



Knowledge grows

11 September 2024

Our Reference: 200-200-LET-DWER-0022

Your Reference: MS870

Mr Ian Munro
Manager, Compliance (Ministerial Statements)
Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace
JOONDALUP WA 6027
Email : compliance@dwer.wa.gov.au

Dear Ian,

Ministerial Statement No. 870, Condition 8 - Yara Pilbara Nitrates Groundwater Monitoring Results

In accordance with Condition 8-4 of Ministerial Statement 870, Yara Pilbara Nitrates (YPN) undertakes monitoring of all groundwater bores every six months. Where monitoring indicates an exceedance of trigger levels, Condition 8-5 requires that the results be reported to the CEO. The most recent round of groundwater monitoring was conducted on the 21st (MW1) and 27th of August (MW2-5), with results received on the 5th (MW1) and 11th (MW2-5) of September 2024. As previously reported since 2017, an elevation in levels of nitrogen species continues. Results of the August 2024 groundwater monitoring are provided as Table 1, with exceedances of trigger levels highlighted.

Known unplanned releases have been previously reported to the Department of Water and Environmental Regulation (DWER) under Section 72 of the *Environmental Protection Act 1986* (31st March 2017, 21st July 2017, 22nd September 2018, and 6th August 2021). The site was reported by Yara to DWER as a Known or Suspected Contaminated Site via submission of Form 1, on the 16th October 2018. On 7th December 2018 DWER classified the site as 'potentially contaminated – investigation required', and in this listing requested that a Contaminated Sites Auditor be engaged, and Detailed Site Investigation (DSI) be completed. On the 6th of February 2023 DWER reclassified the site as 'Contaminated- remediation required'.

To date, YPN have taken the following actions in response to this issue:

1. Completed Tier 1 and Tier 2 Risk Assessments, and a Hydrogeological Conceptual Site Model (in accordance with DWER guidelines) to assess environmental impact (submitted to DWER 19 June and 7 December 2017);
2. Undertaken an expanded groundwater monitoring program including the installation of an additional thirty-eight onsite and six downstream bores;
3. Completed an extensive repair project at the TAN Plant, with a focus on potential source mitigation in areas where groundwater contamination is known or likely;

Yara Pilbara Nitrates Pty Ltd

Postal Address
Locked Bag 5009
Karratha WA 6714
Australia

Visiting Address
Lot 564 and 3017 Village Road
Burrup WA 6714
Australia

Telephone
+61 8 9183 4100
Facsimile
+61 8 9185 6776
ABN
33127391422

Registered Office:
Level 10, 233 Adelaide Terrace
Perth, WA 6000 Australia
Telephone: +61 8 9327 8100
Facsimile: +61 8 9327 8199



4. Engaged Contaminated Sites Auditor from JBS&G;
5. Engaged Golders to undertake further investigations, modelling and assessment (in accordance with DWER guidelines), including completion of:
 - Preliminary Site Investigation (PSI) and Detailed Site Investigation (DSI);
 - Preliminary Ecological Risk Assessment (PERA) and Detailed Ecological Risk Assessment (DERA); and
 - Site Management Plan (SMP), Sampling Analyses Quality Plan (SAQP) and the Remedial Action Plan (RAP).
6. Selected the preferred remedial options, completed detailed engineering design, and obtained licence approvals for the onsite remedial infrastructure (Works Approval W6639/2022/1, 26D and 5C).
7. Implementation of the RAP commenced in 2021 and groundwater remedial infrastructure works in 2022, with completion and commissioning of the remedial infrastructure in November 2023.
8. Operation of the groundwater extraction system commenced 6 December 2023 and is ongoing.
9. Groundwater contours shows that hydraulic containment has been achieved with a total mass extracted to 30 Jun 2024 of 6,309 Kg Ammonia-N and 14,151 Kg Nitrate-N.
10. Bioremediation event 3 was completed in August and the next event is scheduled for November 2024.
11. Works Approval W6639/2022/1 has been amended to extend the operational period to until such time as the licence is amended, or the Works approval expires on the 09 August 2025.

Table 1: Six-Monthly Groundwater Monitoring Results

Date	Units	Trigger Limits	MW1	MW2	MW3	MW4	MW5
Aluminium (Filtered)	mg/L	0.021	0.037	0.005	<0.005	<0.050	<0.005
Alkalinity (total) as	mg/L	561	166	183	481	138	427
Arsenic (Filtered)	mg/L	NA	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium (Filtered)	mg/L	1,210	434	155	63	687	107
Cadmium (Filtered)	mg/L	NA	<0.0001	<0.0001	<0.0001	<0.0020	<0.0001
Chloride	mg/L	95,700	1570	1600	2360	63000	2440
Chromium (III)	mg/L	NA	<0.005	<0.005	<0.005	<0.010	<0.005
Chromium (VI)	mg/L	NA	<0.004	<0.004	<0.004	<0.004	<0.004
Copper (Filtered)	mg/L	NA	0.0028	0.0012	0.0005	0.002	0.0007
Iron (Filtered)	mg/L	0.26	0.009	<0.005	<0.005	<0.050	<0.005
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Magnesium	mg/L	5,170	147	97	171	3320	206
Manganese	mg/L	0.242	0.039	0.006	0.024	0.082	0.013
Ammonium (NH4+)	mg/L	NA	<0.01	55	<0.01	28	270
Ammonia as N	mg/L	0.04	<0.01	43	<0.01	21	210
Nitrate (as NO3)	mg/L	9.57	40	110	710	1700	3700
Nitrogen (Total)	mg/L	5.6	9.7	68	160	440	1000
Nickel (Filtered)	mg/L	NA	0.003	<0.001	0.001	0.038	<0.001
Oil and Grease	mg/L	NA	<10	<10	<10	<10	<10
Lead (Filtered)	mg/L	NA	0.0004	<0.0001	<0.0001	<0.0020	<0.0001
TDS	mg/L	143,000	4200	2900	4800	120000	8300
TSS	mg/L	2,090	6	2	1	17	1
Zinc (Filtered)	mg/L	0.052	0.021	0.006	0.004	0.041	0.006
pH (in-field)		6-8.4	6.9	7.27	7.92	6.93	7.4



If you have any questions, please don't hesitate to contact the undersigned on susan.giles@yara.com.

Yours Sincerely

A handwritten signature in blue ink that reads "Susan Giles".

Susan Giles

Environment and Sustainability Manager

Yara Pilbara Nitrates