

<b>Version No:</b> 1 <b>Issue Date:</b> 15/11/2023 <b>Portfolio:</b> Discrete Water Quality	<b>Horizons Regional Council</b>	<b>Section No:</b> 15.7 <b>Appendix No:</b> 27 <b>Page:</b> 1 of 8
<b>horizons</b> <small>regional council</small> 	<b>Hydrology Operations Manual</b>	

## Water Quality Monitoring Run Guide

# INVESTIGATION - PNCC MANGAONE SAMPLE RUN

**Monthly Sampling by Horizons with additional  
sampling by Traverse**

# Hazard & Task Analysis













## Hazard Identification – tick all that apply, write additional hazards identified:

The yellow highlighted hazards are known hazards at the time of compiling this document. This **does not negate** the need to assess for and potentially eliminate or isolate any hazards at *each* sample location at *every* visit

Hazard	Yes	Hazard	Yes	Hazard	Yes
Confined space	<input type="checkbox"/>	Suspended loads	<input type="checkbox"/>	Noise – plant and equipment	<input type="checkbox"/>
Difficult entry/exit	<input type="checkbox"/>	Falling objects	<input checked="" type="checkbox"/>	Communication – means of	<input type="checkbox"/>
Oxygen deficiency/excess	<input type="checkbox"/>	Working near cranes and crane runways	<input type="checkbox"/>	Remote area	<input checked="" type="checkbox"/>
Poisonous fumes/gas	<input type="checkbox"/>	Live rails-gantry cranes	<input type="checkbox"/>	Temperature extremes	<input checked="" type="checkbox"/>
Explosive gas	<input type="checkbox"/>	Trip hazards	<input checked="" type="checkbox"/>	Reduced visibility	<input type="checkbox"/>
Flammable materials	<input type="checkbox"/>	Slippery surfaces	<input checked="" type="checkbox"/>	Unauthorized persons	<input type="checkbox"/>
Combustible materials	<input type="checkbox"/>	Manual handling	<input checked="" type="checkbox"/>	High pressure water	<input type="checkbox"/>
Hazardous substances	<input type="checkbox"/>	Sharp materials	<input type="checkbox"/>	Vacuum	<input type="checkbox"/>
Drowning	<input checked="" type="checkbox"/>	Line of fire	<input type="checkbox"/>	Air emissions – dust, fumes	<input type="checkbox"/>
Engulfment	<input type="checkbox"/>	Pressurized fluids	<input type="checkbox"/>	General waste	<input checked="" type="checkbox"/>
UV Radiation	<input checked="" type="checkbox"/>	Pressurized air/gas	<input type="checkbox"/>	Hazardous waste	<input type="checkbox"/>
Electrical – low /high voltage	<input type="checkbox"/>	Traffic / vehicle movements	<input checked="" type="checkbox"/>	Hydrocarbon / chemical spill	<input type="checkbox"/>
Multiple electrical feeds	<input type="checkbox"/>	Machinery – mobile plant	<input type="checkbox"/>	Soil disturbance/erosion	<input checked="" type="checkbox"/>
Working at height	<input type="checkbox"/>	Moving parts	<input type="checkbox"/>	Habitat disruption	<input type="checkbox"/>
Ladders	<input type="checkbox"/>	Chemical reaction (Pyrophoric iron)	<input type="checkbox"/>	Lighting	<input type="checkbox"/>
Elevated work platforms	<input type="checkbox"/>	Transport of hazardous substances	<input type="checkbox"/>	Weather extremes	<input checked="" type="checkbox"/>
Potential for difficult rescue	<input type="checkbox"/>	Stock/Farm Animals	<input type="checkbox"/>	Difficult site access/egress	<input checked="" type="checkbox"/>

## Required PPE– tick all that apply, write additional PPE required:

The yellow highlighted PPE are known required PPE at the time of compiling this document. This **does not negate** the need to assess for the appropriate required PPE measures at *each* sample location per visit.

SAMPLING GLOVES	EAR PROTECTION	HARD HAT	SAFETY GLASSES / GOGGLES	WORK BOOTS	PROTECTIVE GLOVES	PERSONAL FLOATATION DEVICE (PFD)
						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HI VIZ	SAFETY HARNESS	WADERS	HAND SANITISER	VEHICLE BEACON		
						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Known Hazard	Significant		Can it be Eliminated		Can it be Isolated	Method of control	
	Yes	No	Yes	No	Yes	No	
Trip Hazards	✓			✓	✓		Prior to sampling staff must check area is clear of any items that pose a risk. If there is any these should only be moved if safe to do so. Sampling only to commence if the sampler is satisfied that any slip, trip or fall hazards are isolated.
Slippery Surfaces, Difficult access/egress – RIVER ACCESS	✓			✓	✓		River banks can be slippery at any time. Care should be taken in all conditions. PFD's must be available for staff if use is deemed appropriate. [HMP18]
Drowning - FLOWING WATER	✓			✓		✓	Staff should be trained in alignment with HRCs training requirements. PFD's must be available for staff if use is deemed appropriate [HMP18]
Machinery – mobile plant	✓			✓		✓	Riverside walking track is maintained, ensure you are seen on site, and avoid getting in the way of any operating machinery.
Traffic Vehicle movements	✓			✓		✓	Staff to obey on site signage and instruction. HRC Vehicle to be parked in a safe and appropriate location. [HMP 16] [HMP 20]
General Waste		✓		✓	✓		General waste is liable to be in and around the channel. Sample staff have no need to interact with any waste. All waste created by HRC staff to be taken with them.
UV Radiation	✓			✓	✓		Horizons provide sunscreen and hats. [HMP
Manual Handling	✓			✓	✓		There should be no need for sample staff to move any equipment etc. in order to carry out sampling activities.
Electrical – low /high voltage	✓			✓	✓		Sampling activity does not require any interaction with live circuitry or equipment. Staff should check sample area is clear of any hazards (i.e. loose cables, live equipment etc.) before sampling. If access/safety is considered compromised sampling is aborted. [HMP 23]
Weather Extremes	✓			✓	✓		During the duration of a sampling run, varying types and degrees of weather may be experienced. All sampling staff are to have access within their HRC vehicle of additional and appropriate clothing.
Temperature Extremes - Hypothermia: following emersion	✓			✓		✓	Staff must have access to suitable PPE and spare clothing within their vehicle. [HMP18] [HMP18]
Traffic Vehicle movements – ROADSIDE /GENERAL	✓			✓		✓	Some sample sites require parking beside a main road. The vehicle must be parked as far off of the road surface as safe and practicable to do so. Use of hazards lights must be considered. Hi-vis clothing must be worn. [HMP 16] [HMP 20]

Known Hazard	Significant		Can it be Eliminated		Can it be Isolated	Method of control	
	Yes	No	Yes	No		Yes	No
Difficult access egress to sample site	✓			✓		✓	Access to the sample locations is limited by bank conditions.
Dangerous bridge, and Falling objects	✓			✓		✓	If alone stay off bridge. If using bridge to access far bank must have two people and take care to walk only on main support beams. Do not sample and gauge directly under bridge.
Sewage overflow channel (when operating, Mangaone site)		✓		✓	✓		Stay well clear of any water flowing in this channel. No equipment or staff in water downstream of this channel (when operating)

## Site Information

Sampling Order	Hilltop Site Name		Easting/ Longitude	Northing/ Latitude	Comments
1	Mangaone at Awapuni Racecourse	NZMG:	2728405	6087718	Access via road separating PNCC STP and racecourse
		NZTM:	1818518	5525981	
		WGS84:	175.574430	-40.388127	Gauge site (wade upstream of bridge when low, 2 person ADCP downstream when high)

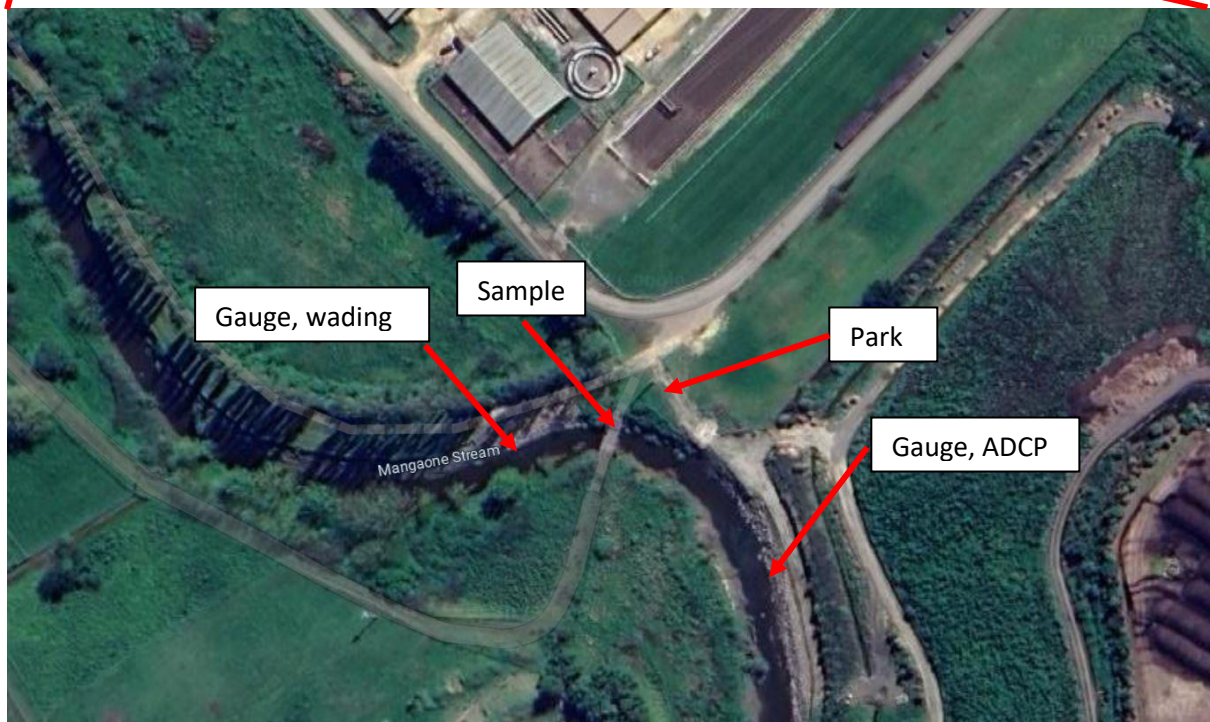
[Contact details can be found here.](#)

## Equipment Required

Equipment	<ul style="list-style-type: none"> <li>• Sample bottles</li> <li>• Handheld multi-parameter instrument (calibrated)</li> <li>• Black disc, viewer, tape measure</li> <li>• Clarity Tube</li> <li>• Sampling pole</li> <li>• Chilly bins and ice-packs</li> <li>• Field sampling books</li> <li>• Sampling ID labels (created using Hilltop Sampler)</li> <li>• Use gloves for wastewater and effluent samples</li> <li>• Appropriate PPE for sites</li> </ul>
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<b>Additional Comments/ Instructions</b>	<ul style="list-style-type: none"> <li>• <b>Mangaone at Awapuni Racecourse:</b> Single person gauging only at low flow. 2 person ADCP when high</li> </ul>
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# Mangaone at Awapuni Racecourse



# Mangaone at Awapuni Racecourse

**POSSIBLE SITE HAZARDS** (this does not negate undertaking a hazard review prior to sampling on the day):

Drowning - River	Traffic / vehicle movements – D/S access way	Slippery surfaces – cobbles, periphyton	Bridge – unstable
Trip hazards – cobbles, uneven ground, particularly getting down to water	UV Radiation	STP overflow channel – potential raw sewage (when operating)	

**REQUIRED PPE** (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

WADERS	HI VIZ	PFD	HAND SANITISER				
							

## DIRECTIONS:

- From No. 1 Dairy head back into town over the main bridge. Head through town towards PNCC STP on Totora Rd.
- Pass through the first main gate (open during normal business hours) and turn immediately right to follow the gravel road alongside the racecourse.
- Drive to the end of the straight section of road and pull off to the left as the road veers right.
- The fenced off bridge will be right in front of you. Park out of the way anywhere here.

## ACCESS:

- Ensure you are wearing your hi-vis and other PPE.
- Sample directly below the bridge to ensure you capture an obscured outlet just upstream of the bridge.
- Take extreme care accessing the water as the banks are unstable and uneven.
- Gauge the site – best location for wader gauging is approx. 10m upstream of the bridge when the water level is low. For a 2 person ADCP gauging approx.. 50m downstream is best. Carefully use the bridge for 1 person to access the far bank.



Mangaone at Awapuni Racecourse – Looking upstream from the high flow gauging area towards the bridge/sampling spot.