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Eliza Anning
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Warners Bay NSW 2282

Via email: E.anning@linxcc.com.au

Ref: 18047 R05.2 9 December 2022

**Re: Biannual Groundwater Monitoring Event 2 (2022)**
**544 Cormorant Road, Kooragang NSW 2304**

This letter has been prepared on behalf of LINX Cargo Care Group to provide a summary of pollution monitoring data for the LINX facility located at 544 Cormorant Road, Kooragang Island, New South Wales, 2304. The site location is presented on Figure 1.

Under Section 66(6) of the *Protection of the Environment Operations Act 1997* (POEO Act), holders of an Environment Protection Licence (EPL) must publish or make pollution monitoring data available to members of the public. For this purpose, this letter is a summary of a more detailed report, *Groundwater Monitoring Event and Annual Summary (2022) – 544 Cormorant Road, Kooragang NSW 2304* prepared by Cavvanba Consulting Pty Ltd in December 2022.

This letter has been prepared in accordance with the guideline *Requirements for Publishing Monitoring Data* (NSW Environment Protection Authority (EPA), 2013), and Table 1 has been specifically designed to address Section 3.7 of the guideline.

**Table 1: Published monitoring data requirements (NSW EPA, 2013)**

| Items requiring publishing | Response |
|---|---|
| EPL number: | 12521. |
| Licensee's name: | LINX Logistics Pty Ltd. |
| Address of premises: | 544 Cormorant Road, Kooragang NSW 2304 (previously referred to as 240 Cormorant Road, Kooragang, NSW 2304) |
| Link to the EPA's Public Register: | Link. |
| Location of monitoring point / area: | Figure 2. |
| Pollutant: | Tables 3 - 6. |
| Unit of measure: | Tables 3 - 6. |
| Monitoring frequency required by the licence: | Every 6 months, in accordance with *Groundwater Monitoring Plan – 240 Cormorant Road, Kooragang NSW 2304* (Cavvanba, 2018). |
| Any other relevant requirements of the monitoring condition: | Nil. |

| Items requiring publishing | Response |
|---|---|
| Any relevant limit imposed by the licence: | Nil. |
| Relevant dates | Groundwater sampling completed in October 2022. Groundwater monitoring report published in December 2022. |
| Upfront notes about apparent missing data: | Nil. |

The results of groundwater monitoring event and annual summary (2022) do not indicate that groundwater conditions have changed significantly, or adverse changes in environmental conditions have occurred.

✧ ✧ ✧ ✧

Please do not hesitate to contact the undersigned on (02) 6685-7811 should you require any additional information or clarification.

Yours sincerely
Cavvanba Consulting Pty Ltd

Ben Wackett
Principal Environmental Scientist

Drew Wood
Principal Environmental Scientist

# Figures

**Figure 1. Site Location** **Ref. 18047 R05**

Site: 544 Cormorant Road, Kooragang, NSW 2304
Location: LINX Logistics
Details: Groundwater Monitoring Event and Annual Summary

Client: LINX Cargo Care Group
Drawn: ZL 1/12/2022
Source: NSW Dept of Finance & Services

CAVVANBA consulting

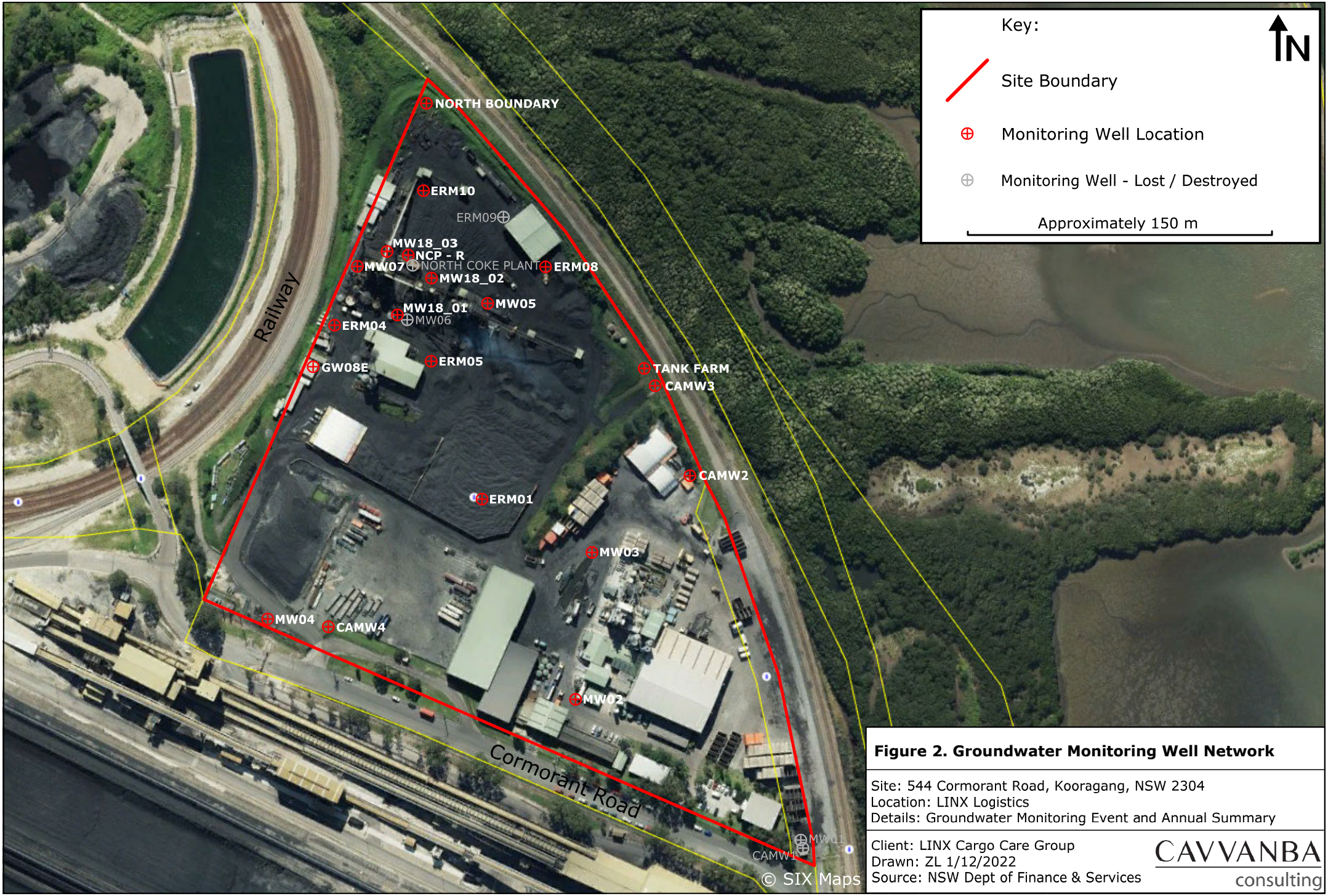


**Figure 2. Groundwater Monitoring Well Network**

Site: 544 Cormorant Road, Kooragang, NSW 2304
Location: LINX Logistics
Details: Groundwater Monitoring Event and Annual Summary

Client: LINX Cargo Care Group
Drawn: ZL 1/12/2022
Source: NSW Dept of Finance & Services

CAVVANBA consulting

# Tables

**Table 1: Groundwater Gauging Data**

| Well ID | Gauging Date | Event | TOC Elevation (mAHD) | Ground Surface Elevation (mAHD) | Depth of Well (mbTOC) | Depth to NAPL (mbTOC) | Depth to Water (mbTOC) | NAPL Thickness (m) | Corrected Depth to Water (mbgl) | Water Elevation (mAHD) |
|---|---|---|---|---|---|---|---|---|---|---|
| CAMW2 | 24/10/2022 | Pre - sampling | 3.014 | - | 3.328 | - | 2.158 | - | - | 0.856 |
| CAMW3 | 24/10/2022 | | 3.365 | - | 3.941 | - | 2.460 | - | - | 0.905 |
| CAMW4 | 24/10/2022 | | 2.801 | - | 2.560 | - | 1.150 | - | - | 1.651 |
| MW02 | 24/10/2022 | | 2.309 | - | 2.930 | - | 0.900 | - | - | 1.409 |
| MW03 | 24/10/2022 | | 3.249 | - | 3.820 | - | 2.125 | - | - | 1.124 |
| MW04 | 24/10/2022 | | - | - | 2.925 | - | 0.885 | - | - | - |
| Tank Farm | 24/10/2022 | | 3.736 | 3.13 | 5.680 | - | 2.765 | - | 2.159 | 0.971 |
| ERM08 | 24/10/2022 | | 3.087 | 3.14 | 3.740 | - | 1.585 | - | 1.638 | 1.502 |
| North Boundary | 25/10/2022 | | 3.593 | 2.92 | 3.585 | - | 2.245 | - | 1.572 | 1.348 |
| GW08E | 24/10/2022 | | 3.128 | 2.58 | 2.325 | - | 1.150 | - | 0.602 | 1.978 |
| ERM01 | 24/10/2022 | | 3.264 | 2.86 | 3.730 | - | 2.405 | - | 2.001 | 0.859 |
| ERM05 | 24/10/2022 | | 3.279 | 3.31 | 2.485 | - | 1.680 | - | 1.711 | 1.599 |
| MW05 | 24/10/2022 | | 3.795 | 3.02 | 3.793 | - | 2.325 | - | 1.55 | 1.470 |
| NCP-R | 24/10/2022 | | 3.576 | 2.89 | 4.265 | - | 2.083 | - | 1.397 | 1.493 |
| ERM04 | 25/10/2022 | | 2.882 | 2.94 | 2.675 | - | 1.210 | - | 1.268 | 1.672 |
| MW07 | 25/10/2022 | | 3.528 | 2.95 | 3.530 | - | 1.943 | - | 1.365 | 1.585 |
| ERM10 | 24/10/2022 | | 2.609 | 2.7 | 2.330 | - | 1.14 | - | 1.231 | 1.469 |
| MW18_01 | 24/10/2022 | | 3.925 | 3.184 | 4.420 | - | 2.325 | - | 1.584 | 1.600 |
| MW18_02 | 24/10/2022 | | 3.72 | 3.031 | 3.985 | - | 2.218 | - | 1.529 | 1.502 |
| MW18_03 | 24/10/2022 | | 3.664 | 2.899 | 4.136 | - | 2.125 | - | 1.36 | 1.539 |

m AHD: metres Australian Height Datum
mbTOC: metres below top of casing
NAPL: non-aqueous phase liquid
mbgl: metres below ground level

**Table 2: Groundwater Quality Parameters**

| Well ID | Date Sampled | DO (mg/L) | EC (µScm-¹) | Salinity (PPM) | Salinity (‰) | pH | Eh (mV) | TEMP (ºC) | Purge Volume (L) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| *Groundwater* | | | | | | | | | | |
| CAMW2 | 24/10/2022 | 0.96 | 1,807 | 1,156 | 1.156 | 7.47 | 26.2 | 18.4 | 2.5 | Clear, no sheen, slight sulfur odour, well in good condition |
| CAMW3 | 24/10/2022 | 1.88 | 2,553 | 1,634 | 1.634 | 7.03 | 33.2 | 18.9 | 2.5 | Clear, no odour or sheen, well in good condition |
| CAMW4 | 24/10/2022 | 1.06 | 1,362 | 872 | 0.872 | 7.73 | 31.7 | 18.8 | 2.5 | Clear, no odour or sheen, well in good condition |
| MW02 | 24/10/2022 | 0.77 | 2,520 | 1,613 | 1.613 | 7.17 | 22.3 | 20.7 | 2.5 | Clear, no sheen, slight sulfur odour, well in good condition |
| MW03 | 24/10/2022 | 1.12 | 734 | 470 | 0.470 | 7.29 | 28.7 | 18.9 | 2.5 | Clear, no odour or sheen, well in good condition |
| MW04 | 24/10/2022 | 2.10 | 1,600 | 1,024 | 1.024 | 7.23 | 35.7 | 19.4 | 2.5 | Light brown then clear, no odour, no sheen, well in good condition |
| Tank Farm | 24/10/2022 | 1.99 | 10,150 | 6,496 | 6.496 | 7.03 | 40.6 | 19.6 | 2.5 | Clear, no sheen, slight sulfur odour, well in good condition |
| ERM08 | 24/10/2022 | 1.22 | 1,008 | 645 | 0.645 | 11.27 | 31 | 19.3 | 2.5 | Clear, fine black particles in sample, no odour or sheen, well damaged, cover removed |
| North Boundary | 25/10/2022 | 1.98 | 1,289 | 825 | 0.825 | 7.89 | 44 | 23.4 | 2.5 | Clear, no odour or sheen, well in good condition |
| GW08E | 24/10/2022 | 1.00 | 450 | 288 | 0.288 | 7.25 | 23 | 18.6 | 2.5 | Clear, orange sediment in sample, no odour or sheen, well in good condition |
| ERM01 | 24/10/2022 | 1.09 | 861 | 551 | 0.551 | 6.61 | 30.7 | 19.4 | 2.5 | Clear, orange sediment in sample, no odour or sheen, well in good condition |
| ERM05 | 24/10/2022 | 1.12 | 772 | 494 | 0.494 | 9.47 | 3.4 | 18.9 | 2.5 | Clear, no sheen, slight sulfur odour, black particles in sample, well in good condition |
| MW05 | 24/10/2022 | 3.10 | 428 | 274 | 0.274 | 9.45 | 31.2 | 19.3 | 2.5 | Clear, no sheen, slight sulfur odour, well in good condition |
| NCP-R | 24/10/2022 | 1.09 | 844 | 540 | 0.540 | 11.34 | 40.5 | 19.0 | 2.5 | Clear, no odour or sheen, well in good condition |
| ERM04 | 25/10/2022 | 1.10 | 541 | 346 | 0.346 | 7.83 | 21.2 | 18.0 | 2.5 | Clear, no odour or sheen, well in good condition |
| MW07 | 25/10/2022 | 1.29 | 2,012 | 1,288 | 1.288 | 7.56 | 32.5 | 19.4 | 2.5 | Clear, no odour or sheen, well in good condition |
| ERM10 | 24/10/2022 | 1.75 | 861 | 551 | 0.551 | 11.17 | 43.7 | 22.1 | 2.5 | Clear, no odour or sheen, well in good condition |
| MW18_01 | 24/10/2022 | 1.48 | 917 | 587 | 0.587 | 11.38 | 26.2 | 19.1 | 2.5 | Clear, no odour or sheen, well in good condition |
| MW18_02 | 24/10/2022 | 1.35 | 860 | 550 | 0.550 | 11.22 | 42.2 | 18.8 | 2.5 | Clear, no odour or sheen, well in good condition |
| MW18_03 | 24/10/2022 | 0.99 | 710 | 454 | 0.454 | 7.37 | 27.6 | 20.2 | 2.5 | Clear, no odour or sheen, well in good condition |

**Table 3: Groundwater Analytical Summary - TRH & BTEXN (µg/L)**

| Sample Identification | Sample Location | Date | BTEXN | | | | | TRH | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Benzene | Toluene | Ethyl benzene | Xylenes | Naphthalene | $C_6$ - $C_{10}$ TRH | F1>$C_6$ - $C_{10}$ TRH | F2 >$C_{10}$ - $C_{16}$ TRH | F3 >$C_{16}$ - $C_{34}$ TRH | F4 >$C_{34}$ - $C_{40}$ TRH | >$C_{10}$ - $C_{40}$ TRH |
| *LOR* | | | *1* | *2* | *2* | *2* | *2* | *20* | *20* | *100* | *100* | *100* | *100* |
| *Analytical - Groundwater* | | | | | | | | | | | | | |
| CAMW2 | CAMW2 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| CAMW3 | CAMW3 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| CAMW4 | CAMW4 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - |
| MW02 | MW02 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| MW03 | MW03 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - |
| MW04 | MW04 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - |
| Tank Farm | Tank Farm | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - |
| ERM08 | ERM08 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| North Boundary | North Boundary | 25/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| GW08E | GW08E | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - |
| ERM01 | ERM01 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| ERM05 | ERM05 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - |
| MW05 | MW05 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| NCP-R | North Coke Plant | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| ERM04 | ERM04 | 25/10/2022 | - | - | - | - | - | - | - | - | - | - | - |
| MW07 | MW07 | 25/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| ERM10 | ERM10 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - |
| MW18_01 | MW18_01 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| MW18_02 | MW18_02 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| MW18_03 | MW18_03 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| *Statistics* | | | | | | | | | | | | | |
| Samples analysed | | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Detects | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % detect | | | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Maximum | | | <1 | <2 | <2 | <2 | <2 | <20 | <20 | <100 | <100 | <100 | <100 |
| Mean | | | <1 | <2 | <2 | <2 | <2 | <20 | <20 | <100 | <100 | <100 | <100 |
| Median | | | <1 | <2 | <2 | <2 | <2 | <20 | <20 | <100 | <100 | <100 | <100 |
| Minimum | | | <1 | <2 | <2 | <2 | <2 | <20 | <20 | <100 | <100 | <100 | <100 |
| Criteria | | | | | | | | | | | | | |
| Marine Waters [1] | | | 500 | 180 | 80 | 75 | 50 | - | - | - | - | - | - |
| HSL D 2 m to < 4 m (Sand) | | | 5,000 | NL | NL | NL | NL | - | 6,000 | NL | - | - | - |
| HSL Intrusive Maintenance Worker 2 m to < 4 m (Sand) | | | NL | NL | NL | NL | NL | - | NL | NL | - | - | - |

**Table 4: Groundwater Analytical Summary - Metals (µg/L)**

| Sample Identification | Sample Location | Date | Arsenic | Cadmium | Chromium | Copper | Lead | Nickel | Zinc | Mercury |
|---|---|---|---|---|---|---|---|---|---|---|
| *LOR* | | | *1* | *0.1* | *1* | *1* | *1* | *1* | *5* | *0.1* |
| *Analytical - Groundwater* | | | | | | | | | | |
| CAMW2 | CAMW2 | 24/10/2022 | 1 | nd | nd | nd | nd | 2 | nd | nd |
| CAMW3 | CAMW3 | 24/10/2022 | **5** | nd | nd | nd | nd | 4 | **6** | nd |
| CAMW4 | CAMW4 | 24/10/2022 | **37** | 0.1 | 2 | **3** | nd | 1 | **17** | nd |
| MW02 | MW02 | 24/10/2022 | **3** | nd | nd | nd | nd | 3 | **32** | nd |
| MW03 | MW03 | 24/10/2022 | **2** | nd | nd | nd | nd | 1 | nd | nd |
| MW04 | MW04 | 24/10/2022 | **4** | nd | nd | **2** | nd | 1 | **14** | nd |
| Tank Farm | Tank Farm | 24/10/2022 | - | - | - | - | - | - | - | - |
| ERM08 | ERM08 | 24/10/2022 | **18** | nd | nd | nd | nd | nd | nd | nd |
| North Boundary | North Boundary | 25/10/2022 | nd | nd | nd | **2** | nd | 6 | **39** | nd |
| GW08E | GW08E | 24/10/2022 | **3** | nd | nd | nd | nd | 2 | nd | nd |
| ERM01 | ERM01 | 24/10/2022 | nd | nd | nd | nd | nd | 8 | **36** | nd |
| ERM05 | ERM05 | 24/10/2022 | **3** | nd | nd | nd | nd | nd | nd | nd |
| MW05 | MW05 | 24/10/2022 | **4** | nd | nd | nd | nd | nd | nd | nd |
| NCP-R | North Coke Plant | 24/10/2022 | 2 | nd | nd | nd | nd | nd | nd | nd |
| ERM04 | ERM04 | 25/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd |
| MW07 | MW07 | 25/10/2022 | 2 | nd | nd | nd | nd | 2 | nd | nd |
| ERM10 | ERM10 | 24/10/2022 | **6** | nd | nd | nd | nd | nd | nd | nd |
| MW18_01 | MW18_01 | 24/10/2022 | nd | nd | 2 | nd | nd | 1 | nd | nd |
| MW18_02 | MW18_02 | 24/10/2022 | 1 | nd | nd | nd | nd | nd | nd | nd |
| MW18_03 | MW18_03 | 24/10/2022 | **3** | nd | nd | nd | nd | 4 | nd | nd |
| *Statistics* | | | | | | | | | | |
| Samples analysed | | | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| Detects | | | 15 | 1 | 2 | 3 | 0 | 12 | 6 | 0 |
| % detect | | | 79% | 5% | 11% | 16% | 0% | 63% | 32% | 0% |
| Maximum | | | **37** | 0.10 | 2 | **3** | <1 | 8 | **39** | <0.1 |
| Mean | | | **6** | 0.05 | 1 | **2** | <1 | 3 | **21** | <0.1 |
| Median | | | **3** | 0.05 | 2 | **2** | <1 | 2 | **17** | <0.1 |
| Minimum | | | <1 | <0.1 | <1 | <1 | <1 | <1 | <5 | <0.1 |
| *Criteria* | | | | | | | | | | |
| Marine Waters [1] | | | **2.3 **** | 0.7 *** | 4.4* | **1.3** | 4.4 | 70 | **8** | 0.1 *** |

**Table 5: Groundwater Analytical Summary - PAHs and Phenols (µg/L)**

| Sample Identification | Sample Location | Date | Naphthalene | Acenaphthylene | Acenaphthene | Fluorene | Phenanthrene | Anthracene | Fluoranthene | Pyrene | Benz(a)anthracene | Chrysene | Benzo(b)fluoranthene | Benzo(k)fluoranthene | Benzo(a)pyrene | Indeno(1.2.3.cd)pyrene | Dibenz(a.h)anthracene | Benzo(g.h.i)perylene | Phenol | Pentachlorophenol | 2-Methylphenol | 3- & 4-Methylphenol | 2.4-Dimethylphenol | 2-Chlorophenol | Total PAHs | B(a)P TEQ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *LOR* | | | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0.5* | *1* | *1* | *1* | *1* | *2* | *1* | *2* | *1* | *1* | *0.5* | *0.5* |
| *Analytical - Groundwater* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAMW2 | CAMW2 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| CAMW3 | CAMW3 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| CAMW4 | CAMW4 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MW02 | MW02 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| MW03 | MW03 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MW04 | MW04 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tank Farm | Tank Farm | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ERM08 | ERM08 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| North Boundary | North Boundary | 25/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| GW08E | GW08E | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ERM01 | ERM01 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| ERM05 | ERM05 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MW05 | MW05 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 4.5 | 2.8 | 1.3 | nd | nd | nd |
| NCP-R | North Coke Plant | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 3 | 2.2 | 3.9 | nd | nd | nd |
| ERM04 | ERM04 | 25/10/2022 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MW07 | MW07 | 25/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| ERM10 | ERM10 | 24/10/2022 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MW18_01 | MW18_01 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| MW18_02 | MW18_02 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| MW18_03 | MW18_03 | 24/10/2022 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| *Statistics* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Samples analysed | | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Detects | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % detect | | | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Maximum | | | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <0.5 | <1 | <1 | <1 | <1 | <2 | 5 | 3 | 4 | <1 | <0.5 | <0.5 |
| Mean | | | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <0.5 | <1 | <1 | <1 | <1 | <2 | 3 | 2 | 2 | <1 | <0.5 | <0.5 |
| Median | | | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <0.5 | <1 | <1 | <1 | <1 | <2 | 3 | 2 | 1 | <1 | <0.5 | <0.5 |
| Minimum | | | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <0.5 | <1 | <1 | <1 | <1 | <2 | <1 | <2 | <1 | <1 | <0.5 | <0.5 |
| *Criteria* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marine Waters [1] | | | 70 | - | - | - | 0.6*** | 0.01 | 1*** | - | - | - | - | - | 0.1*** | - | - | - | 400 | 11*** | - | - | - | - | - | - |

**Table 6: Groundwater Analytical Summary - Nutrients (µg/L)**

| Sample Identification | Sample Location | Date | Ammonia as N | Nitrate + Nitrite as N | Total Kjeldahl Nitrogen | Total Nitrogen as N | Total Phosphorus as P |
|---|---|---|---|---|---|---|---|
| *LOR* | | | *10* | *10* | *100* | *100* | *10* |
| *Analytical - Groundwater* | | | | | | | |
| CAMW2 | CAMW2 | 24/10/2022 | **3,780** | nd | 3,700 | 3,700 | 220 |
| CAMW3 | CAMW3 | 24/10/2022 | 750 | nd | 1,200 | 1,200 | 160 |
| CAMW4 | CAMW4 | 24/10/2022 | 210 | 330 | 400 | 700 | 80 |
| MW02 | MW02 | 24/10/2022 | **2,110** | 1,380 | 2,600 | 4,000 | 320 |
| MW03 | MW03 | 24/10/2022 | **2,700** | 3,190 | 3,400 | 6,600 | 220 |
| MW04 | MW04 | 24/10/2022 | 20 | 50 | 200 | 200 | 100 |
| Tank Farm | Tank Farm | 24/10/2022 | **13,400** | nd | 14,100 | 14,100 | 2,330 |
| ERM08 | ERM08 | 24/10/2022 | **3,630** | 20 | 3,500 | 3,500 | 30 |
| North Boundary | North Boundary | 25/10/2022 | 110 | 20 | 200 | 200 | 40 |
| GW08E | GW08E | 24/10/2022 | 60 | nd | 300 | 300 | 780 |
| ERM01 | ERM01 | 24/10/2022 | 60 | nd | 400 | 400 | 170 |
| ERM05 | ERM05 | 24/10/2022 | **2,930** | nd | 3,600 | 3,600 | 80 |
| MW05 | MW05 | 24/10/2022 | **4,320** | nd | 4,700 | 4,700 | 100 |
| NCP-R | North Coke Plant | 24/10/2022 | **2,830** | 170 | 3,100 | 3,300 | nd |
| ERM04 | ERM04 | 25/10/2022 | 180 | nd | 200 | 200 | 40 |
| MW07 | MW07 | 25/10/2022 | **1,090** | nd | 1,700 | 1,700 | 530 |
| ERM10 | ERM10 | 24/10/2022 | **1,510** | 110 | 2,100 | 2,200 | 70 |
| MW18_01 | MW18_01 | 24/10/2022 | 360 | 440 | 500 | 900 | 30 |
| MW18_02 | MW18_02 | 24/10/2022 | **960** | 2,260 | 1,300 | 3,600 | 20 |
| MW18_03 | MW18_03 | 24/10/2022 | 90 | nd | 300 | 300 | 110 |
| *Statistics* | | | | | | | |
| Samples analysed | | | 20 | 20 | 20 | 20 | 20 |
| Detects | | | 20 | 10 | 20 | 20 | 19 |
| % detect | | | 100% | 50% | 100% | 100% | 95% |
| Maximum | | | **13,400** | 3,190 | 14,100 | 14,100 | 2,330 |
| Mean | | | **1,957** | 725 | 2,262 | 2,638 | 272 |
| Median | | | **960** | 170 | 1,300 | 1,700 | 100 |
| Minimum | | | 30 | <10 | 200 | 200 | <10 |
| *Criteria* | | | | | | | |
| Marine Waters [1] | | | **910** | - | - | - | - |

**Groundwater Analytical Summary Table Notes**

LOR - limit of reporting (standard LOR unless otherwise shown)

nd - not detected above the LOR

**Bold** - Exceeds criteria

^ - LOR raised

- denotes not analysed/not available

*- Chromium criteria as Cr(VI)

** - Low reliability trigger value, used as interim working level only

*** - Bioaccumulative, therefore a higher protection level has been adopted. For example, PC95 will be increased to PC99, and PC80 will be increased to PC90

Health Screening Levels (HSLs) for vapour intrusion in a sand geology

HSL D - Commercial/industrial

ANZG (2018) - Australian and New Zealand Guidelines for Fresh and Marine Water Quality (http://www.waterquality.gov.au/anz-guidelines as accessed 20 October 2020) (ANZG 2018)