

Attachment 4 - Groundwater Monitoring Program

Table 1. Parameters and frequency

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Parameter	Units	Frequency (all monitoring bores identified in Table 2)
Field Measurement		
Flow	kL/day	M ¹
Standing Water Level (SWL)	m AHD	M
pH	pH units	Q
Electrical Conductivity (EC)	µS/cm	Q
Dissolved Oxygen (DO)	% saturation	Q
Temperature	°C	Q
Reduction Oxidation Potential (REDOX)	mV	Q
Metals/Metalloids (filtered (0.45 µm))		
Arsenic (As)	µg/L	A
Boron (B)		Q
Cadmium (Cd)		A
Chromium (Cr)		Q
Cobalt (Co)		A
Copper (Cu)		Q
Lead (Pb)		Q
Lithium (Li)		A
Nickel (Ni)		Q
Vanadium (V)		A
Zinc (Zn)		Q
Major Ions		
Carbonate (CO ₃)	mg/L	Q
Bicarbonate (HCO ₃)		Q
Calcium (Ca)		Q
Magnesium (Mg)		Q
Potassium (K)		Q
Sodium (Na)		Q
Chloride (Cl)		Q
Sulphate (SO ₄)		Q
Nutrients		
Ammonia (NH ₃ as N)	µg/L	Q
Ammonium (NH ₄)		Q
Nitrate (NO ₃)		Q
Nitrite (NO ₂)		Q
Oxides of Nitrogen (NO _x)		Q
Total Nitrogen (TN)		Q
Total Phosphorous (TP)		Q
Hydrocarbons		
Total Recoverable Hydrocarbons (TRH)	µg/L	A
Benzene		A
Toluene		A
Ethylbenzene		A
Xylene		A
Naphthalene		A
PFAS (per-and poly-fluoroalkyl substances) (Analysis on a minimum of 28 PFAS compounds using LC-MS/MS)		
PFOS	µg/L	Q
PFOA		Q
Other		
Chemical Oxygen Demand (COD)	mg/L	Q
Total Organic Carbon (TOC)		Q
Total Dissolved Solids (TDS)		Q
Organophosphate Pesticides	µg/L	A

Organochlorine Pesticides	µg/L	A
Polychlorinated Biphenyls		A
Tributyltin Oxide		A
Phenols		A
Escherichia Coli	CFU/100 mL	A
Enterococci		A
M – Monthly Q – Quarterly (January, April, July, October) A – Annually (January) 1 - If the water level is above top of casing when measuring SWLs then estimate the flow.		

Table 2. Sampling Locations (MGA Zone 52)

Bore ID	Easting ¹	Northing ¹	TOC (mAHD)	Screened interval (mBGL)	Screened lithology
GW1-3	709564	8631004	8.63	1.5 - 3	Siltstone
GW1-12	709566	8631004	8.59	9 - 12	Siltstone
GW2-3	709629	8630835	7.94	1.5 - 3	Siltstone
GW2-12	709631	8630835	7.94	9 - 12	Siltstone
GW3-3	709652	8630746	9.80	1.5 - 3	Siltstone
GW3-12	709654	8630746	9.82	9 - 12	Siltstone
GW4-3	709775	8630634	5.49	1.5 - 3	Siltstone
GW4-12	709776	8630633	5.44	9 - 12	Siltstone
GW4-30	709777	8630631	5.20	15 - 21	Gravelly sand, Sandstone
GW5-3	709880	8630224	5.41	1.5 - 3	Siltstone
GW5-12	709880	8630226	5.33	9 - 12	Siltstone, Gravelly Clay
GW7-3	709900	8629992	5.03	1.5 - 3	Siltstone
GW7-12	709900	8629994	5.08	9 - 12	Siltstone, Sandy Silt
GW8-3	709896	8629708	5.28	1.5 - 3	Claystone
GW8-12	709896	8629708	5.22	9.1 - 12.1	Claystone, Sandstone
GW9-12	709660	8629469	15.93	9 - 12	Siltstone
GW10-3	709147	8629507	18.06	1.5 - 3	Siltstone
GW10-12	709149	8629507	17.98	9.1 - 12.1	Siltstone
GW11-3	709040	8629671	13.38	1.5 - 3	Siltstone
GW11-12	709042	8629671	13.38	9 - 12	Siltstone, Sandstone
GW13-3	709017	8630175	12.88	3 - 4.5	Siltstone
GW13-12	709016	8630174	12.86	10 - 13.5	Siltstone
GW14-3	709013	8630423	6.73	1.5 - 3	Siltstone
GW14-12	709013	8630424	6.64	9 - 12	Siltstone
GW15-3	709230	8630599	11.06	1.5 - 3	Siltstone
GW15-12	709233	8630599	11.04	9 - 12	Siltstone
GW16-3	709493	8630030	14.55	1.5 - 3	Porcilinite
GW16-12	709494	8630025	14.61	9 - 12	Siltstone
GW16-30	709495	8630021	14.56	20 - 26	Siltstone
GW17-3	709387	8630672	11.83	0.5 - 4	siltstone
GW17-12	709384	8630672	11.80	8 - 11	Sandy clay loam
GW17-30	709418	8630691	11.88	27 - 30	Fine loamy sand
GW18-3	709464	8630729	11.51	tba	tba
GW18-12	709464	8630728	10.72	8 - 12	Sandy clay loam
WW1	709474	8630256	16.60	0 - 6.3	-
WW6	709047	8630478	7.46	0 - 20.4	-
WW9	709016	8630598	7.09	1 - 9.8	Siltstone
WW13	709457	8630598	0.7	1 - 10	Siltstone