



## CERTIFICATE OF ANALYSIS

**Work Order** : EP2503328  
**Client** : GASCOYNE WATER COOPERATIVE LTD  
**Contact** : Lisa Sweetman  
**Address** : 50 BOUNDARY ROAD PO BOX 5  
CARNARVON WESTERN AUSTRALIA, AUSTRALIA 6701  
**Telephone** : ----  
**Project** : Retest - 3 sites 2025  
**Order number** : PO-1463  
**C-O-C number** : ----  
**Sampler** : Carnarvon Plumbing  
**Site** : Town Sites  
**Quote number** : EP24GASWAT0004  
**No. of samples received** : 3  
**No. of samples analysed** : 3

**Page** : 1 of 5  
**Laboratory** : Environmental Division Perth  
**Contact** : Customer Services EP  
**Address** : 26 Rigali Way Wangara WA Australia 6065  
**Telephone** : +61-8-9406 1301  
**Date Samples Received** : 06-Mar-2025 15:00  
**Date Analysis Commenced** : 06-Mar-2025  
**Issue Date** : 12-Mar-2025 09:54



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Vinitha Kesavan	Analyst	Perth Microbiology, Wangara, WA



## General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- MF = membrane filtration
- CFU = colony forming unit
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- MW006 is ALS's internal code and is equivalent to AS4276.5.
- MW006 and MW007: Analysis Commenced:Date:06/03/2025.Time:04:00PM.
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu.
- MW007 is ALS's internal code and is equivalent to AS4276.5.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Sample ID		North River Road	McGlades Road	Boundary Road	----	----
		Sampling date / time		05-Mar-2025 15:47	05-Mar-2025 16:00	05-Mar-2025 16:12	----	----
Compound	CAS Number	LOR	Unit	EP2503328-001	EP2503328-002	EP2503328-003	-----	-----
				Result	Result	Result	----	----
<b>EA005P: pH by PC Titrator</b>								
pH Value	----	0.01	pH Unit	<b>8.21</b>	<b>8.13</b>	<b>8.22</b>	----	----
<b>EA010P: Conductivity by PC Titrator</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	<b>906</b>	<b>902</b>	<b>952</b>	----	----
<b>ED037P: Alkalinity by PC Titrator</b>								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<b>104</b>	<b>99</b>	<b>119</b>	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<b>104</b>	<b>99</b>	<b>119</b>	----	----
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<b>64</b>	<b>67</b>	<b>69</b>	----	----
<b>ED045G: Chloride by Discrete Analyser</b>								
Chloride	16887-00-6	1	mg/L	<b>202</b>	<b>206</b>	<b>197</b>	----	----
<b>ED093F: Dissolved Major Cations</b>								
Calcium	7440-70-2	1	mg/L	<b>48</b>	<b>52</b>	<b>46</b>	----	----
Magnesium	7439-95-4	1	mg/L	<b>24</b>	<b>23</b>	<b>23</b>	----	----
Sodium	7440-23-5	1	mg/L	<b>90</b>	<b>89</b>	<b>100</b>	----	----
Potassium	7440-09-7	1	mg/L	<b>10</b>	<b>10</b>	<b>10</b>	----	----
<b>ED093F: SAR and Hardness Calculations</b>								
Total Hardness as CaCO3	----	1	mg/L	<b>219</b>	<b>224</b>	<b>210</b>	----	----
<b>EG020F: Dissolved Metals by ICP-MS</b>								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L	<b>0.002</b>	<0.001	<b>0.004</b>	----	----



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				Result	Result	Result	----	----	
<b>EG020F: Dissolved Metals by ICP-MS - Continued</b>									
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----	
Zinc	7440-66-6	0.005	mg/L	<b>0.007</b>	<0.005	<0.005	----	----	
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----	
Arsenic	7440-38-2	0.001	mg/L	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<b>0.0001</b>	<0.0001	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Molybdenum	7439-98-7	0.001	mg/L	<b>0.003</b>	<b>0.002</b>	<b>0.005</b>	----	----	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----	
Zinc	7440-66-6	0.005	mg/L	<b>0.007</b>	<0.005	<0.005	----	----	
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----	
<b>EG052G: Silica by Discrete Analyser</b>									
Reactive Silica	----	0.05	mg/L	<b>46.1</b>	<b>40.9</b>	<b>50.3</b>	----	----	
Reactive Silica as Silicon	----	0.05	mg/L	<b>21.6</b>	<b>19.1</b>	<b>23.5</b>	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<b>0.4</b>	<b>0.3</b>	<b>0.5</b>	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<b>0.71</b>	<b>0.66</b>	<b>0.77</b>	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<b>0.71</b>	<b>0.66</b>	<b>0.77</b>	----	----	



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Compound	CAS Number	LOR	Unit	EP2503328-001	EP2503328-002	EP2503328-003	-----	-----	
				Result	Result	Result	----	----	
<b>EN055: Ionic Balance</b>									
∅ Total Anions	----	0.01	meq/L	<b>9.11</b>	<b>9.18</b>	<b>9.37</b>	----	----	
∅ Total Cations	----	0.01	meq/L	<b>8.54</b>	<b>8.61</b>	<b>8.79</b>	----	----	
∅ Ionic Balance	----	0.01	%	<b>3.22</b>	<b>3.20</b>	<b>3.18</b>	----	----	
<b>MW006: Faecal Coliforms &amp; E.coli by MF</b>									
Thermotolerant Coliforms	----	1	CFU/100mL	<1	<1	<1	----	----	
<i>Escherichia coli</i>	----	1	CFU/100mL	<1	<1	<1	----	----	
<b>MW007: Coliforms by MF</b>									
Coliforms	----	1	CFU/100mL	~2	~9	~7	----	----	