Mokauiti-Aria – Quarterly River Monitoring – November

Sample Collection Day: 12th November 2025

*Water quality was **Excellent** in Whareroa stream (Site 23) and Ramaroa stream (Site 27), and **Fair** in Huioteko stream (Site 22) and Mokauiti stream (Site 28).*

E. coli concentrations were very low in the Whareroa and Ramaroa streams (66 cells per 100 mL), meeting recommended guidelines for swimming (540 cells per 100 mL) and livestock drinking water (< 100 cells per 100 mL). Concentrations was slightly elevated in the Huioteko and Mokauiti streams (350 - 360 cells per 100 mL) but still fell within swimming guidelines.

Nitrogen: Nitrate concentrations were low across all sites (≤ 0.36 mg/L), falling well below the ecological toxicity threshold (2.4 mg/L). **Ammonia** concentrations were low in three sites (≤ 0.03 mg/L) and slightly elevated in Huioteko stream (0.032 mg/L). **Dissolved inorganic nitrogen (DIN)** was low across all sites (≤ 0.36 mg/L), falling below the ecological impact threshold (0.5 mg/L).

Phosphorus: Dissolved reactive phosphorus (DRP) concentrations were low in Whareroa stream and Ramaroa stream (≤ 0.010 mg/L), slightly elevated in Mokauiti stream (0.011 mg/L) and elevated in Huioteko stream (0.019 mg/L).

Suspended sediment: Water clarity was *Excellent* in the Whareroa and Ramaroa streams (0.99 - 1.08 m), *Fair* in Huioteko stream (0.63 m) and *Poor* in Mokauiti stream (0.45 m), relative to the national bottom line (1.34 m for Mokauiti stream and 0.61 m for all other sites).

The results in the table below have been graded according to the National Policy Statement for Freshwater Management (NPS-FM, 2020).

Mokauiti-Aria	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
Sample Date: 12-Nov-25 Lab: Analytica	E. coli/100 ml	Nitrates Toxicity (mg N/L)	Ammonia Toxicity (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L)[2]	Dissolved Reactive Phosphorus (mg/L)	Water Clarity (m)[1]	National Bottom Line
22-Huioteko Stm-248	350	0.29	0.032	0.32	0.019	0.63	0.61
23-Whareroa Stm-231	66	0.16	0.013	0.17	0.003	0.99	0.61
27-Ramaroa stream	66	0.36	<0.005	0.36	0.010	1.08	0.61
28-Mokauiti stream	360	0.20	0.024	0.22	0.011	0.45	1.34

[1]Water clarity has been converted from measured turbidity using the formular ln(CLAR) = 1.21 – 0.72 ln(TURB) (Franklin, Booker & Stoffels, 2020).
[2]Guideline values to assess ecological impacts of nitrogen on freshwater life. Attribute band limits are from the NPS-FM consultation draft (2019)

Attribute Band	
A	Ecosystem Health
B	
C	
D	
E	Human Contact only

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

Mokau River – Summary of water quality collected from 15 sites across the Mokau River catchment on 12th November 2025

Water quality was Fair across the Mokau River Catchment. While most sites had low to moderate levels of nitrogen and phosphorus, 73% of all sites had poor water clarity and 60% had elevated E. coli concentrations. The sites with the best water quality in the Mokau River catchment were Whareroa stream, Ramaroa stream, and Waitanguru stream.

E. coli (Microbial Contamination):

- Three sites (20%) had low concentrations (≤ 190 cells per 100 mL), a low risk for swimming.
- Two sites had very low concentrations (< 100), considered safe for livestock drinking water[1].
- Another three sites (20%) had slightly elevated concentrations (350 - 400 cells per 100 mL)
- Just under two thirds of sites (60%) had very high concentrations (610 – 2,200), which exceeded recommended levels for swimming.

Nitrogen

Nitrate:

- Two thirds of sites (67%) had low concentrations (≤ 0.48 mg/L) and a third of sites exceeded this ecological impact threshold (> 0.5 mg/L), which may affect stream health.
- All sites fell well below ecological toxicity thresholds (2.4 mg/L) for native fish and invertebrates.

Ammonia:

- Most sites had low concentrations (<0.005 - 0.03 mg/L), of little concern for aquatic life.
- Two sites had slightly elevated concentrations (> 0.03 mg/L), which can impact sensitive aquatic species.

Dissolved Inorganic Nitrogen (DIN):

- Two thirds of sites (67%) had low concentrations (≤ 0.50 mg/L).
- The other third had slightly elevated concentrations (0.53 – 0.77 mg/L), exceeding the ecological impact threshold of 0.5 mg/L.

Phosphorus

Dissolved Reactive Phosphorus (DRP):

- Two thirds of sites (67%) had low concentrations (0.003 - 0.01 mg/L).
- The other third of sites had slightly elevated concentrations (0.011 – 0.013 mg/L), which can contribute to problematic plant and algae growth if levels stay high.

Suspended Sediment / Water Clarity:

- Three sites (20%) had *Excellent* water clarity (A band).
- One site had *Fair* water clarity (C band).
- Nearly three quarters of all sites (73%) had *Poor* water clarity (D band).

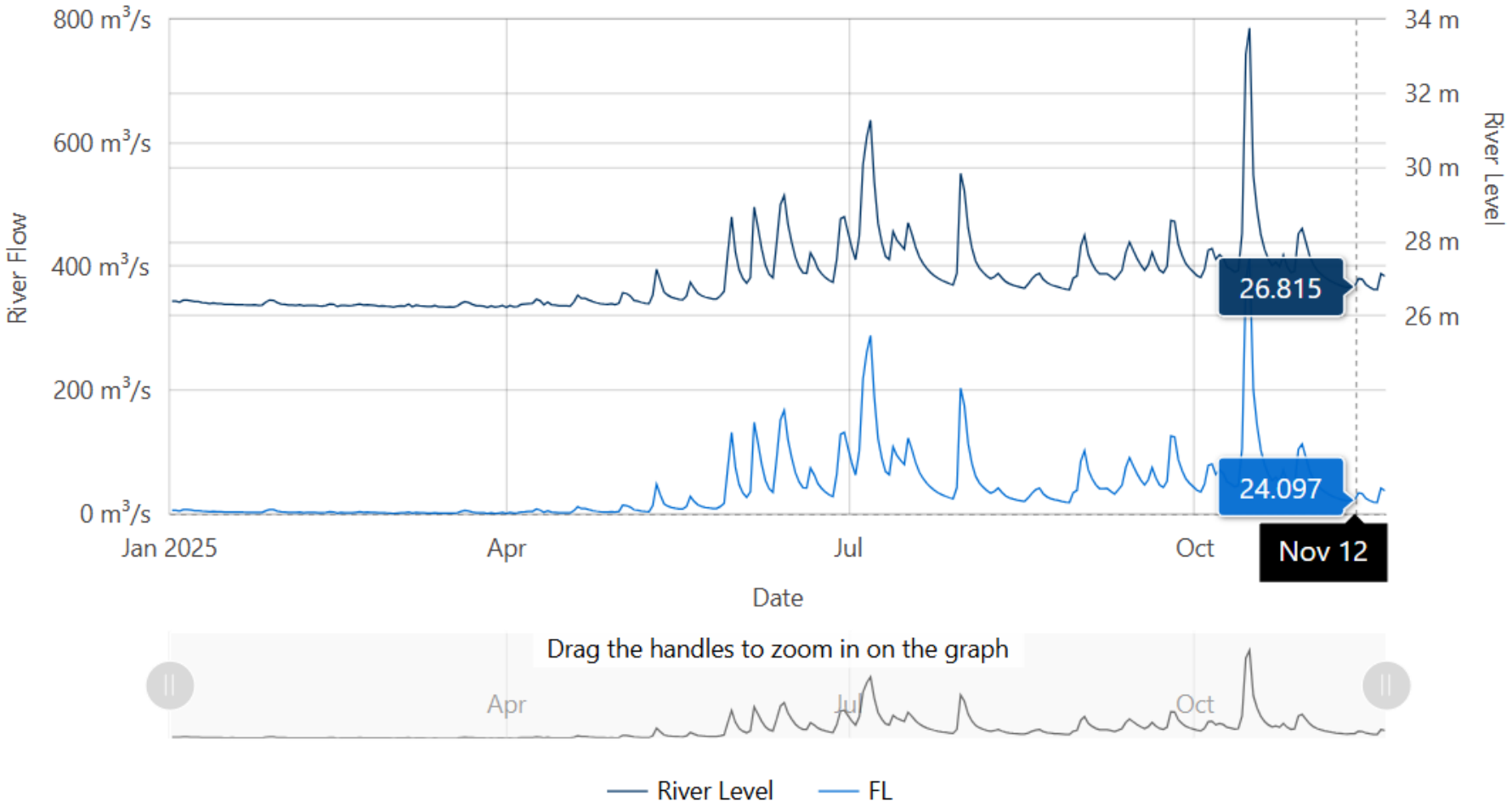
Water clarity bands for each site are based on the National Bottom Line (NBL), which varies depending on local landscape characteristics (e.g. geology, climate, and elevation). For Mokau River sites, the NBL is either 1.34 m or 0.61 m, depending on location.

[1] Drinking water for livestock should contain < 100 cfu/100 mL (median value) of E. coli. Livestock Drinking Water Guidelines (2023), Australian & New Zealand Guidelines for Fresh & Marine Water Quality.

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

River Level and Flow Rate – Mokau River, Totoro Road

The below chart presents continuous data collected by the Waikato Regional Council for Mokau River between 1st January and 20th November 2025. River Level and Flow Rate on the day of sampling (12-November) are highlighted.



Data source: Waikato Regional Council envirohub website for environmental data.

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