



## Knowledge grows

4<sup>th</sup> October 2018

Our Reference: 200-200-LET-DWER-0009

Your Reference: MS870

Mr Ian Munro  
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Dear Ian,

### **Yara Pilbara Nitrates 6-Monthly Groundwater monitoring Results as per Condition 8 of Ministerial Statement No. 870**

This letter is to inform the Department of Water and Environmental Regulation (DWER) on the outcomes of the latest six-monthly groundwater monitoring undertaken by Yara Pilbara Nitrates Pty Ltd (YPN) at the Technical Ammonium Nitrate (TAN) plant, as required by Conditions 8-4 and 8-5 of Ministerial Statement 870.

Six-monthly groundwater monitoring was undertaken 11 September 2018 with results received 28 September 2018. As was reported 5 April 2018, 11 October 2017 and 3 April 2017 and elevation in levels of nitrogen species continues. Investigations continue into the cause of these elevations.

Known unplanned releases have been reported to DWER under Section 72 of the *Environmental Protection Act 1986* (31 March and 21 July 2017). Potential additional sources of contamination are being assessed, with findings to be reported according to due process.

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

1. Completed a Tier 1 Risk Assessment, Tier 2 Risk Assessment and Conceptual Site Model (in accordance with DWER guidelines) to assess environmental impact (submitted to DWER 19 June 2017 and 7 December 2017);

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## Yara Pilbara Nitrates

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2. Installed an additional two (2) site bores and an additional eight (8) downstream bores;
3. Undertaken an expanded groundwater monitoring program;
4. Conducting repair of pond liners and structural integrity; and
5. Engaged Golder to undertake further investigations, including Ecological Risk Assessment and subsequent Sampling, Analysis and Quality Plan to guide soil, groundwater and surface water investigations at the TAN plant.

Six-monthly groundwater monitoring results can be seen in Table 1 with exceedances of trigger levels highlighted.

**Table 1: Six-Monthly Groundwater Monitoring Results**

Date	Units	Trigger Limits	MW1	MW2	MW3	MW4	MW5
			11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
Aluminium (Filtered)	mg/L	0.021	0.005	<0.005	<0.005	<0.050	<0.005
Alkalinity (total) as CaCO <sub>3</sub>	mg/L	561	149	199	556	149	345
Arsenic (Filtered)	mg/L	NA	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium (Filtered)	mg/L	1,210	41	617	84.6	595	131
Cadmium (Filtered)	mg/L	NA	<0.0001	<0.0005	<0.0005	<0.005	<0.001
Chloride	mg/L	95,700	213	5,100	4,800	63,700	5,640
Chromium (III+VI) (Filtered)	mg/L	NA	<0.001	0.015	0.01	<0.01	0.019
Copper (Filtered)	mg/L	NA	0.0001	<0.0005	<0.0005	<0.005	<0.001
Iron (Filtered)	mg/L	0.26	<0.005	<0.005	<0.005	<0.05	<0.005
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Magnesium (Filtered)	mg/L	5,170	15	370	239	2,410	406
Manganese (Filtered)	mg/L	0.242	0.005	0.021	0.008	0.4	0.002
Ammonia as N (NH <sub>3</sub> -N)	mg/L	0.04	<0.01	170	<0.01	1.6	0.03
Nitrate (as NO <sub>3</sub> ) calculated	mg/L	9.57	40.73	1,416.52	28.77	6,197.3	18,591.89
Nitrogen (Total)	mg/L	5.6	9.4	1,100	6.9	1,500	4,300
Nickel (Filtered)	mg/L	NA	<0.001	<0.005	<0.005	<0.05	<0.01
Lead (Filtered)	mg/L	NA	<0.0001	<0.0005	<0.0005	<0.005	<0.001
TDS	mg/L	143,000	660	10,000	9,300	120,000	35,000
TSS	mg/L	2,090	78	22	2	17	15
Zinc (Filtered)	mg/L	0.052	0.002	<0.005	<0.005	<0.05	<0.01
pH		6-8.4	7.24	6.75	7.30	7.02	7.24

Please contact us if you have any further questions.

Yours Sincerely,

**Brian HOWARTH**

Health, Environment, Safety & Quality Manager

**Yara Pilbara Nitrates**