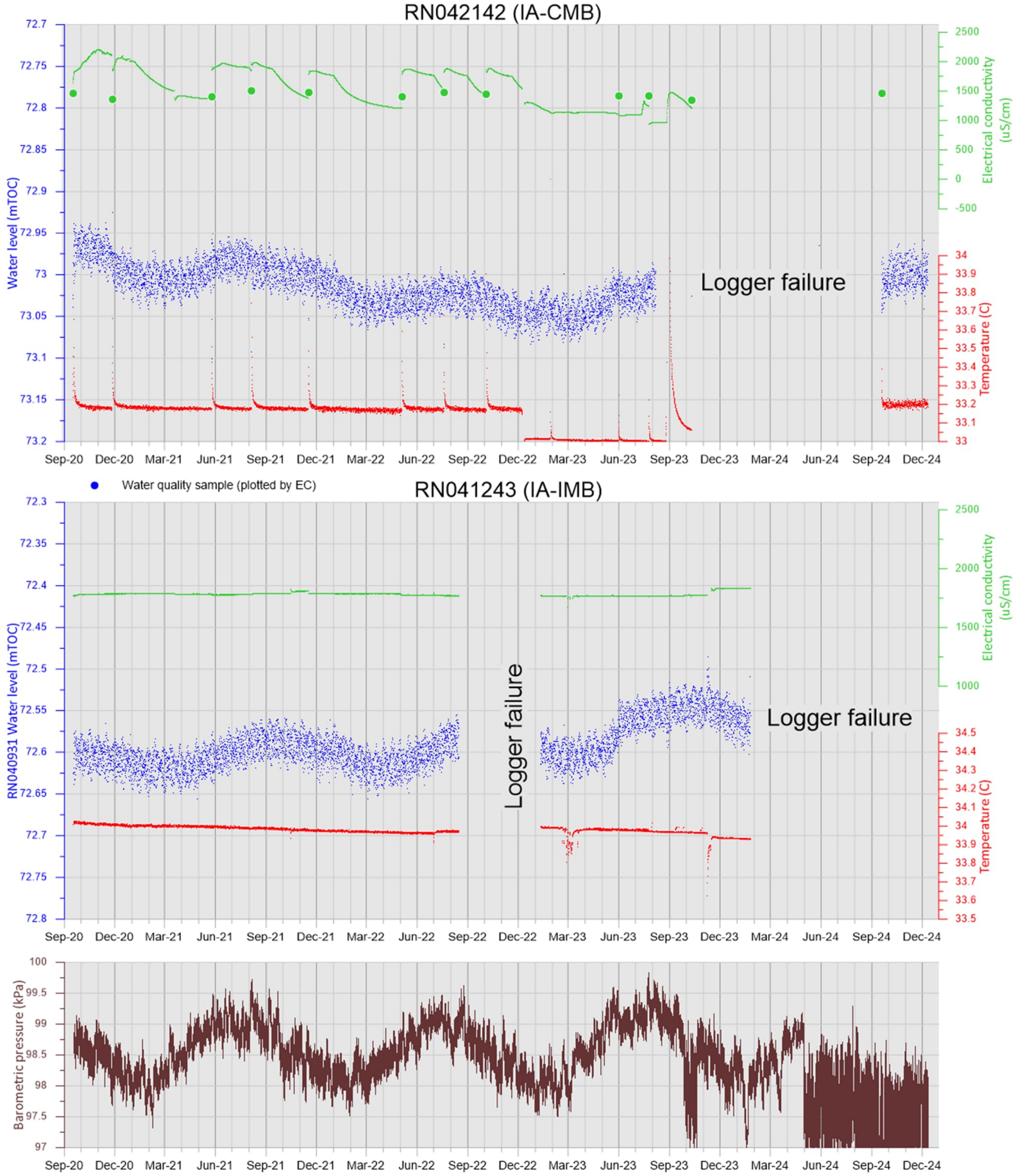


Figure 5 Inacumba Aquifer (IA) - LTC timeseries monitoring data



Water quality monitoring

There have been no drilling or HFS activities at Inacumba.

The most recent samples available from RN040931 was October 2022 as the pump was removed from the bore in December 2022. The most recent sample from RN041242 was from December 2024 as the site could not be accessed in the first quarter of 2025 due to wet weather.

Statistical summaries of the water quality results are provided in Attachment A. In lieu of assessing potential changes to water quality associated with exploration activities, the Mann-Kendall test for trend was performed for all analytes for each of RN040931 and RN041242. Where the Mann-Kendall test identified a rising trend (i.e. there appears to be a deterioration in the reported water quality), a time-series chart has been prepared and the data qualitatively described in Table 4

Table 4 Inacumba - Description of timeseries data for those analytes with a rising trend

Bore in which exceedances were reported	Parameter with rising trend	Description of trend
RN040931 (Gum Ridge Formation)[1]	pH – field	The field pH was quite variable when routine sampling commenced in Jul 2019, showing an overall steeply declining trend to a minimum of 6.4. The field pH then rose to ~pH 8, where it was relatively stable, except for an anomalously low reading in September 2020. The field pH showed a slight declining trend through 2022.
	pH - laboratory	The laboratory measured pH exhibits similar trends to the field pH. The value of the laboratory measured pH is generally approximately 0.5 pH units greater than the field measured pH. This is likely due to volatilisation of dissolved carbon dioxide, a weak acid, that is commonly observed effervescing in the groundwaters collected from the Gum Ridge Formation
	Carbonate alkalinity	Carbonate alkalinity has mostly been reported at <LOR except for one sample in January 2022 and for 3 samples from August 2021, October and 2021 and February 2022 where concentrations peaked at 20 mg/L. The two most recent samples (July and October 2022) were both <LOR.
	Potassium	The potassium sample collected immediately after drilling contained 22 mg/L potassium. The concentration rose from 25 mg/L to 33 mg/L as the bore continued to be sampled, and then gradually declined to 26 mg/L between January 2020 and July 2022. Most recent sample report a concentration of 28 mg/L.
	Methane (dissolved)	Dissolved methane was report <LOR in all samples prior to October 2021. The concentration rose to a maximum of 5 mg/L in May 2022, declining to 20 mg/L in July 2022 and <LOR in October 2022.
	Lithium (dissolved)	The dissolved lithium concentration has fluctuated between 0.4 mg/L and 0.5 mg/L except for a few lower concentration outliers. The most recent sample (0.48 mg/L) contained lower than the maximum reported concentration (0.51 mg/L).
	Molybdenum (total)	The maximum total molybdenum concentration (0.05 mg/L) was reported from the sample immediately after drilling. When routine sampling commenced, concentrations were generally 0.002 mg/L but reduced to <LOR in January 2020. Concentrations rose to a maximum of 0.004 mg/L in May 2021 and remained less than this concentration but >LOR since.
RN041242 (Inacumba Aquifer)[2]	Iron (dissolved)	The dissolved iron concentration exhibited a gradually increasing concentration from 0.14 mg/L in October 2019 to 0.38 mg/L November 2021. The May 2023 sample reported 21.9 mg/L. This sample was the first collected for six months due to the pump being removed. The concentration then reduced to 1.34 mg/L in July 2023 and <LOR in October 2023. There was another hiatus in sampling during 2024 due to site access issues The dissolved iron concentration increased to 1.36 mg/L in September 2024 and 1.46 mg/L in December 2024. The large fluctuation in concentration most likely relates to the presence of corrosion product and the amount the bore is used/purged prior to sample collection.
	Manganese (dissolved)	The dissolved manganese concentration has risen from 0.004 mg/L in the first sample collected to a maximum of 0.574 mg/L in May 2023. The concentration then declined to 0.015 mg/L in July 2003 and then increased to 0.288 mg/L in October 2023 and then declined to 0.028 mg/L in September 2024 and then 0.019 mg/L in December 2024. The fluctuation in concentrations likely to be related to corrosion product and to the amount the bore is used/purged prior to sample collection.
	Iron (total)	The total iron exhibits a similar trend to the dissolved iron trend, but at higher concentrations. The most recent sample contained 1.65 mg/L, significantly lower than the maximum concentration of 26.1 mg/L.

Bore in which exceedances were reported	Parameter with rising trend	Description of trend
	Manganese (total)	The total manganese concentrations and trends are very similar to the dissolved manganese concentrations and trends. The most recent reported concentration was 0.019 mg/L.

[1] Most recent sample was from October 2022
[2] Most recent sample was from December 2024

5. Dissolved methane

Santos has analysed 346 individual samples for dissolved methane across its monitoring bores and from pastoral bores baselined and routinely monitored on Tanumbirini Station and the adjacent O.T. Downs (Beetaloo) station. This includes bore baseline and routine monitoring of pastoral water bores and Santos monitoring bores. Methane was detected in 121 of those samples (35 %). Dissolved methane has been detected in all monitored formations (Anthony Lagoon Formation, Gum Ridge Formation, Inacumba Aquifer and Proterozoic Bedrock) before and after drilling, and before and after HFS activities. The maximum reported dissolved methane concentration was 777 µg/L[1], from RN037666 (a station bore) that is more than 50 km to the northeast of the Tanumbirini site, compared with a maximum reported concentration of less than 50 µg/L at the Tanumbirini site. Methane saturation in water at atmospheric pressure is 20,700 µg/L at 30 °C (Walker and Mallants, 2014), which is the concentration required for free gas to be present.

Timeseries data shows a rising trend in the reported dissolved methane concentrations in the Tanumbirini IMB (RN040936) and CMB (RN040930) from May 2021 to December 2021. Low concentrations of dissolved methane were detected in the IMB and RN038580 prior to the commencement of drilling, however dissolved methane had not previously been detected in the CMB. The IMB reported a maximum concentration of 48 µg/L and the CMB a maximum of 16 µg/L. The peak concentrations were followed by a decline to local minima in July 2022 and January 2023 in the CMB and IMB respectively. The CMB concentrations returned to <LOR in samples from July and October 2022, however concentrations in that bore have since exhibited an increasing trend to September 2024 when 9 µg/L was reported, however the December 2024 sample declined to 3 µg/L. The IMB concentration increased from its local minimum of 15 µg/L in January 2023 to 25 µg/L in May 2023, and then declined to 10 µg/L in October 2023, which is similar to the pre-activity maximum of 9 µg/L reported in December 2020. It has since exhibited a gradually increasing trend to May 2024 when 15 µg/L was report, but the concentration has since decline, with the September 2024 sample reporting 13 µg/L and December 2024 reporting 11 µg/L. RN038580 is also at the Tanumbirini site and reported the presence of dissolved methane in 2018 (11 µg/L). Concentrations declined through 2019 and 2020, reaching a minimum of 2 µg/L in August 2021 (near the end of drilling). The concentration exhibited a rising trend and local maximum concentration of 6 µg/L was reported in May 2022. The concentration remained at 5-6 µg/L until January 2024, when 1 µg/L was reported, however similarly to the CMB and IMB it has exhibited a rising trend through 2024 with a concentration of 5 µg/L reported from September 2024. A maximum concentration of 20 µg/L (CSIRO, 2019) was reported from RN038580 prior to the commencement of drilling.

While the dissolved methane concentrations temporarily increased at the Tanumbirini exploration site, the detected dissolved methane concentrations remain less than concentrations observed elsewhere across EP161. A timeseries comparison of the methane concentrations from Santos's regular monitoring of pastoral bores and those at the Tanumbirini exploration site is shown on Figure 6 and the spatial distribution of methane concentrations from all Santos monitoring activities (including bore baselines) are shown on Figure 7. The following observations can be made from the figures

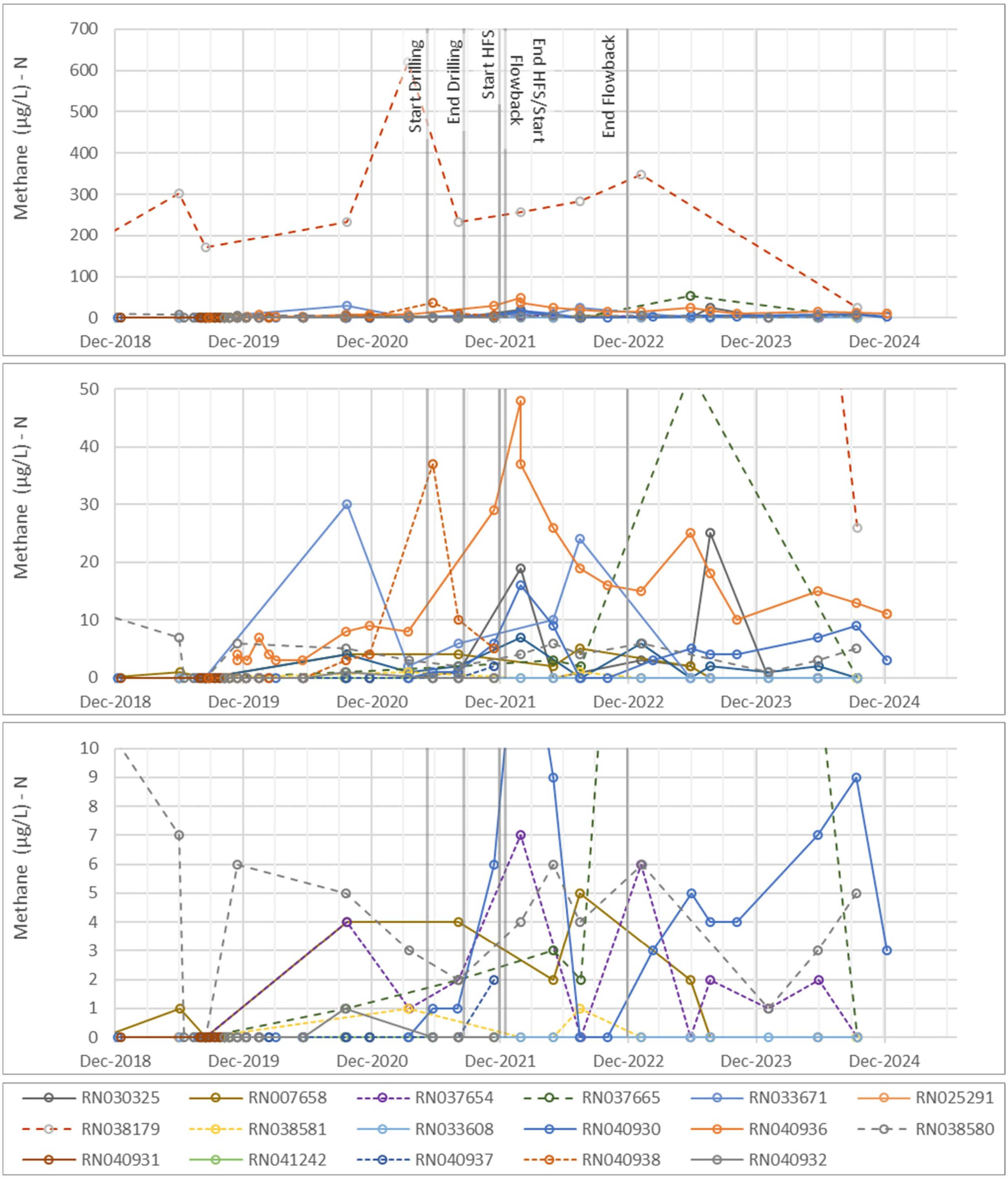
[1] A result of 7,200 µg/L was reported from RN007658 in May 2024. The concentration is an order of magnitude greater than any other dissolved methane concentration observed by Santos. The laboratory was not able to rerun the sample due to the time between the original analysis and querying the result, but confirmed that the reported concentration was not due to an administrative error. This result has been excluded from the calculation of statistics due to its uncertainty. RN007658 is location roughly 9km south-southeast of the Tanumbirini well site.

- Dissolved methane has been detected in all monitored formations (Anthony Lagoon Formation, Gum Ridge Formation, Inacumba Aquifer and Proterozoic Bedrock) before and after drilling, and before and after HFS activities.
- There is no apparent spatial pattern to the distribution of dissolved methane concentrations.
- The maximum reported dissolved methane concentration was 777 µg/L, from RN037666 (a station bore) that is more than 50 km to the northeast of the Tanumbirini exploration site.
- RN038179 (11 km southwest of the Tanumbirini site) routinely reports dissolved methane concentrations greater than 200 µg/L, with a maximum concentration of 620 µg/L reported in March 2021. CSIRO (2019) reported a concentration of 379 µg/L from RN038179 (sampled in October 2018). The dissolved methane concentration in this bore has exhibited a rising trend from August 2021 to January 2023, reaching a local maximum of 348 µg/L, however the most recent sample (September 2024) reported 26 µg/L, the lowest concentration yet observed from this bore.
- RN030325 (3.6 km from Tanumbirini), RN040937 (10.8 km from Tanumbirini) and RN037654 (24.3 km from Tanumbirini) also report rising dissolved methane concentrations over the equivalent period to the drilling and HFS activities (May 2021 to February 2022), albeit at lower concentrations compared with the Tanumbirini site. The dissolved methane concentration in RN040937 peaked at 6 µg/L in July 2022 but was <LOR in the two subsequent samples (the last samples collected from that bore). RN030325 reported 25 µg/L in July 2023 (having increased from <LOR in May 2022) but has since returned to <LOR. RN030325 has reported variable dissolved methane concentrations, fluctuating between <LOR and a maximum of 25 µg/L, more frequently <2 µg/L. The most recent sample (May 2024) reported <LOR.
- RN037665 reported a dissolved methane concentration of 53 µg/L in May 2023. Its previously reported maximum concentration was 13 µg/L, reported in May 2018, with intervening concentrations less than or equal to 3 µg/L. It was not sampled between May 2023 and September 2024, with the latter sample reporting <LOR. RN037665 is approximately 30 km from the Tanumbirini site.
- RN040938 reported an increasing trend from <LOR to a peak of 37 µg/L in May 2021, followed by a gradual decrease to 1 µg/L in October 2022 (most recent sample)
- RN033761 reported an increasing trend from <LOR to a peak of 30 µg/L, followed by a decrease to less than 10 µg/L in the following two samples. From March 2021 the reported concentration increased to 10 µg/L in May 2022, and was reported to be 24 µg/L in July 2022, but was <LOR through 2023 and 2024.
- RN040931 (the GRF monitoring bore at Inacumba) reported 5 µg/L in May 2022 and 2 µg/L in July 2022. All other samples prior to and post these dates, the reported dissolved methane concentrations were <LOR. The sample from October 2022 (most recent sample) was report <LOR.
- RN035502 reported 1 µg/L in July 2023 and 2 µg/L in May 2024 (subsequent and most recent sample) with all previous results reporting <LOR.
- RN041242 reported 4 µg/L in September 2024 whereas all previous samples and December 2024 were <LOR.
- Of the bores that are routinely sampled by Santos, only three bores have never reported dissolved methane greater than the limit of reporting (RN040939, RN025291, RN033608).
- Dissolved methane concentrations may reduce to less than the limit of reporting, and then increase again. These changes may occur between consecutive samples (every three or six months depending on the bore) or over a longer period.

CSIRO (2019) collected 25 samples for dissolved methane in October to November 2018. The CSIRO (2019) limit of reporting was 0.2 µg/L as compared with the 1 µg/L at which Santos's results are usually reported. CSIRO reported the presence of methane in all the samples it collected. It found that concentrations were generally less than 10 µg/L, but concentrations up to 1129.5 µg/L were present. Stable isotope composition of the methane in the two samples analysed (RN031397 and RN038179) indicated that the presence of methane was due to microbial activity. RN038179 is on Tanumbirini Station and is included in the Santos regional monitoring program. CSIRO (2020) identified that methanogenic organisms (i.e. methane producing organisms) are naturally occurring within the groundwater of the Cambrian Limestone Aquifer. Dissolved methane concentrations are generally too low to enable isotopic characterisation. CSIRO has advised Santos that analysis to determine the stable isotope composition of the methane, which would confirm whether the methane is sourced from microbial activity, cannot be performed with confidence in the results if the dissolved methane concentration is less than 500 µg/L (pers. Comm. Santos, 2022).

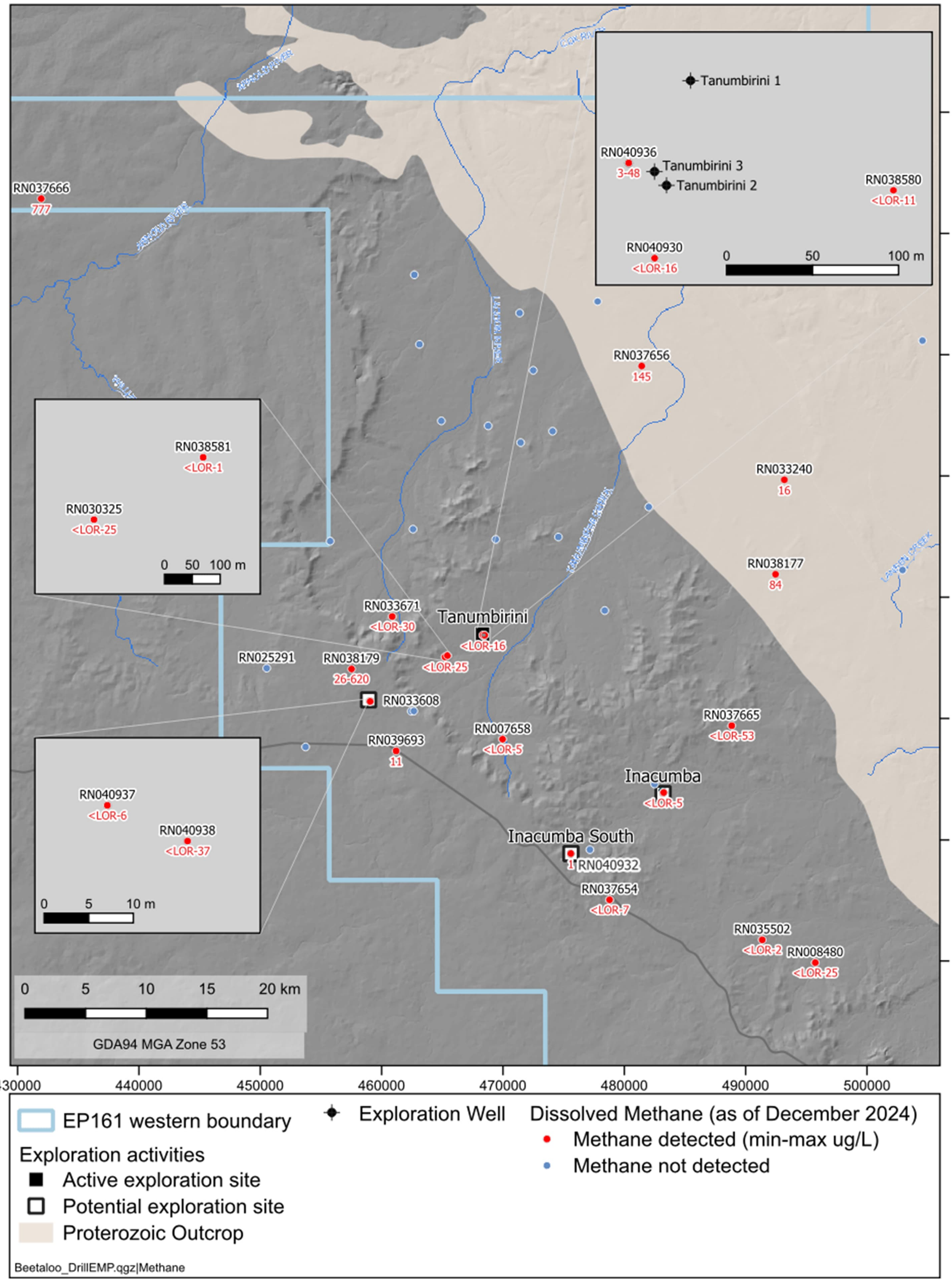
No propane or ethane has been detected in any of the groundwater samples collected by Santos. While the absence of propane and ethane does not preclude a thermogenic origin for the methane, it does indicate that a biogenic source to the methane detected is more likely.

Figure 6 Dissolved methane time series comparison*



* the graphs report the same data at different scales, except for the lowermost graph where some bores have been removed for clarity

Figure 7 Spatial distribution of methane concentrations



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7. Disclaimer

RDM Hydro Pty Ltd (RDM Hydro) has prepared this report with all reasonable skill, care and diligence, and taking account of the timescale and resources allowed to it by agreement with Santos (the Client). Information reported herein is based on the interpretation of data collected and collated, which has been accepted in good faith as being accurate and valid.

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Attachment A – Groundwater chemistry statistical summaries

RN040930				Statistical Summary: All Data							Statistical Summary: Pre-Activity Data							Statistical Summary: Post Activity Data							Statistics	
Group	Parameter	Units	Fraction	Count	Min	Max	Average	P10	P50	P90	Count	Min	Max	Average	P10	P50	P90	Count	Min	Max	Average	P10	P50	P90	F.Test Statistic	T.Test - P-value
Field Measurements	pH - Field	pH Unit	N	37	6.28	8.16	6.95	6.62	6.9	7.28	23	6.28	7.61	6.9	6.55	7	7.29	14	6.66	8.16	6.94	6.70	6.875	7.01	0.57	0.46
	Electrical Conductivity - Field	µS/cm	N	37	1183	1643	1387.486	1297.4	1382	1465.4	23	1356	1643	1407.9	1371	1388	1458.4	14	1183	1517	1353.929	1265.6	1323	1459.7	0.05	0.020
	CH4 - Field	% LEL	N	33	0	0.2	0.012121	0	0	0	20	0	0.2	0.0	0	0	0	13	0	0.1	0.015385	0	0	0.08	0.54	0.36
Physiochemical	Electrical Conductivity @ 25°C	µS/cm	N	41	878	1410	1310.683	1280	1310	1370	27	878	1410	1304.7	1286	1310	1376	14	1220	1390	1322.143	1283	1330	1367	0.01	0.21
	Total Dissolved Solids @180°C	mg/L	T	41	616	929	842.6341	805	845	896	27	616	929	832.2	787.8	843	880.2	14	812	910	862.7857	827.7	859	900.2	0.03	0.02
	pH - Lab	pH Unit	N	41	6.92	8.04	7.733659	7.41	7.76	8.01	27	7.27	8.02	7.7	7.406	7.72	7.986	14	6.92	8.04	7.714286	7.45	7.78	8.024	0.09	0.36
	Suspended Solids	mg/L	N	41	5	46	16.2	5.8	11	32.4	27	5	46	20.7	6.2	11	39	14	7	12	9.5	7.5	9.5	11.5	0.22	0.27
Major Ions	Bicarbonate Alkalinity as CaCO3	mg/L	N	41	269	467	403.4146	377	407	424	27	269	467	404.7	382.4	410	424	14	359	444	400.9	374.2	400	433.9	0.26	0.35
	Carbonate Alkalinity as CaCO3	mg/L	N	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Chloride	mg/L	N	41	60	121	109.7073	106	110	116	27	60	116	108.1	104.8	110	113	14	105	121	112.8	106	113	120.1	0.03	0.03
	Sulfate as SO4 2-	mg/L	D	41	125	208	171.2683	159	172	183	27	125	208	170.6	160.2	172	183.8	14	143	184	172.5	162.6	174	181.1	0.14	0.34
	Sodium	mg/L	D	41	45	83	75.43902	73	76	79	27	45	81	75.1	73.6	76	79	14	66	83	76.0	71.9	76	79	0.07	0.33
	Potassium	mg/L	D	41	7	17	11.85366	11	12	13	27	7	13	11.4	11	12	12	14	11	17	12.7	11	12.5	14	0.07	0.0015
	Calcium	mg/L	D	41	86	156	135.2195	124	137	149	27	99	152	137.2	126.6	138	149.4	14	86	156	131.4	120.5	133	143.8	0.09	0.09
	Magnesium	mg/L	D	41	35	63	55.65854	53	56	60	27	35	63	56.0	53.6	57	60.8	14	48	61	54.9	53	55.5	56.7	0.03	0.19
	Fluoride	mg/L	N	41	0.5	1	0.639024	0.6	0.6	0.7	27	0.5	1	0.7	0.6	0.6	0.7	14	0.6	0.7	0.6	0.6	0.6	0.67	0.00	0.04
Nutrients & Radiological	Nitrite as N	mg/L	N	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Nitrate as N	mg/L	N	41	0.04	0.04	0.04	0.04	0.04	0.04	27	0.04	0.04	0.0	0.04	0.04	0.04	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Reactive Silica	mg/L	N	40	14.8	25.7	23.5125	22.69	23.65	24.73	26	14.8	25.7	23.1	22.55	23.2	24.85	14	23.2	25.5	24.2	23.52	24.15	24.67	0.00	0.01
	Gross alpha	Bq/L	N	41	0.36	1.46	0.741463	0.52	0.75	0.9	27	0.43	1.46	0.8	0.608	0.75	0.864	14	0.36	0.99	0.7	0.464	0.74	0.907	0.95	0.20
	Gross beta activity - 40K	Bq/L	N	41	0.12	0.82	0.33225	0.21	0.32	0.46	27	0.21	0.82	0.4	0.26	0.345	0.475	14	0.12	0.46	0.3	0.172	0.255	0.412	0.43	0.02
Dissolved Gases	Methane	µg/L	N	41	1	16	5.666667	1.2	4.5	9	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	1	16	5.7	1.2	4.5	9	-	-
	Ethane	µg/L	N	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Propane	µg/L	N	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
Dissolved Metals/ Metalloids	Aluminium	mg/L	D	41	0.01	0.02	0.015	0.011	0.015	0.019	27	0.02	0.02	0.020	0.02	0.02	0.02	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Arsenic	mg/L	D	41	0.001	0.008	0.004677	0.002	0.005	0.007	27	0.002	0.008	0.005	0.0026	0.005	0.007	14	0.001	0.005	0.002	0.001	0.0015	0.0041	0.72	0.0035771
	Barium	mg/L	D	41	0.032	0.05	0.04361	0.041	0.044	0.046	27	0.039	0.05	0.044	0.0416	0.044	0.046	14	0.032	0.049	0.043	0.0385	0.044	0.0474	0.00	0.32
	Beryllium	mg/L	D	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Boron	mg/L	D	41	0.1	0.22	0.172683	0.14	0.18	0.19	27	0.1	0.2	0.169	0.14	0.17	0.19	14	0.11	0.22	0.18	0.163	0.18	0.207	0.49	0.08
	Cadmium	mg/L	D	41	0.0001	0.0002	0.000133	0.0001	0.0001	0.00018	27	0.0001	0.0002	0.000	0.0001	0.0001	0.00018	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Chromium	mg/L	D	41	0.009	0.009	0.009	0.009	0.009	0.009	27	0.009	0.009	0.009	0.009	0.009	0.009	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Cobalt	mg/L	D	41	0.001	0.057	0.006393	0.002	0.004	0.0083	27	0.001	0.057	0.007	0.002	0.004	0.0084	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Copper	mg/L	D	41	0.001	0.014	0.0046	0.001	0.002	0.0104	27	0.001	0.002	0.001	0.001	0.001	0.0018	14	0.005	0.014	0.010	0.0059	0.0095	0.0131	0.02	0.16
	Iron	mg/L	D	41	0.06	1.43	0.513611	0.185	0.455	0.955	27	0.06	1.11	0.408	0.129	0.38	0.736	14	0.39	1.43	0.725	0.472	0.6	1.155	0.24	0.001
	Lead	mg/L	D	41	0.001	0.003	0.0018	0.001	0.002	0.0026	27	0.001	0.003	0.002	0.001	0.002	0.0026	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Lithium	mg/L	D	41	0.057	0.084	0.067293	0.063	0.068	0.073	27	0.057	0.076	0.067	0.0626	0.065	0.073	14	0.059	0.084	0.069	0.0643	0.068	0.0707	0.33	0.12
	Manganese	mg/L	D	41	0.001	0.046	0.019634	0.015	0.018	0.027	27	0.008	0.046	0.019	0.015	0.018	0.0268	14	0.001	0.034	0.021	0.0173	0.019	0.0267	0.75	0.29
	Mercury	mg/L	D	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Molybdenum	mg/L	D	41	0.001	0.009	0.002833	0.001	0.0015	0.006	27	0.001	0.009	0.003	0.001	0.0015	0.006	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Nickel	mg/L	D	41	0.001	0.22	0.016854	0.002	0.01	0.024	27	0.004	0.22	0.024	0.007	0.014	0.0284	14	0.001	0.005	0.003	0.001	0.002	0.004	0.00	0.005
	Selenium	mg/L	D	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Silver	mg/L	D	40	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	26	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Strontium	mg/L	D	40	0.674	0.905	0.784975	0.7385	0.7815	0.8417	26	0.719	0.864	0.792	0.753	0.787	0.84	14	0.674	0.905	0.772	0.7061	0.767	0.8418	0.03	0.14
	Uranium	mg/L	D	41	0.001	0.037	0.004925	0.001	0.004	0.008	27	0.002	0.037	0.007	0.003	0.005	0.0084	14	0.001	0.002	0.001	0.001	0.001	0.002	0.00	0.0001
	Vanadium	mg/L	D	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Zinc	mg/L	D	41	0.005	0.099	0.024949	0.0094	0.02	0.0406	27	0.005	0.099	0.027	0.01	0.0205	0.0575	14	0.006	0.035	0.020077	0.008	0.019	0.033	0.00	0.08
Total Metals/ Metalloids	Aluminium	mg/L	T	41	0.01	0.03	0.02	0.013	0.02	0.027	27	0.02	0.03	0.0250	0.021	0.025	0.029	14	0.01	0.02	0.0150	0.011	0.015	0.019	1.00	0.1464
	Arsenic	mg/L	T	41	0.001	0.014	0.005094	0.002	0.005	0.0079	27	0.001	0.014	0.006	0.0026	0.006	0.008	14	0.001	0.005	0.003	0.001	0.002	0.0046	0.52	0.01075
	Barium	mg/L	T	41	0.038	0.058	0.046659	0.043	0.047	0.05	27	0.038	0.053	0.046	0.0426	0.047	0.05	14	0.042	0.058	0.047	0.044	0.046	0.0504	0.49	0.33
	Beryllium	mg/L	T	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Boron	mg/L	T	41	0.08	0.27	0.176585	0.14	0.18	0.21	27	0.08	0.22	0.173	0.136	0.17	0.204	14	0.12	0.27	0.183571	0.146	0.18	0.228	0.29	0.16
	Cadmium	mg/L	T	41	0.0001	0.0002	0.00016	0.0001	0.0002	0.0002	27	0.0001	0.0002	0.000	0.0001	0.0002	0.0002	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Chromium	mg/L	T	41	0.001	0.011	0.005	0.0017	0.003	0.0103	27	0.002	0.003	0.003	0.002	0.0025	0.003	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Cobalt	mg/L	T	41	0.002	0.06	0.007036	0.003	0.004	0.009	27	0.002	0.06	0.007	0.003	0.004	0.009	14	0.003	0.003	0.003	0.003	0.003	0.003	-	-
	Copper	mg/L	T	41	0.002	0.158	0.015321	0.0027	0.007	0.0219	27	0.002	0.031	0.008	0.0028	0.007	0.0134	14	0.002	0.158	0.030	0.0028	0.014	0.066	0.00	0.11
	Iron	mg/L	T	41	0.21	3.62	1.186585	0.32	0.83	2.4	27	0.21	3.62	1.100	0.26	0.68	2.524	14	0.55	3.29	1.354	0.603	1.13	2.287	0.53	0.21
	Lead	mg/L	T	41	0.001	0.028	0.006069	0.002	0.005	0.0104	27	0.001	0.028	0.007	0.002	0.005	0.0132	14	0.002	0.005	0.003	0.002	0.003	0.0047	0.04	0.019
	Lithium	mg/L	T	41	0.057	0.082	0.069146	0.062	0.068	0.077	27	0.057	0.082	0.069	0.0612	0.069	0.0774	14	0.061	0.081	0.069357	0.0649	0.068	0.0744	0.27	0.44
	Manganese	mg/L	T	41	0.008	0.057	0.022561	0.016	0.018	0.033	27	0.008	0.057	0.021	0.016	0.018	0.0302	14	0.016	0.049	0.025	0.017	0.0235	0.0371	0.71	0.08
	Mercury	mg/L	T	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Molybdenum	mg/L	T	41	0.001	0.004	0.0015	0.001	0.001	0.0031	27	0.001	0.004	0.002	0.001	0.001	0.0031	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Nickel	mg/L	T	41	0.001	0.234	0.018317	0.002	0.012	0.028	27	0.005	0.234	0.026	0.0098	0.016	0.0296	14	0.001	0.014	0.004	0.001	0.003	0.0074	0.00	0.01
	Selenium	mg/L	T	41	0.05	0.05	0.05	0.05	0.05	0.05	27	0.05	0.05	0.050	0.05	0.05	0.05	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Silver	mg/L	T	40	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	26	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Strontium	mg/L	T	40	0.668	0.944	0.811625	0.7445	0.812	0.8734	26	0.668	0.944	0.817	0.7415	0.8335	0.8665	14	0.74	0.878	0.802	0.758	0.797	0.8722	0.22	0.22
	Uranium	mg/L	T	41	0.001	0.038	0.00522	0.001	0.004	0.009	27	0.003	0.038	0.007	0.0036	0.006	0.009	14	0.001	0.003	0.001	0.001	0.001	0.002	0.00	0.0001
	Vanadium	mg/L	T	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Zinc	mg/L	T	41	0.006	0.101	0.040659	0.014	0.036	0.065	27	0.01	0.101	0.046	0.0172	0.039	0.0806	14	0.006	0.063	0.031	0.01	0.027	0.0596	0.45	0.03
Complex Hydrocarbons	C6 - C36 Fraction (Sum)	µg/L	N	36	1360	1360	1360	1360	1360	1360	22	1360	1360	1360.0	1360	1360	1360	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Sum of BTEX	µg/L	N	41	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Sum of polycyclic aromatic hydrocarbons (PAHs)	µg/L	N	39	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	25	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	14	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-

NA = not analysed

RN040936				Statistical Summary: All Data							Statistical Summary: Pre-Activity Data							Statistical Summary: Post Activity Data							Statistics	
Group	Parameter	Units	Fraction	Count	Min	Max	Average	P10	P50	P90	Count	Min	Max	Average	P10	P50	P90	Count	Min	Max	Average	P10	P50	P90	F.Test Statistic	T.Test - P-value
Field Measurements	pH - Field	pH Unit	N	21	6.44	7.13	6.74	6.55	6.73	6.91	10	6.44	7.13	6.8	6.54	6.76	7.02	11	6.49	6.91	6.73	6.62	6.72	6.85	0.11	0.34
	Electrical Conductivity - Field	µS/cm	N	21	1117	1691	1366.286	1201	1393	1451	10	1342	1691	1422.0	1358.2	1396	1475	11	1117	1473	1315.636	1160	1312	1444	0.55	0.021
	CH4 - Field	% LEL	N	21	0	0.2	0.02381	0	0	0.1	10	0	0.2	0.0	0	0	0.11	11	0	0.1	0.018182	0	0	0.1	0.13	0.31
	Electrical Conductivity @ 25°C	µS/cm	N	23	1230	1360	1318.696	1284	1320	1350	10	1280	1340	1315.0	1298	1315	1340	13	1230	1360	1321.538	1270	1330	1350	0.05	0.30
Physiochemical	Total Dissolved Solids @180°C	mg/L	T	23	783	920	859.4783	817.2	862	890.2	10	783	878	852.2	824.4	857.5	876.2	13	812	920	865.0769	817.2	869	911.2	0.58	0.18
	pH - Lab	pH Unit	N	23	6.96	8.05	7.523913	7.286	7.47	7.97	10	7.28	7.99	7.5	7.316	7.445	7.63	13	6.96	8.05	7.559231	7.286	7.52	7.97	0.17	0.25
	Suspended Solids	mg/L	N	23	6	18	8.2	6	8	9.6	10	6	18	8.7	6	8	10.8	13	6	10	7.5	6	7.5	9	0.07	0.24
Major Ions	Bicarbonate Alkalinity as CaCO3	mg/L	N	23	373	435	401.7826	379.4	401	422.6	10	379	420	400.0	383.5	402.5	416.4	13	373	435	403.2	377.8	401	431.8	0.27	0.35
	Carbonate Alkalinity as CaCO3	mg/L	N	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Chloride	mg/L	N	23	103	125	111.5652	107	111	118	10	103	114	109.5	103.9	110.5	113.1	13	107	125	113.2	107	111	120.4	0.14	0.05
	Sulfate as SO4 2-	mg/L	D	23	145	187	173.3043	162	174	184.6	10	156	187	175.0	161.4	177	186.1	13	145	183	172.0	163.2	174	182.4	0.84	0.25
	Sodium	mg/L	D	23	72	83	77.73913	75	77	80.8	10	76	81	78.9	76.9	79.5	80.1	13	72	83	76.8	73.4	76	80.8	0.07	0.04
	Potassium	mg/L	D	23	11	15	12.91304	12	13	14.8	10	11	13	12.1	11.9	12	13	13	12	15	13.5	12.2	13	15	0.07	0.0004
	Calcium	mg/L	D	23	124	155	136.4783	128	135	151.8	10	128	155	141.1	129.8	139	152.3	13	124	154	132.9	125.6	131	137.8	0.52	0.01
	Magnesium	mg/L	D	23	52	60	55.65217	54	55	58	10	54	59	57.0	55.8	57	58.1	13	52	60	54.6	53.2	54	55.8	0.30	0.001
	Fluoride	mg/L	N	23	0.6	0.7	0.608696	0.6	0.6	0.6	10	0.6	0.7	0.6	0.6	0.6	0.7	13	0.6	0.6	0.6	0.6	0.6	0.6	0.00	0.08
Nutrients & Radiological	Nitrite as N	mg/L	N	23	0.13	0.13	0.13	0.13	0.13	0.13	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	0.13	0.13	0.1	0.13	0.13	0.13	-	-
	Nitrate as N	mg/L	N	23	0.09	0.09	0.09	0.09	0.09	0.09	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	0.09	0.09	0.1	0.09	0.09	0.09	-	-
	Reactive Silica	mg/L	N	23	21.8	25.2	23.85652	22.26	24.3	24.86	10	21.8	24.9	23.1	22.07	23	24.63	13	23.5	25.2	24.4	23.96	24.4	25.02	0.01	0.001
	Gross alpha	Bq/L	N	23	0.35	1	0.703043	0.532	0.7	0.888	10	0.54	0.82	0.7	0.54	0.725	0.82	13	0.35	1	0.7	0.466	0.7	0.922	0.11	0.40
	Gross beta activity - 40K	Bq/L	N	23	0.2	0.44	0.307391	0.224	0.31	0.378	10	0.2	0.39	0.3	0.254	0.315	0.372	13	0.22	0.44	0.3	0.224	0.29	0.376	0.58	0.34
Dissolved Gases	Methane	µg/L	N	23	3	48	14.52174	3	11	28.4	10	3	9	5.2	3	4	8.1	13	10	48	21.7	11.4	18	35.4	0.00	0.0001
	Ethane	µg/L	N	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Propane	µg/L	N	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
Dissolved Metals/ Metalloids	Aluminium	mg/L	D	23	0.02	0.02	0.02	0.02	0.02	0.02	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	0.02	0.02	0.02	0.02	0.02	0.02	-	-
	Arsenic	mg/L	D	23	0.001	0.004	0.002417	0.0011	0.002	0.0039	10	0.002	0.004	0.003	0.002	0.0025	0.004	13	0.001	0.001	0.001	0.001	0.001	0.001	-	-
	Barium	mg/L	D	23	0.039	0.051	0.045435	0.043	0.045	0.049	10	0.039	0.05	0.044	0.0426	0.044	0.0464	13	0.04	0.051	0.046	0.0432	0.047	0.049	0.92	0.04
	Beryllium	mg/L	D	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Boron	mg/L	D	23	0.12	0.2	0.16913	0.132	0.18	0.19	10	0.12	0.19	0.160	0.129	0.165	0.19	13	0.13	0.2	0.176154	0.152	0.18	0.198	0.48	0.05
	Cadmium	mg/L	D	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Chromium	mg/L	D	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Cobalt	mg/L	D	23	0.001	0.002	0.001556	0.001	0.002	0.002	10	0.001	0.002	0.002	0.001	0.002	0.002	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Copper	mg/L	D	23	0.001	0.001	0.001	0.001	0.001	0.001	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	0.001	0.001	0.001	0.001	0.001	0.001	-	-
	Iron	mg/L	D	23	1.43	4.73	2.5085	1.468	2.27	3.714	10	2.16	4.73	3.242	2.328	3.1	4.162	13	1.43	2.51	1.908	1.45	1.93	2.43	0.02	0.000
	Lead	mg/L	D	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Lithium	mg/L	D	23	0.055	0.078	0.068217	0.0632	0.069	0.0726	10	0.055	0.074	0.067	0.0613	0.0675	0.0713	13	0.063	0.078	0.069	0.0652	0.07	0.0726	0.24	0.10
	Manganese	mg/L	D	23	0.023	0.062	0.035522	0.028	0.034	0.0438	10	0.023	0.062	0.040	0.0275	0.0395	0.0512	13	0.028	0.039	0.032	0.0282	0.032	0.0374	0.00	0.04
	Mercury	mg/L	D	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Molybdenum	mg/L	D	23	0.001	0.001	0.001	0.001	0.001	0.001	10	0.001	0.001	0.001	0.001	0.001	0.001	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Nickel	mg/L	D	23	0.001	0.009	0.004385	0.0012	0.004	0.0078	10	0.002	0.009	0.005	0.0029	0.005	0.0081	13	0.001	0.002	0.001	0.001	0.001	0.0018	0.11	0.01
	Selenium	mg/L	D	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Silver	mg/L	D	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Strontium	mg/L	D	23	0.72	0.861	0.79213	0.7424	0.794	0.8512	10	0.722	0.86	0.794	0.749	0.7945	0.8546	13	0.72	0.861	0.791	0.7432	0.777	0.8386	0.96	0.45
	Uranium	mg/L	D	23	0.001	0.005	0.0026	0.001	0.0025	0.0041	10	0.003	0.005	0.004	0.003	0.004	0.005	13	0.001	0.002	0.001	0.001	0.001	0.002	0.22	0.0000000
	Vanadium	mg/L	D	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Zinc	mg/L	D	23	0.005	0.024	0.01275	0.0069	0.012	0.0192	10	0.006	0.024	0.013	0.0087	0.0115	0.0213	13	0.005	0.019	0.0123	0.0068	0.012	0.0181	0.87	0.36
Total Metals/ Metalloids	Aluminium	mg/L	T	23	0.01	0.02	0.013333	0.01	0.01	0.018	10	0.01	0.01	0.010	0.01	0.01	0.01	13	0.01	0.02	0.015	0.011	0.015	0.019	-	-
	Arsenic	mg/L	T	23	0.001	0.004	0.002727	0.002	0.003	0.004	10	0.002	0.004	0.003	0.002	0.003	0.004	13	0.001	0.001	0.001	0.001	0.001	0.001	-	-
	Barium	mg/L	T	23	0.039	0.086	0.049304	0.043	0.046	0.0558	10	0.039	0.049	0.045	0.0417	0.044	0.049	13	0.044	0.086	0.053	0.045	0.05	0.0584	0.00	0.01
	Beryllium	mg/L	T	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Boron	mg/L	T	23	0.08	0.28	0.167826	0.13	0.17	0.208	10	0.08	0.2	0.150	0.116	0.15	0.2	13	0.14	0.28	0.181538	0.152	0.17	0.218	0.96	0.03
	Cadmium	mg/L	T	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Chromium	mg/L	T	23	0.002	0.002	0.002	0.002	0.002	0.002	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	0.002	0.002	0.002	0.002	0.002	0.002	-	-
	Cobalt	mg/L	T	23	0.002	0.002	0.002	0.002	0.002	0.002	10	0.002	0.002	0.002	0.002	0.002	0.002	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Copper	mg/L	T	23	0.001	0.01	0.003538	0.001	0.003	0.0058	10	0.001	0.01	0.004	0.0015	0.004	0.0075	13	0.001	0.006	0.003	0.001	0.003	0.0048	0.20	0.15
	Iron	mg/L	T	23	1.5	6.19	3.18	1.716	2.5	4.714	10	2.27	6.19	4.478	3.449	4.51	6.172	13	1.5	2.97	2.182	1.632	2.21	2.812	0.00	0.00004
	Lead	mg/L	T	23	0.001	0.005	0.0025	0.0017	0.002	0.0043	10	0.001	0.005	0.003	0.0016	0.002	0.0044	13	0.002	0.002	0.002	0.002	0.002	0.002	-	-
	Lithium	mg/L	T	23	0.058	0.081	0.068609	0.0624	0.069	0.075	10	0.058	0.076	0.067	0.0616	0.065	0.0751	13	0.061	0.081	0.069692	0.064	0.07	0.075	0.78	0.16
	Manganese	mg/L	T	23	0.025	0.062	0.035913	0.03	0.033	0.0444	10	0.025	0.062	0.040	0.0304	0.0385	0.053	13	0.028	0.037	0.033	0.03	0.033	0.0366	0.00	0.04
	Mercury	mg/L	T	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Molybdenum	mg/L	T	23	0.001	0.003	0.002	0.0012	0.002	0.0028	10	0.001	0.001	0.001	0.001	0.001	0.001	13	0.003	0.003	0.003	0.003	0.003	0.003	-	-
	Nickel	mg/L	T	23	0.001	0.011	0.0054	0.001	0.006	0.0096	10	0.002	0.011	0.007	0.0047	0.0065	0.0092	13	0.001	0.01	0.003	0.001	0.001	0.0068	0.22	0.02
	Selenium	mg/L	T	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Silver	mg/L	T	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Strontium	mg/L	T	23	0.702	0.887	0.804522	0.7614	0.791	0.8784	10	0.702	0.876	0.799	0.7569	0.7885	0.8562	13	0.734	0.887	0.809	0.7622	0.791	0.8798	0.98	0.33
	Uranium	mg/L	T	23	0.001	0.005	0.002842	0.001	0.003	0.005	10	0.003	0.005	0.004	0.0039	0.004	0.005	13	0.001	0.002	0.001	0.001	0.001	0.002	0.52	0.000000002
	Vanadium	mg/L	T	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Zinc	mg/L	T	23	0.007	0.041	0.018348	0.0084	0.02	0.026	10	0.013	0.041	0.022	0.0148	0.021	0.0275	13	0.007	0.026	0.015385	0.008	0.015	0.0252	0.61	0.02
Complex Hydrocarbons	C6 - C36 Fraction (Sum)	µg/L	N	22	80	140	110	84	120	132	9	80	140	110.0	84	120	132	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Sum of BTEX	µg/L	N	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-
	Sum of polycyclic aromatic hydrocarbons (PAHs)	µg/L	N	23	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	10	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	13	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-

NA = not analysed

RN040931

Group	Parameter	Units	Fraction	Count	Min	Max	Average	P10	P50	P90	First	Last	MK-trend
Field Measurements	pH - Field	pH Unit	N	25	6.39	8.11	7.356	6.77	7.3	8.008	7.8	7.78	Rising
	Electrical Conductivity - Field	µS/cm	N	25	1241	2018	1662.5	1319	1794	1925.4	1845	1290	Falling
	CH4 - Field	% LEL	N	28	<LOR	0.2	0.01	<LOR	<LOR	0.03	0	0.1	Rising
	Electrical Conductivity @ 25°C	µS/cm	N	27	1200	1940	1583.3	1260	1590	1894	1560	1280	Falling
	Total Dissolved Solids @180°C	mg/L	T	27	697	1330	1016.4	732.2	1130	1258	976	783	Falling
Physiochemical parameters	pH - Lab	pH Unit	N	27	7.36	8.49	7.947	7.454	8	8.354	8.06	8.29	Rising
	Suspended Solids	mg/L	N	27	8	36	14.6	5	13	30.4	35	<LOR	Falling
Major ions, nutrients and radiological parameters	Bicarbonate Alkalinity as CaCO3	mg/L	N	27	225	470	362.2	244.4	366	461.8	363	271	Falling
	Carbonate Alkalinity as CaCO3	mg/L	N	27	7	22	3.3	1	1	10.6	<LOR	<LOR	Rising
	Chloride	mg/L	N	27	142	161	153.1	147.2	154	159	148	142	No Trend
	Sulfate as SO4 2-	mg/L	D	27	192	451	313.1	195	343	423	328	203	Falling
	Sodium	mg/L	D	27	100	127	110.1	105.4	109	117.4	103	117	No Trend
	Potassium	mg/L	D	27	22	33	27.6	26	28	30	22	28	No Trend
	Calcium	mg/L	D	27	20	163	92	21.6	114	156.6	134	28	Falling
	Magnesium	mg/L	D	27	80	122	98.6	83.6	102	114.4	88	95	Falling
	Fluoride	mg/L	N	27	1.3	3	2.15	1.5	2.3	2.8	1.8	1.5	Falling
	Nitrite as N	mg/L	N	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Nitrate as N	mg/L	N	27	0.02	2.12	0.091	0.01	0.01	0.014	0.02	<LOR	No Trend
	Reactive Silica	mg/L	N	26	7.42	24.8	16.492	7.88	17.75	24.55	23.9	9.37	Falling
	Gross alpha	Bq/L	N	27	0.05	1.7	0.28	0.114	0.24	0.354	1.7	0.09	Falling
	Gross beta activity - 40K	Bq/L	N	27	0.1	0.84	0.223	0.106	0.21	0.28	0.84	<LOR	Falling
Dissolved Gases	Methane	µg/L	N	27	2	5	1.5	1	1	1.4	<LOR	<LOR	Rising
	Ethane	µg/L	N	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Propane	µg/L	N	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
Dissolved Metals/Metalloids	Aluminium	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Arsenic	mg/L	D	27	0.001	0.003	0.0012	0.001	0.001	0.002	0.003	<LOR	Falling
	Barium	mg/L	D	27	0.019	0.047	0.0293	0.0206	0.029	0.036	0.028	0.021	Falling
	Beryllium	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Boron	mg/L	D	27	0.1	0.31	0.244	0.208	0.25	0.28	0.31	0.25	No Trend
	Cadmium	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Chromium	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Cobalt	mg/L	D	27	0.033	0.033	0.0022	0.001	0.001	0.001	0.033	<LOR	No Trend
	Copper	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Iron	mg/L	D	27	0.07	9.58	1.878	0.05	0.29	5.77	<LOR	<LOR	Falling
	Lead	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Lithium	mg/L	D	27	0.19	0.51	0.4224	0.3796	0.434	0.482	0.416	0.48	Rising
	Manganese	mg/L	D	27	0.068	0.249	0.1407	0.0696	0.125	0.2284	0.142	<LOR	Falling
	Mercury	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Molybdenum	mg/L	D	27	0.001	0.046	0.0037	0.001	0.002	0.0034	0.046	0.002	No Trend
	Nickel	mg/L	D	27	0.001	0.032	0.0021	0.001	0.001	0.001	0.032	<LOR	No Trend
	Selenium	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Silver	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Strontium	mg/L	D	27	0.096	1.02	0.5809	0.117	0.671	0.9864	0.868	0.145	Falling
	Uranium	mg/L	D	27	0.01	0.01	0.0013	0.001	0.001	0.001	0.01	<LOR	No Trend
	Vanadium	mg/L	D	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Zinc	mg/L	D	27	0.012	0.098	0.0212	0.005	0.012	0.0482	0.014	0.023	Falling
Total Metals/Metalloids	Aluminium	mg/L	T	27	0.01	0.3	0.023	0.01	0.01	0.02	0.3	<LOR	Falling
	Arsenic	mg/L	T	27	0.001	0.01	0.0019	0.001	0.002	0.002	0.01	<LOR	Falling
	Barium	mg/L	T	27	0.025	0.048	0.034	0.026	0.034	0.0416	0.036	0.026	Falling
	Beryllium	mg/L	T	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Boron	mg/L	T	27	0.06	0.36	0.261	0.224	0.26	0.316	0.27	0.26	No Trend
	Cadmium	mg/L	T	27	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	<LOR	0.0001	No Trend
	Chromium	mg/L	T	27	0.003	0.003	0.0011	0.001	0.001	0.001	<LOR	<LOR	No Trend
	Cobalt	mg/L	T	27	0.036	0.036	0.0023	0.001	0.001	0.001	0.036	<LOR	No Trend
	Copper	mg/L	T	27	0.001	0.002	0.001	0.001	0.001	0.001	0.002	<LOR	No Trend
	Iron	mg/L	T	27	0.05	19.1	6.776	0.872	5.03	14.96	7.33	0.12	Falling
	Lead	mg/L	T	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Lithium	mg/L	T	27	0.199	0.606	0.4475	0.4016	0.45	0.5038	0.365	0.49	No Trend
	Manganese	mg/L	T	27	0.002	0.269	0.159	0.0778	0.163	0.2418	0.163	0.002	Falling
	Mercury	mg/L	T	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Molybdenum	mg/L	T	27	0.002	0.05	0.0041	0.002	0.002	0.003	0.05	0.003	Rising
	Nickel	mg/L	T	27	0.001	0.034	0.0024	0.001	0.001	0.0014	0.034	<LOR	No Trend
	Selenium	mg/L	T	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Silver	mg/L	T	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Strontium	mg/L	T	27	0.082	1.16	0.6234	0.1222	0.835	1.03	0.835	0.164	Falling
	Uranium	mg/L	T	27	0.011	0.011	0.0014	0.001	0.001	0.001	0.011	<LOR	No Trend
	Vanadium	mg/L	T	27	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Zinc	mg/L	T	27	0.021	0.473	0.078	0.0298	0.048	0.1042	0.041	0.045	No Trend
Complex Hydrocarbons	C6 - C36 Fraction (Sum)	µg/L	N	23	50	120	30	20	20	44	<LOR	120	No Trend
	Sum of BTEX	µg/L	N	27	2	2	1	1	1	1	<LOR	<LOR	No Trend
	Sum of polycyclic aromatic hydrocarbons (PAHs)	µg/L	N	26	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA

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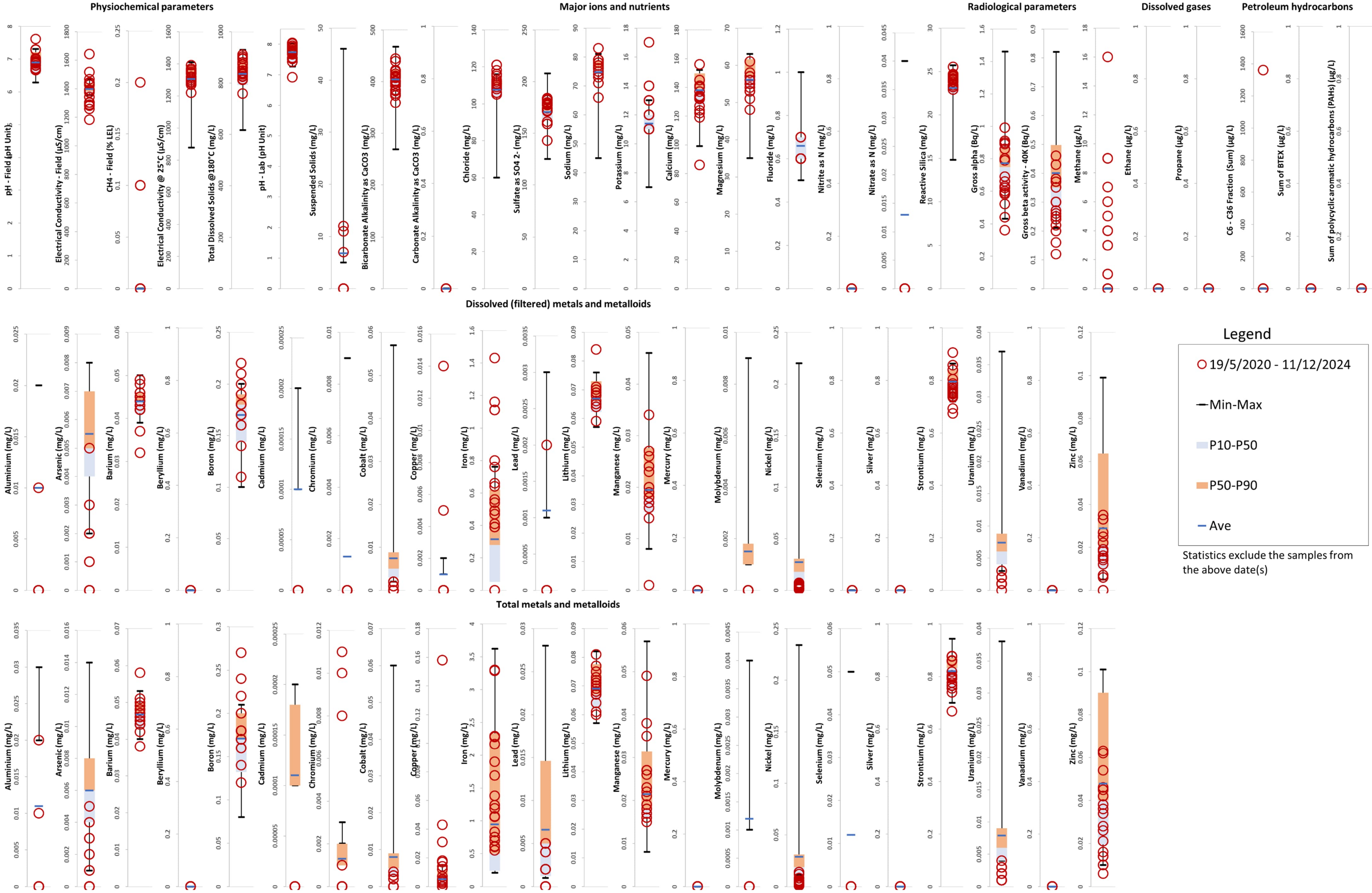
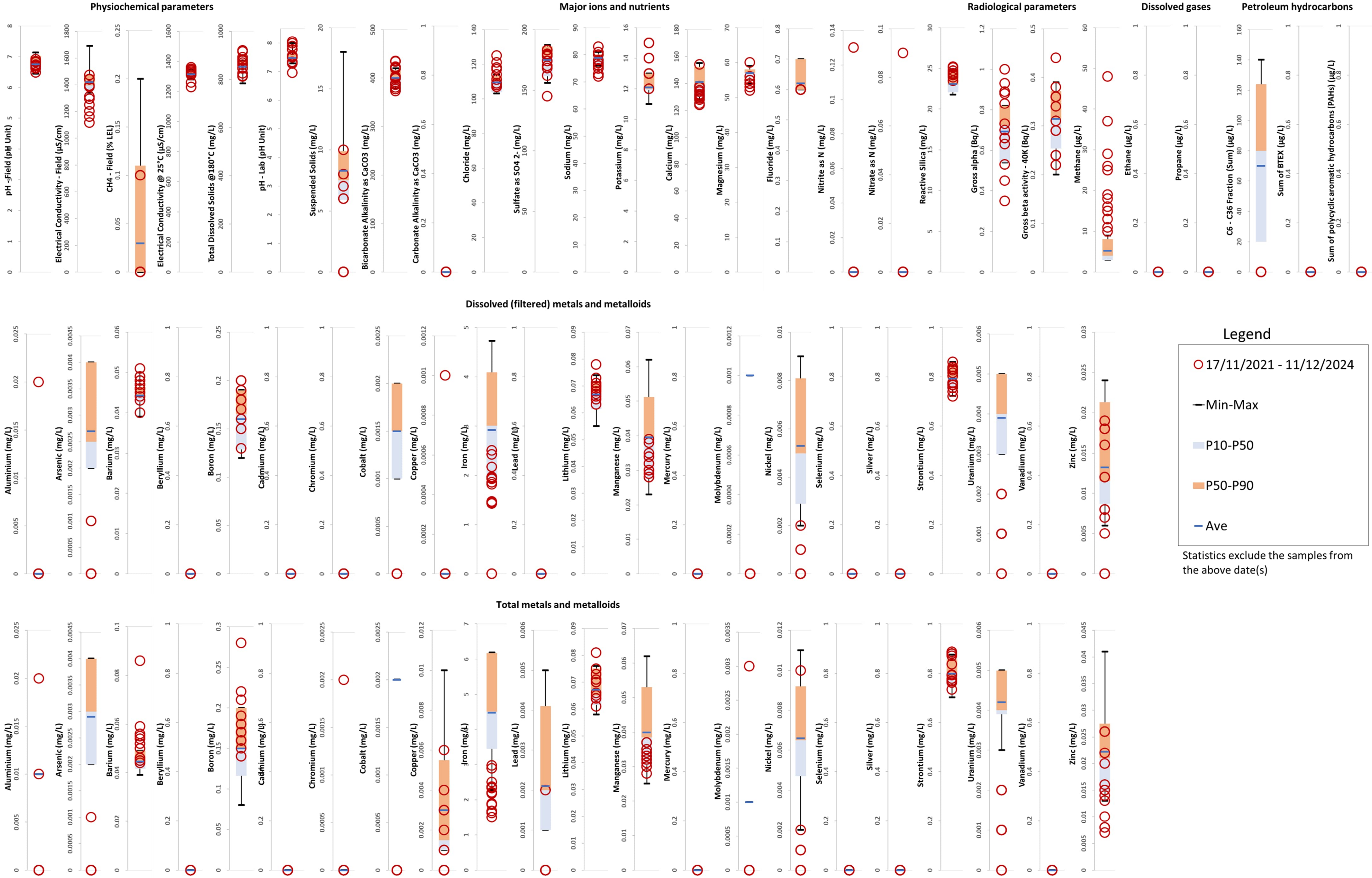
Group	Parameter	Units	Fraction	Count	Min	Max	Average	P10	P50	P90	First	Last	MK-trend
Field Measurements	pH - Field	pH Unit	N	15	6.6	7.3	6.894	6.678	6.86	7.202	7.13	6.67	No Trend
	Electrical Conductivity - Field	µS/cm	N	15	733	1841	1438.9	1271.6	1480	1582.6	1579	1349	No Trend
	CH4 - Field	% LEL	N	15	<LOR	0.2	0.03	<LOR	<LOR	0.16	0.2	0	No Trend
	Electrical Conductivity @ 25°C	µS/cm	N	16	1350	1510	1429.4	1375	1425	1475	1410	1470	No Trend
	Total Dissolved Solids @180°C	mg/L	T	16	854	1040	987.9	968	991.5	1030	991	1010	No Trend
Physiochemical parameters	pH - Lab	pH Unit	N	16	6.86	8	7.577	7.215	7.59	7.885	7.57	7.29	No Trend
	Suspended Solids	mg/L	N	16	6	48	10.7	5	5	28.5	<LOR	<LOR	No Trend
Major ions, nutrients and radiological parameters	Bicarbonate Alkalinity as CaCO3	mg/L	N	16	355	438	397.7	373	397	428.5	355	394	No Trend
	Carbonate Alkalinity as CaCO3	mg/L	N	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Chloride	mg/L	N	16	98	114	104.7	100.5	104.5	107.5	103	102	Falling
	Sulfate as SO4 2-	mg/L	D	16	241	294	267.2	247.5	264.5	285.5	258	241	No Trend
	Sodium	mg/L	D	16	67	75	71.1	68	72	73	67	75	No Trend
	Potassium	mg/L	D	16	12	14	12.6	12	12.5	13.5	13	14	No Trend
	Calcium	mg/L	D	16	143	179	158.6	145	158	170	147	163	No Trend
	Magnesium	mg/L	D	16	60	72	64.6	62	64	67.5	60	72	No Trend
	Fluoride	mg/L	N	15	0.5	0.8	0.65	0.6	0.6	0.76	0.8	0.6	Falling
	Nitrite as N	mg/L	N	15	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Nitrate as N	mg/L	N	15	0.04	0.04	0.015	0.01	0.01	0.028	<LOR	<LOR	No Trend
	Reactive Silica	mg/L	N	15	19.5	24	22.26	20.5	22.6	23.32	22.3	22.9	No Trend
	Gross alpha	Bq/L	N	16	0.53	1.26	0.94	0.695	0.885	1.21	0.71	0.53	No Trend
	Gross beta activity - 40K	Bq/L	N	16	0.19	1	0.412	0.245	0.355	0.575	0.37	0.19	No Trend
Dissolved Gases	Methane	µg/L	N	16	4	4	1.2	1	1	1	<LOR	<LOR	No Trend
	Ethane	µg/L	N	15	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Propane	µg/L	N	15	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
Dissolved Metals/Metalloids	Aluminium	mg/L	D	16	0.02	0.02	0.011	0.01	0.01	0.01	<LOR	<LOR	No Trend
	Arsenic	mg/L	D	16	0.001	0.002	0.0011	0.001	0.001	0.001	0.001	<LOR	No Trend
	Barium	mg/L	D	16	0.026	0.04	0.0353	0.032	0.036	0.0375	0.035	0.037	No Trend
	Beryllium	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Boron	mg/L	D	16	0.12	0.2	0.162	0.13	0.17	0.18	0.17	0.17	No Trend
	Cadmium	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Chromium	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Cobalt	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Copper	mg/L	D	16	0.013	0.013	0.0018	0.001	0.001	0.001	<LOR	<LOR	No Trend
	Iron	mg/L	D	16	0.14	21.9	1.833	0.095	0.32	1.41	0.14	1.46	Rising
	Lead	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Lithium	mg/L	D	16	0.08	0.116	0.0899	0.0815	0.0875	0.1	0.116	0.081	Falling
	Manganese	mg/L	D	16	0.004	0.574	0.0639	0.005	0.0105	0.158	0.004	0.019	Rising
	Mercury	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Molybdenum	mg/L	D	15	0.001	0.006	0.0014	0.001	0.001	0.0016	0.006	<LOR	Falling
	Nickel	mg/L	D	16	0.001	0.006	0.0014	0.001	0.001	0.002	0.001	<LOR	No Trend
	Selenium	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Silver	mg/L	D	15	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Strontium	mg/L	D	15	0.727	0.87	0.7829	0.733	0.782	0.8446	0.87	0.786	No Trend
	Uranium	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Vanadium	mg/L	D	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Zinc	mg/L	D	16	0.01	0.099	0.0351	0.0125	0.028	0.065	0.028	0.064	No Trend
Total Metals/Metalloids	Aluminium	mg/L	T	16	0.01	0.01	0.01	0.01	0.01	0.01	<LOR	<LOR	No Trend
	Arsenic	mg/L	T	16	0.001	0.002	0.0011	0.001	0.001	0.001	0.001	<LOR	No Trend
	Barium	mg/L	T	16	0.02	0.044	0.0362	0.0335	0.0375	0.039	0.038	0.036	No Trend
	Beryllium	mg/L	T	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Boron	mg/L	T	16	0.08	0.3	0.178	0.14	0.17	0.22	0.17	0.18	No Trend
	Cadmium	mg/L	T	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Chromium	mg/L	T	16	0.001	0.002	0.0011	0.001	0.001	0.0015	<LOR	0.001	Falling
	Cobalt	mg/L	T	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Copper	mg/L	T	16	0.001	0.01	0.0027	0.001	0.001	0.007	0.004	<LOR	No Trend
	Iron	mg/L	T	16	0.17	26.1	3.151	0.275	0.415	8.575	0.17	1.65	Rising
	Lead	mg/L	T	16	0.001	0.002	0.0011	0.001	0.001	0.001	0.002	<LOR	No Trend
	Lithium	mg/L	T	16	0.034	0.121	0.0875	0.0785	0.0865	0.1	0.121	0.085	Falling
	Manganese	mg/L	T	16	0.003	0.56	0.0638	0.0045	0.0105	0.163	0.004	0.019	Rising
	Mercury	mg/L	T	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Molybdenum	mg/L	T	16	0.005	0.005	0.0015	0.001	0.001	0.003	0.005	<LOR	Falling
	Nickel	mg/L	T	16	0.001	0.01	0.0016	0.001	0.001	0.001	<LOR	<LOR	No Trend
	Selenium	mg/L	T	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Silver	mg/L	T	15	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Strontium	mg/L	T	15	0.394	0.896	0.7722	0.6968	0.804	0.8568	0.843	0.774	No Trend
	Uranium	mg/L	T	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Vanadium	mg/L	T	16	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Zinc	mg/L	T	16	0.009	0.084	0.0399	0.0185	0.0265	0.074	0.021	0.063	Rising
Complex Hydrocarbons	C6 - C36 Fraction (Sum)	µg/L	N	15	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Sum of BTEX	µg/L	N	15	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA
	Sum of polycyclic aromatic hydrocarbons (PAHs)	µg/L	N	15	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	NA

Attachment B – Box-and-whisker plots

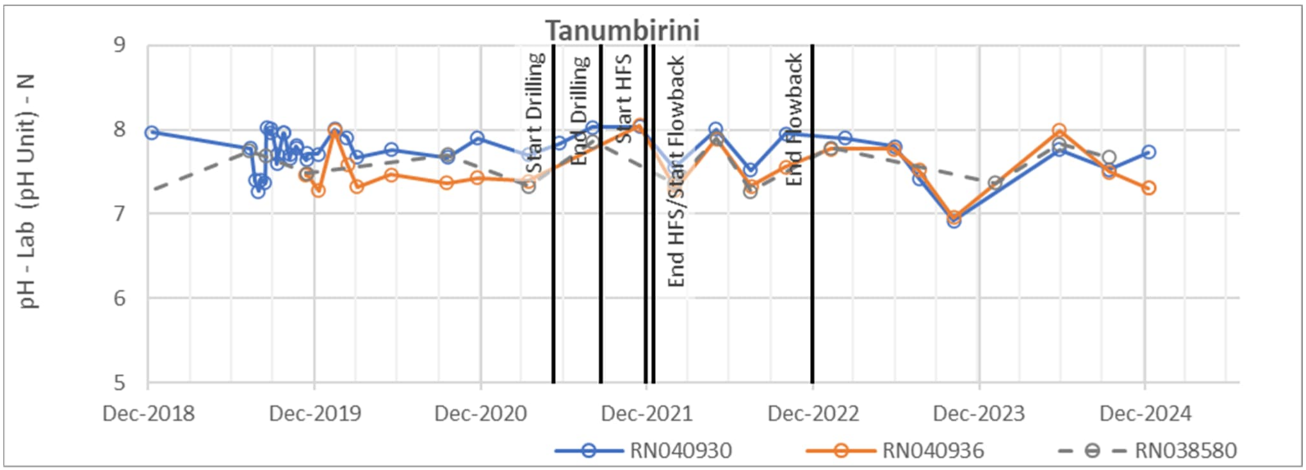
RN040930

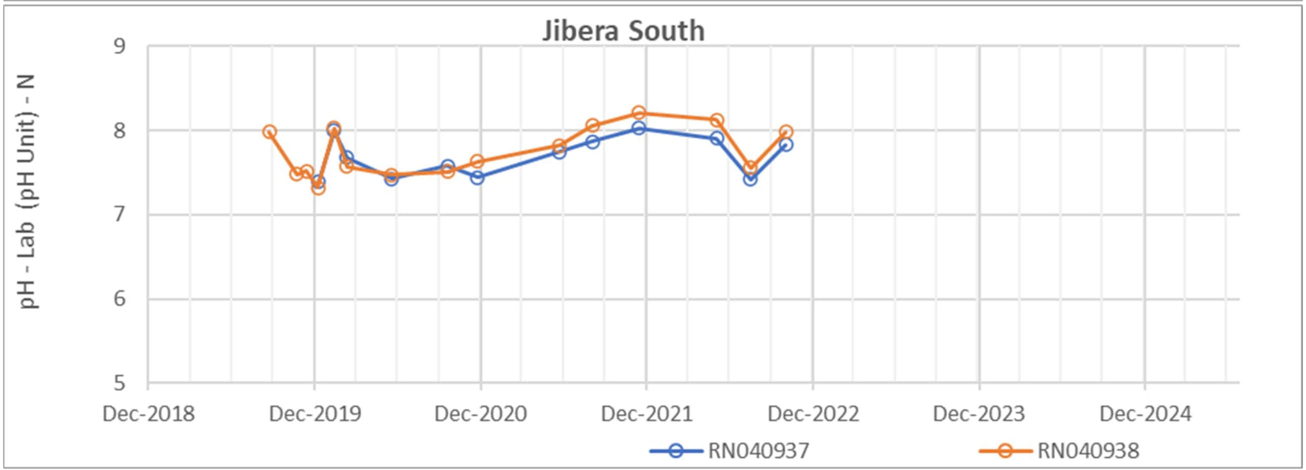

Physiochemical parameters
Major ions and nutrients
Radiological parameters
Dissolved gases
Petroleum hydrocarbons
pH - Field (pH Unit)
Electrical Conductivity - Field (µS/cm)
CH4 - Field (% LEL)
Electrical Conductivity @ 25°C (µS/cm)
Total Dissolved Solids @180°C (mg/L)
pH - Lab (pH Unit)
Suspended Solids (mg/L)
Bicarbonate Alkalinity as CaCO3 (mg/L)
Carbonate Alkalinity as CaCO3 (mg/L)
Chloride (mg/L)
Sulfate as SO4 2- (mg/L)
Sodium (mg/L)
Potassium (mg/L)
Calcium (mg/L)
Magnesium (mg/L)
Fluoride (mg/L)
Nitrite as N (mg/L)
Nitrate as N (mg/L)
Reactive Silica (mg/L)
Gross alpha (Bq/L)
Gross beta activity - 40K (Bq/L)
Methane (µg/L)
Ethane (µg/L)
Propane (µg/L)
C6 - C36 Fraction (Sum) (µg/L)
Sum of BTEX (µg/L)
Sum of polycyclic aromatic hydrocarbons (PAHs) (µg/L)
Dissolved (filtered) metals and metalloids
Total metals and metalloids
Aluminium (mg/L)
Arsenic (mg/L)
Barium (mg/L)
Beryllium (mg/L)
Boron (mg/L)
Cadmium (mg/L)
Chromium (mg/L)
Cobalt (mg/L)
Copper (mg/L)
Iron (mg/L)
Lead (mg/L)
Lithium (mg/L)
Manganese (mg/L)
Mercury (mg/L)
Molybdenum (mg/L)
Nickel (mg/L)
Selenium (mg/L)
Silver (mg/L)
Strontium (mg/L)
Uranium (mg/L)
Vanadium (mg/L)
Zinc (mg/L)
Legend
19/5/2020 - 11/12/2024
Min-Max
P10-P50
P50-P90
Ave
Statistics exclude the samples from the above date(s)

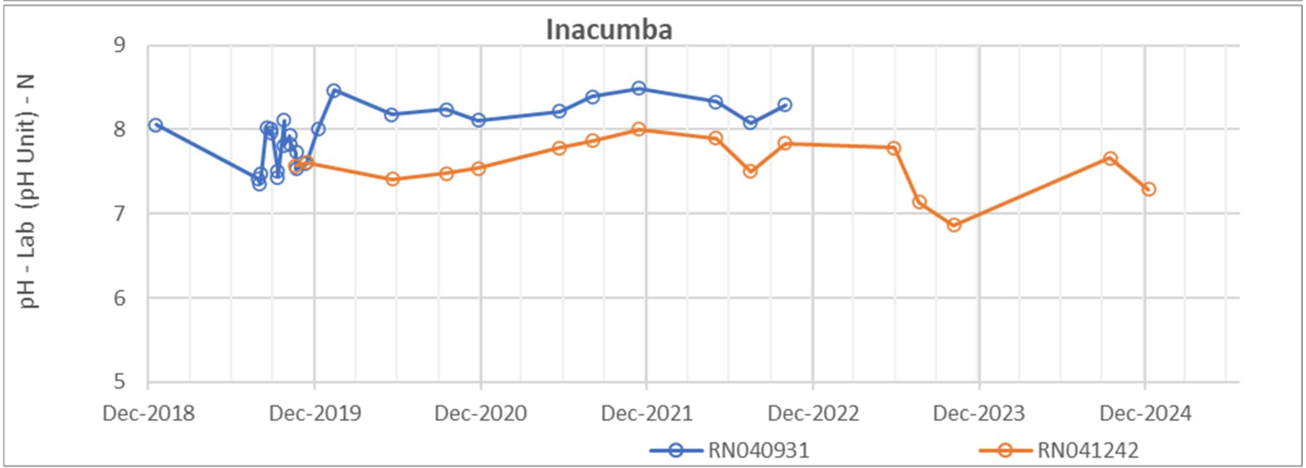
RN040936

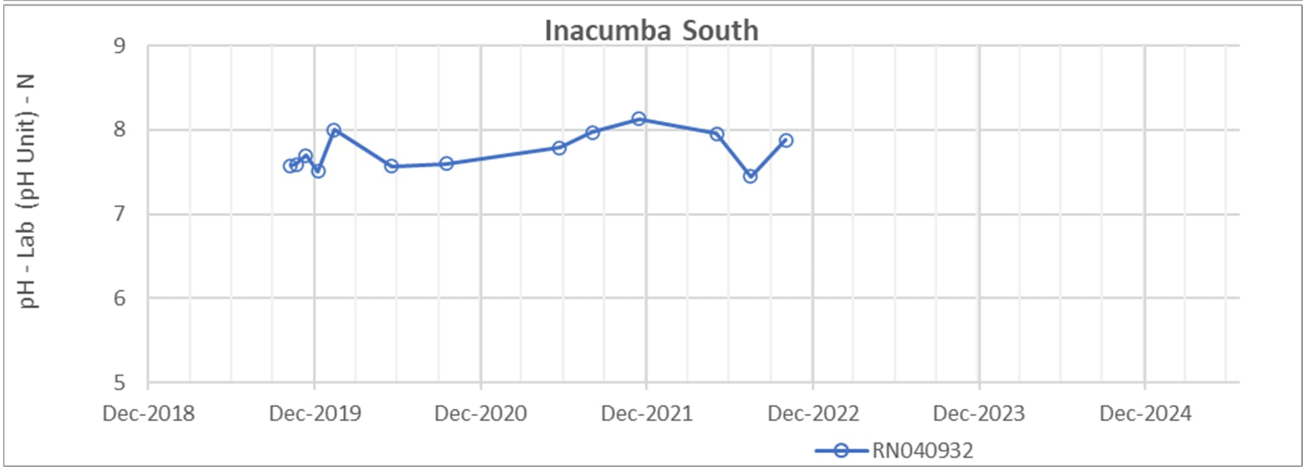

Physiochemical parameters
Major ions and nutrients
Radiological parameters
Dissolved gases
Petroleum hydrocarbons
Dissolved (filtered) metals and metalloids
Total metals and metalloids
Legend
17/11/2021 - 11/12/2024
Min-Max
P10-P50
P50-P90
Ave
Statistics exclude the samples from the above date(s)

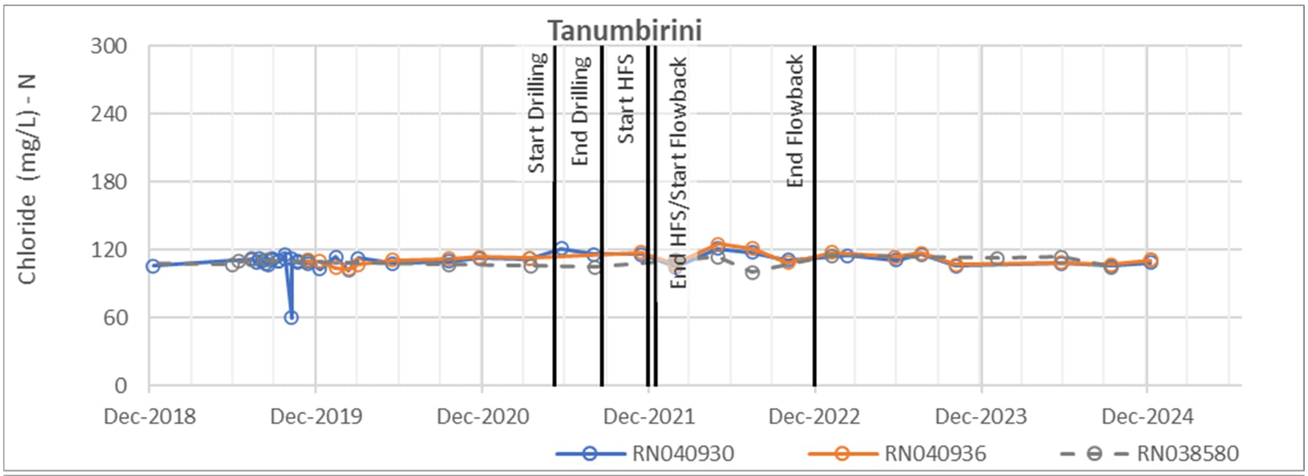
Attachment C – Tanumbirini - Timeseries chemistry charts (including other Santos monitoring bores)

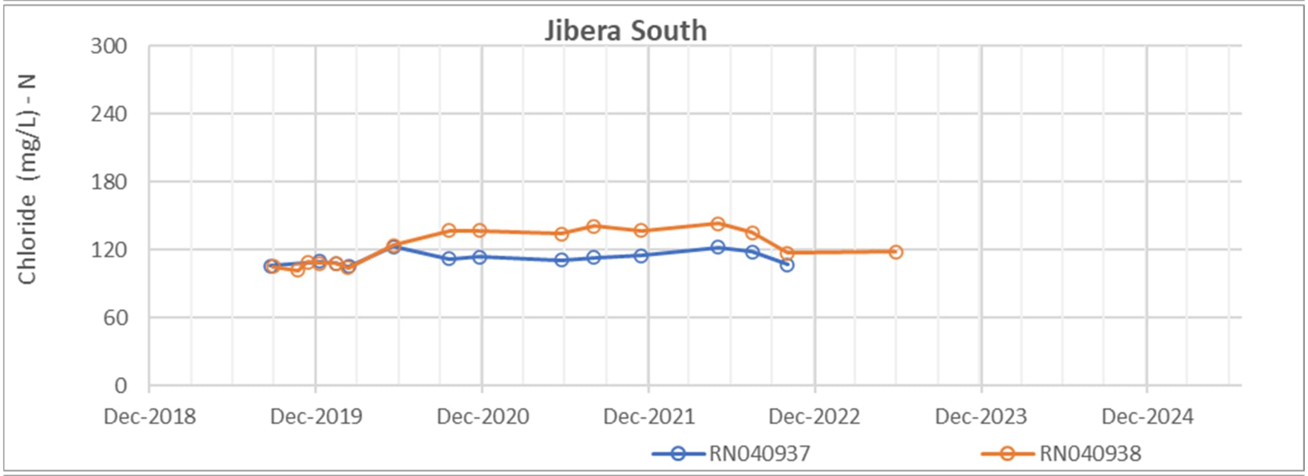

Tanumbirini
pH - Lab (pH Unit) - N
9
8
7
6
5
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

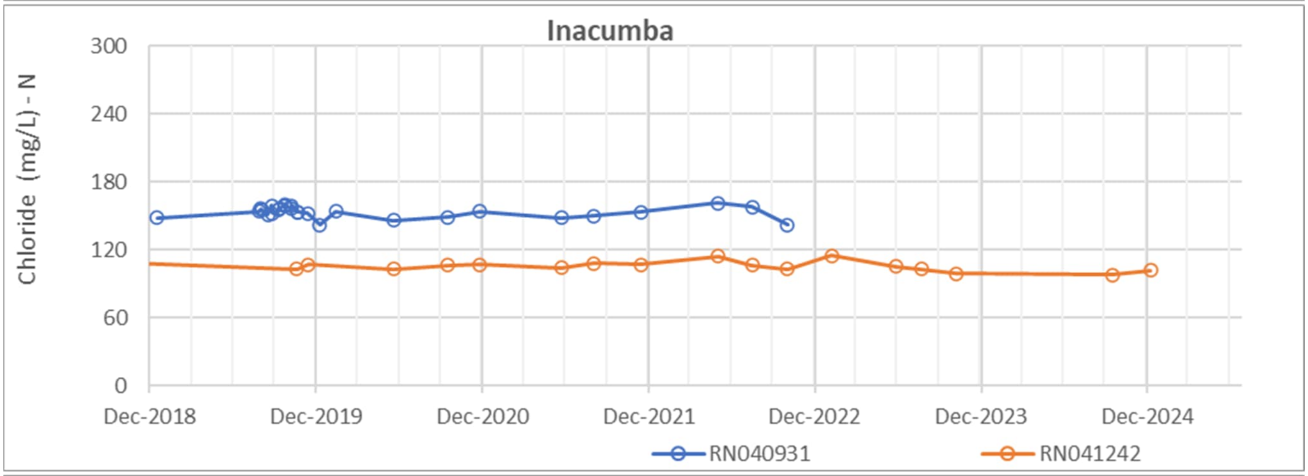

Jibera South
pH - Lab (pH Unit) - N
9
8
7
6
5
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

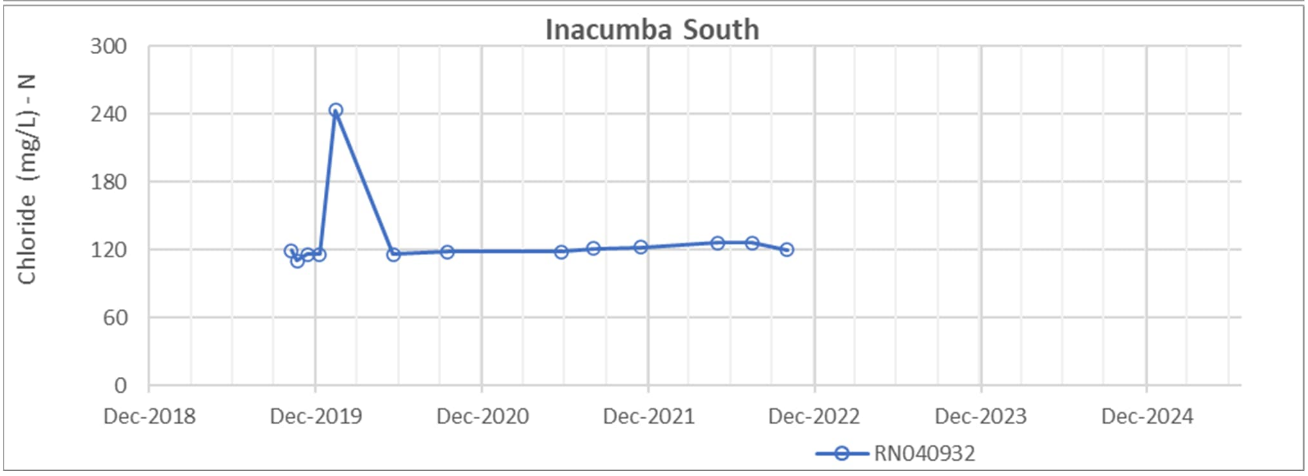

Inacumba
pH - Lab (pH Unit) - N
9
8
7
6
5
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

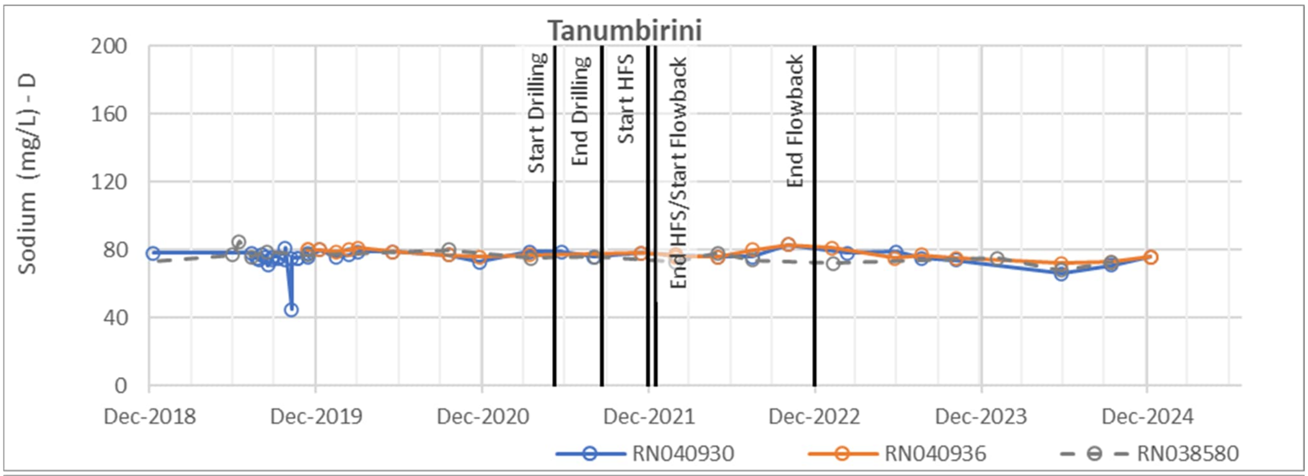

Inacumba South
pH - Lab (pH Unit) - N
9
8
7
6
5
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

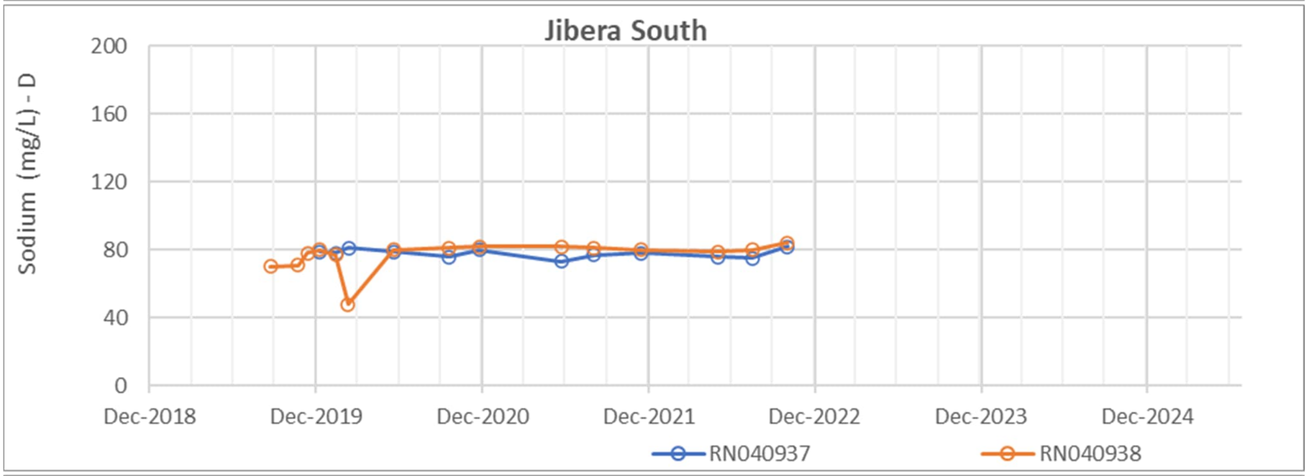

Tanumbirini
Chloride (mg/L) - N
300
240
180
120
60
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

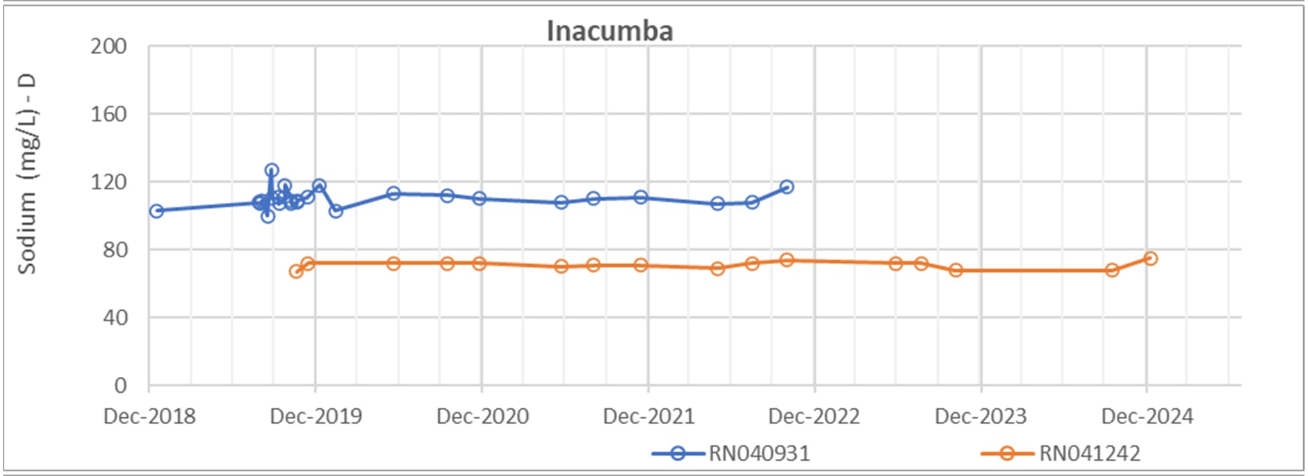

Jibera South
Chloride (mg/L) - N
300
240
180
120
60
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

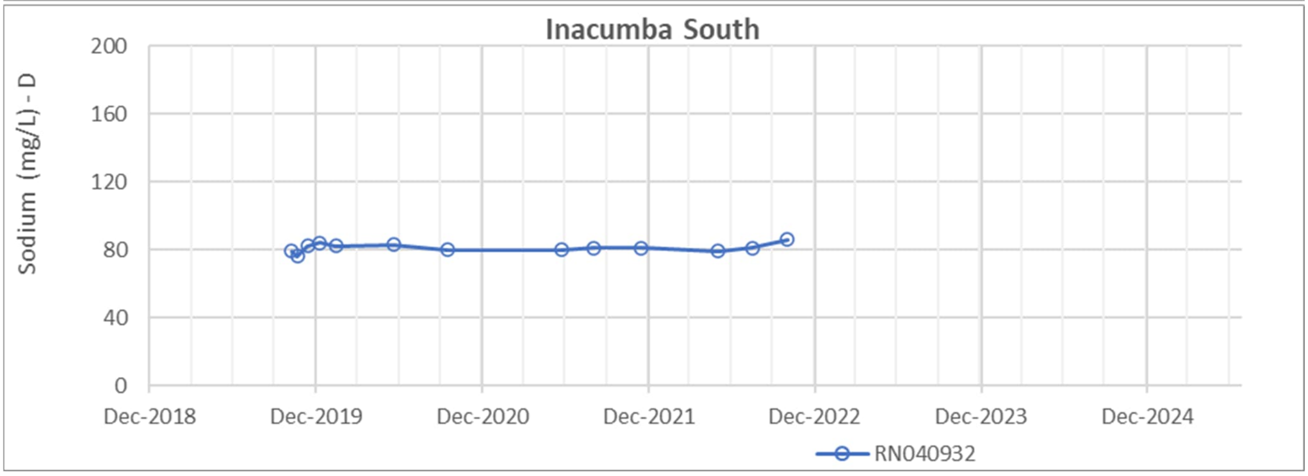

Inacumba
Chloride (mg/L) - N
300
240
180
120
60
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

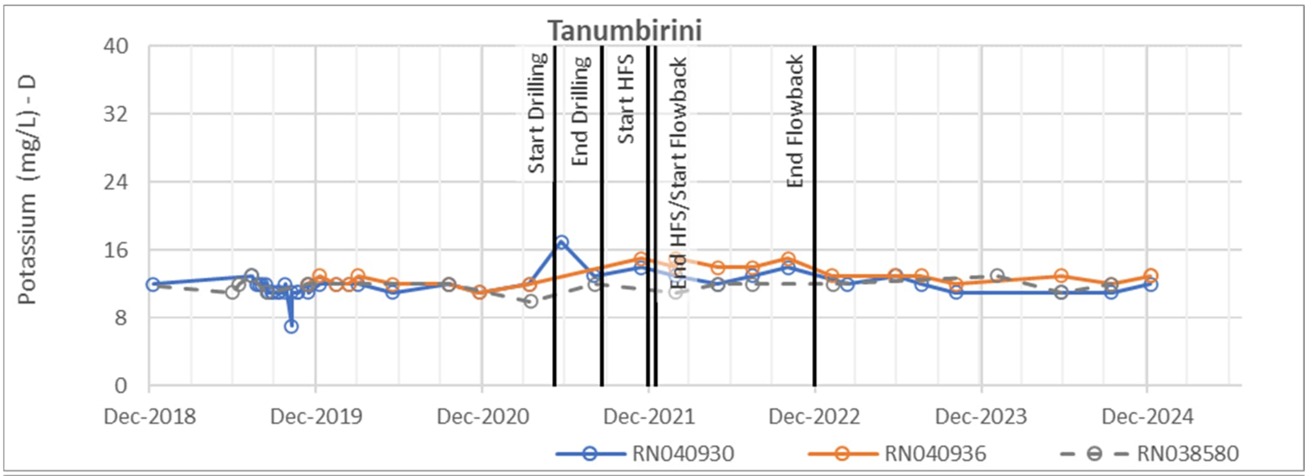

Inacumba South
Chloride (mg/L) - N
300
240
180
120
60
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

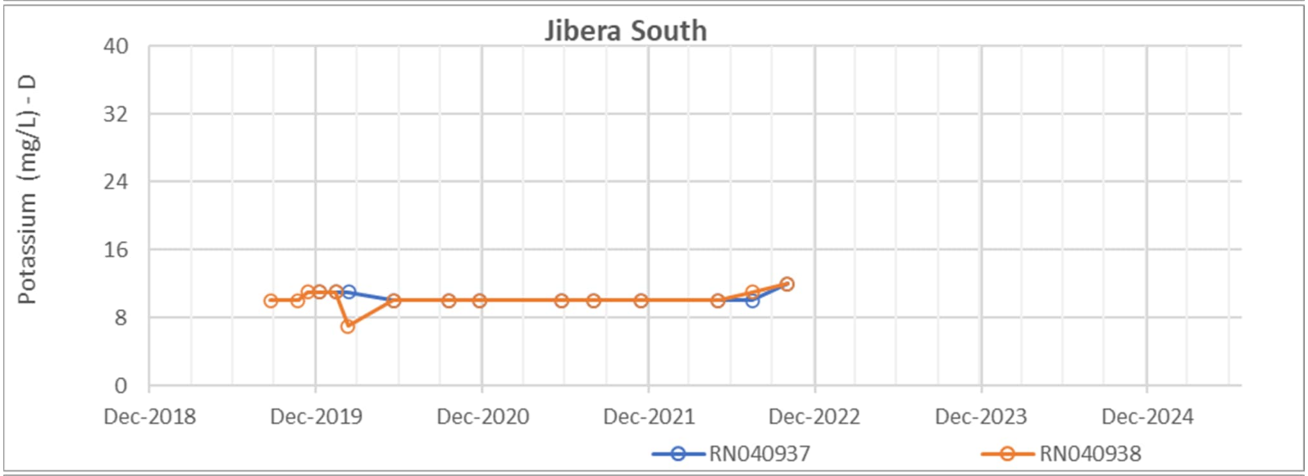

Tanumbirini
Sodium (mg/L) - D
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
RN040930
RN040936
RN038580

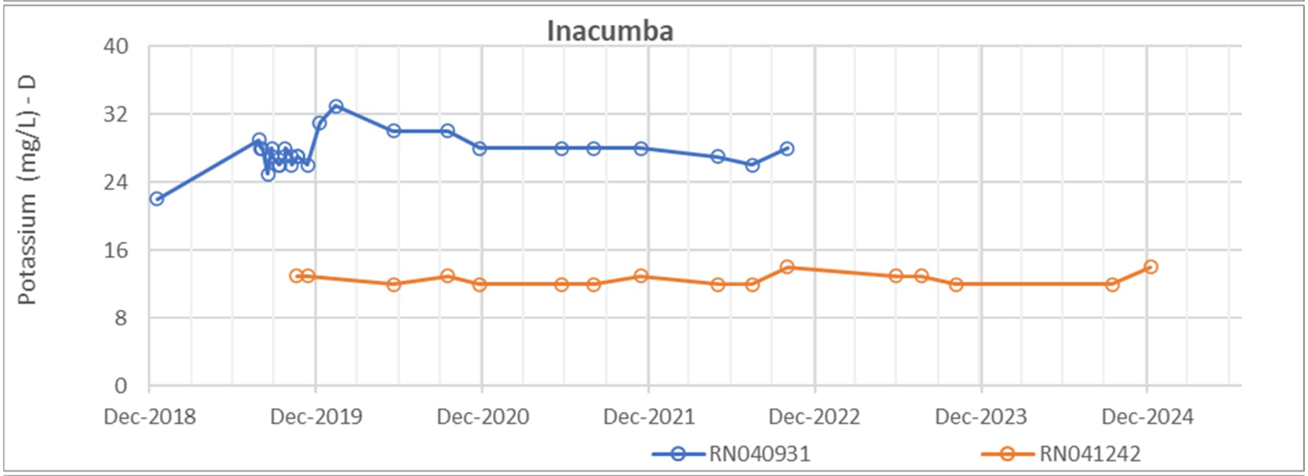

Jibera South
Sodium (mg/L) - D
RN040937
RN040938

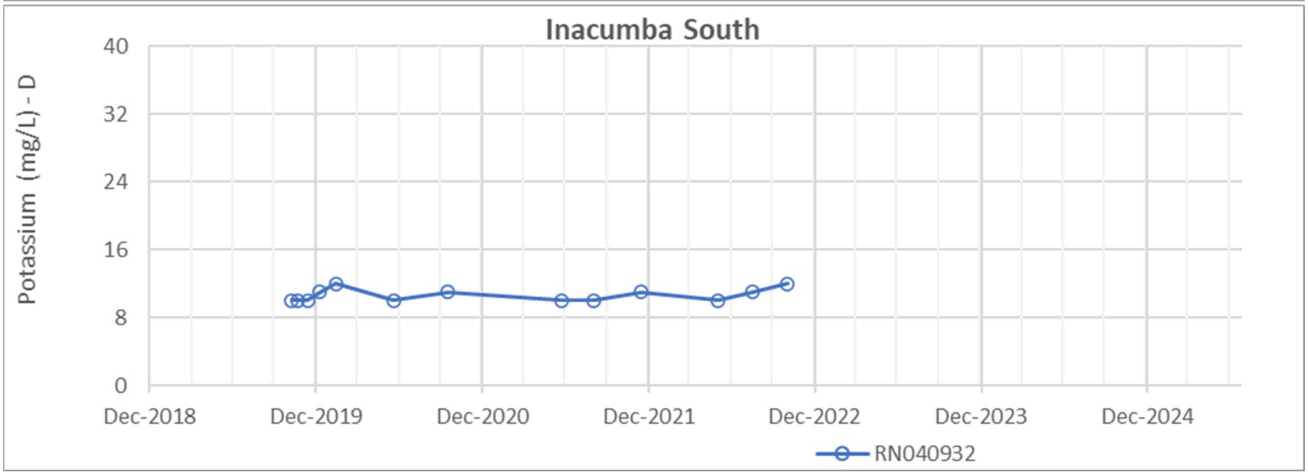

Inacumba
Sodium (mg/L) - D
RN040931
RN041242

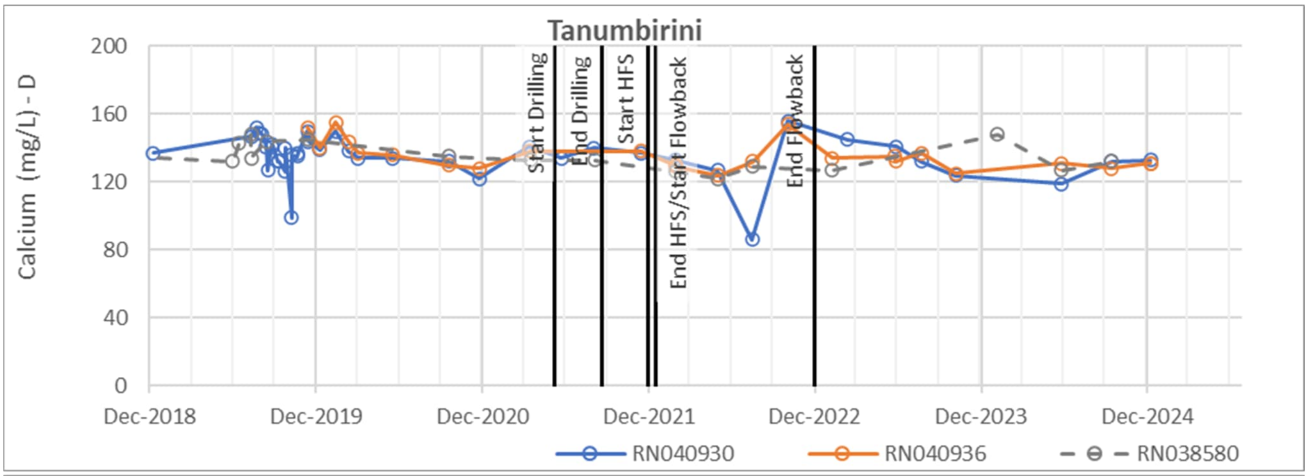

Inacumba South
Sodium (mg/L) - D
RN040932

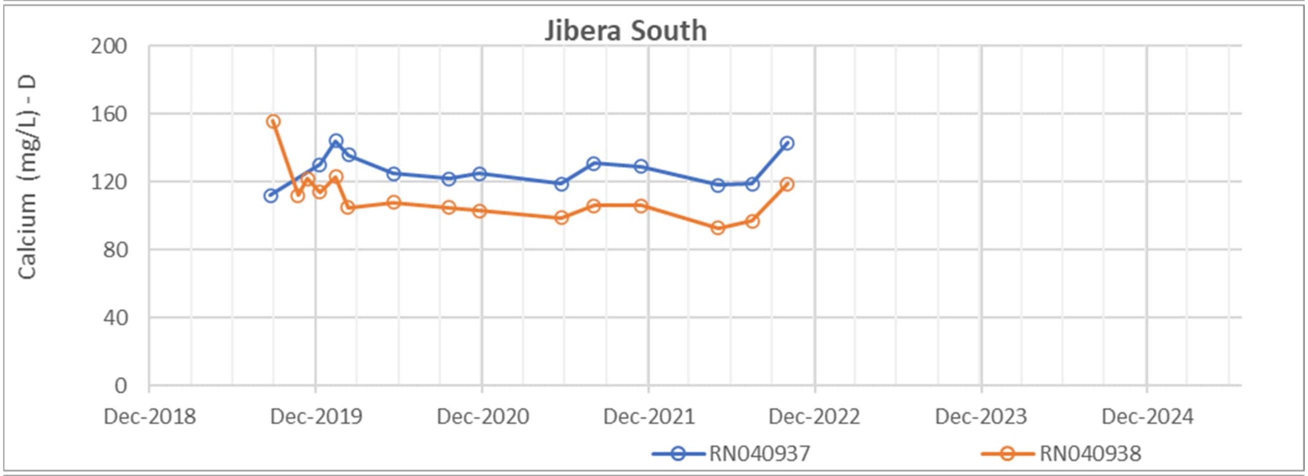

Tanumbirini
Potassium (mg/L) - D
40
32
24
16
8
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

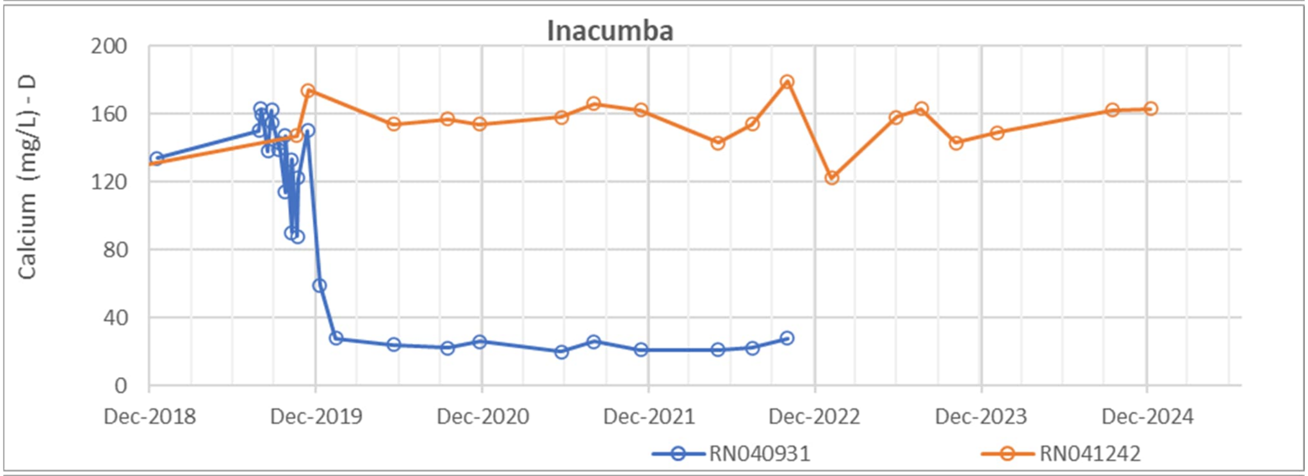

Jibera South
Potassium (mg/L) - D
40
32
24
16
8
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

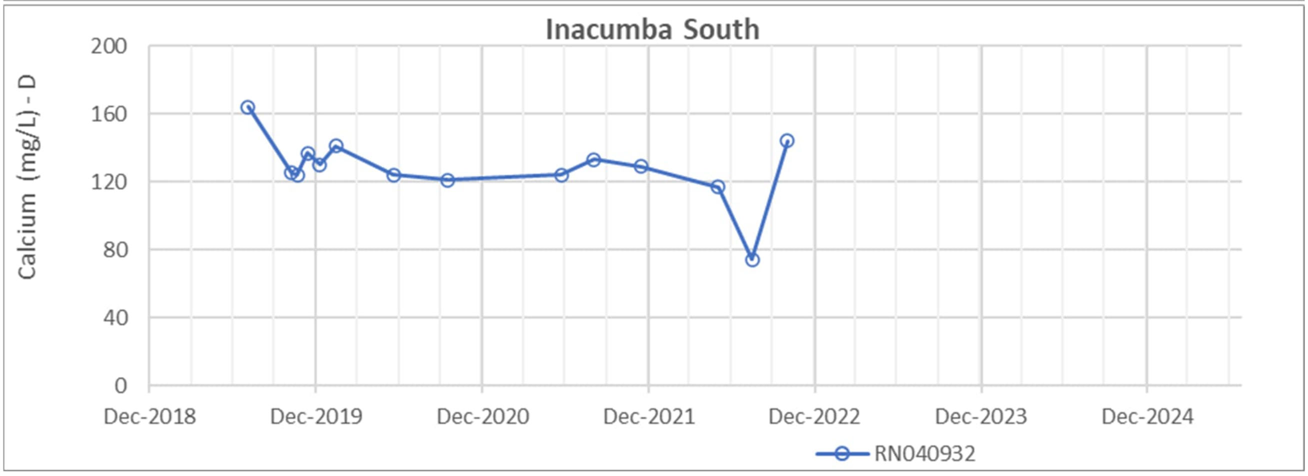

Inacumba
Potassium (mg/L) - D
40
32
24
16
8
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

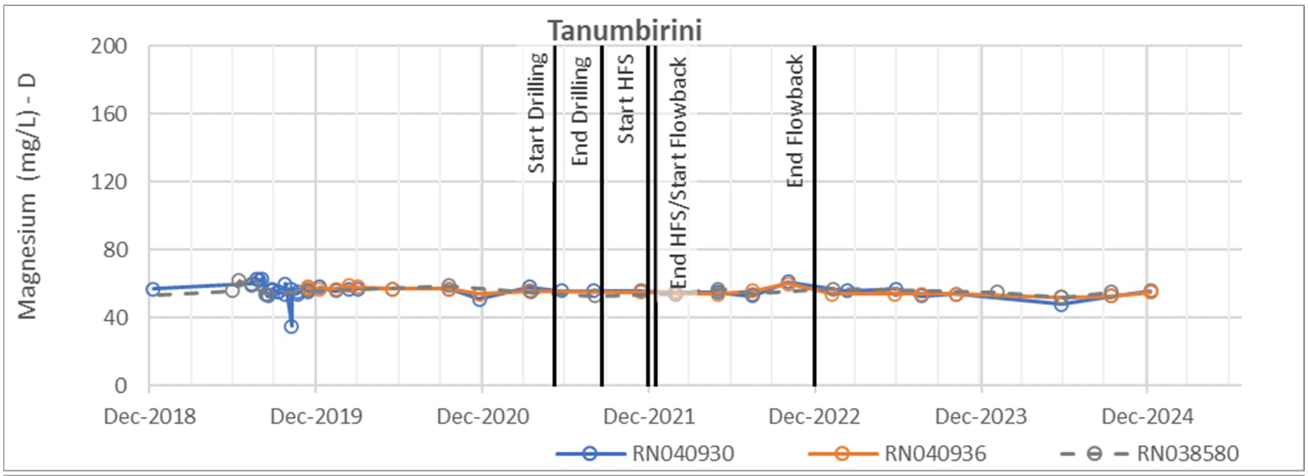

Inacumba South
Potassium (mg/L) - D
40
32
24
16
8
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

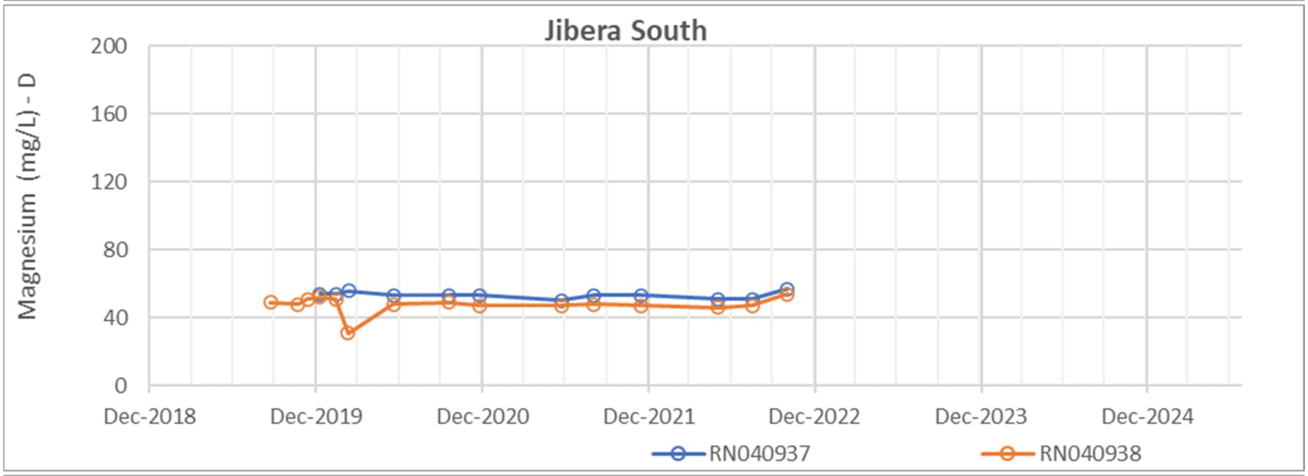

Tanumbirini
Calcium (mg/L) - D
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
0
40
80
120
160
200
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

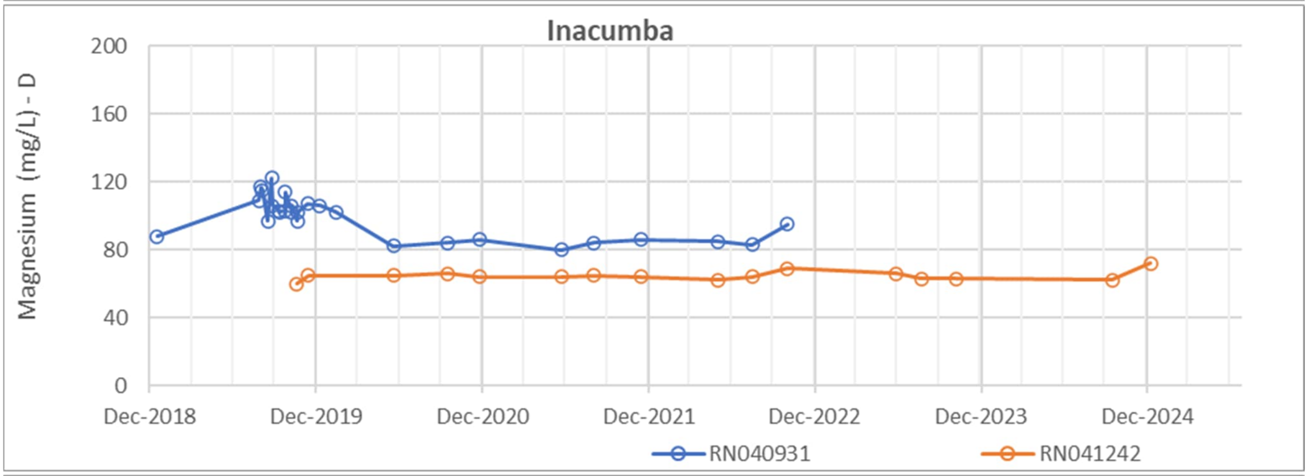

Jibera South
Calcium (mg/L) - D
0
40
80
120
160
200
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

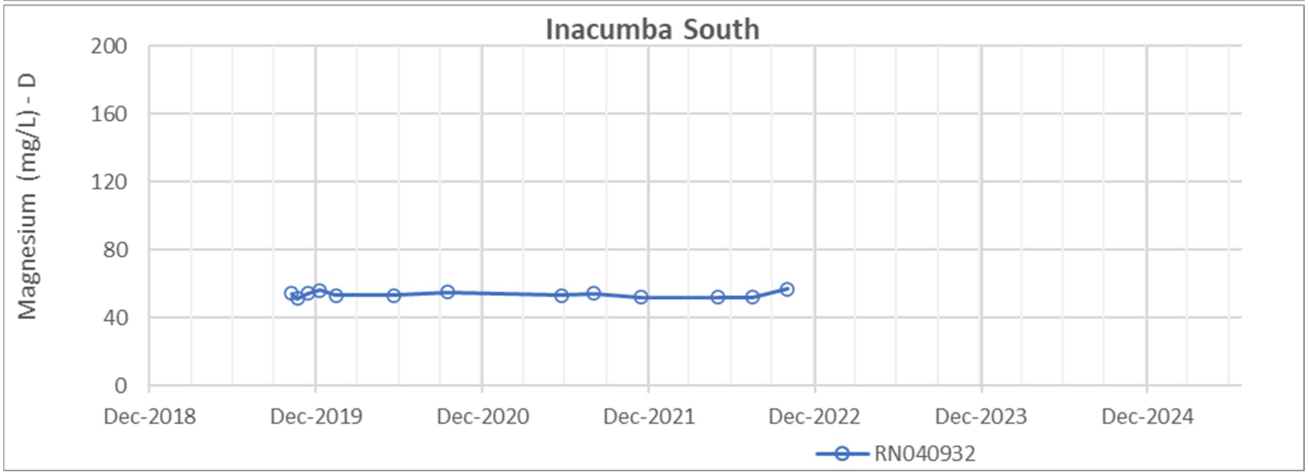

Inacumba
Calcium (mg/L) - D
0
40
80
120
160
200
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

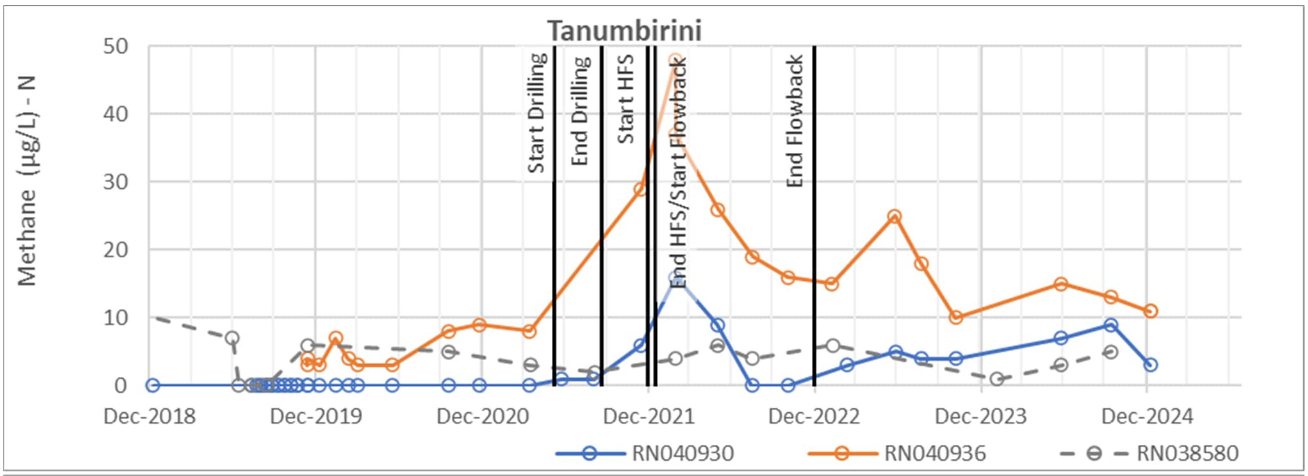

Inacumba South
Calcium (mg/L) - D
0
40
80
120
160
200
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

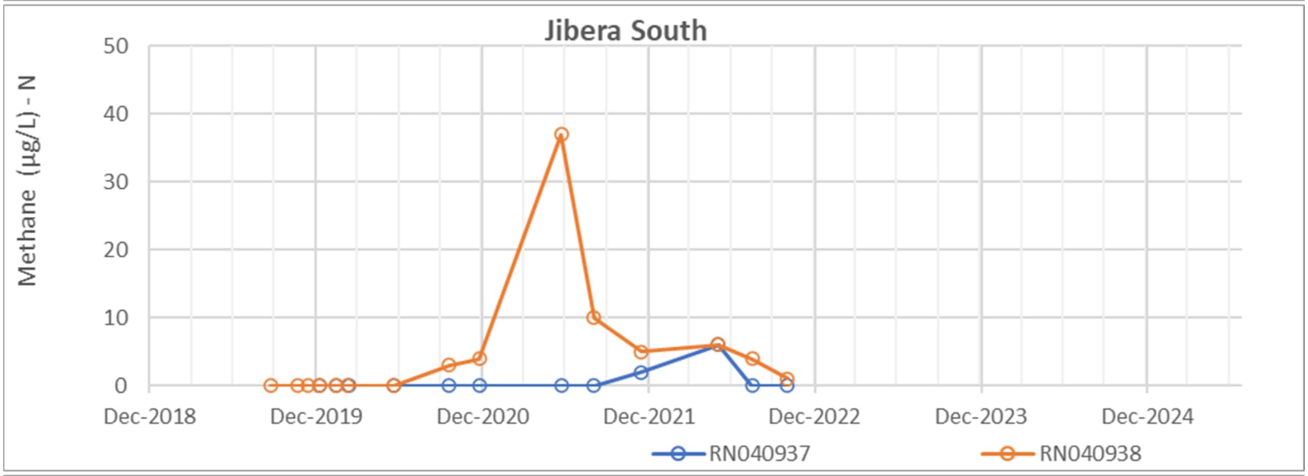

Tanumbirini
Magnesium (mg/L) - D
200
160
120
80
40
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

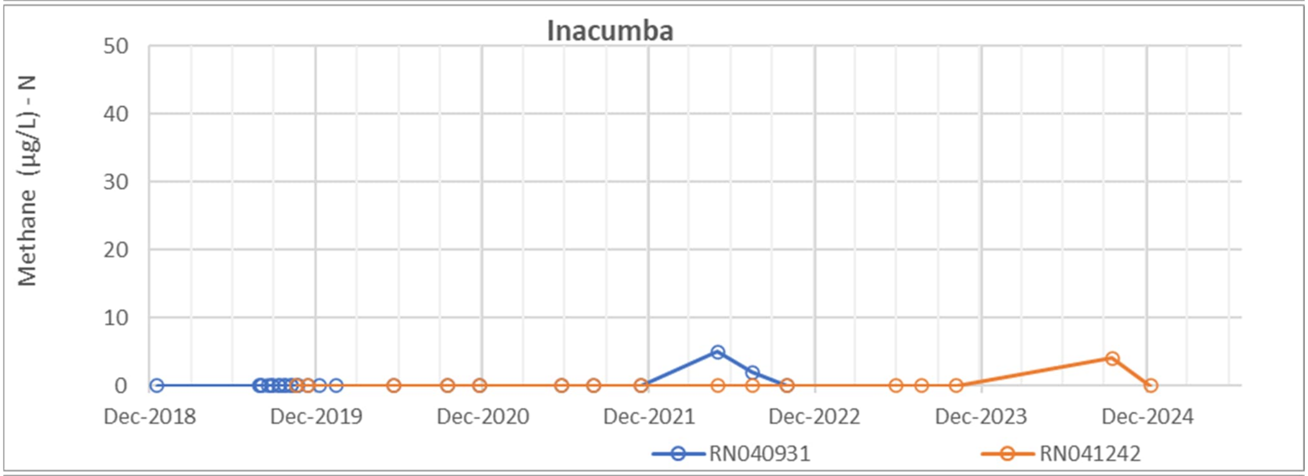

Jibera South
Magnesium (mg/L) - D
200
160
120
80
40
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

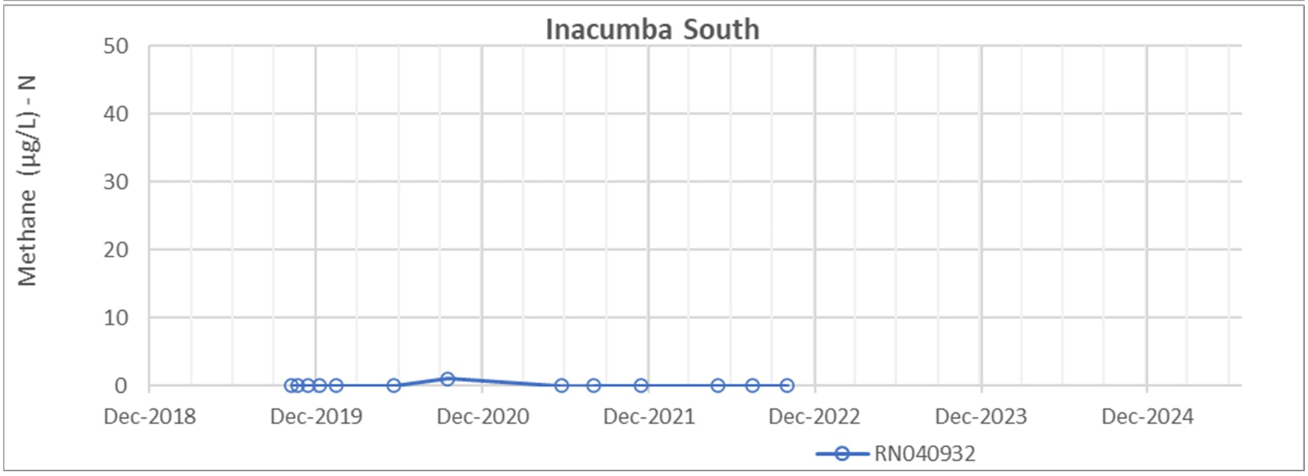

Inacumba
Magnesium (mg/L) - D
200
160
120
80
40
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

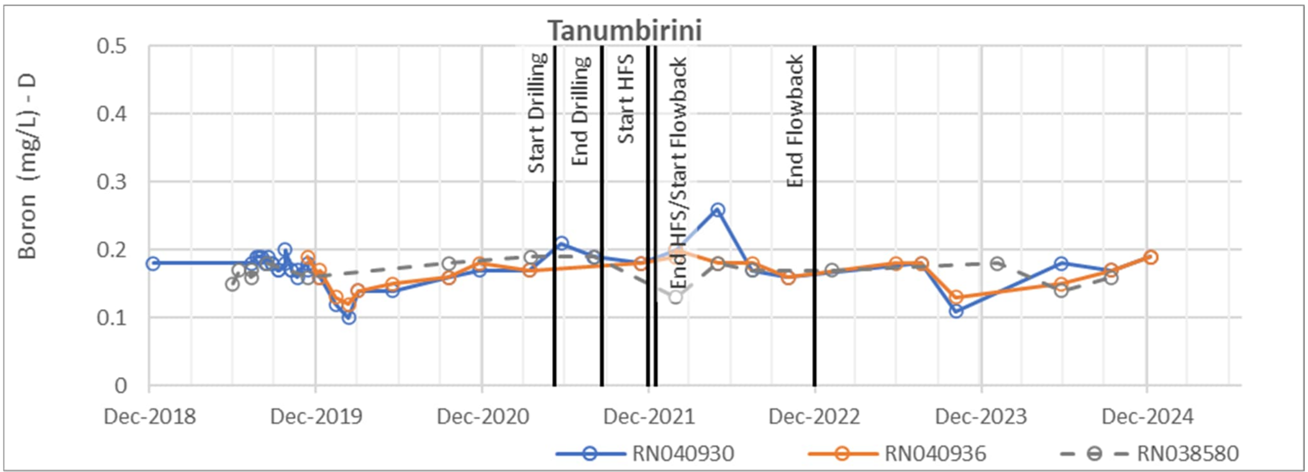

Inacumba South
Magnesium (mg/L) - D
200
160
120
80
40
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

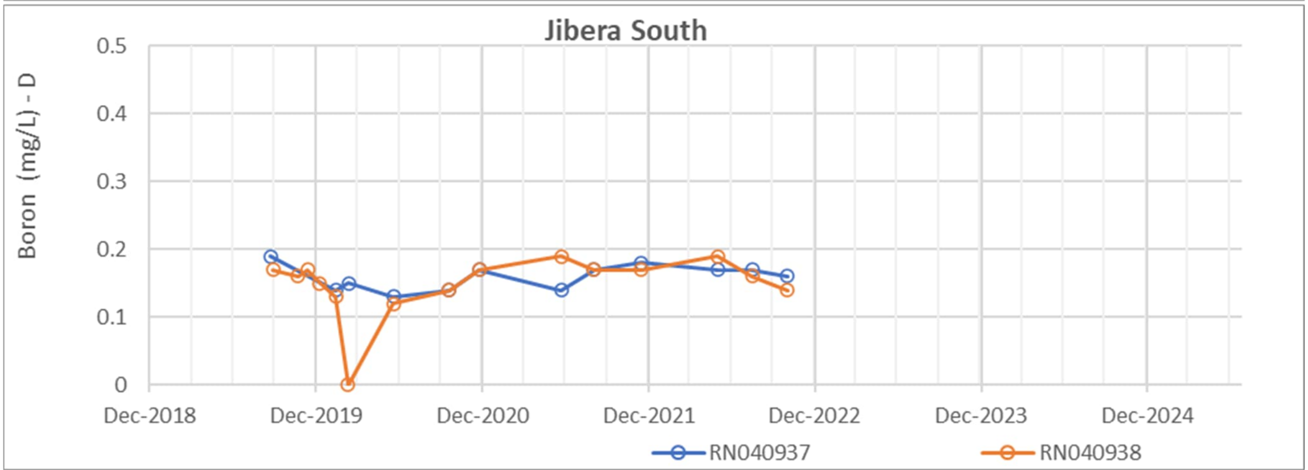

Tanumbirini
Methane (µg/L) - N
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
0
10
20
30
40
50
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

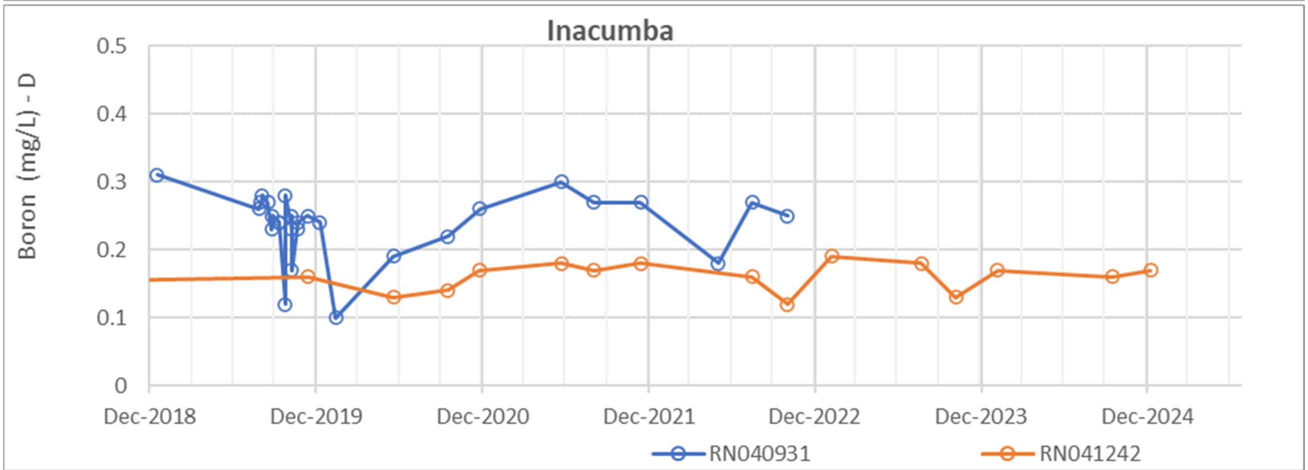

Jibera South
Methane (µg/L) - N
0
10
20
30
40
50
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

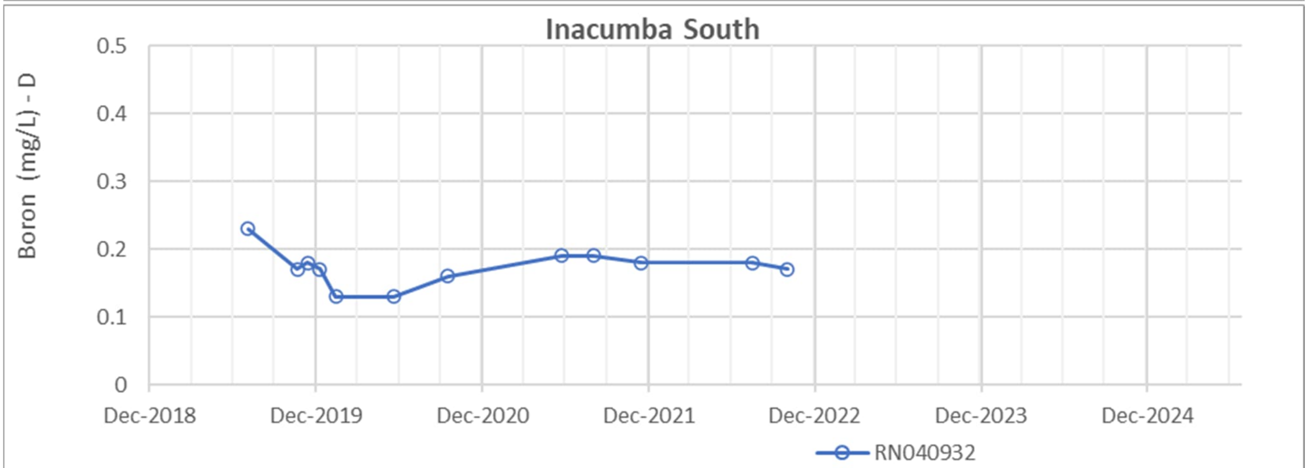

Inacumba
Methane (µg/L) - N
0
10
20
30
40
50
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

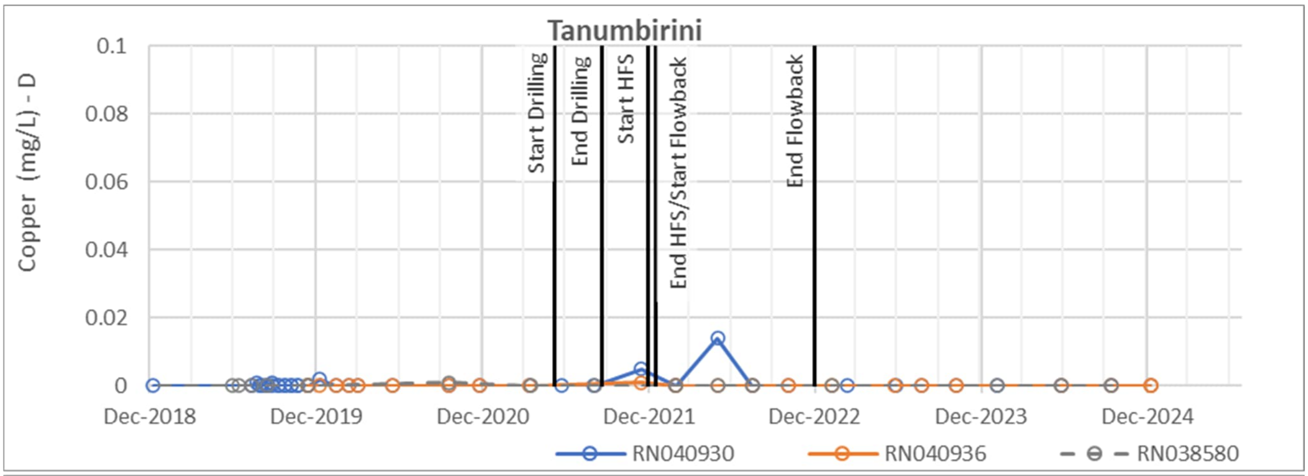

Inacumba South
Methane (µg/L) - N
0
10
20
30
40
50
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

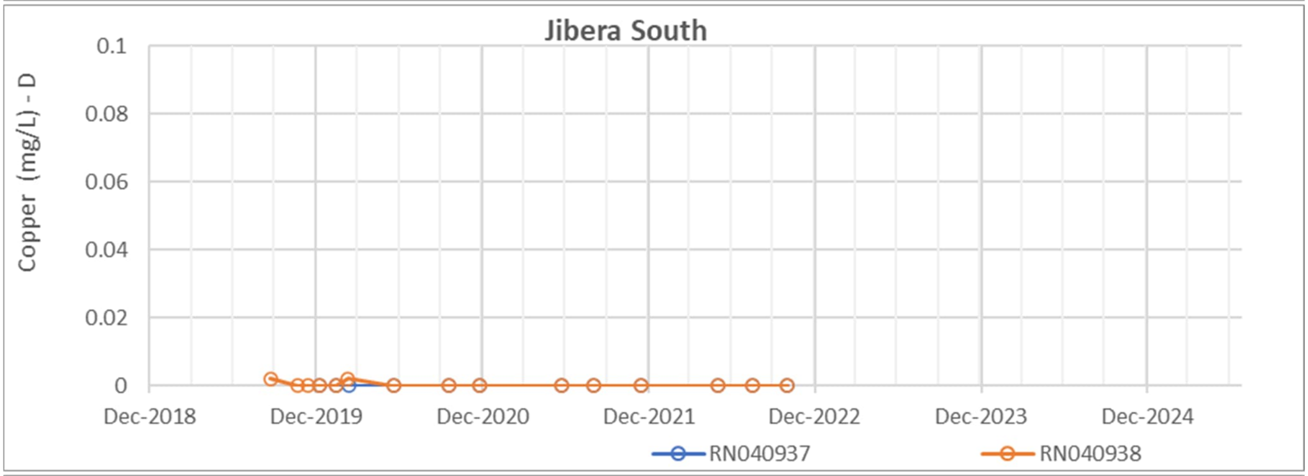

Tanumbirini
Boron (mg/L) - D
0.5
0.4
0.3
0.2
0.1
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

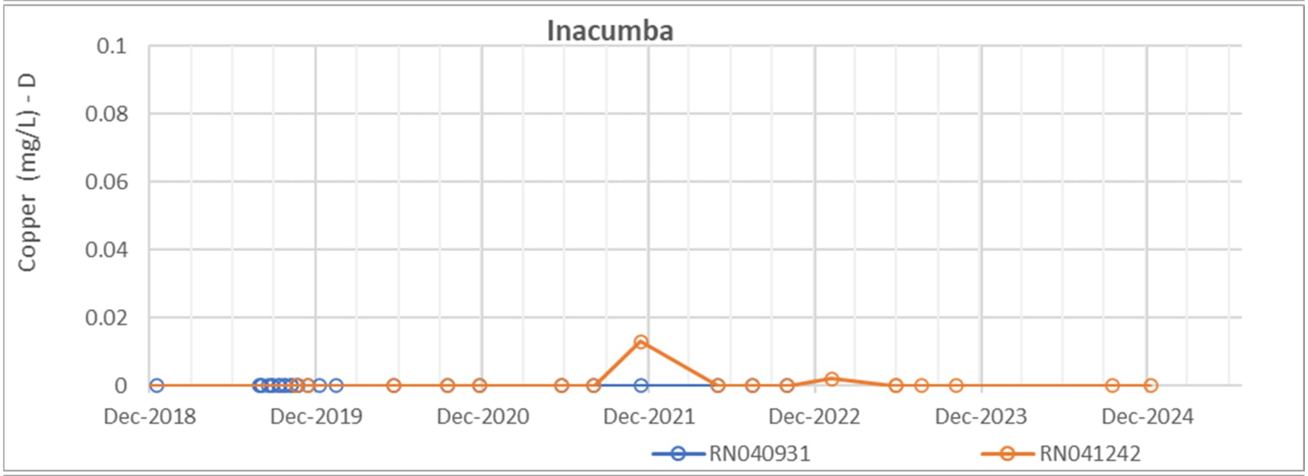

Jibera South
Boron (mg/L) - D
0.5
0.4
0.3
0.2
0.1
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

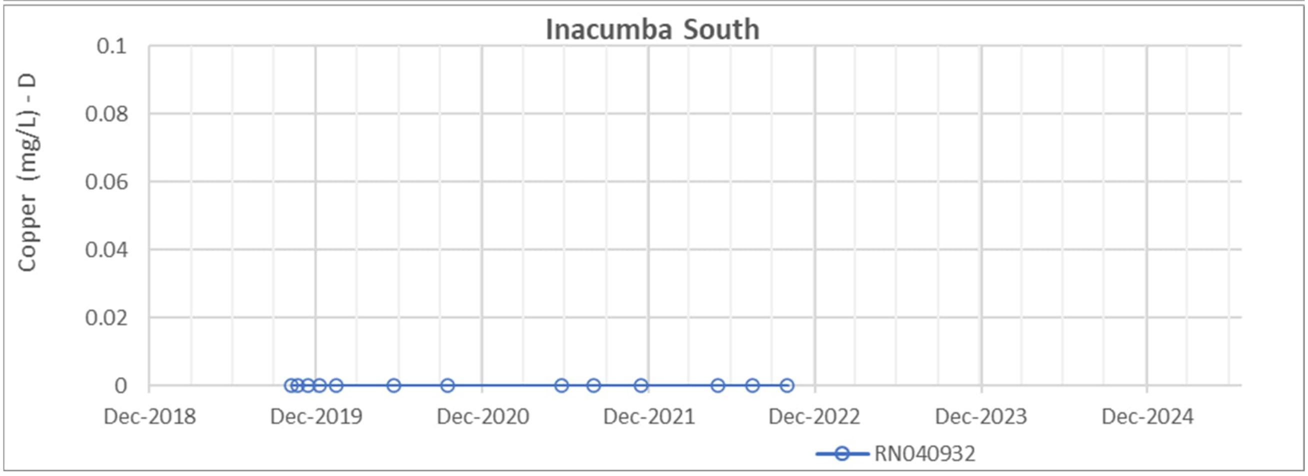

Inacumba
Boron (mg/L) - D
0.5
0.4
0.3
0.2
0.1
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

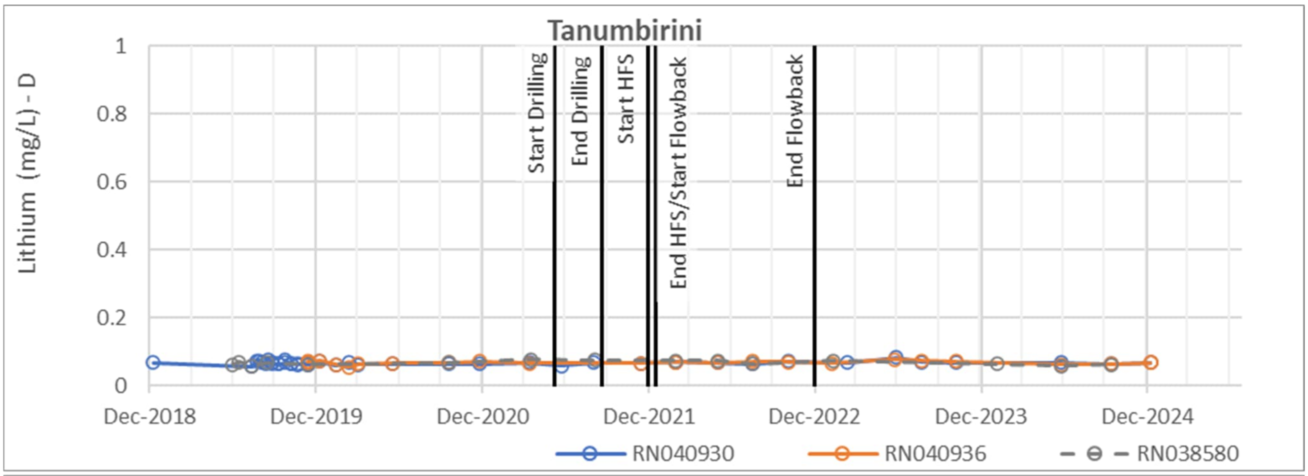

Inacumba South
Boron (mg/L) - D
0.5
0.4
0.3
0.2
0.1
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

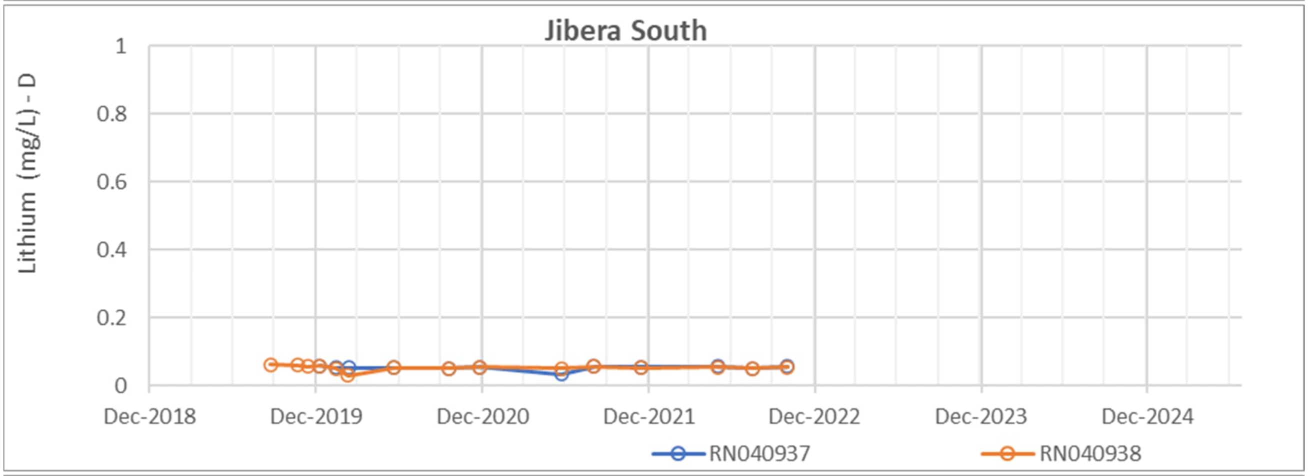

Tanumbirini
Copper (mg/L) - D
0.1
0.08
0.06
0.04
0.02
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

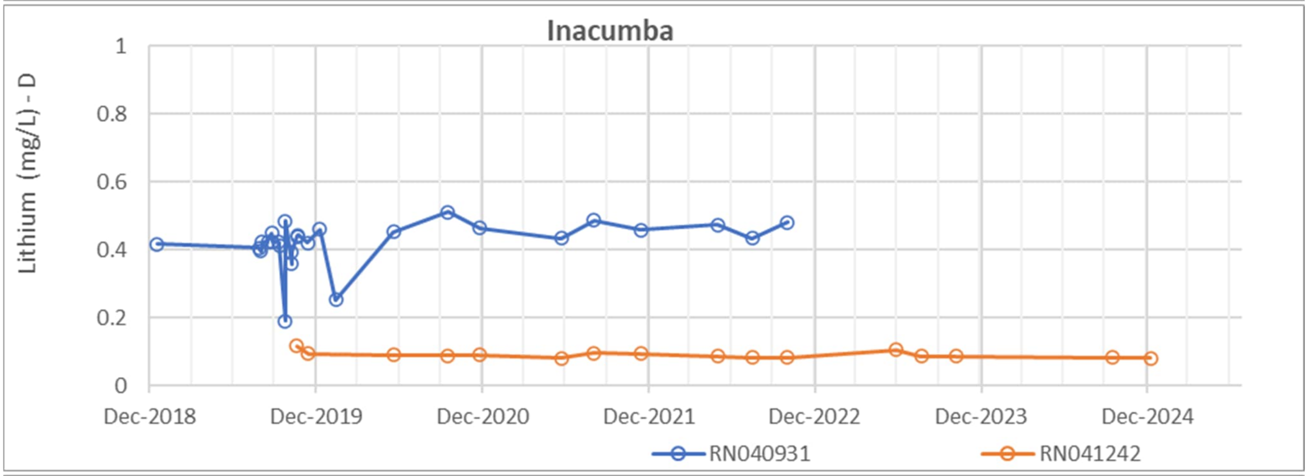

Jibera South
Copper (mg/L) - D
0.1
0.08
0.06
0.04
0.02
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

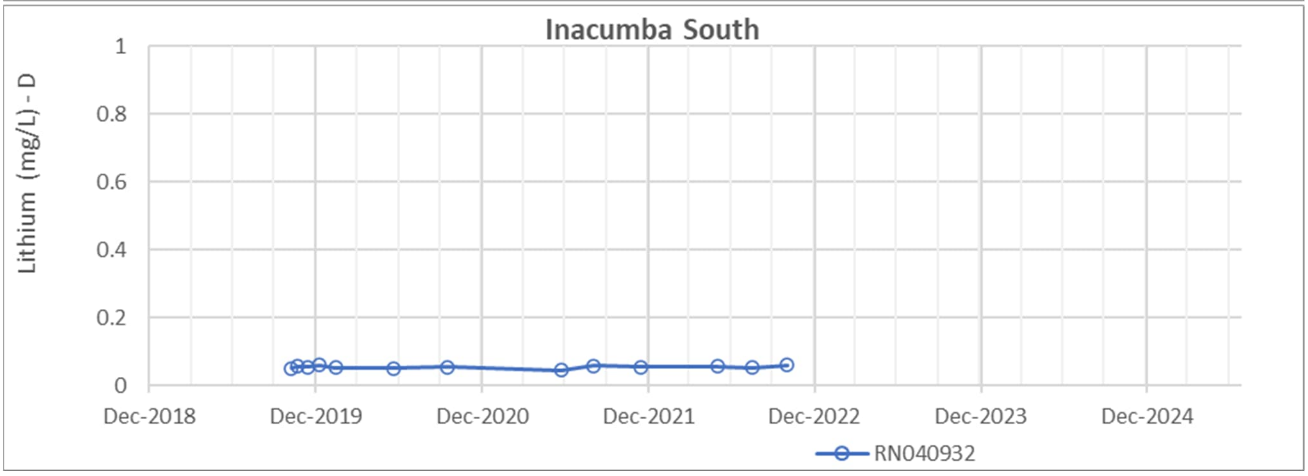

Inacumba
Copper (mg/L) - D
0.1
0.08
0.06
0.04
0.02
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

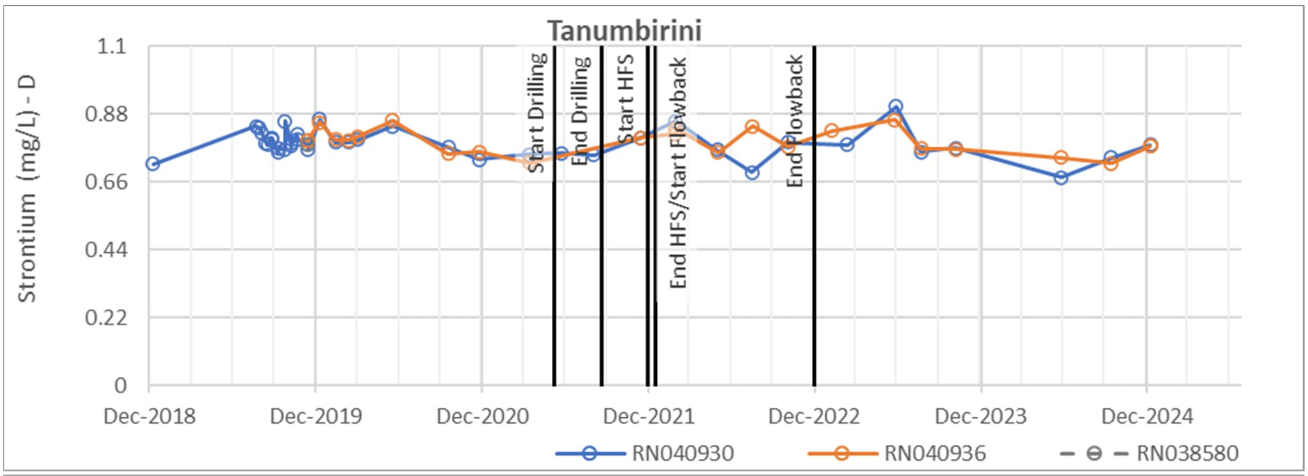

Inacumba South
Copper (mg/L) - D
0.1
0.08
0.06
0.04
0.02
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

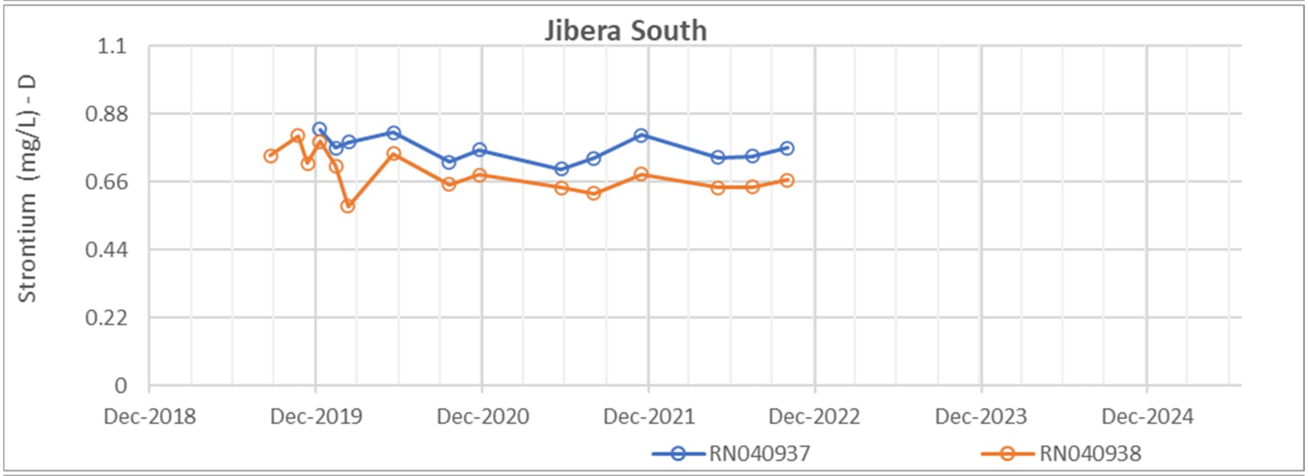

Tanumbirini
Lithium (mg/L) - D
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

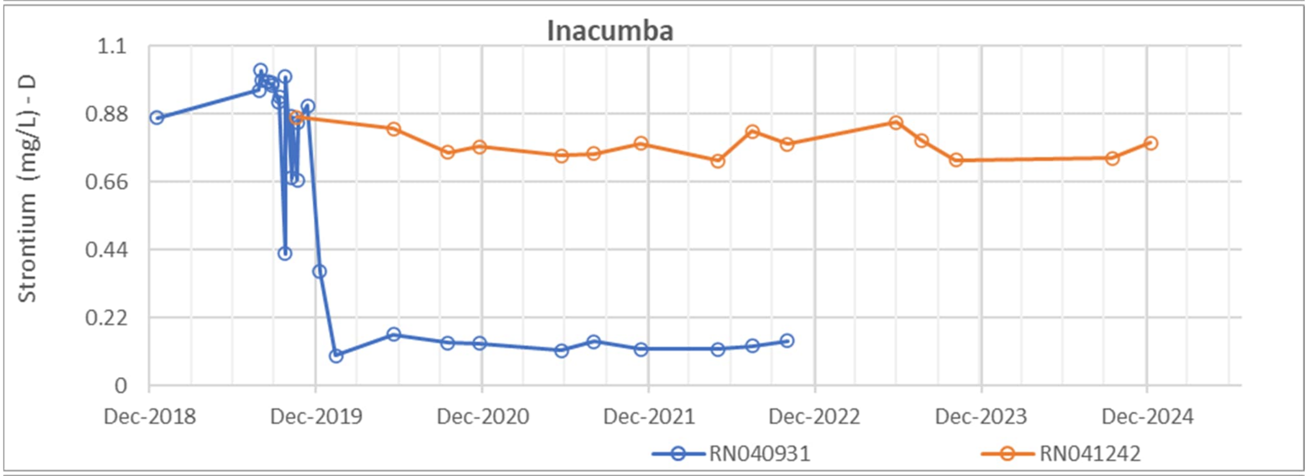

Jibera South
Lithium (mg/L) - D
RN040937
RN040938

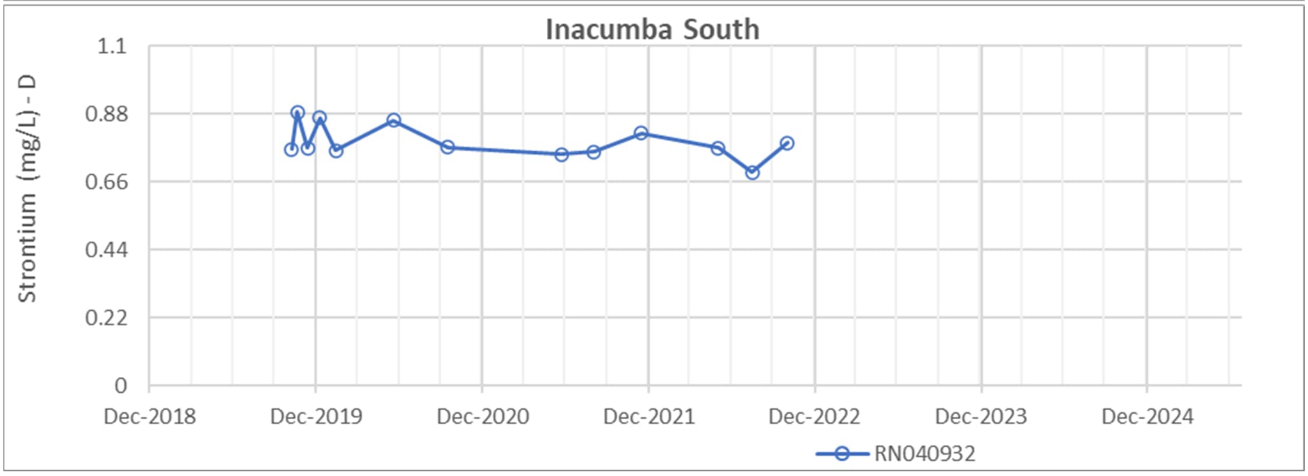

Inacumba
Lithium (mg/L) - D
RN040931
RN041242

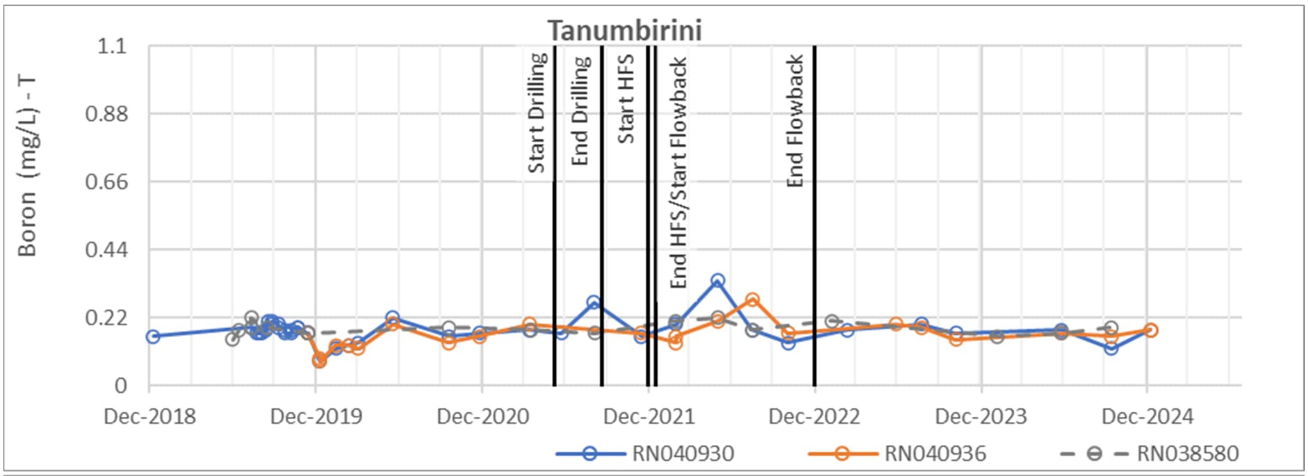

Inacumba South
Lithium (mg/L) - D
RN040932


Tanumbirini
Strontium (mg/L) - D
1.1
0.88
0.66
0.44
0.22
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
RN040930
RN040936
RN038580


Jibera South
Strontium (mg/L) - D
1.1
0.88
0.66
0.44
0.22
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938


Inacumba
Strontium (mg/L) - D
1.1
0.88
0.66
0.44
0.22
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242


Inacumba South
Strontium (mg/L) - D
1.1
0.88
0.66
0.44
0.22
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932


Tanumbirini
Boron (mg/L) - T
1.1
0.88
0.66
0.44
0.22
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
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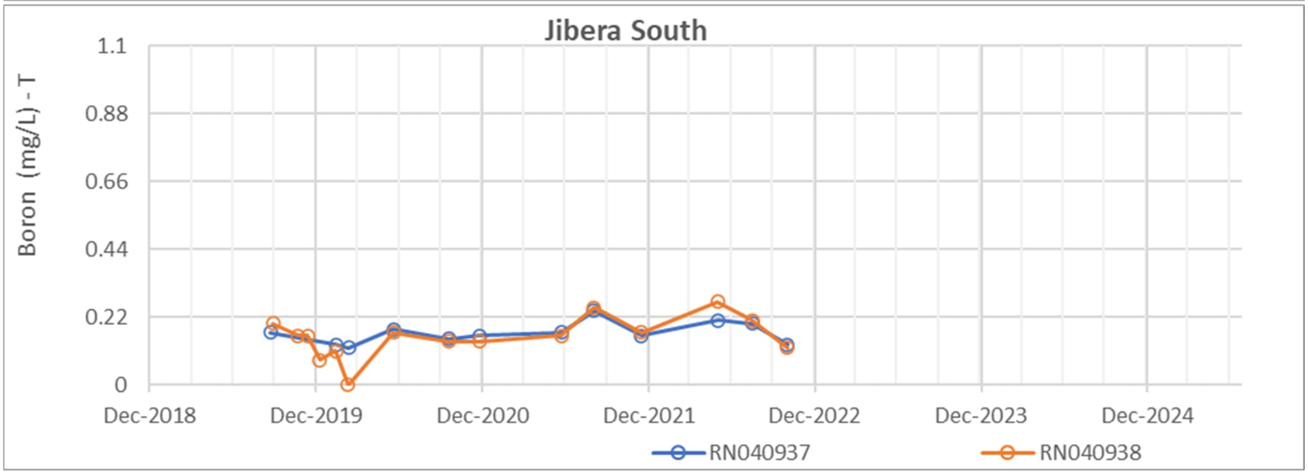
RN040936
RN038580


Jibera South
Boron (mg/L) - T
1.1
0.88
0.66
0.44
0.22
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
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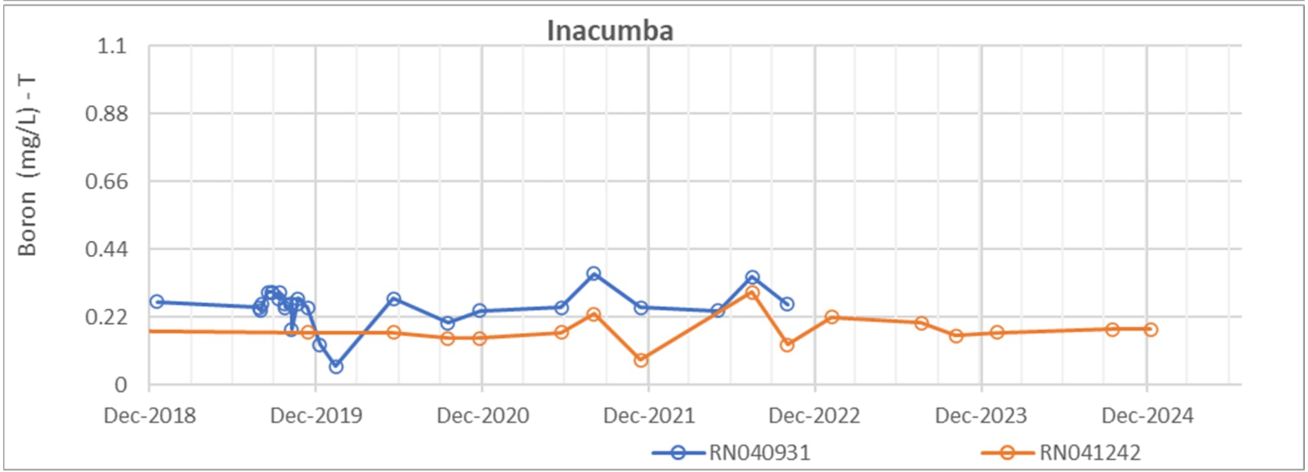
RN040938


Inacumba
Boron (mg/L) - T
1.1
0.88
0.66
0.44
0.22
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
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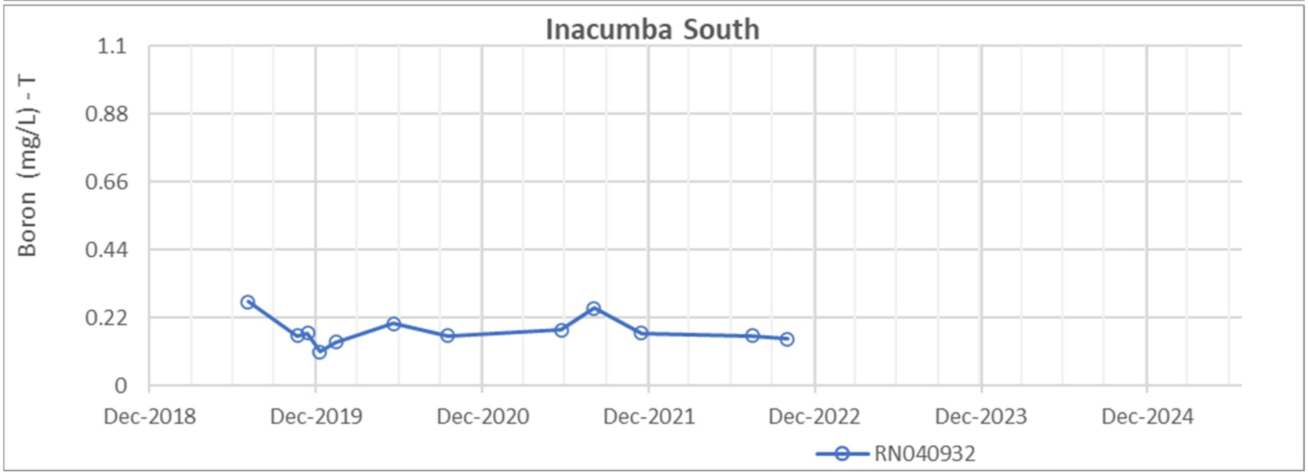
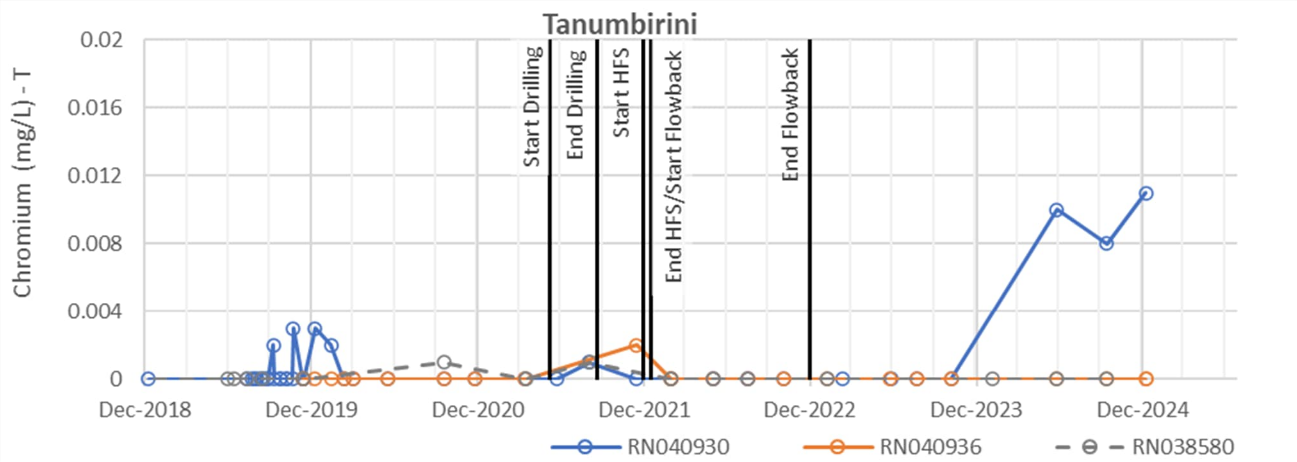
RN041242


Inacumba South
Boron (mg/L) - T
1.1
0.88
0.66
0.44
0.22
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932


Tanumbirini
Chromium (mg/L) - T
0.02
0.016
0.012
0.008
0.004
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
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Dec-2022
Dec-2023
Dec-2024
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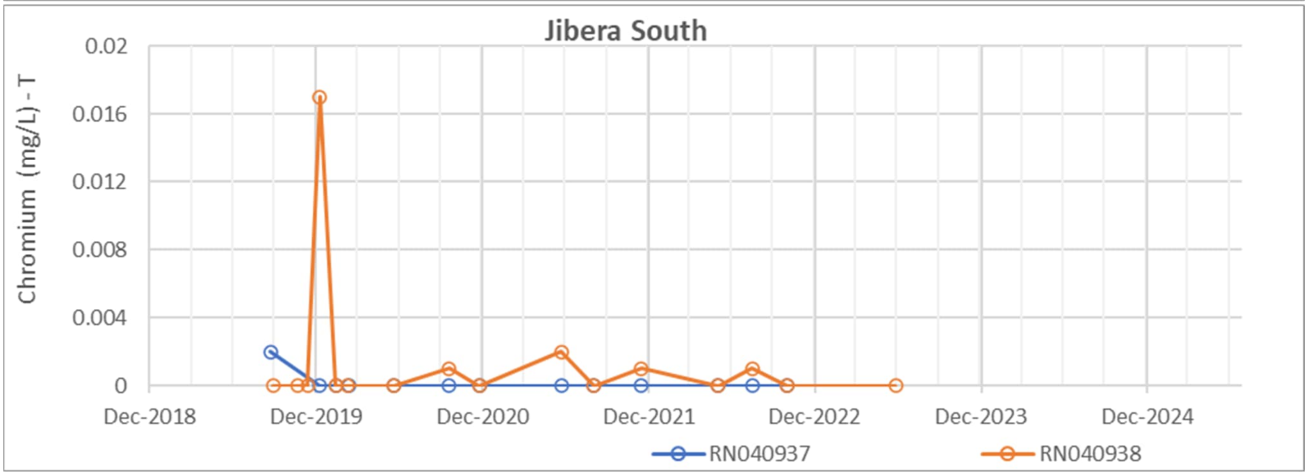
RN038580


Jibera South
Chromium (mg/L) - T
0.02
0.016
0.012
0.008
0.004
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
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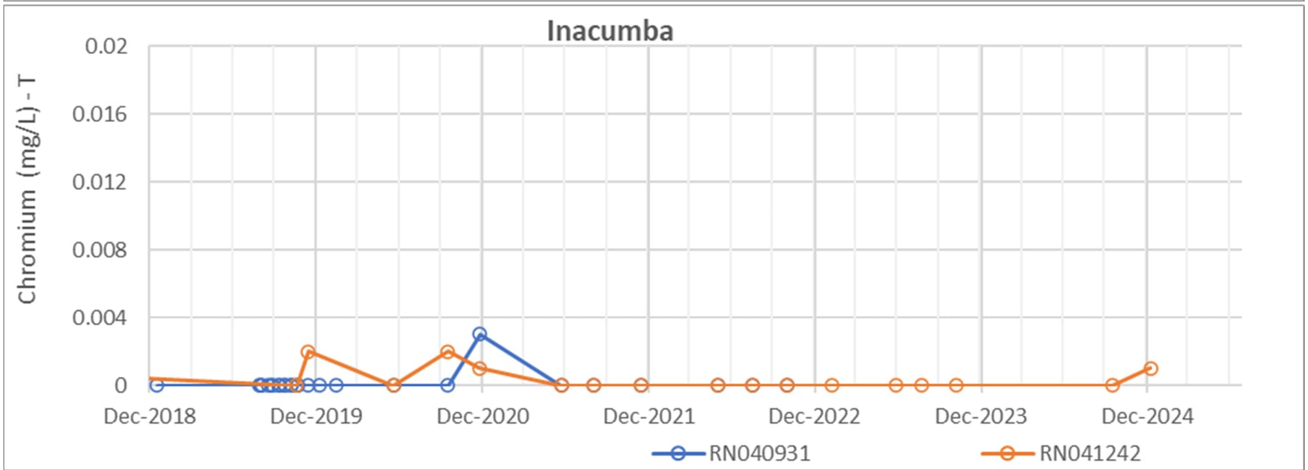
RN040937
RN040938


Inacumba
Chromium (mg/L) - T
0.02
0.016
0.012
0.008
0.004
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
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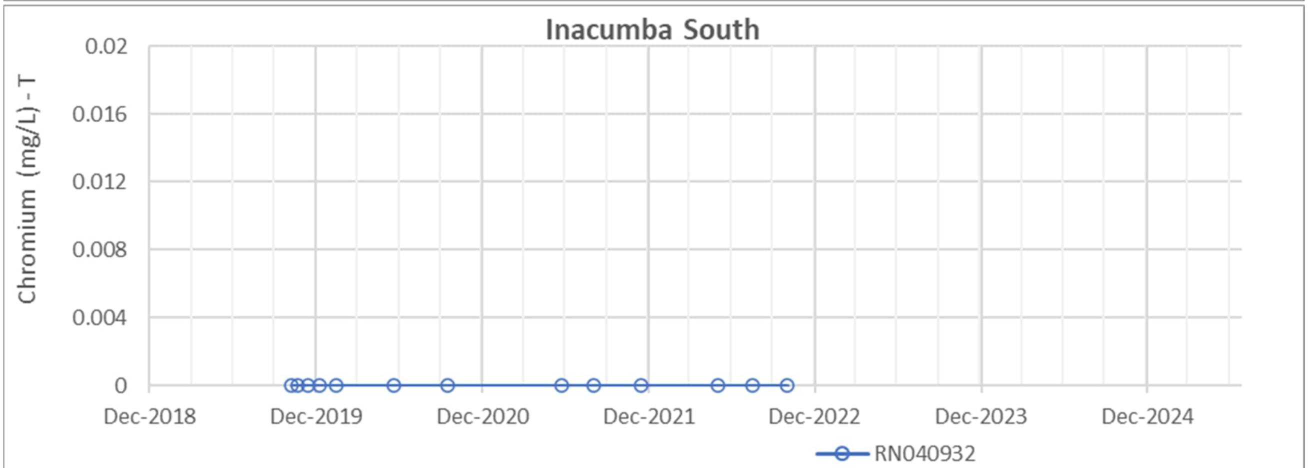
RN041242


Inacumba South
Chromium (mg/L) - T
0.02
0.016
0.012
0.008
0.004
0
Dec-2018
Dec-2019
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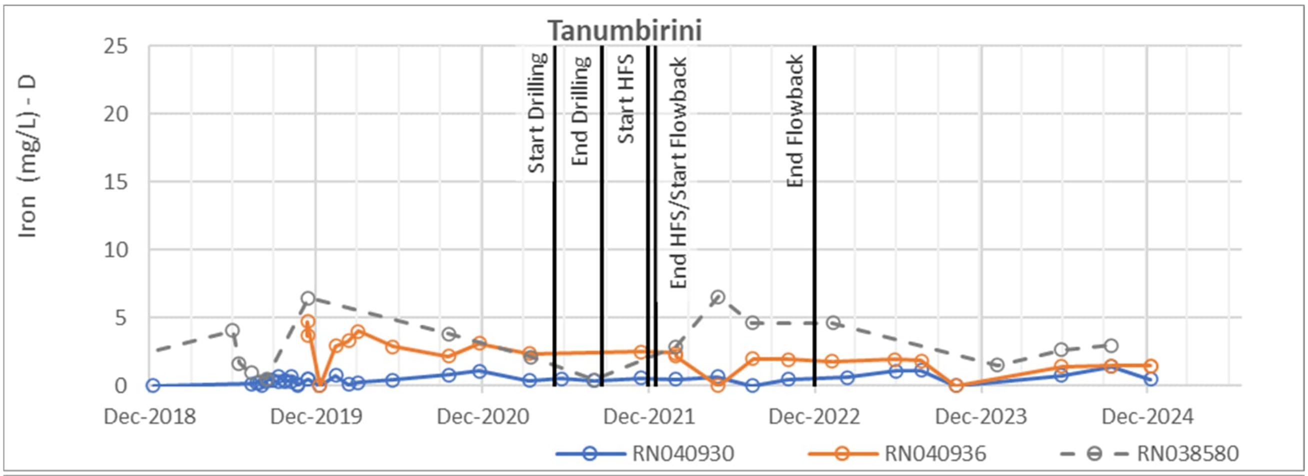
Dec-2024
RN040932


Tanumbirini
Iron (mg/L) - D
25
20
15
10
5
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
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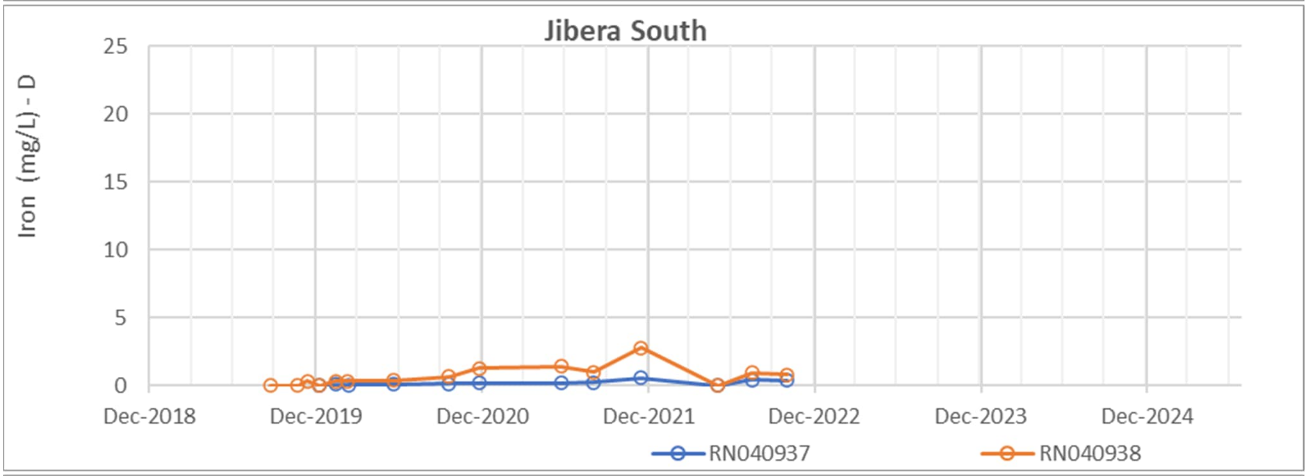
RN038580


Jibera South
Iron (mg/L) - D
25
20
15
10
5
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
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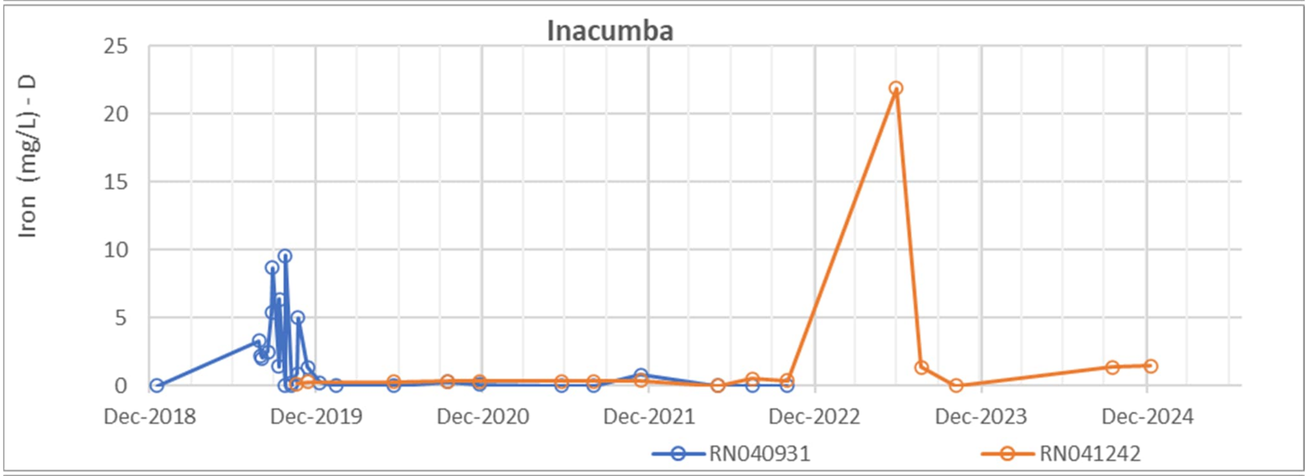
RN040937
RN040938


Inacumba
Iron (mg/L) - D
25
20
15
10
5
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
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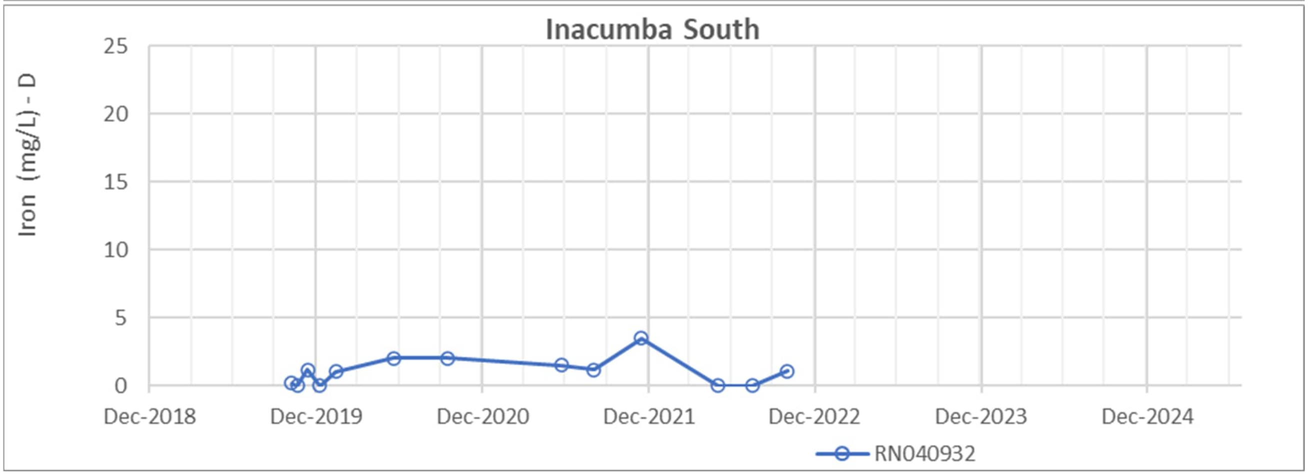
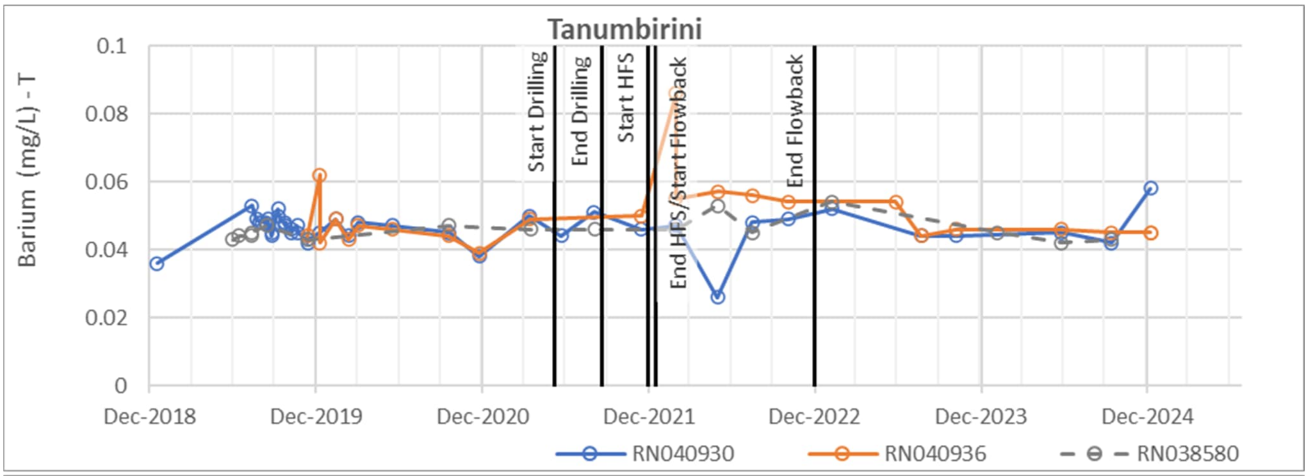
RN041242


Inacumba South
Iron (mg/L) - D
25
20
15
10
5
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932


Tanumbirini
Barium (mg/L) - T
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
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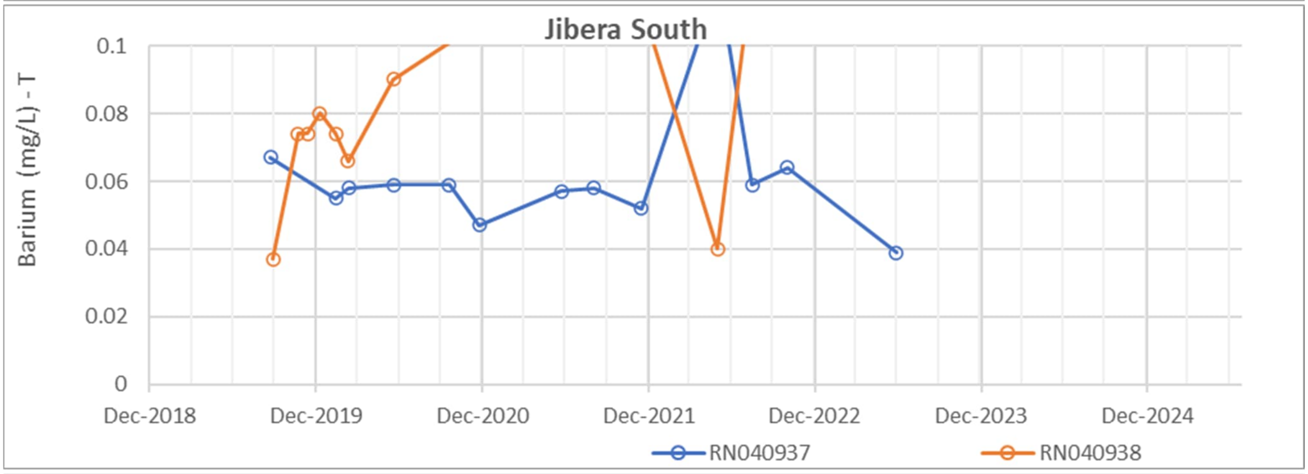
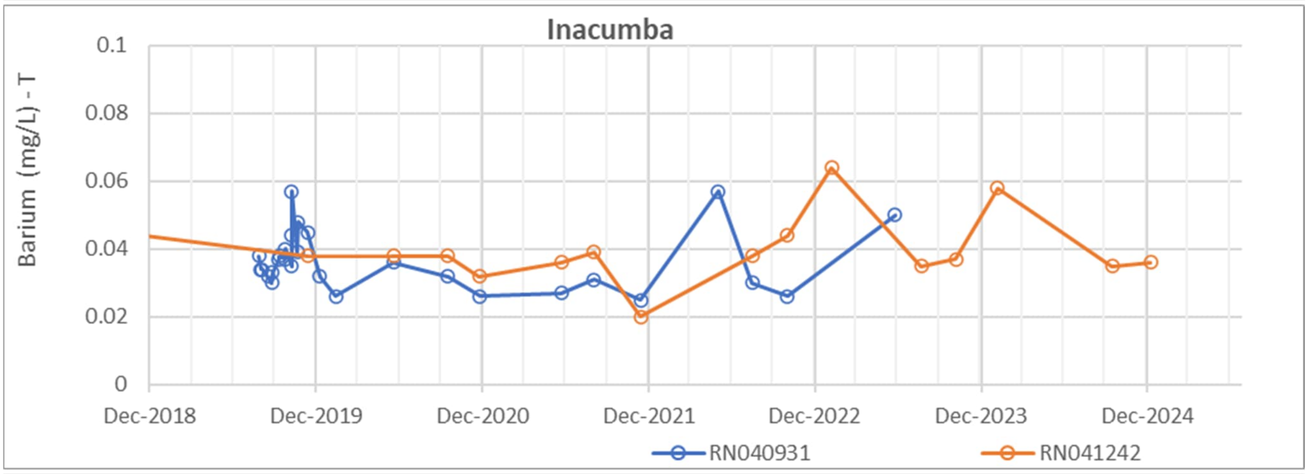
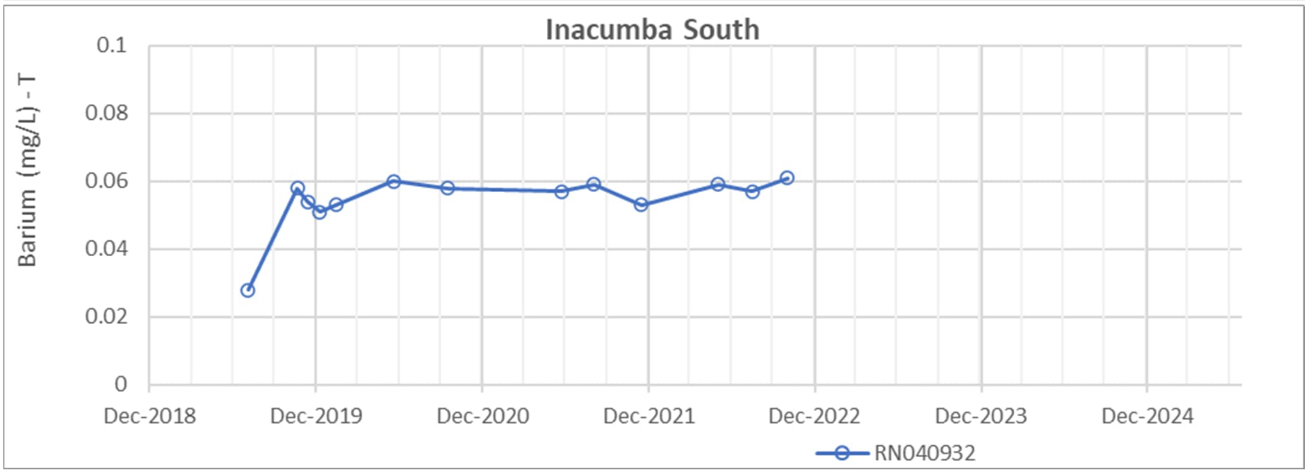
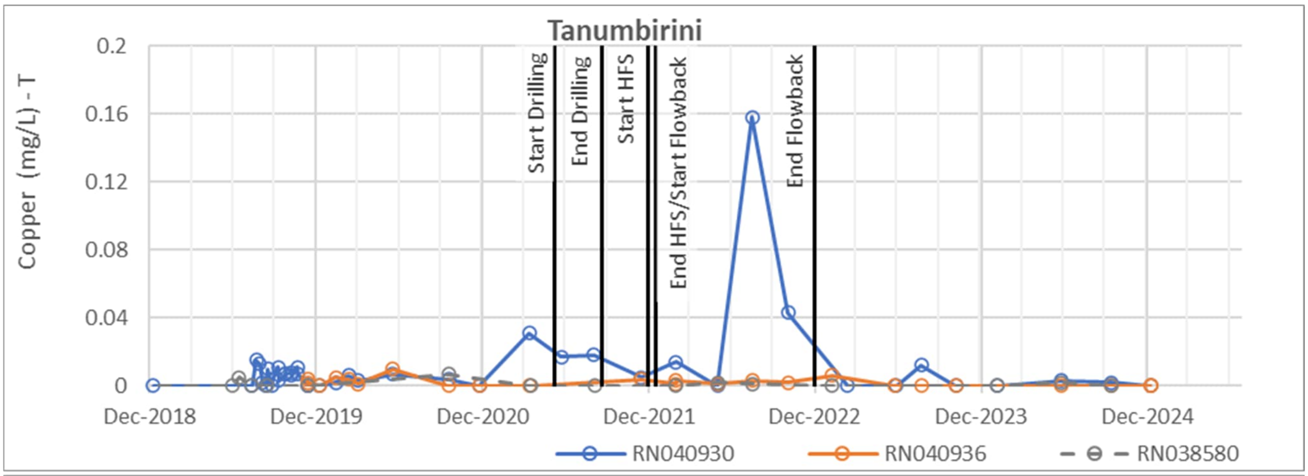
RN038580


Jibera South
Barium (mg/L) - T
RN040937
RN040938


Inacumba
Barium (mg/L) - T
RN040931
RN041242


Inacumba South
Barium (mg/L) - T
RN040932


Tanumbirini
Copper (mg/L) - T
0.2
0.16
0.12
0.08
0.04
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
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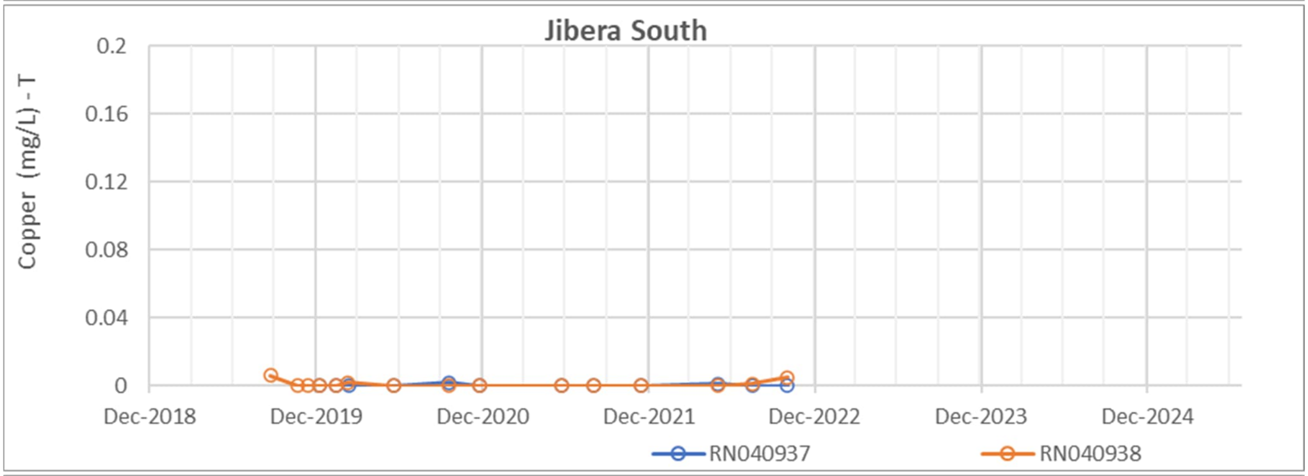
RN038580


Jibera South
Copper (mg/L) - T
0.2
0.16
0.12
0.08
0.04
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
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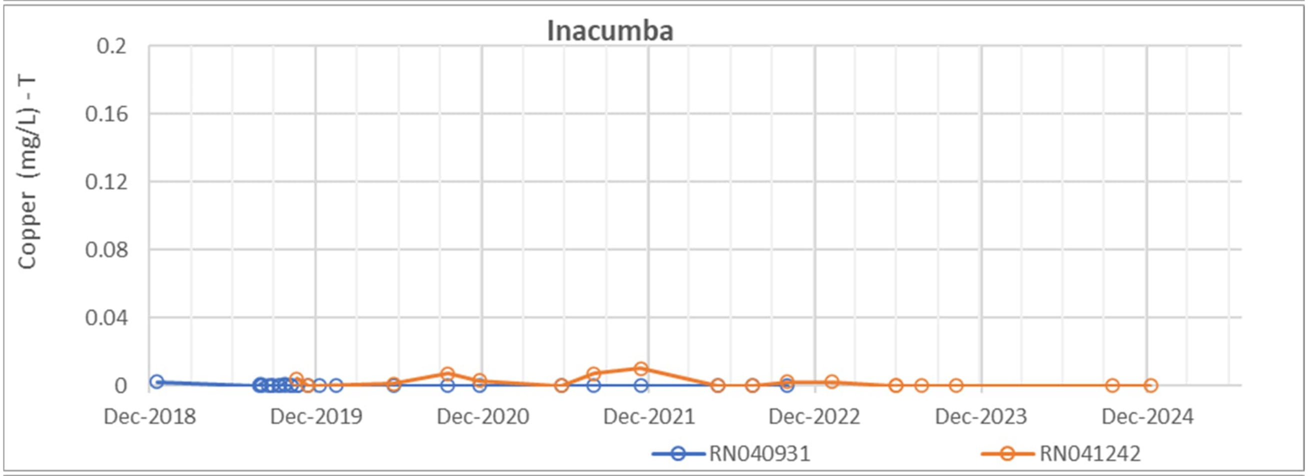
Inacumba
Copper (mg/L) - T
0.2
0.16
0.12
0.08
0.04
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
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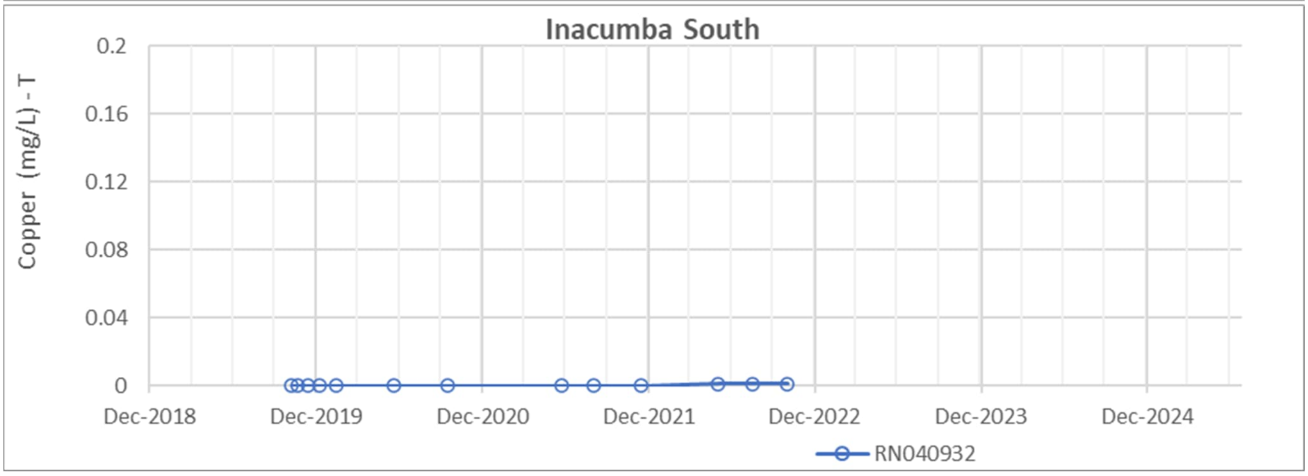
Inacumba South
Copper (mg/L) - T
0.2
0.16
0.12
0.08
0.04
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
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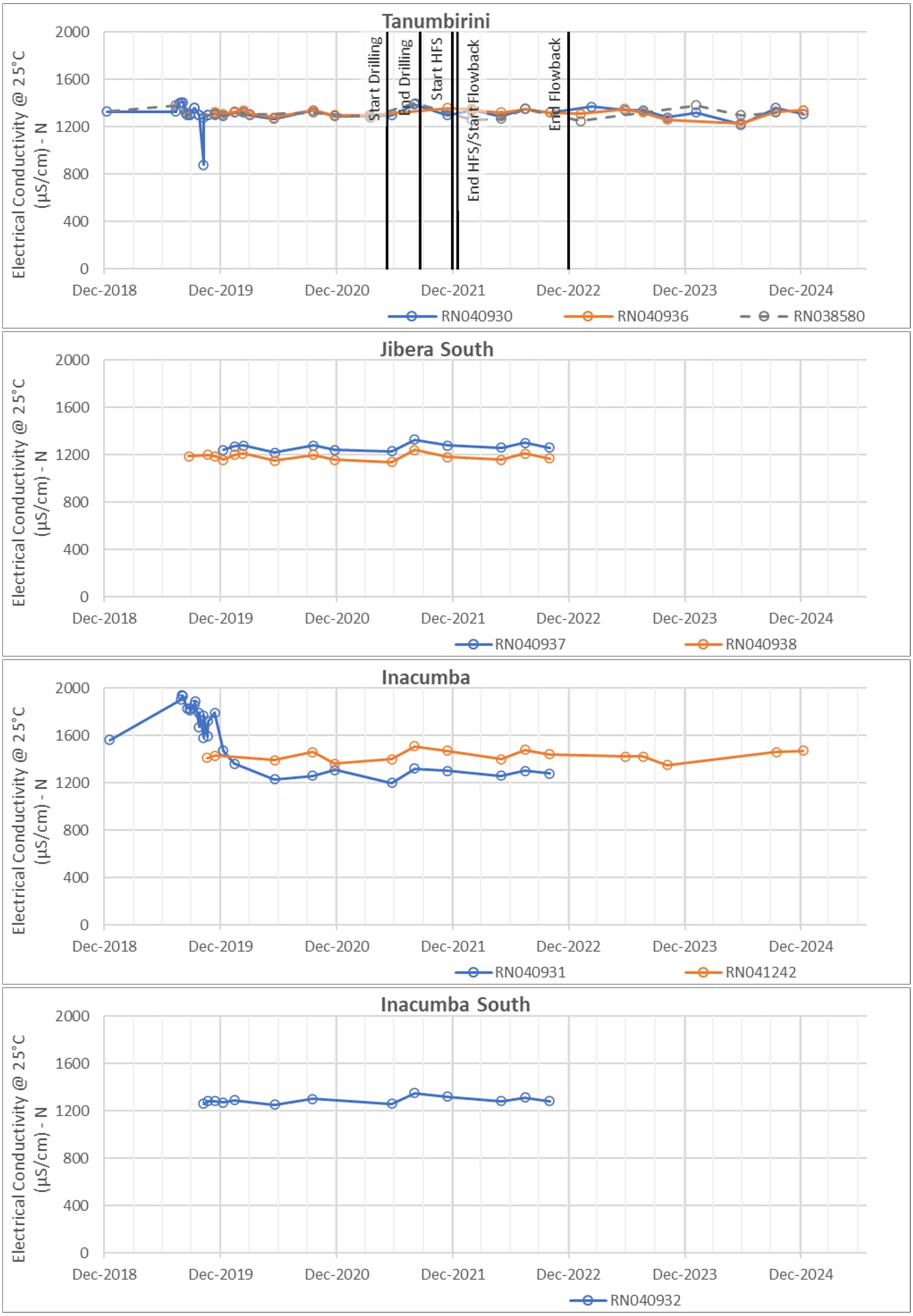
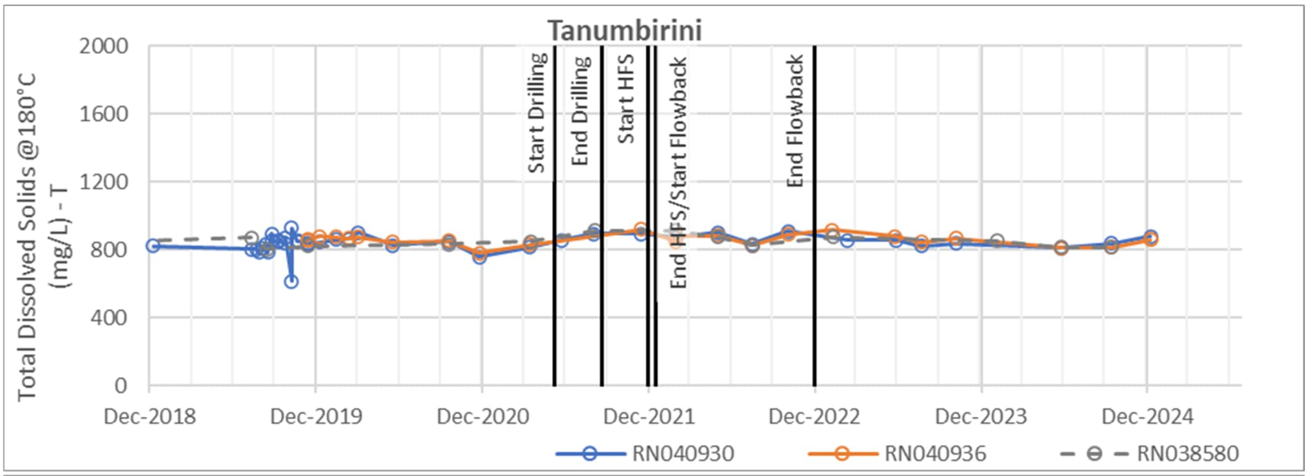

Tanumbirini
Electrical Conductivity @ 25°C (µS/cm) - N
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580
Jibera South
RN040937
RN040938
Inacumba
RN040931
RN041242
Inacumba South
RN040932


Tanumbirini
Total Dissolved Solids @180°C (mg/L) - T
2000
1600
1200
800
400
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
Dec-2020
Dec-2021
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Dec-2023
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RN040930
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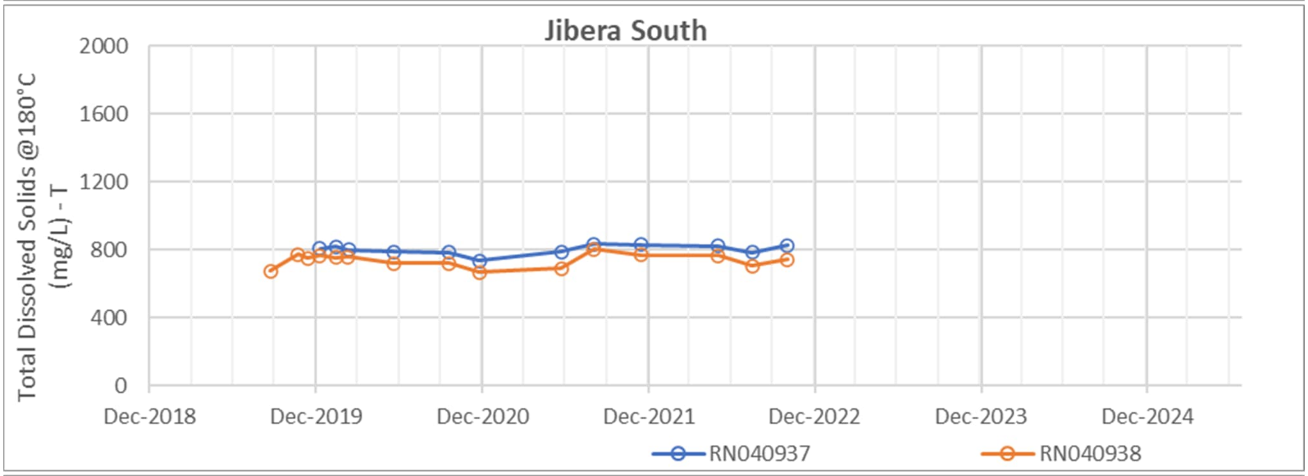
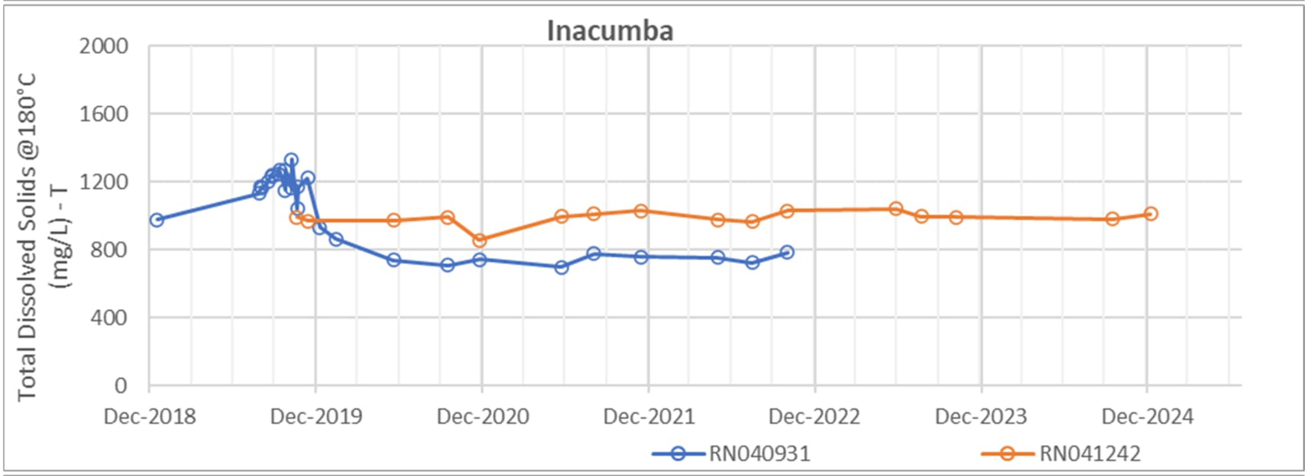
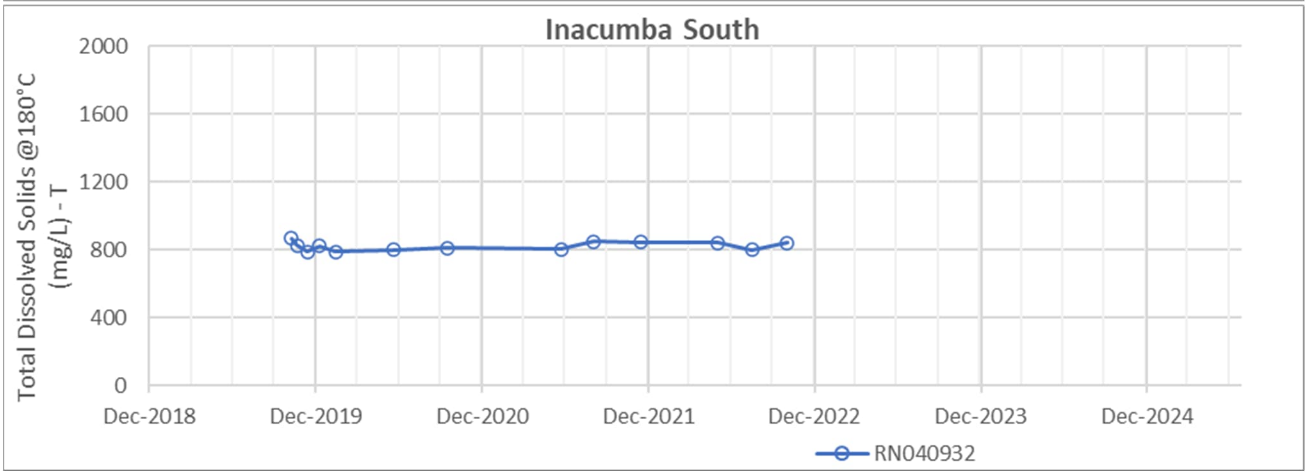
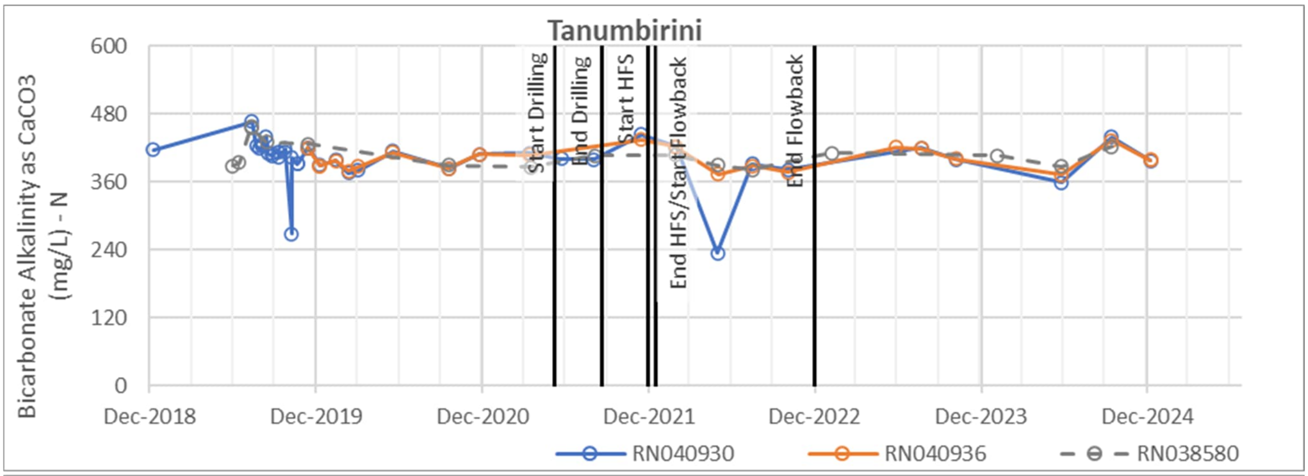
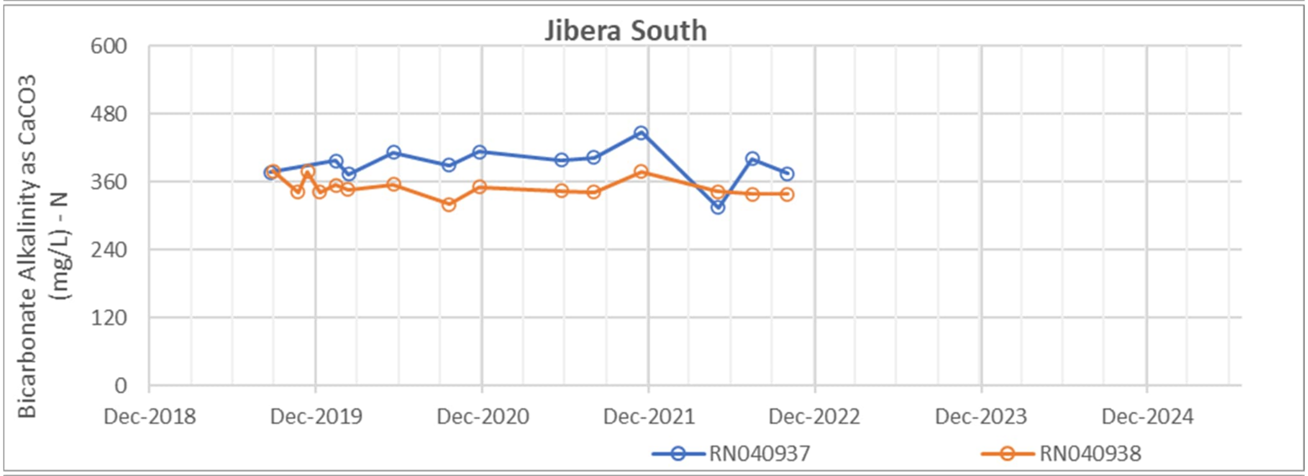
RN038580

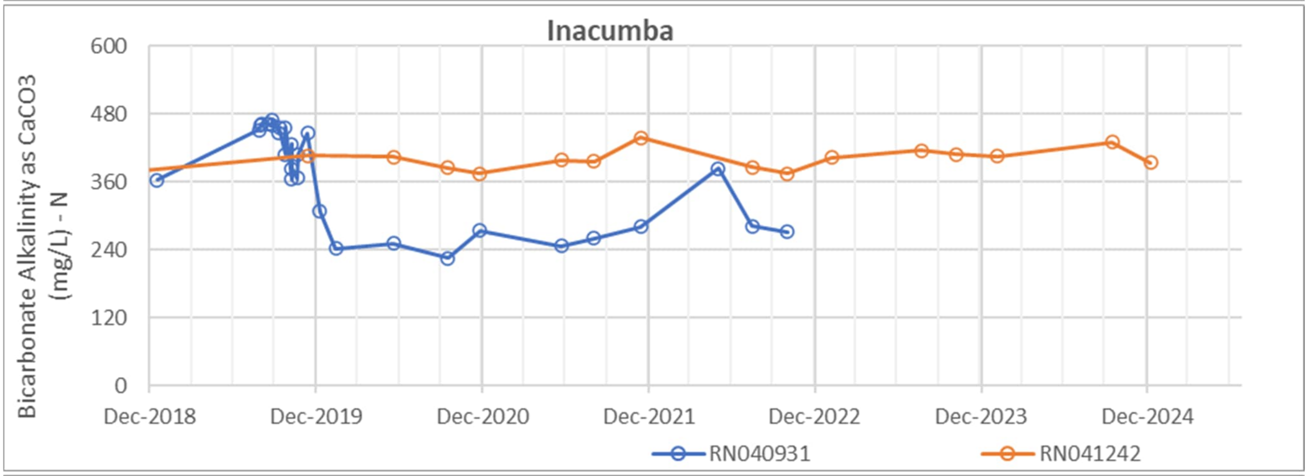

Jibera South
Total Dissolved Solids @180°C (mg/L) - T
2000
1600
1200
800
400
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

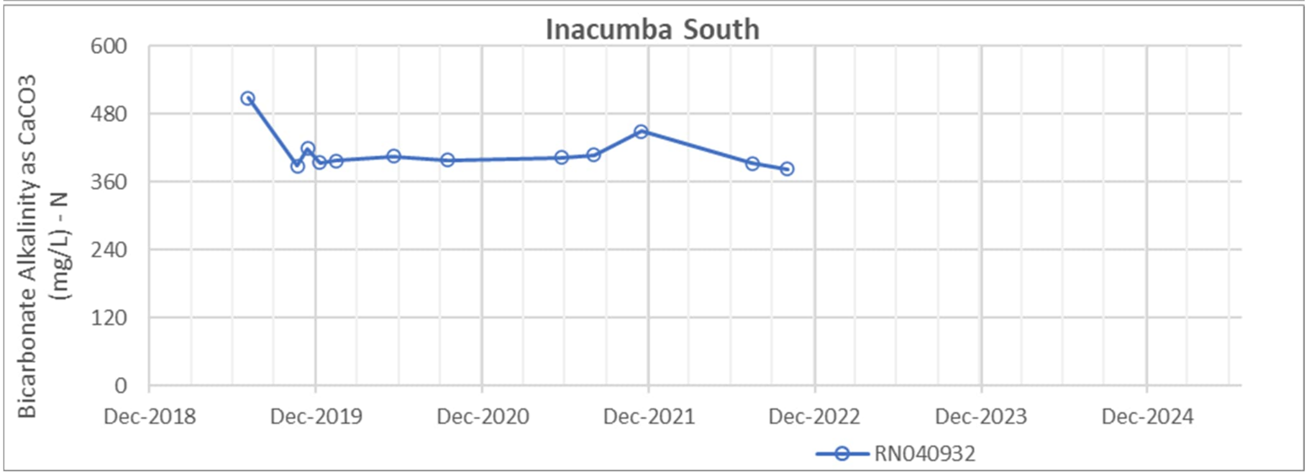

Inacumba
Total Dissolved Solids @180°C (mg/L) - T
2000
1600
1200
800
400
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

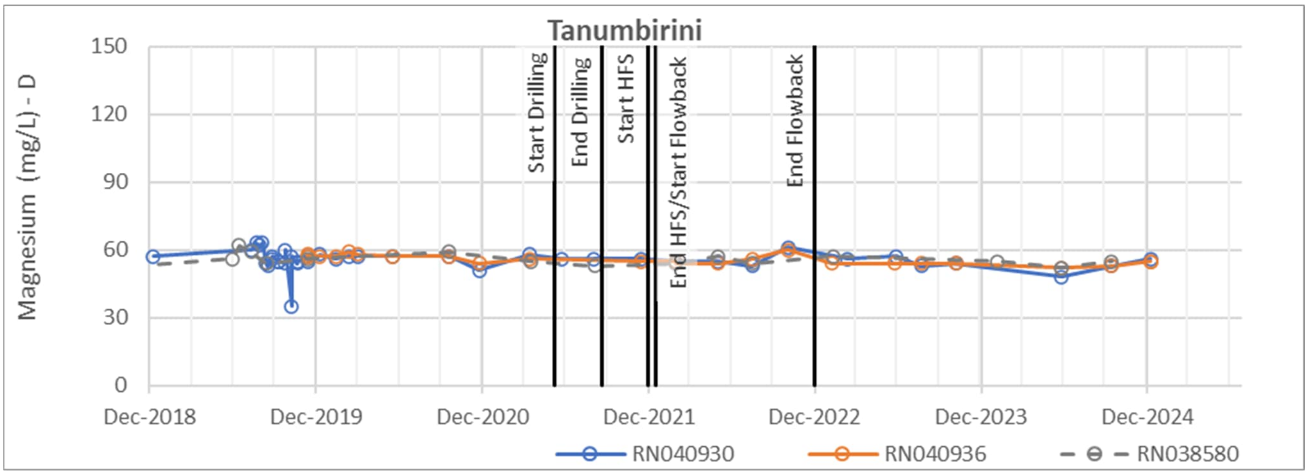

Inacumba South
Total Dissolved Solids @180°C (mg/L) - T
2000
1600
1200
800
400
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

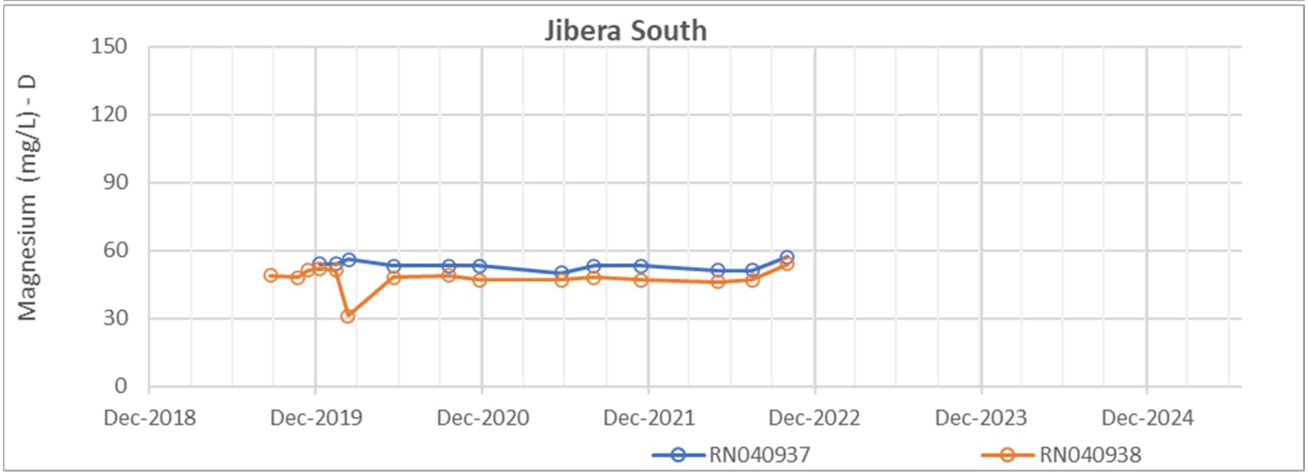

Tanumbirini
Bicarbonate Alkalinity as CaCO3 (mg/L) - N
600
480
360
240
120
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
RN040930
RN040936
RN038580

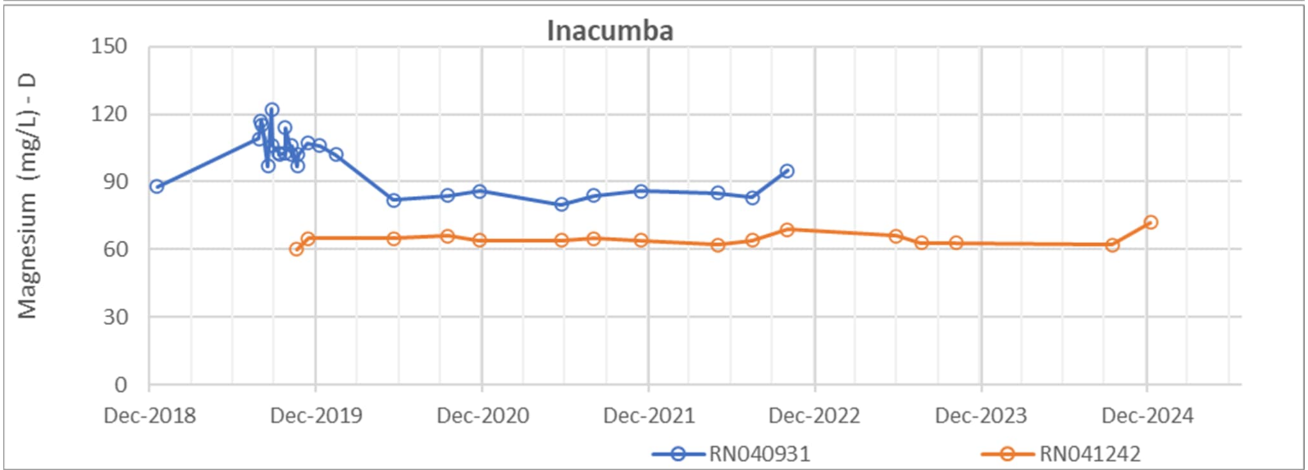

Jibera South
Bicarbonate Alkalinity as CaCO3 (mg/L) - N
600
480
360
240
120
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

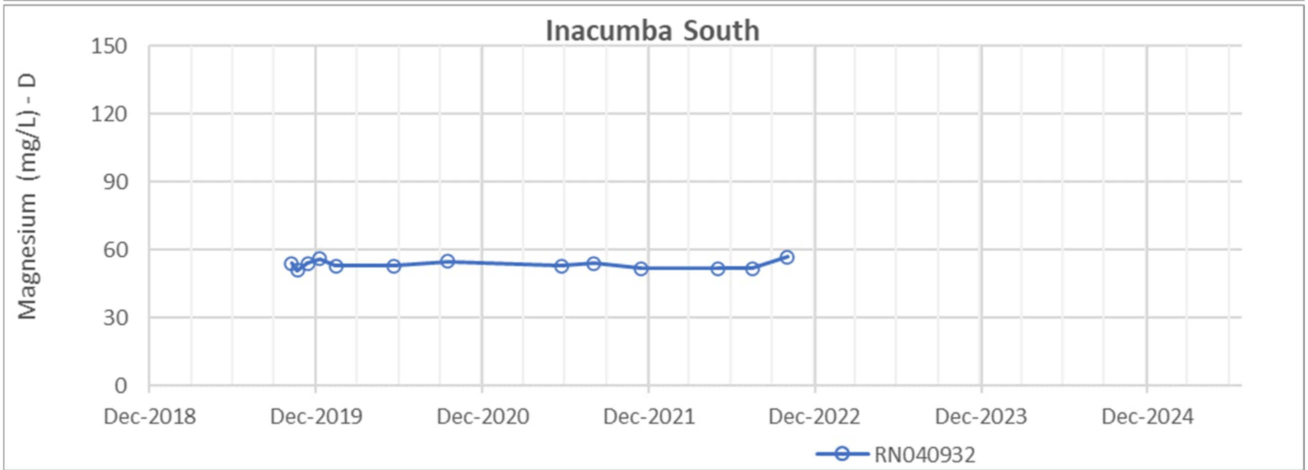

Inacumba
Bicarbonate Alkalinity as CaCO3 (mg/L) - N
600
480
360
240
120
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242

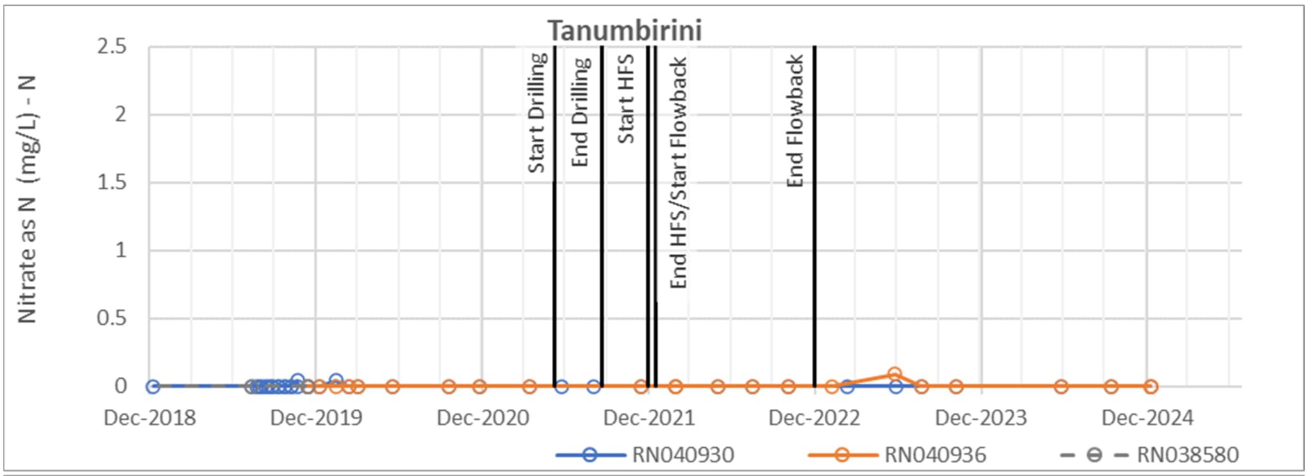

Inacumba South
Bicarbonate Alkalinity as CaCO3 (mg/L) - N
600
480
360
240
120
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

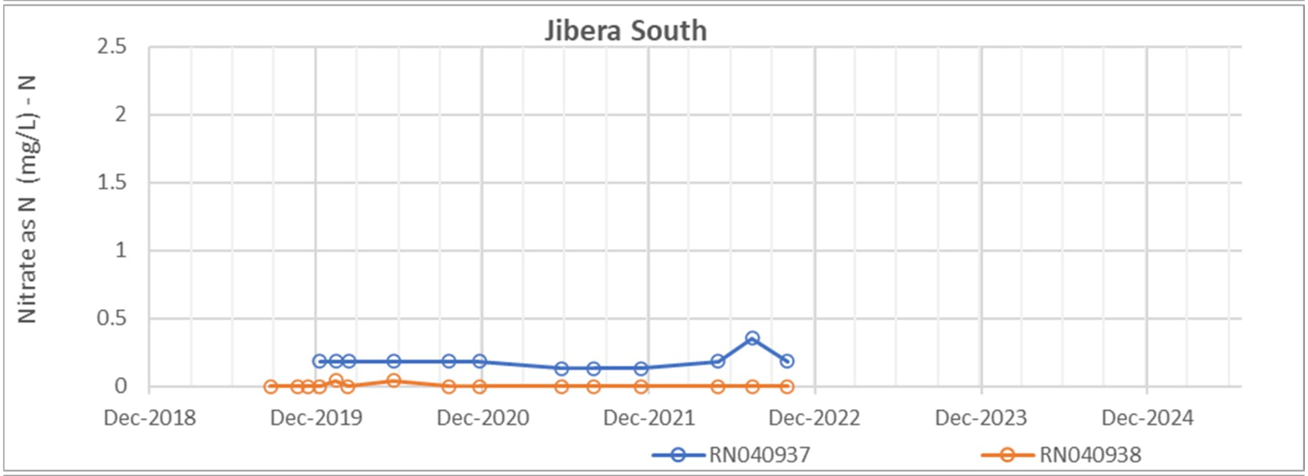

Tanumbirini
Magnesium (mg/L) - D
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
150
120
90
60
30
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580

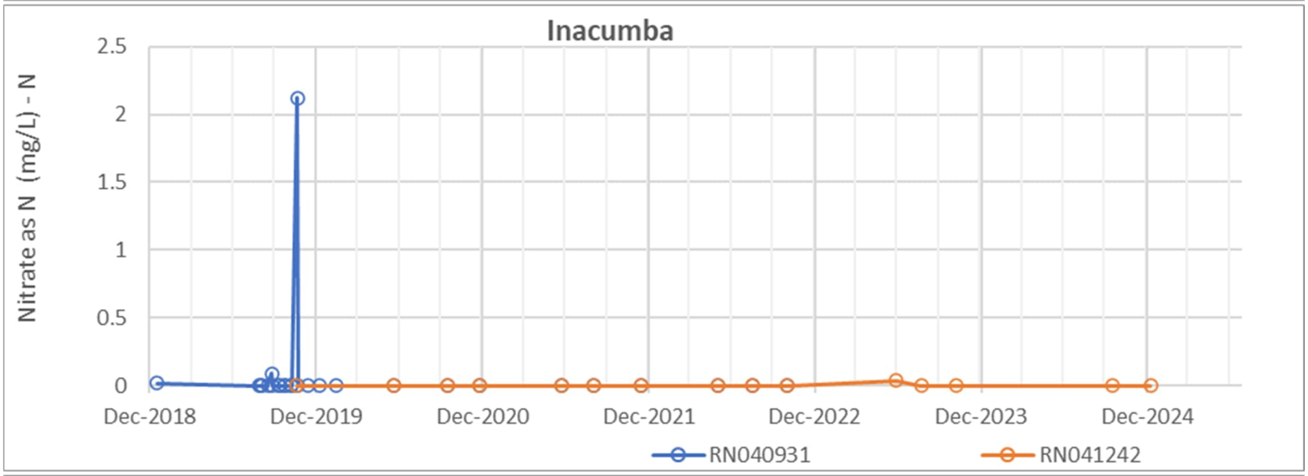

Jibera South
Magnesium (mg/L) - D
150
120
90
60
30
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938

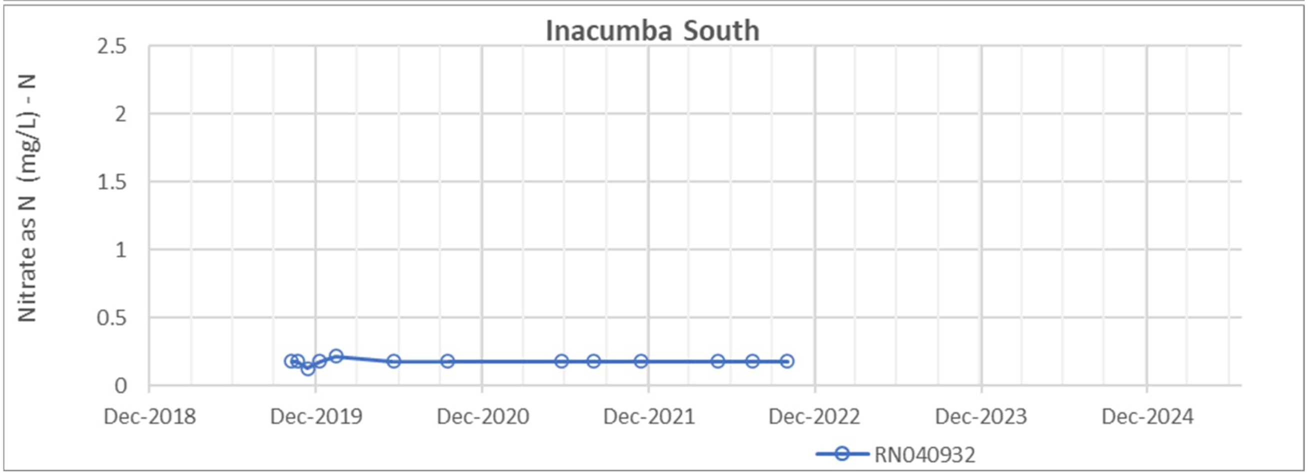

Inacumba
Magnesium (mg/L) - D
150
120
90
60
30
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242


Inacumba South
Magnesium (mg/L) - D
150
120
90
60
30
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932


Tanumbirini
Nitrate as N (mg/L) - N
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
0
0.5
1
1.5
2
2.5
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040930
RN040936
RN038580


Jibera South
Nitrate as N (mg/L) - N
0
0.5
1
1.5
2
2.5
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040937
RN040938


Inacumba
Nitrate as N (mg/L) - N
0
0.5
1
1.5
2
2.5
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040931
RN041242


Inacumba South
Nitrate as N (mg/L) - N
0
0.5
1
1.5
2
2.5
Dec-2018
Dec-2019
Dec-2020
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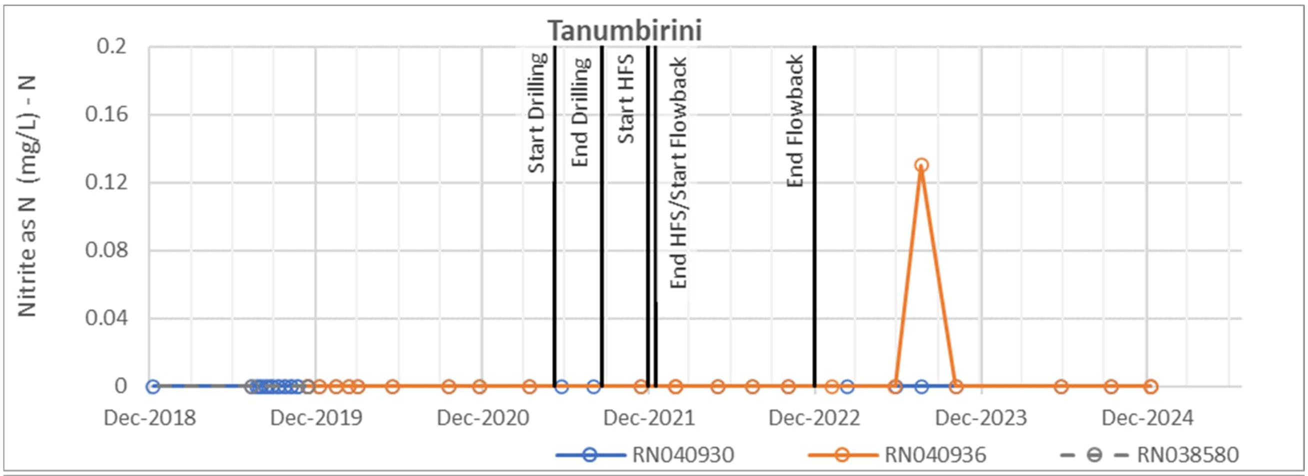
Tanumbirini
Nitrite as N (mg/L) - N
0.2
0.16
0.12
0.08
0.04
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
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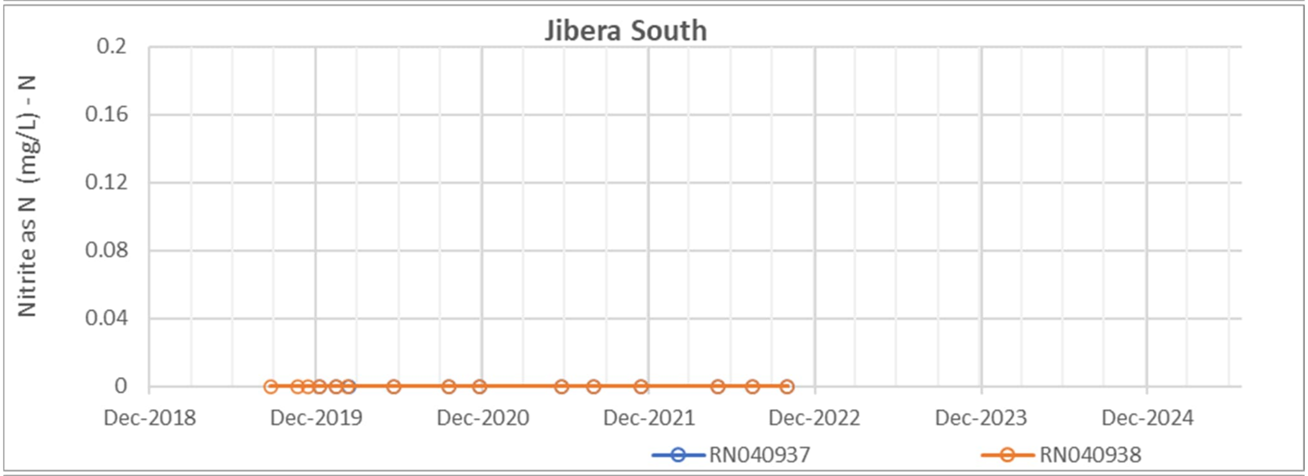
Jibera South
Nitrite as N (mg/L) - N
0.2
0.16
0.12
0.08
0.04
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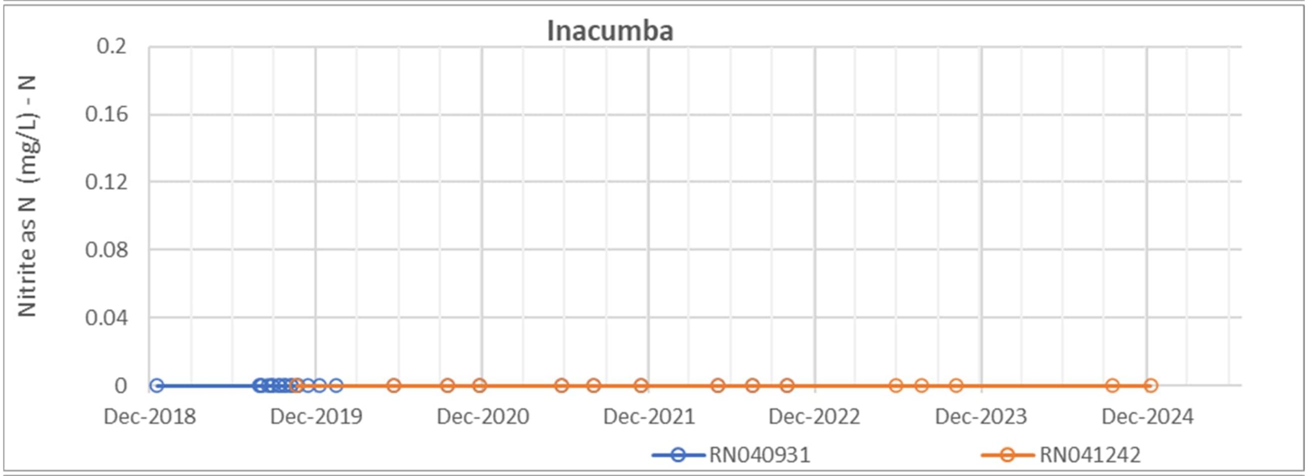
Inacumba
Nitrite as N (mg/L) - N
0.2
0.16
0.12
0.08
0.04
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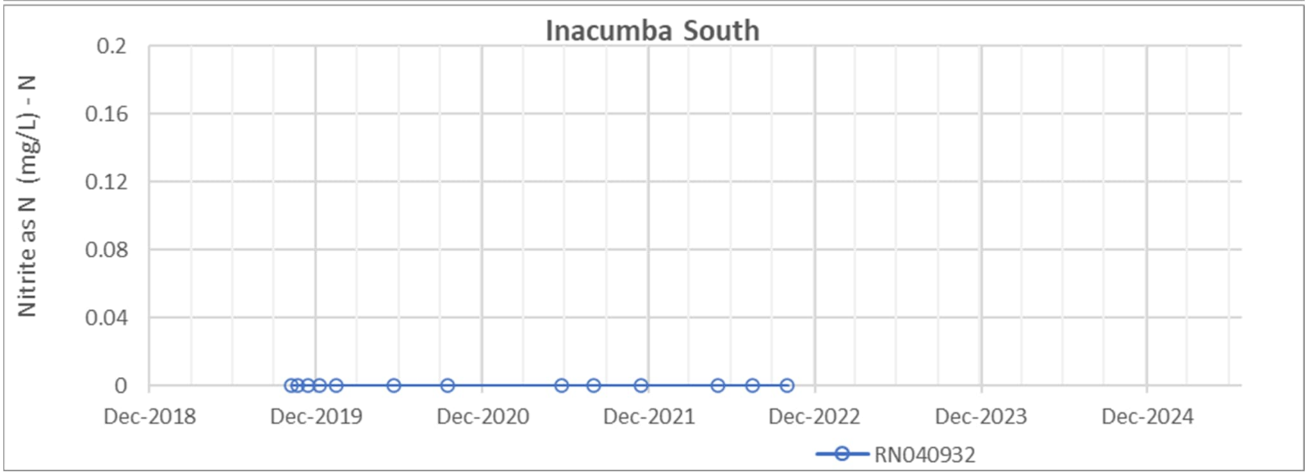
Inacumba South
Nitrite as N (mg/L) - N
0.2
0.16
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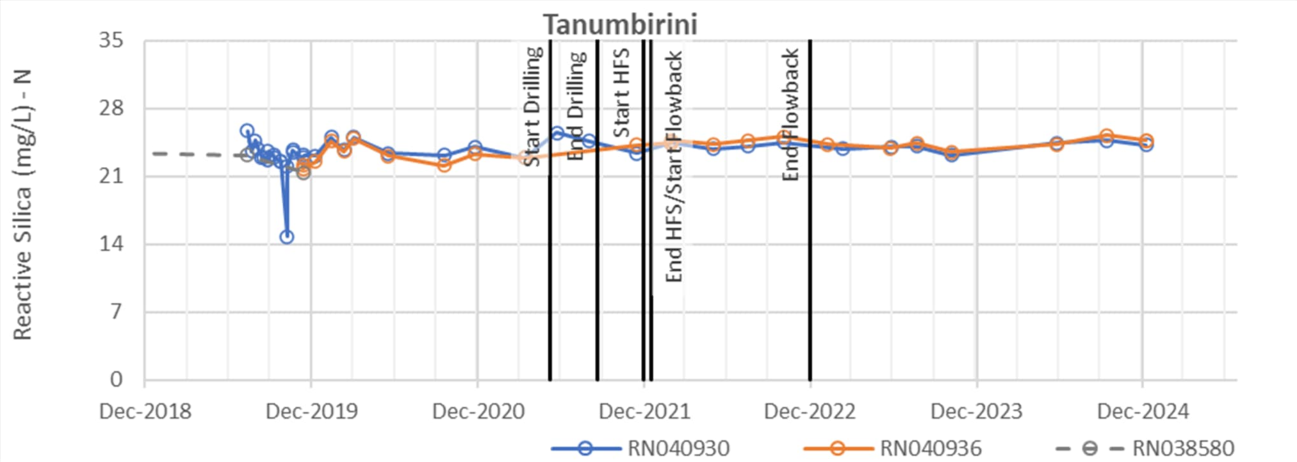
Tanumbirini
Reactive Silica (mg/L) - N
35
28
21
14
7
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
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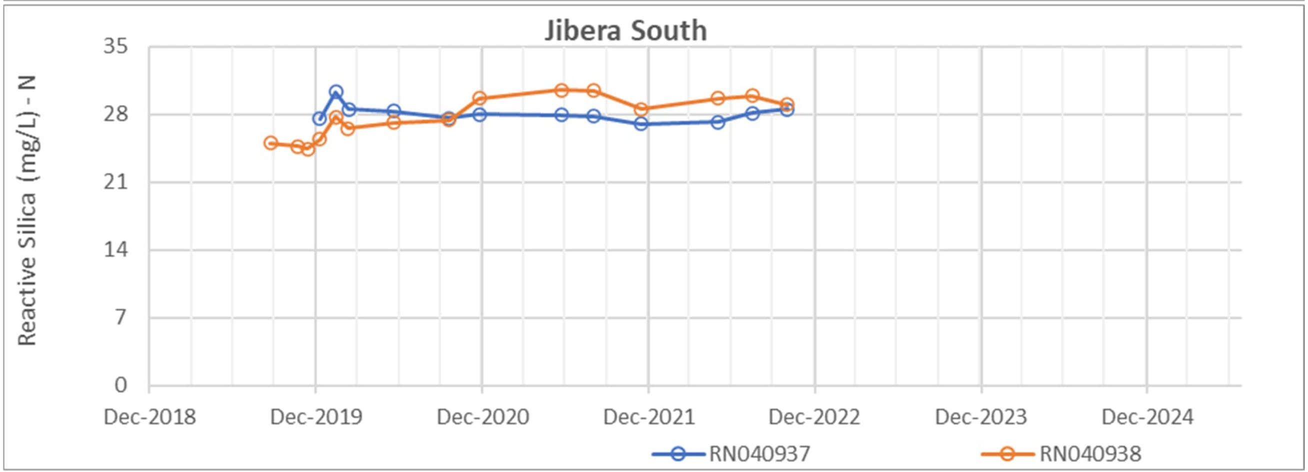
Jibera South
Reactive Silica (mg/L) - N
35
28
21
14
7
0
Dec-2018
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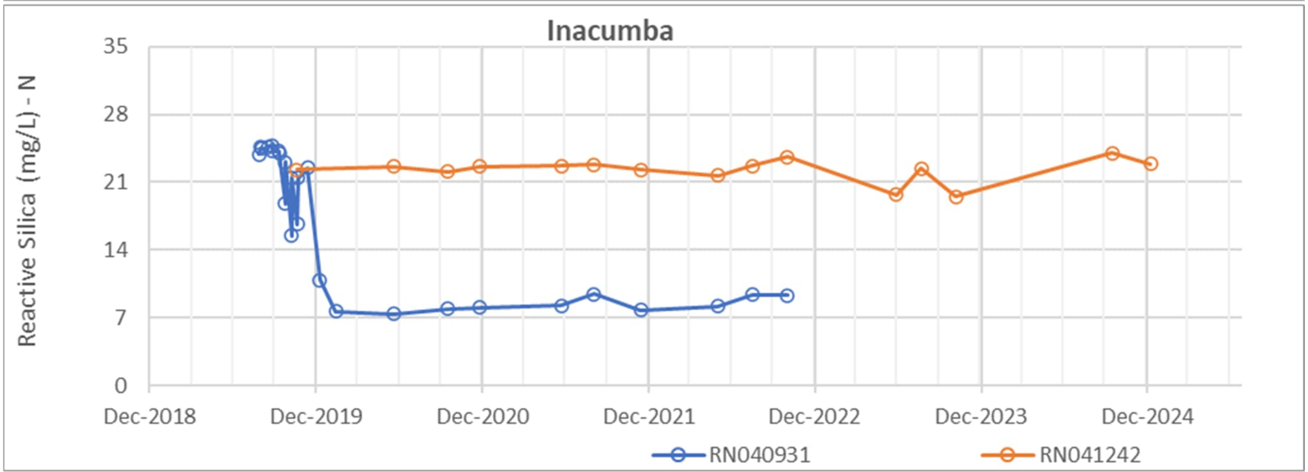
Inacumba
Reactive Silica (mg/L) - N
35
28
21
14
7
0
Dec-2018
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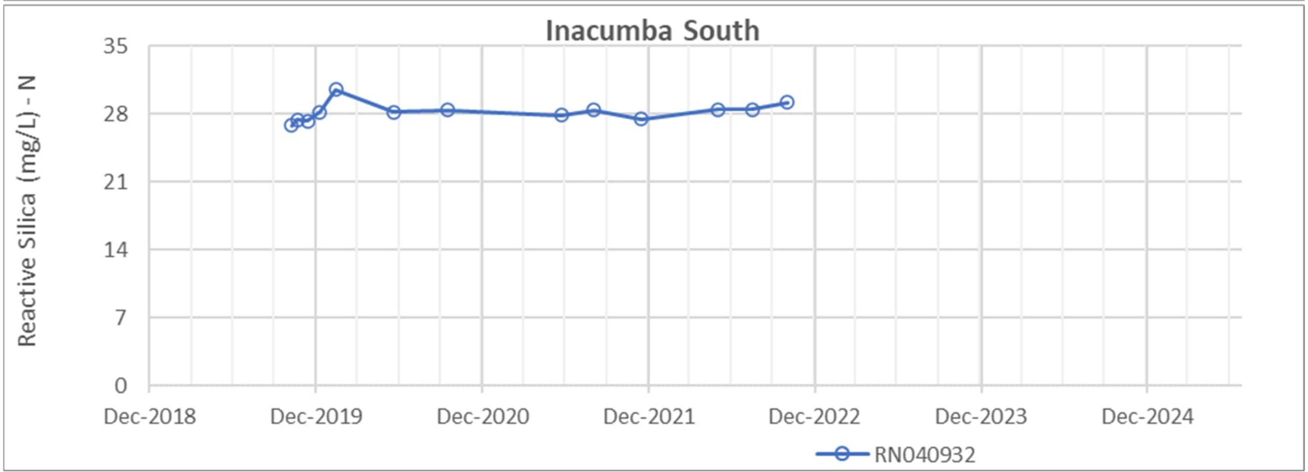
Inacumba South
Reactive Silica (mg/L) - N
35
28
21
14
7
0
Dec-2018
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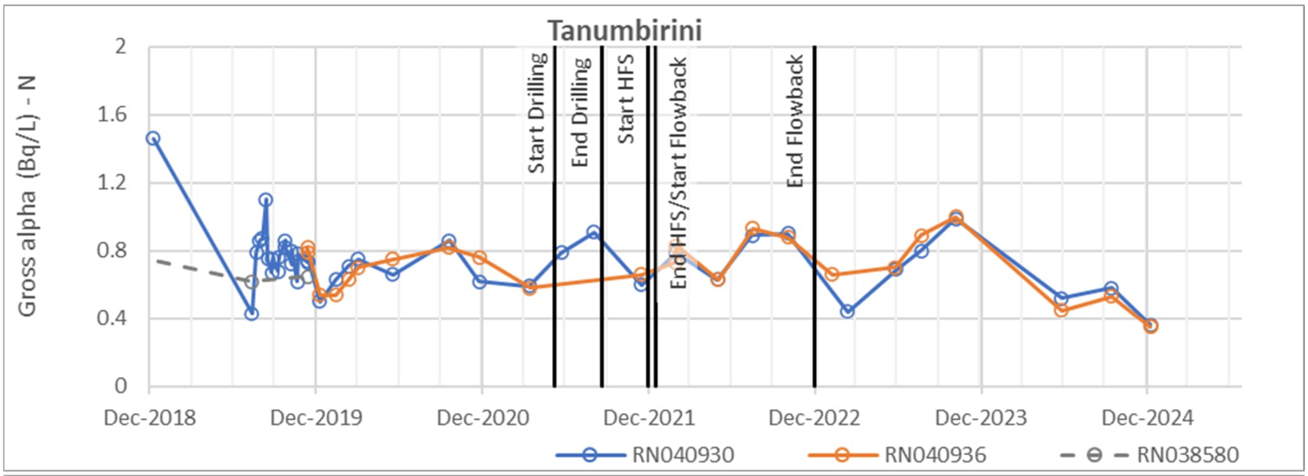
Tanumbirini
Gross alpha (Bq/L) - N
2
1.6
1.2
0.8
0.4
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
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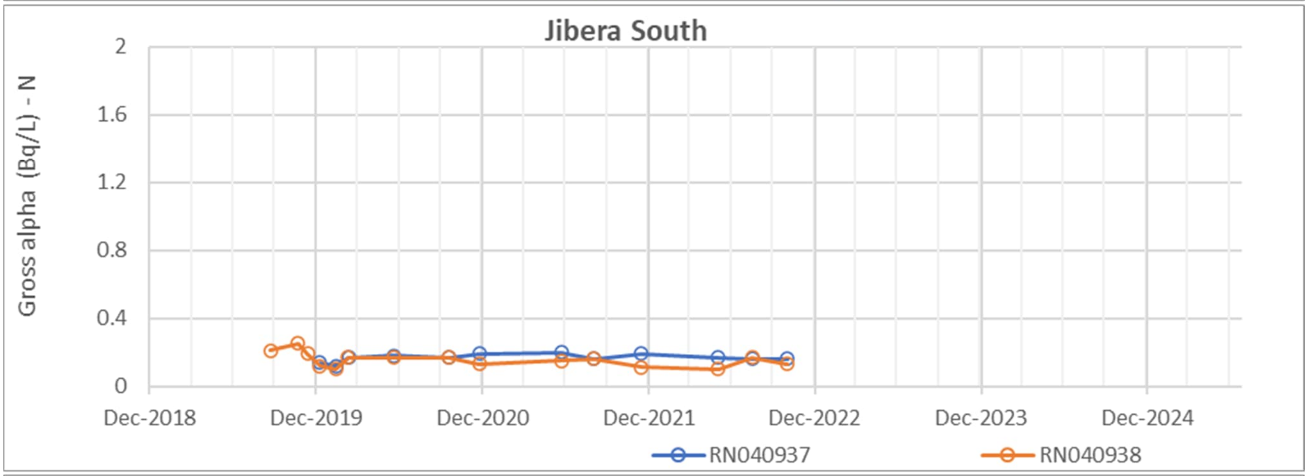
Jibera South
Gross alpha (Bq/L) - N
2
1.6
1.2
0.8
0.4
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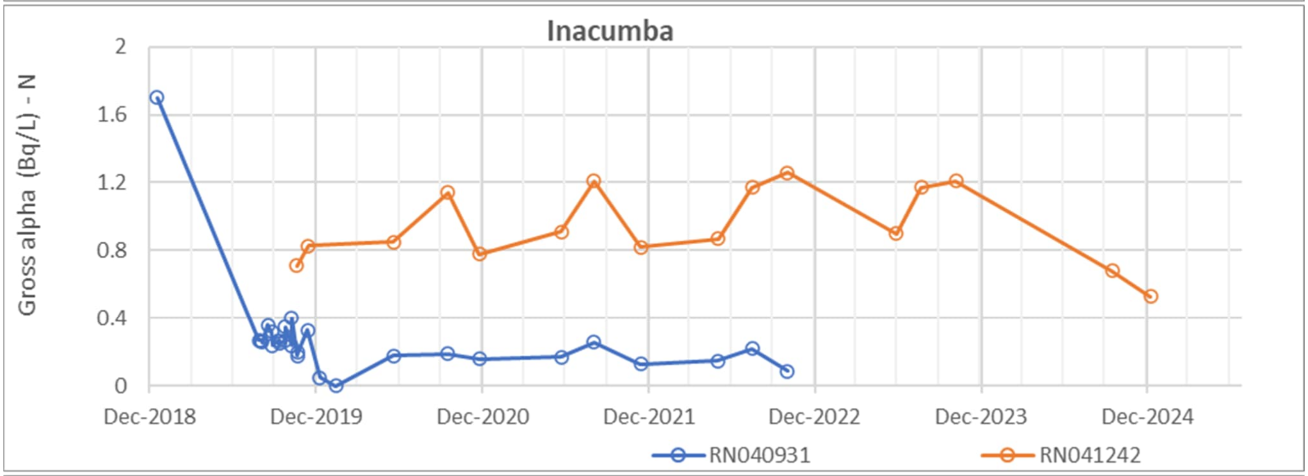
Inacumba
Gross alpha (Bq/L) - N
2
1.6
1.2
0.8
0.4
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Dec-2023
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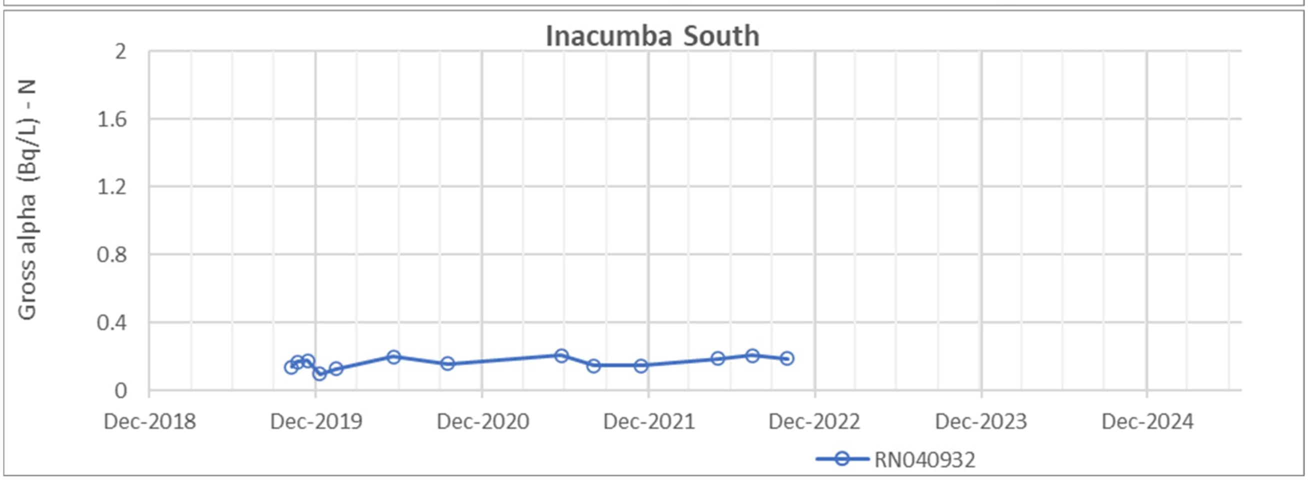
Inacumba South
Gross alpha (Bq/L) - N
2
1.6
1.2
0.8
0.4
0
Dec-2018
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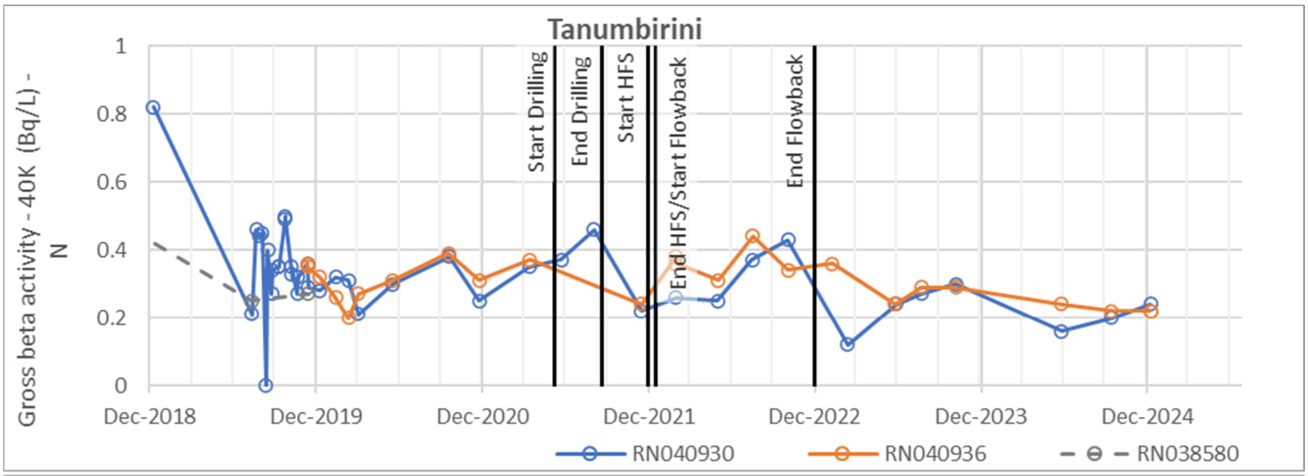
Tanumbirini
Gross beta activity - 40K (Bq/L) - N
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
1
0.8
0.6
0.4
0.2
0
Dec-2018
Dec-2019
Dec-2020
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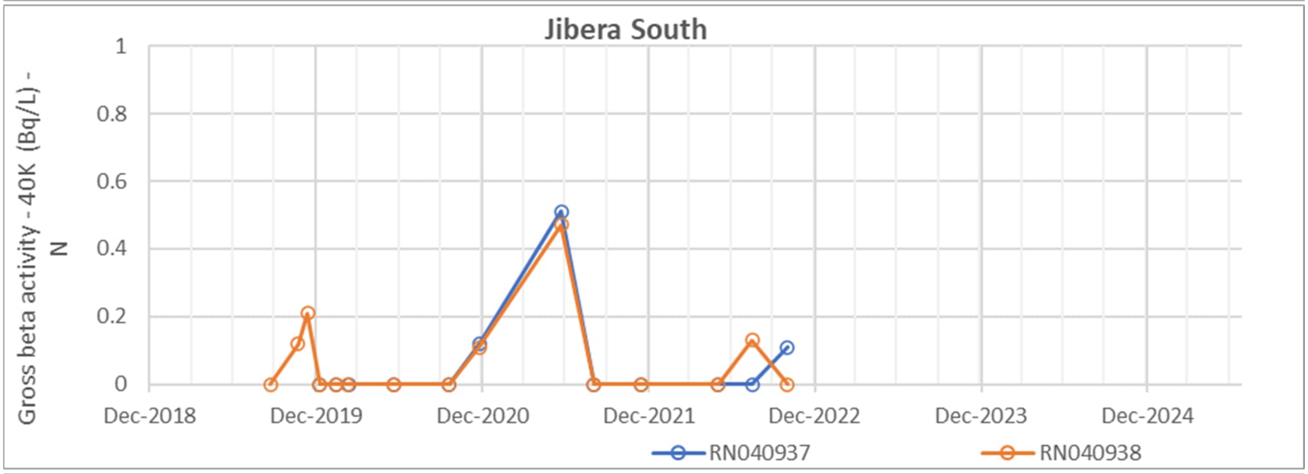
Jibera South
Gross beta activity - 40K (Bq/L) - N
1
0.8
0.6
0.4
0.2
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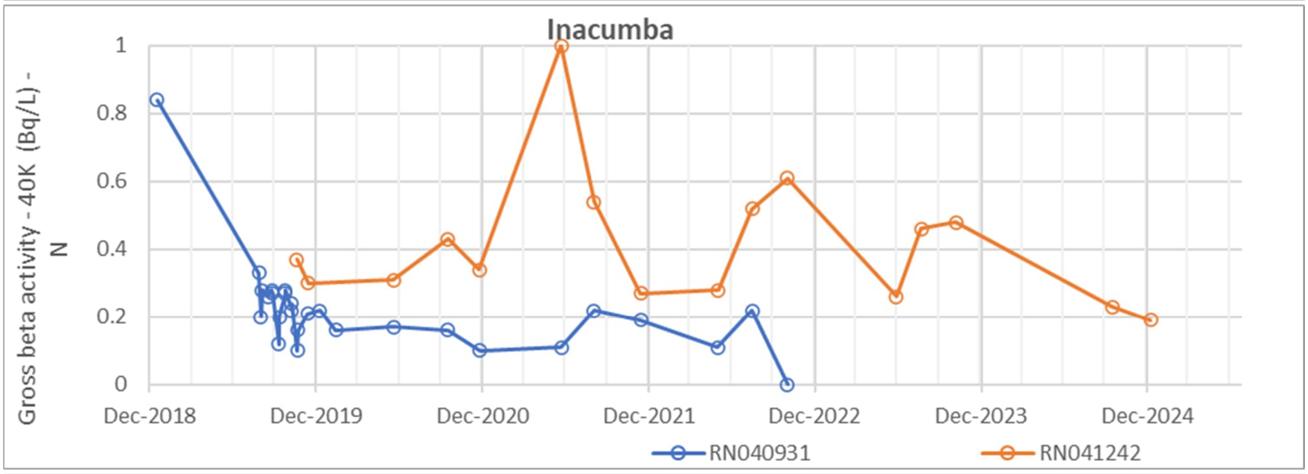
Inacumba
Gross beta activity - 40K (Bq/L) - N
1
0.8
0.6
0.4
0.2
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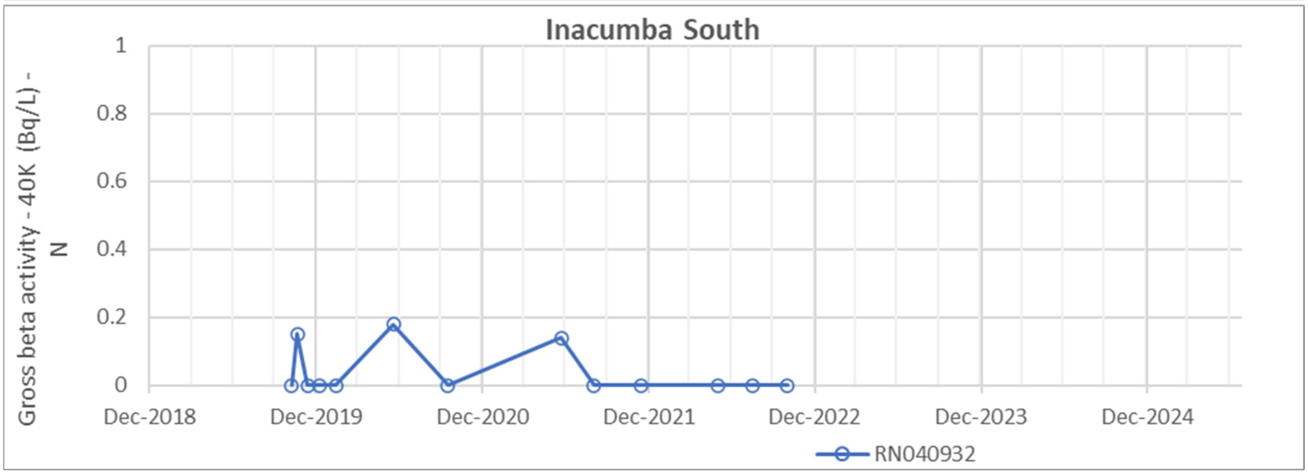
Inacumba South
Gross beta activity - 40K (Bq/L) - N
1
0.8
0.6
0.4
0.2
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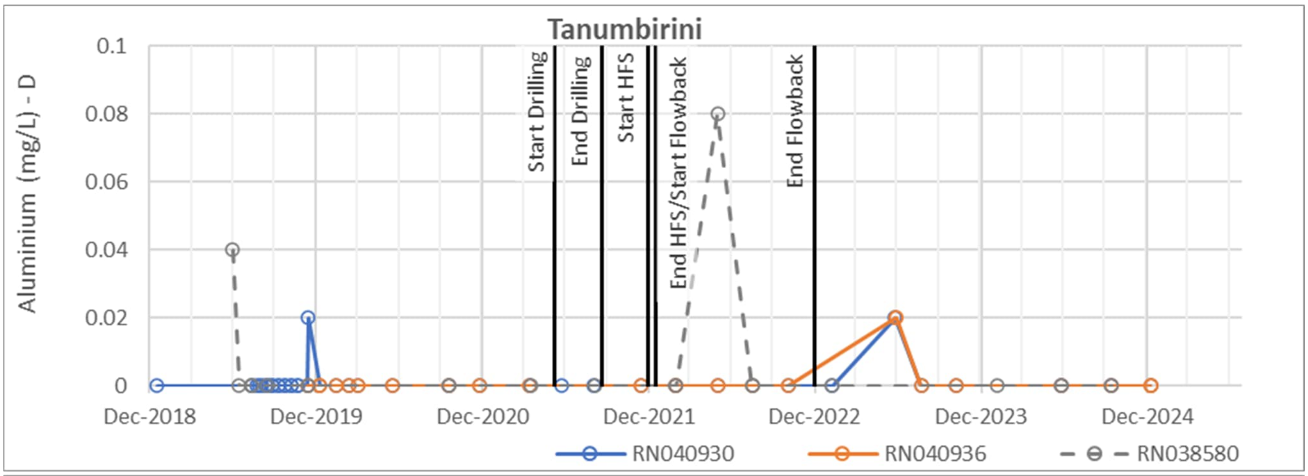
Tanumbirini
Aluminium (mg/L) - D
0.1
0.08
0.06
0.04
0.02
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
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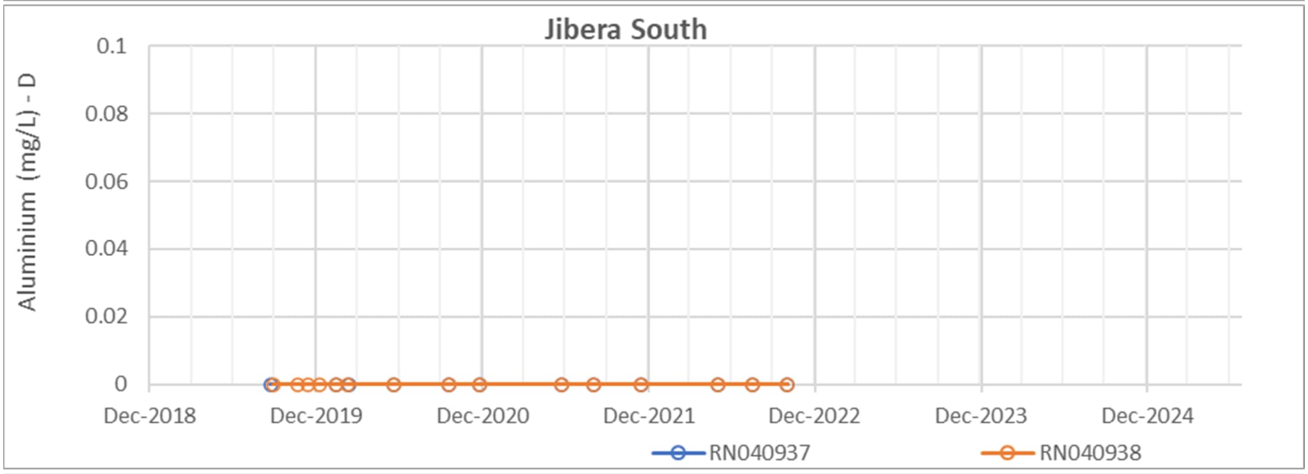
Jibera South
Aluminium (mg/L) - D
0.1
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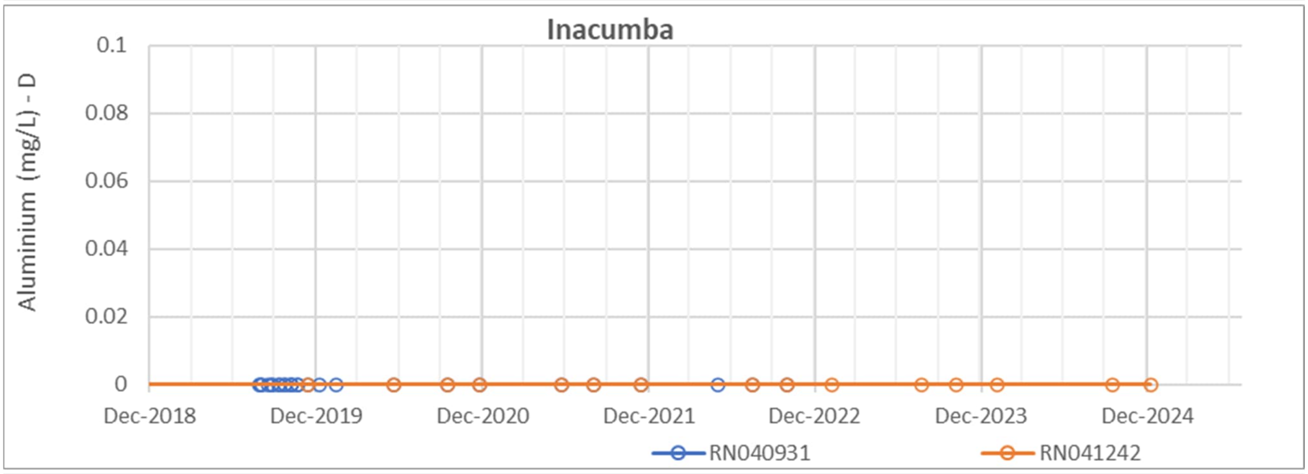
Inacumba
Aluminium (mg/L) - D
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0.08
0.06
0.04
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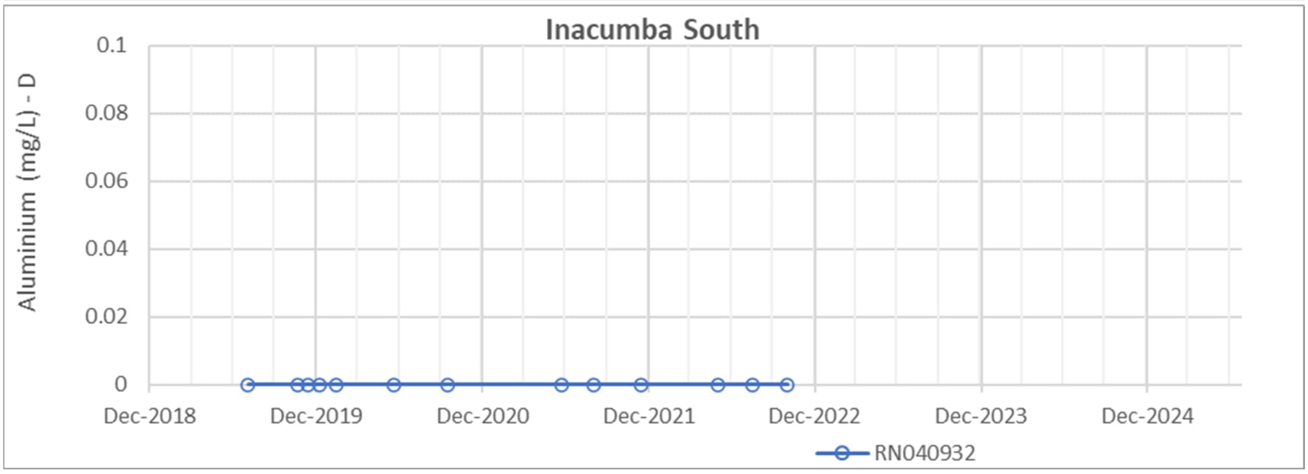
Inacumba South
Aluminium (mg/L) - D
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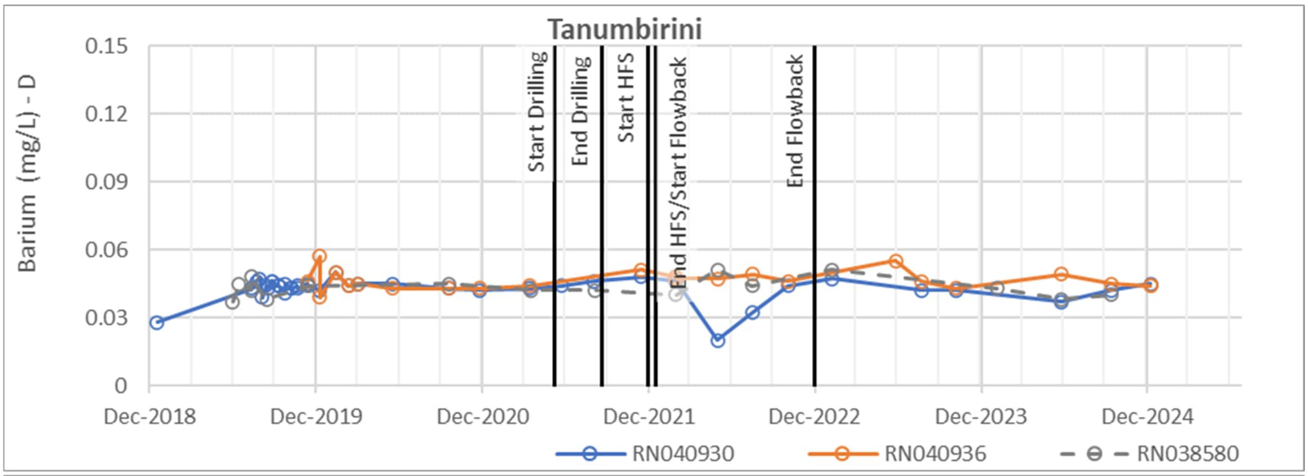
Tanumbirini
Barium (mg/L) - D
0.15
0.12
0.09
0.06
0.03
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
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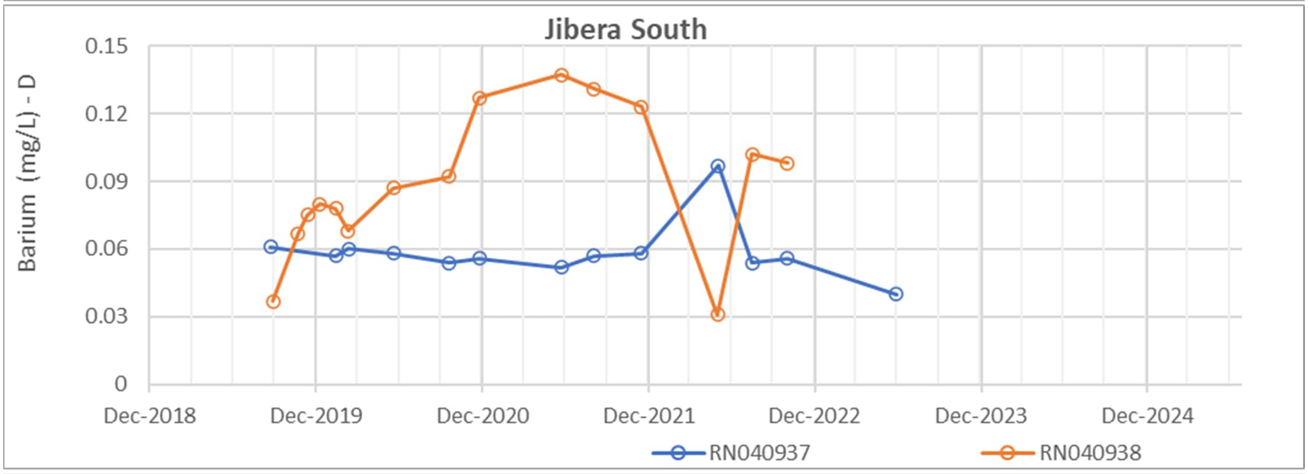
Jibera South
Barium (mg/L) - D
0.15
0.12
0.09
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0.03
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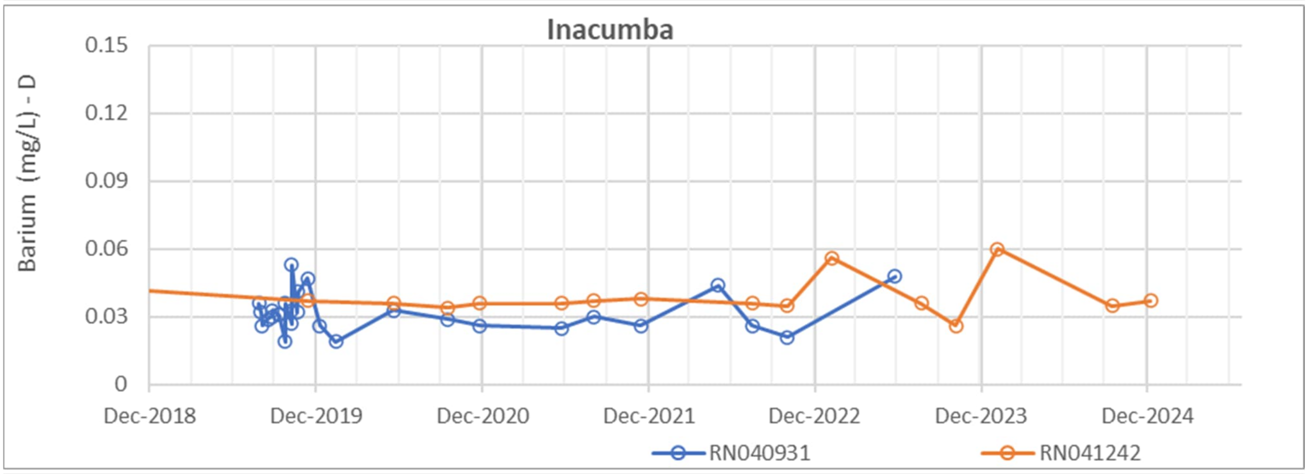
Inacumba
Barium (mg/L) - D
0.15
0.12
0.09
0.06
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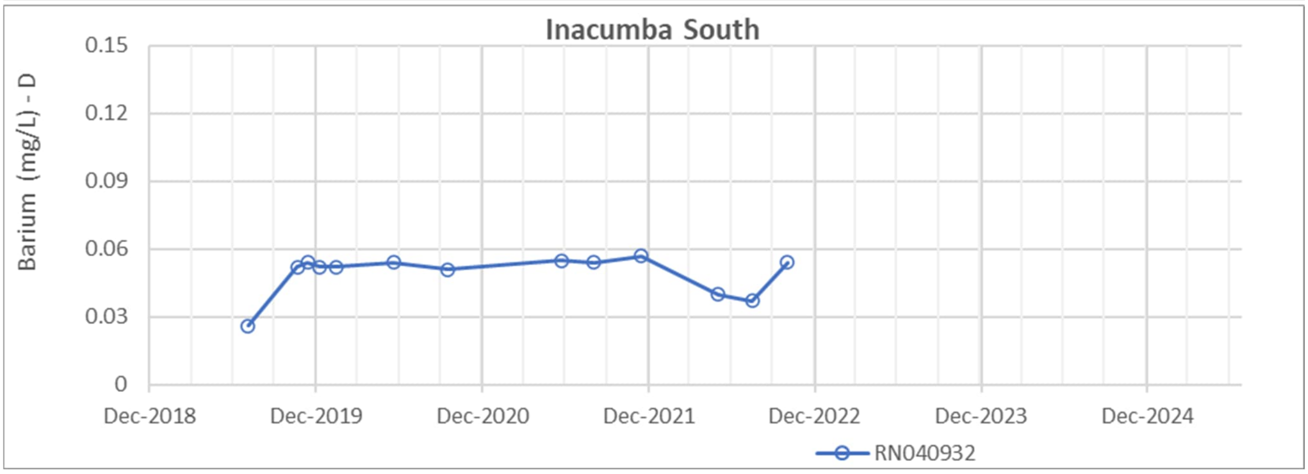
Inacumba South
Barium (mg/L) - D
0.15
0.12
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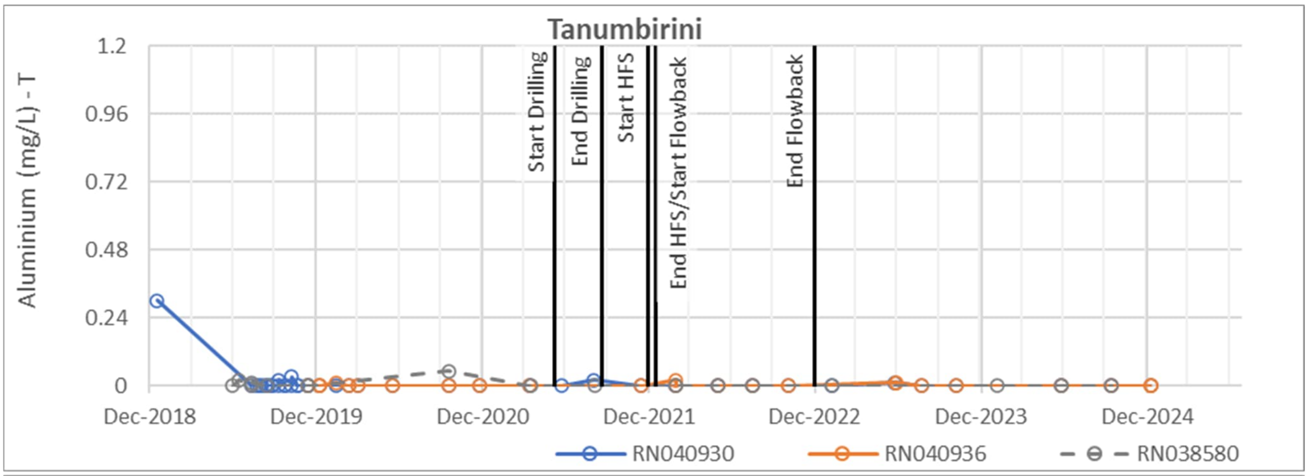
Tanumbirini
Aluminium (mg/L) - T
1.2
0.96
0.72
0.48
0.24
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
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End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
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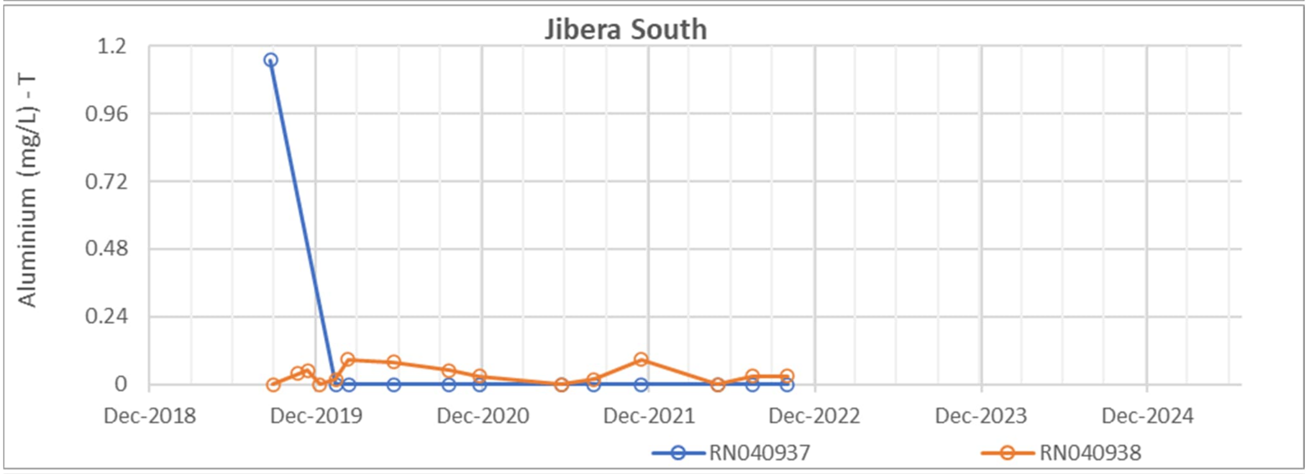
Jibera South
Aluminium (mg/L) - T
1.2
0.96
0.72
0.48
0.24
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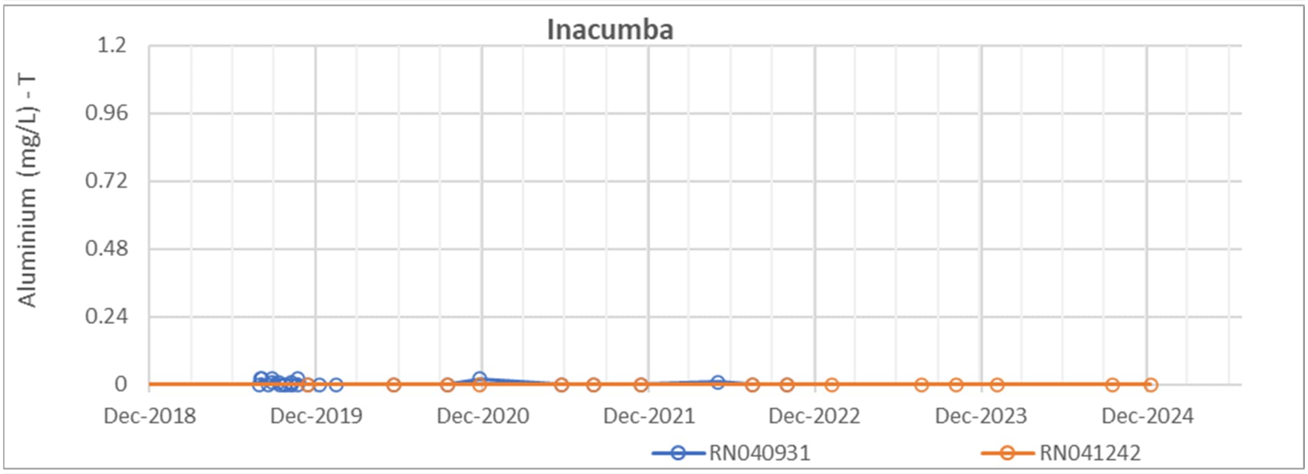
Inacumba
Aluminium (mg/L) - T
1.2
0.96
0.72
0.48
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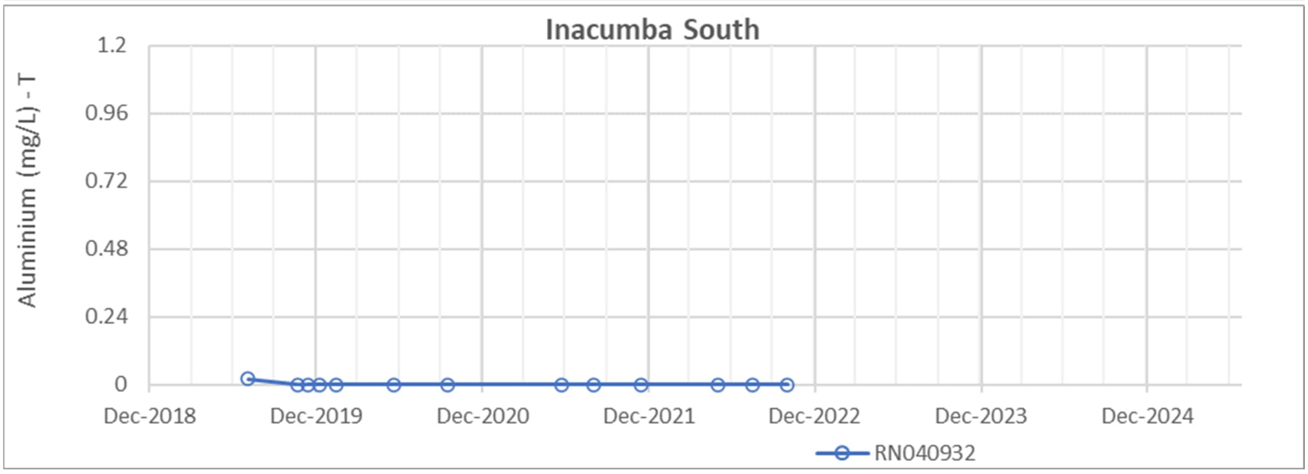
Inacumba South
Aluminium (mg/L) - T
1.2
0.96
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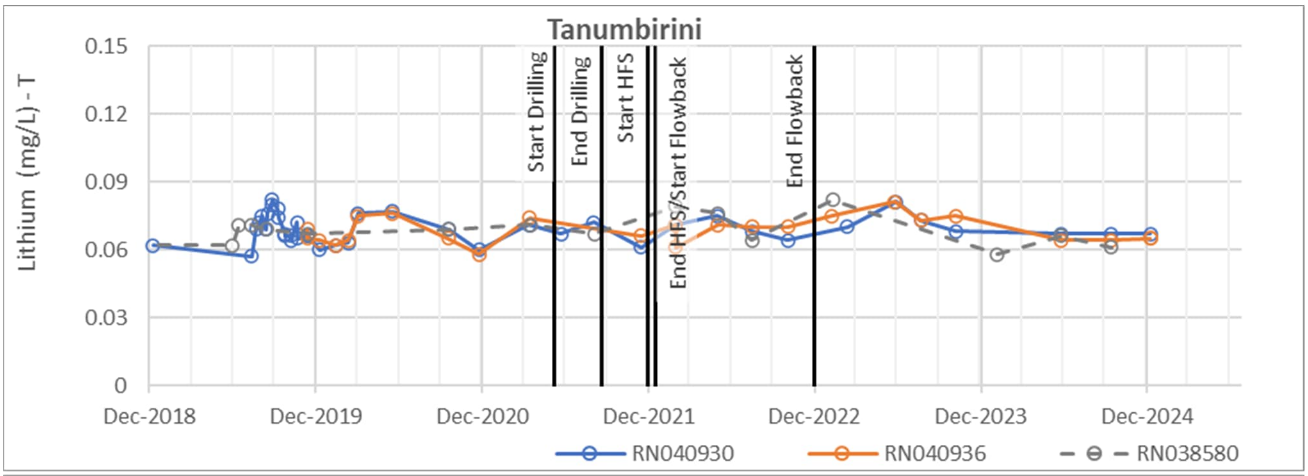
Tanumbirini
Lithium (mg/L) - T
0.15
0.12
0.09
0.06
0.03
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
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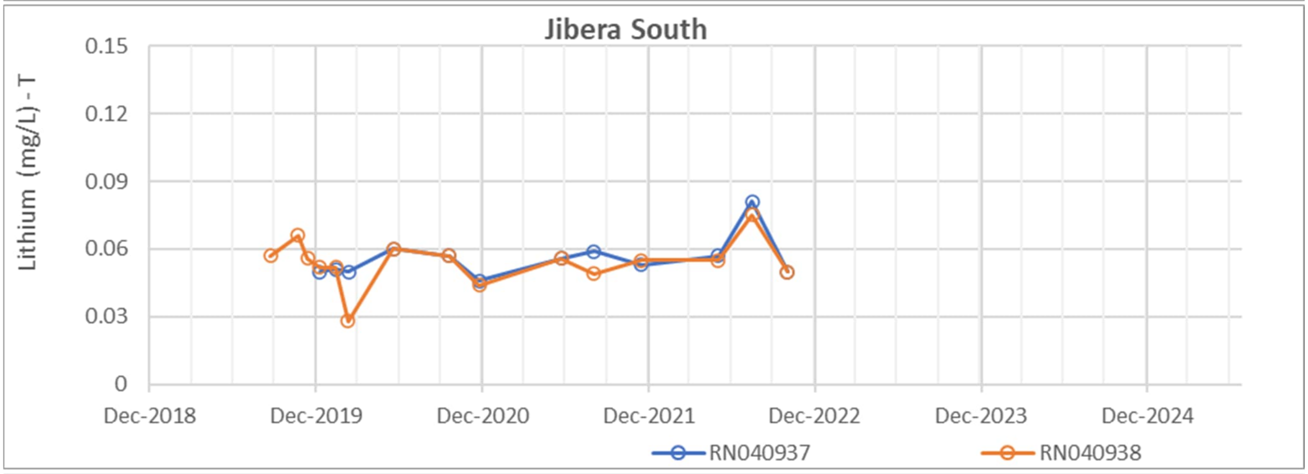
Jibera South
Lithium (mg/L) - T
0.15
0.12
0.09
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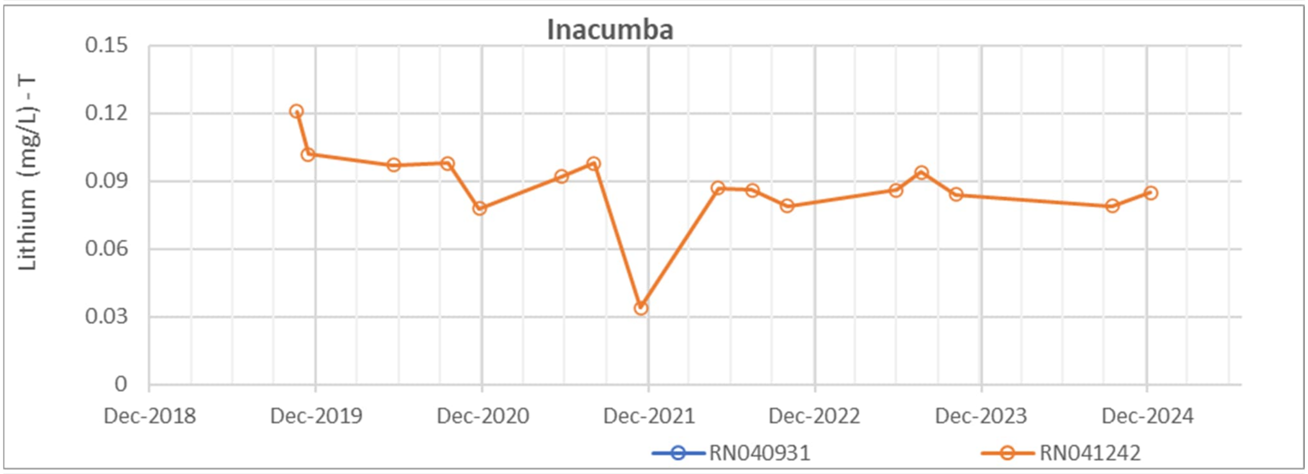
Inacumba
Lithium (mg/L) - T
0.15
0.12
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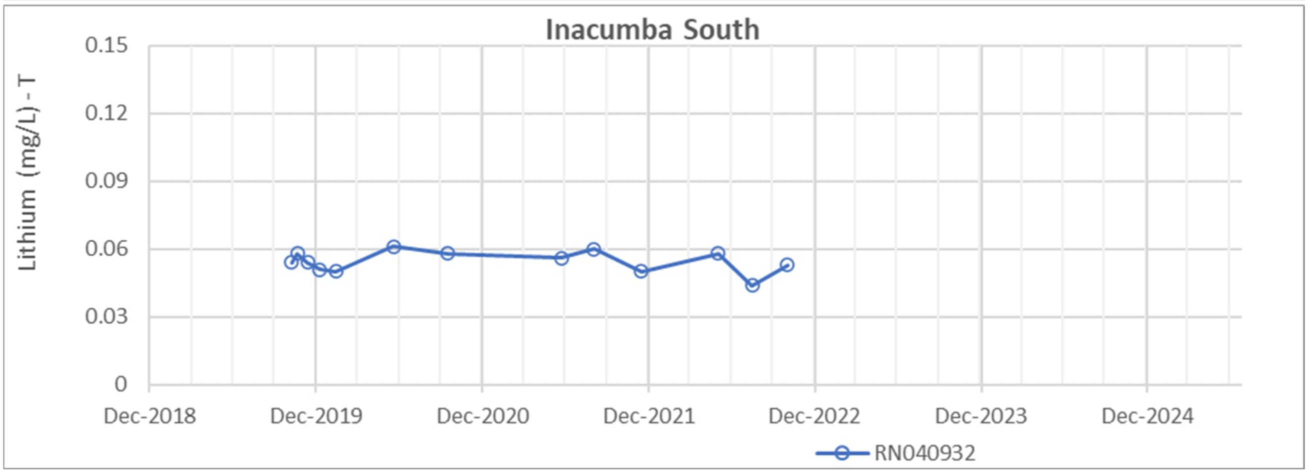
Inacumba South
Lithium (mg/L) - T
0.15
0.12
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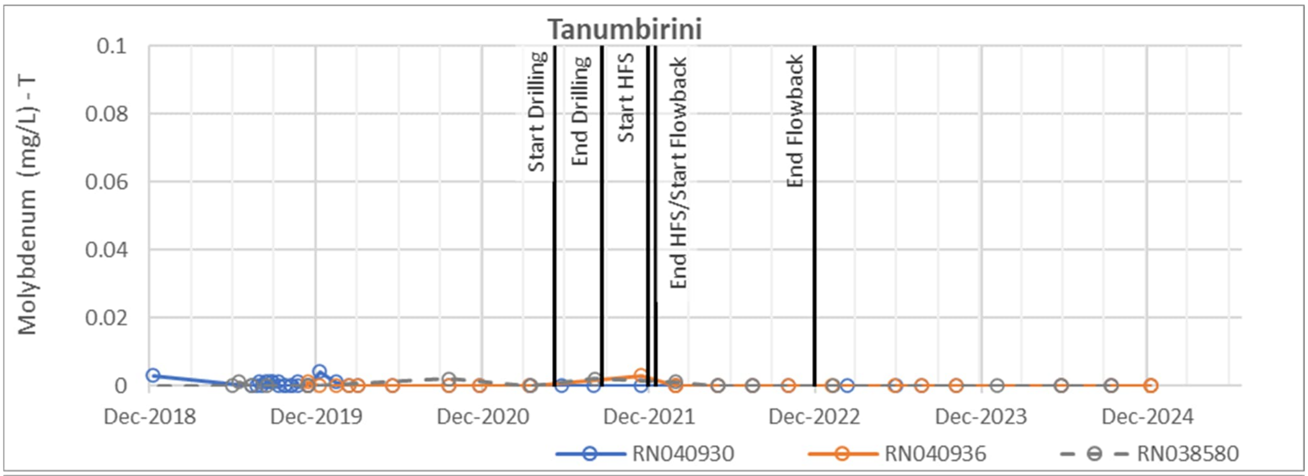
Tanumbirini
Molybdenum (mg/L) - T
0.1
0.08
0.06
0.04
0.02
0
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
Dec-2018
Dec-2019
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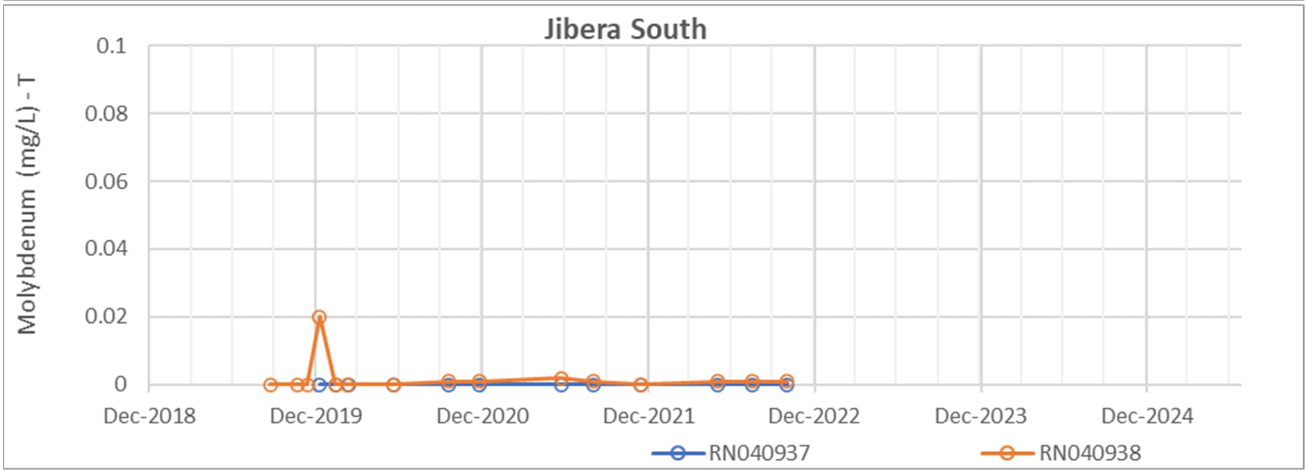
Jibera South
Molybdenum (mg/L) - T
0.1
0.08
0.06
0.04
0.02
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Dec-2018
Dec-2019
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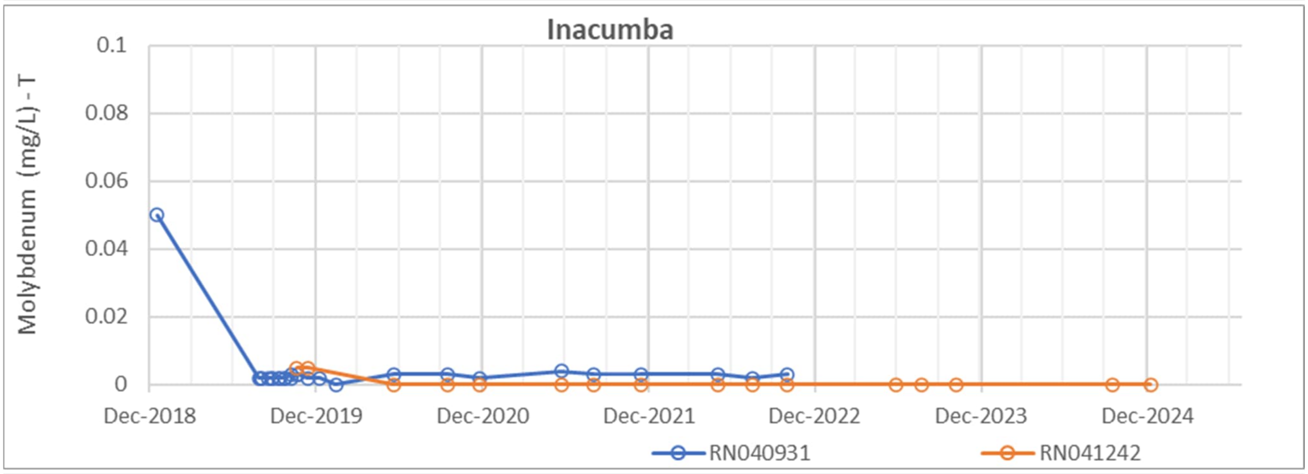
Inacumba
Molybdenum (mg/L) - T
0.1
0.08
0.06
0.04
0.02
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Dec-2018
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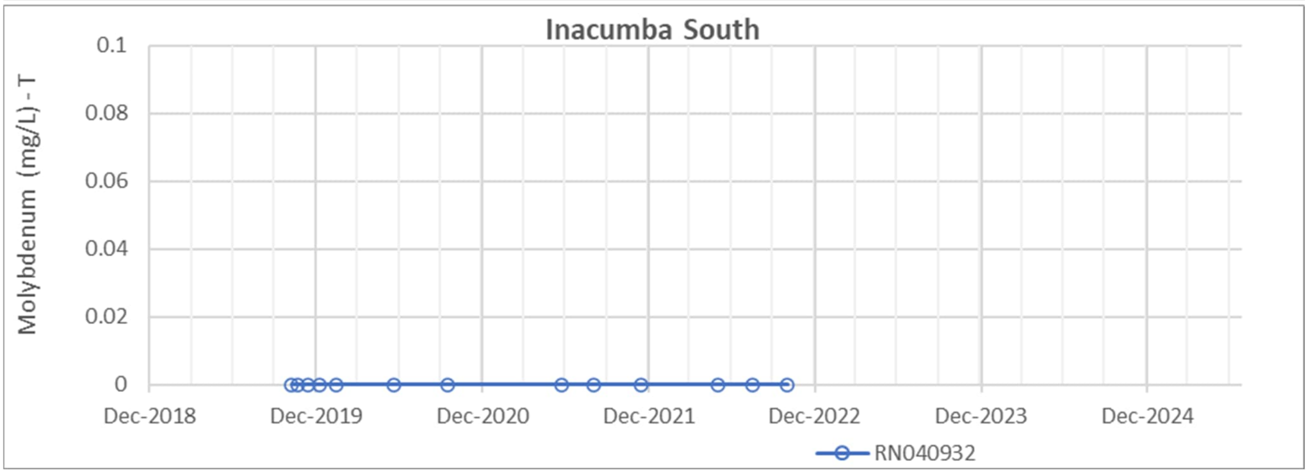
Inacumba South
Molybdenum (mg/L) - T
0.1
0.08
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Dec-2018
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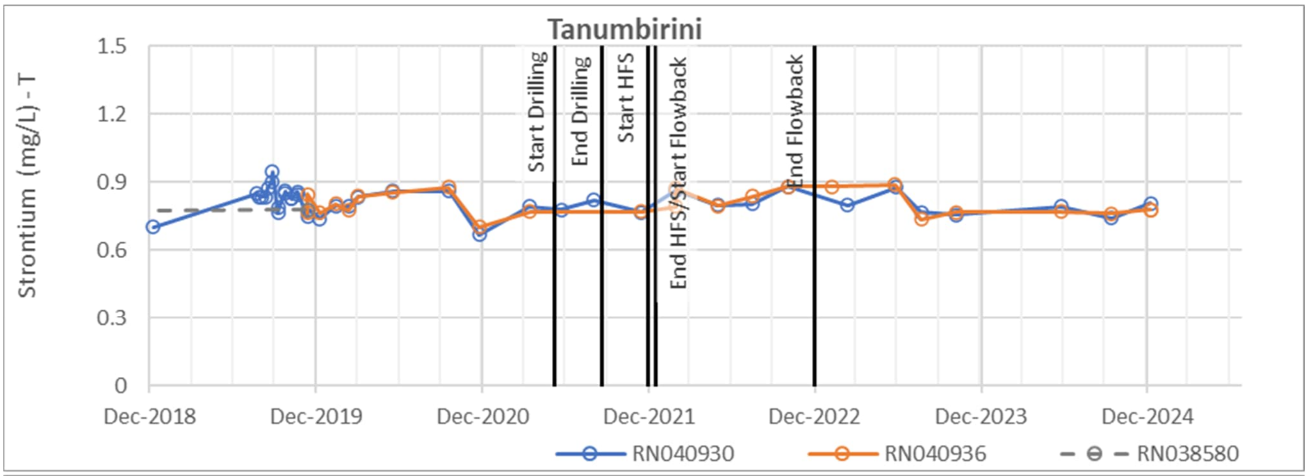
Tanumbirini
Strontium (mg/L) - T
Start Drilling
End Drilling
Start HFS
End HFS/Start Flowback
End Flowback
1.5
1.2
0.9
0.6
0.3
0
Dec-2018
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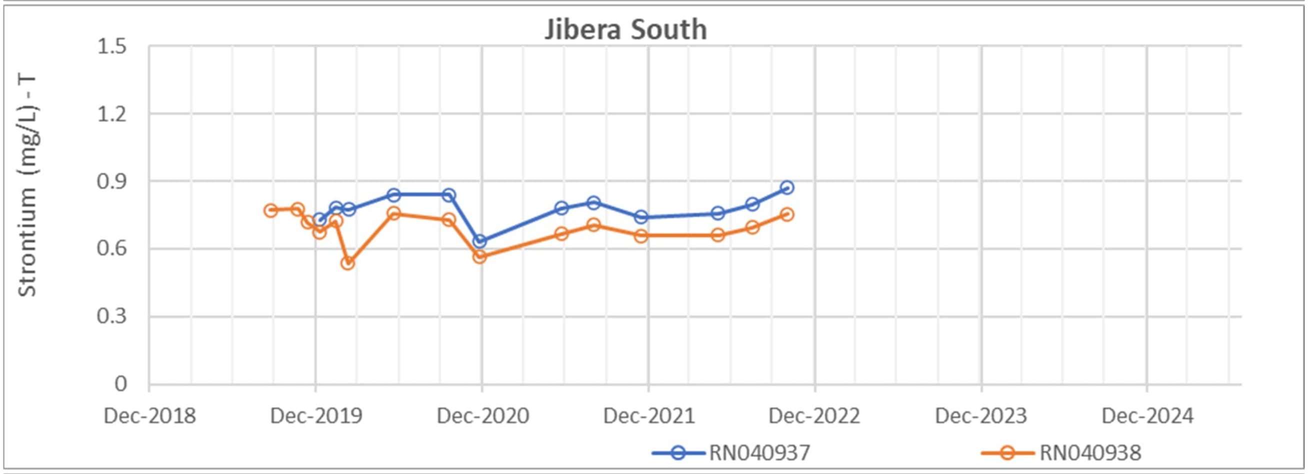
Jibera South
Strontium (mg/L) - T
1.5
1.2
0.9
0.6
0.3
0
Dec-2018
Dec-2019
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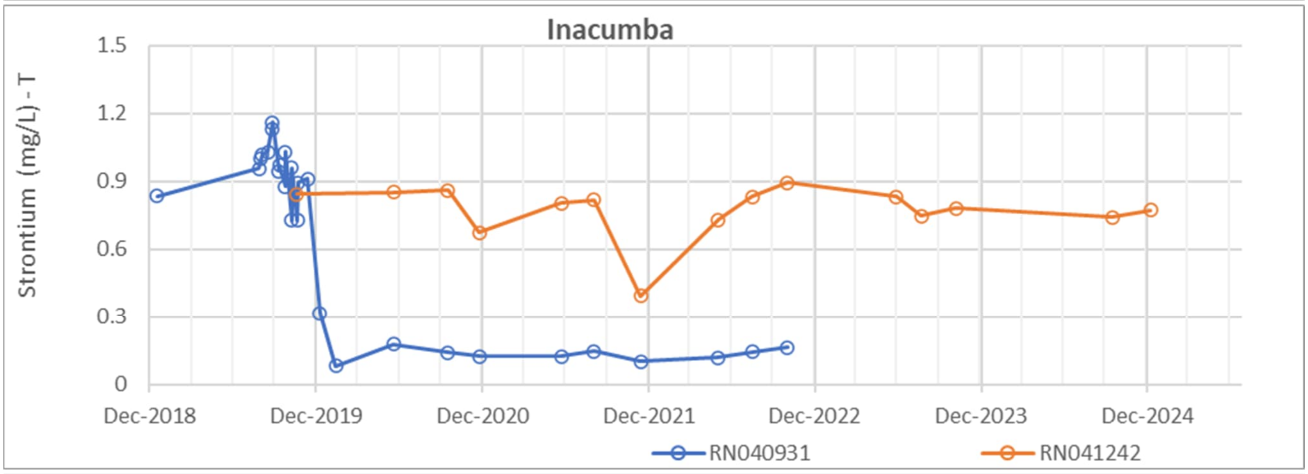
Inacumba
Strontium (mg/L) - T
1.5
1.2
0.9
0.6
0.3
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
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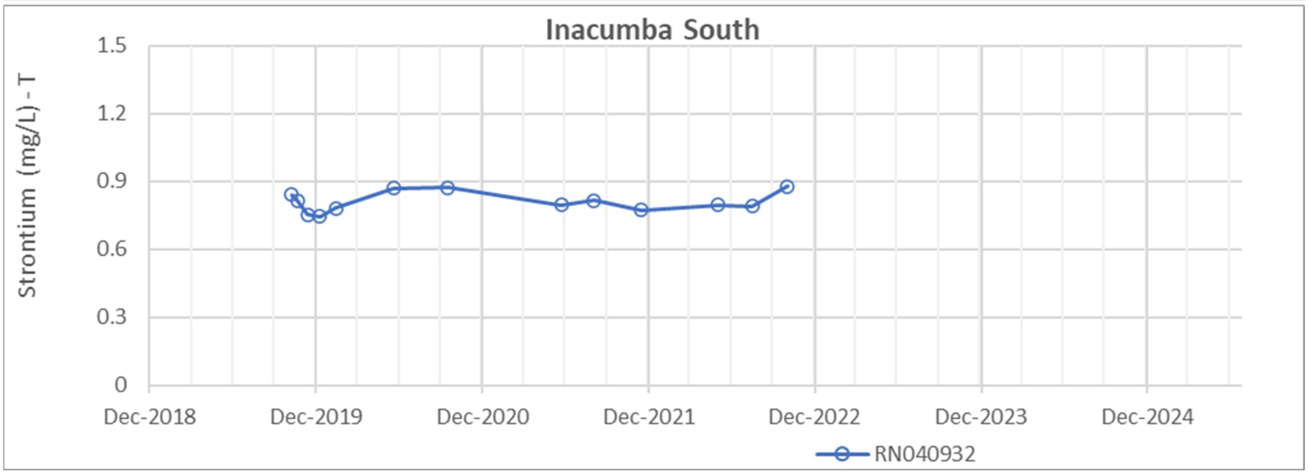
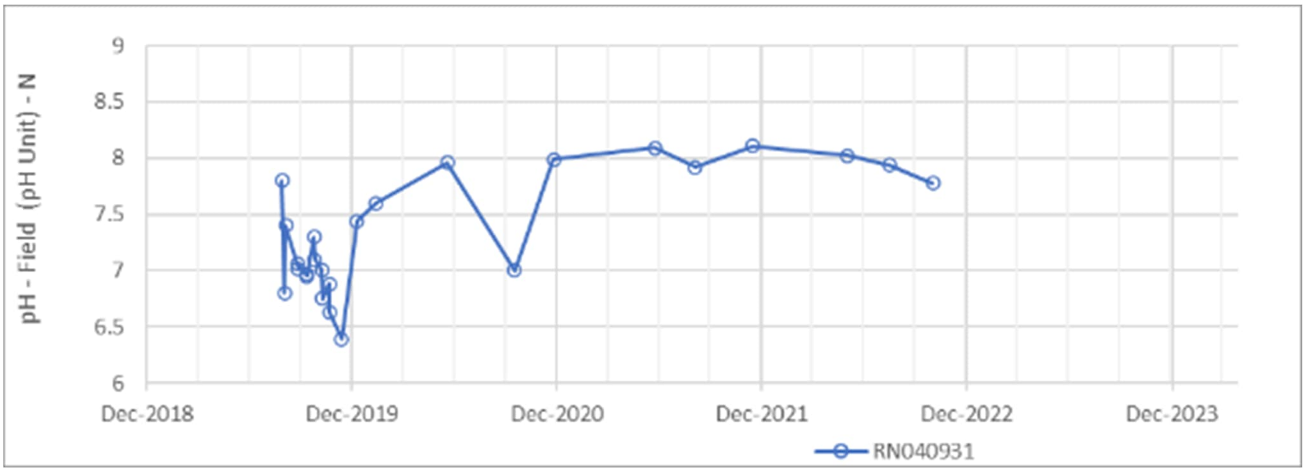
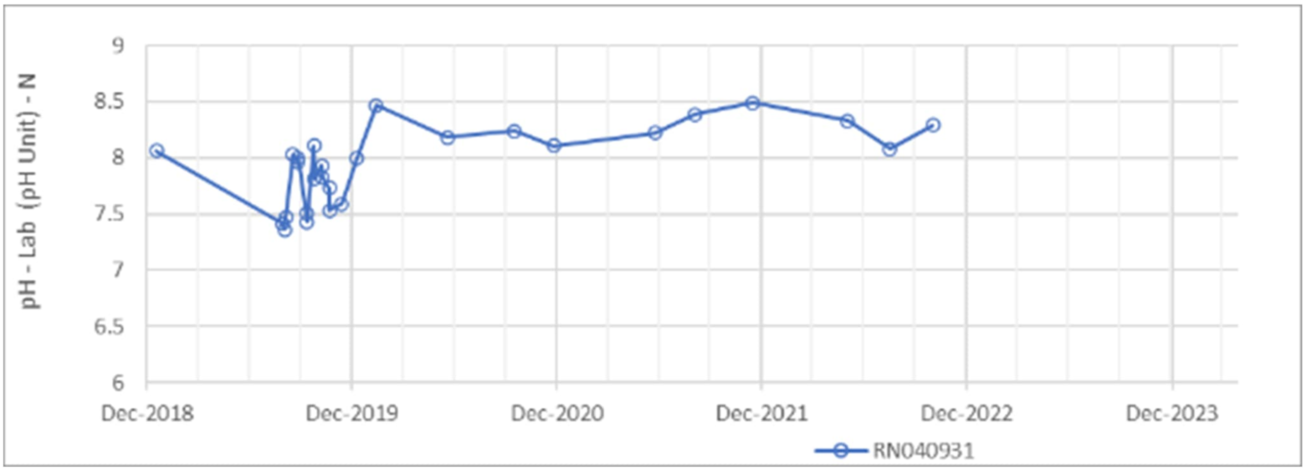
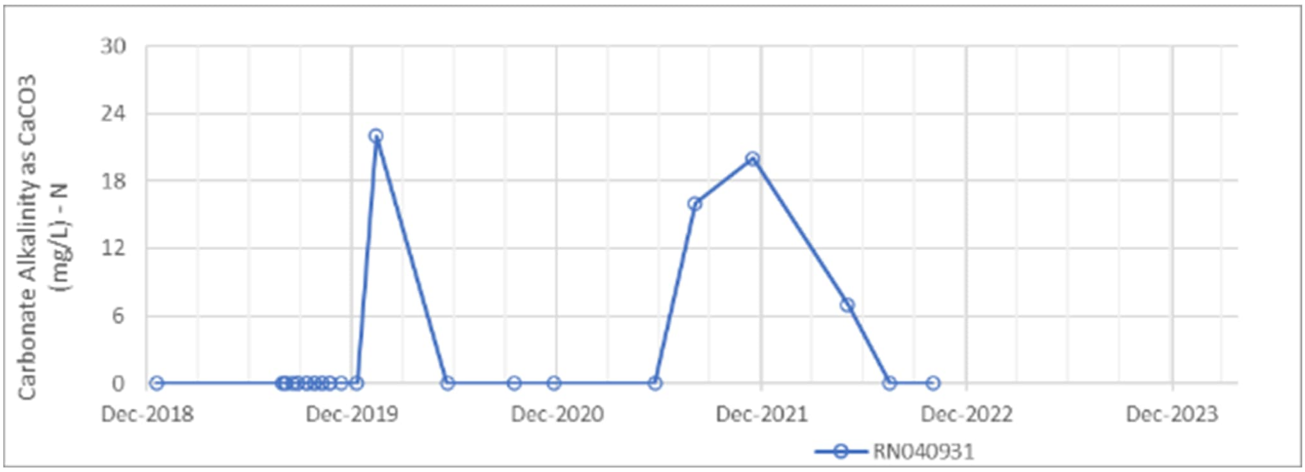
RN040931
RN041242

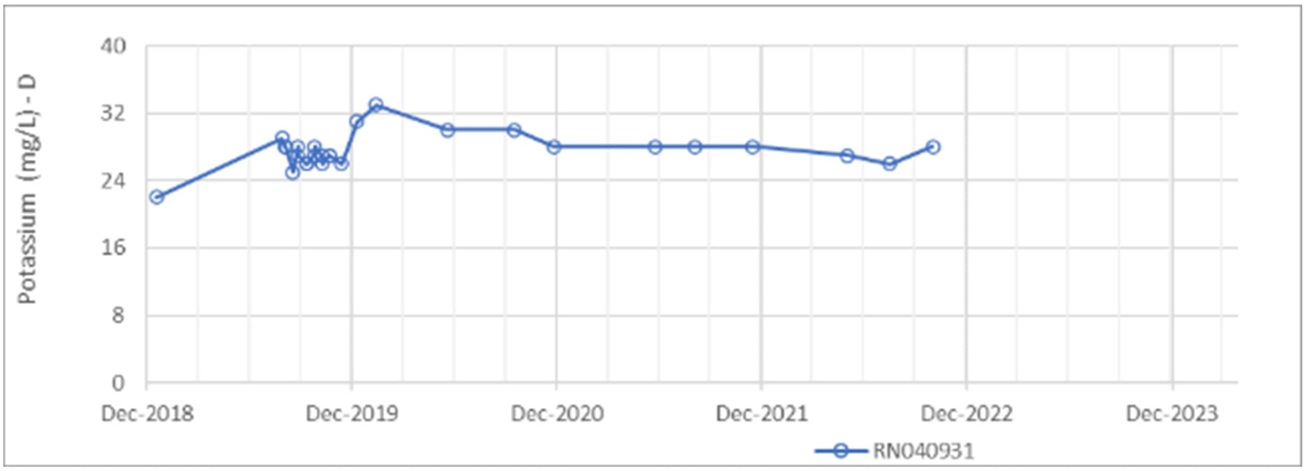

Inacumba South
Strontium (mg/L) - T
1.5
1.2
0.9
0.6
0.3
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN040932

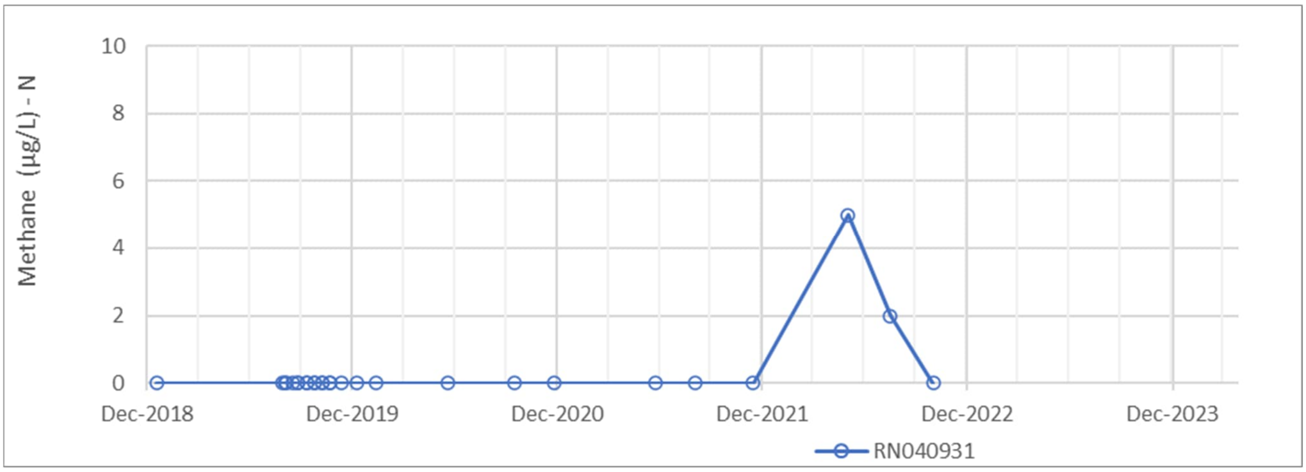
Attachment D – Inacumba Timeseries Charts

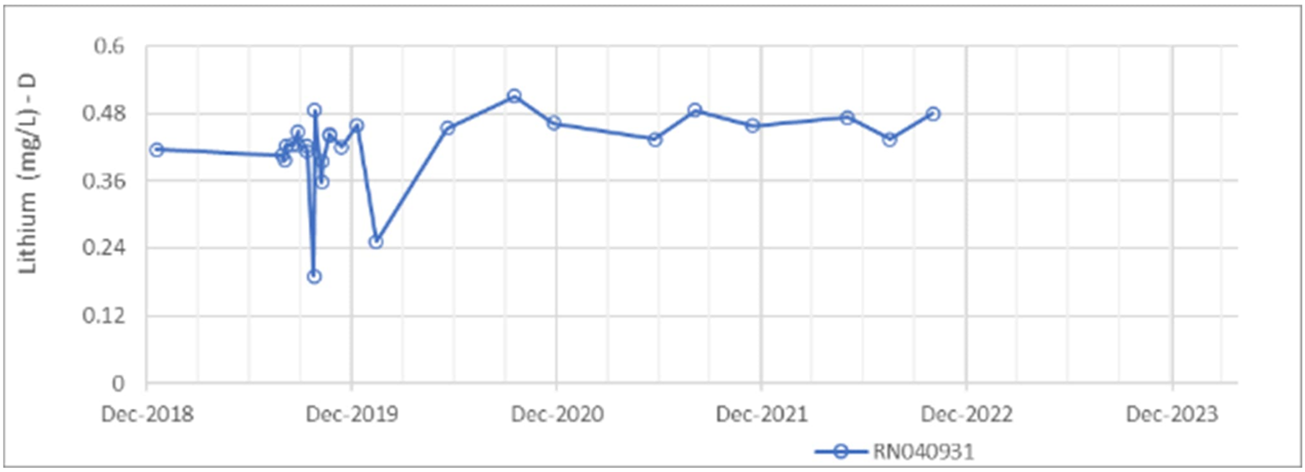

pH - Field (pH Unit) - N
9
8.5
8
7.5
7
6.5
6
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
RN040931

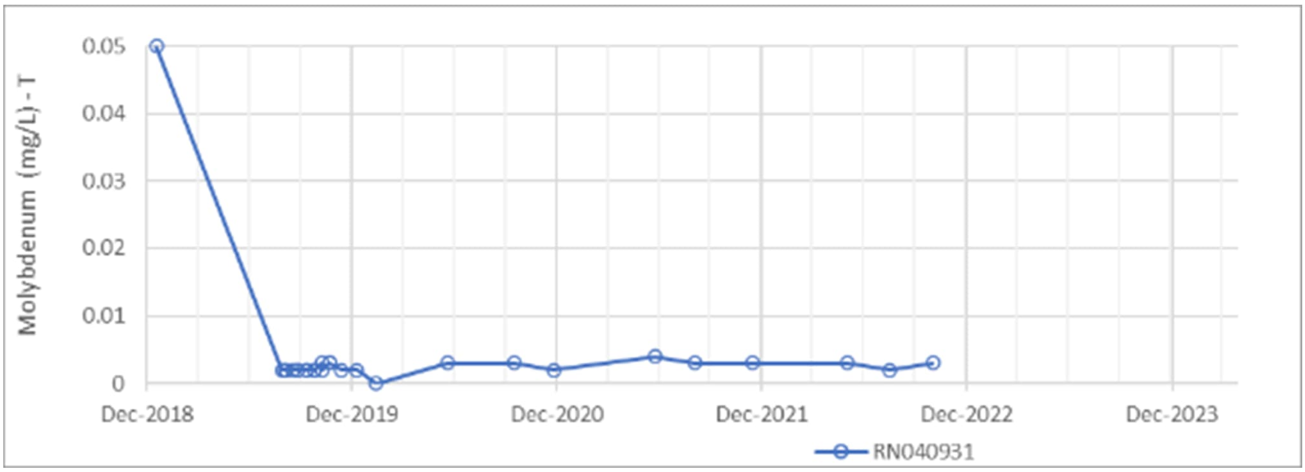

pH - Lab (pH Unit) - N
9
8.5
8
7.5
7
6.5
6
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
RN040931

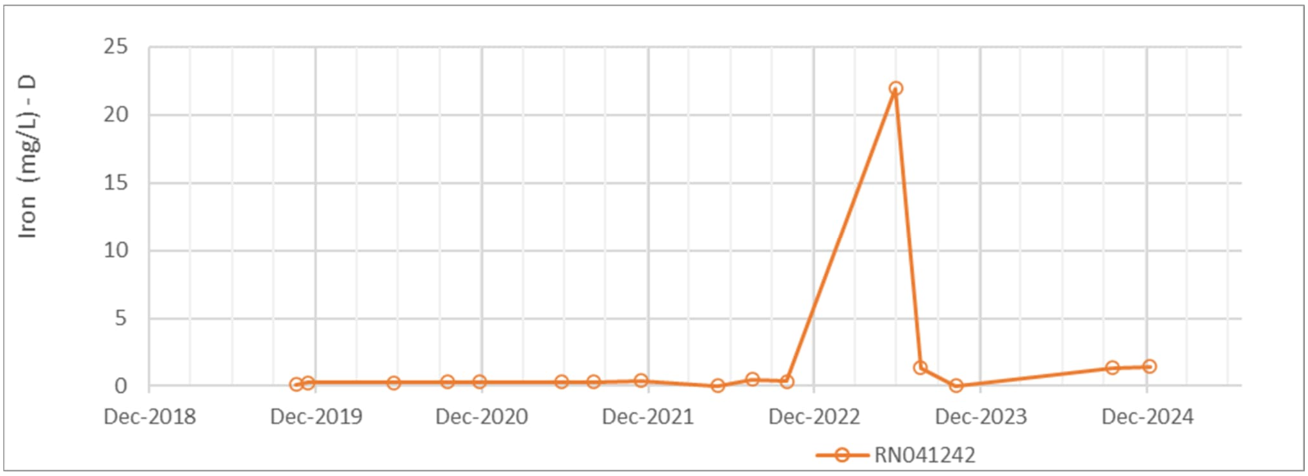

Carbonate Alkalinity as CaCO3 (mg/L) - N
30
24
18
12
6
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
RN040931

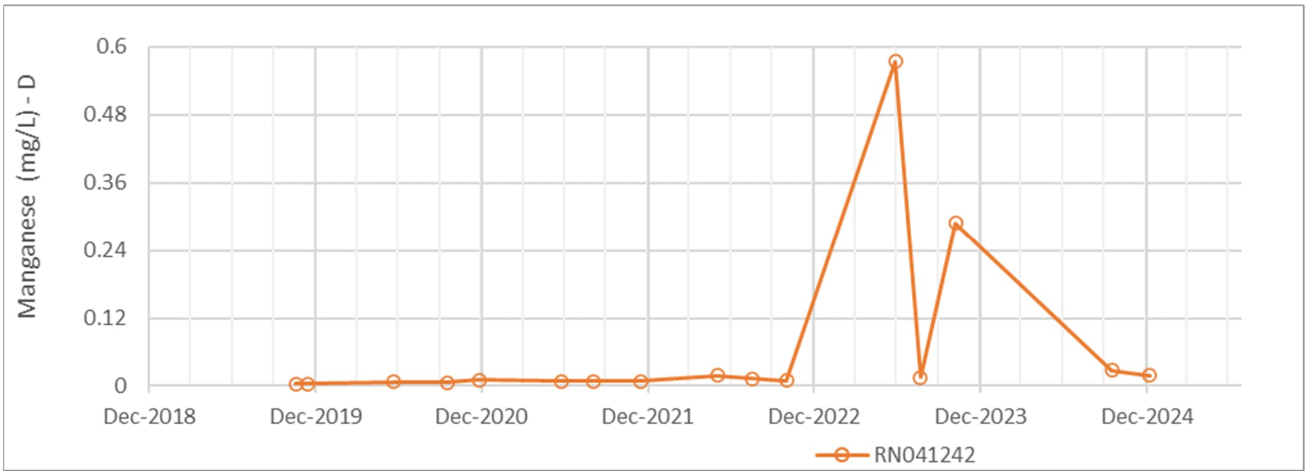

Potassium (mg/L) - D
40
32
24
16
8
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
RN040931

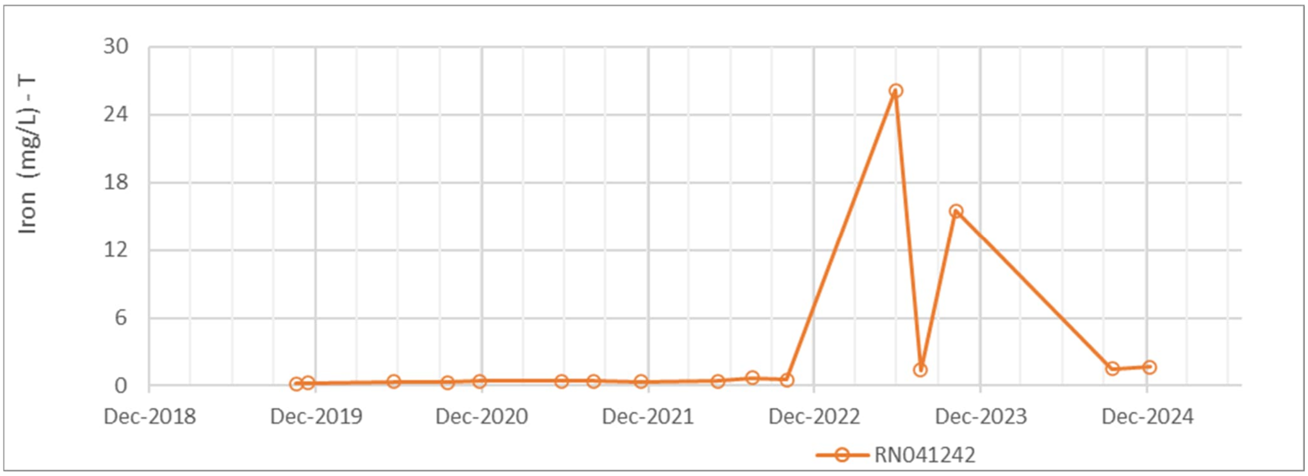

10
8
6
4
2
0
Methane (µg/L) - N
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
RN040931

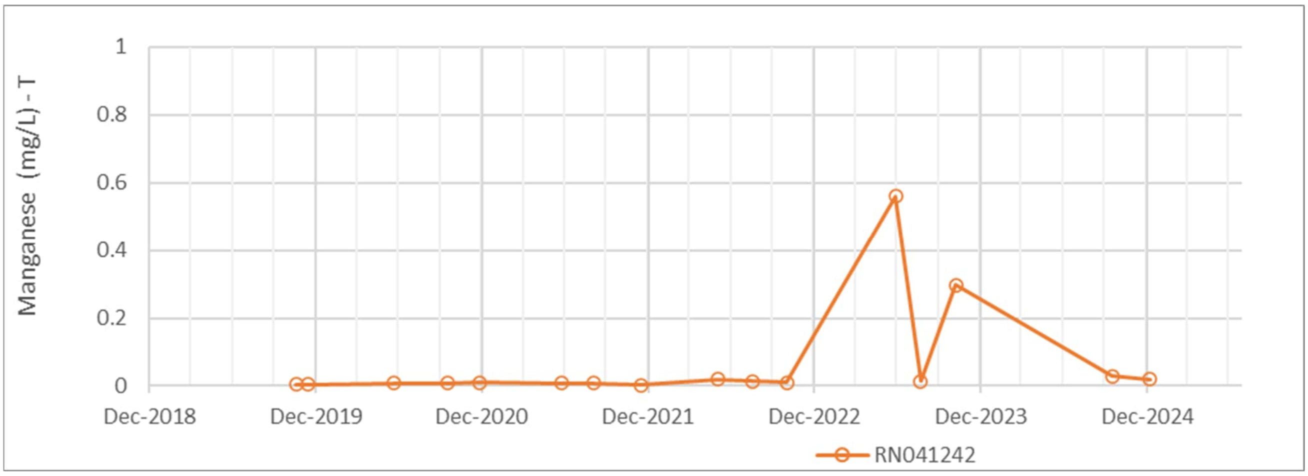

0.6
0.48
0.36
0.24
0.12
0
Lithium (mg/L) - D
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
RN040931


0.05
0.04
0.03
0.02
0.01
0
Molybdenum (mg/L) - T
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
RN040931


Iron (mg/L) - D
25
20
15
10
5
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN041242


Manganese (mg/L) - D
0.6
0.48
0.36
0.24
0.12
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN041242


Iron (mg/L) - T
30
24
18
12
6
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN041242


Manganese (mg/L) - T
1
0.8
0.6
0.4
0.2
0
Dec-2018
Dec-2019
Dec-2020
Dec-2021
Dec-2022
Dec-2023
Dec-2024
RN041242