



Version No: 05 Issue Date: 21/10/2024 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 20 Page: 1 of 23
horizons <small>regional council</small> 	Hydrology Operations Manual	

Version 3.2.23/01/2020

Water Quality Monitoring Run Guide

Upper Whanganui

STATE OF ENVIRONMENT (Monthly Sampling)

Job 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 checked="" type="checkbox"/>	Suspended loads	<input type="checkbox"/>	Noise – plant and equipment	<input type="checkbox"/>
Difficult entry/exit	<input type="checkbox"/>	Falling objects	<input type="checkbox"/>	Communication – means of	<input checked="" 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 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 type="checkbox"/>
UV Radiation	<input 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 checked="" 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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HI VIZ	SAFETY HARNESS					
						
<input checked="" type="checkbox"/>	<input type="checkbox"/>					

Known Hazard	Significant		Can it be Eliminated		Can it be Minimised		Method of control
	Yes	No	Yes	No	Yes	No	
							ENTER KNOWN HAZARDS AND CONTROLS HERE THESE SHOULD BE 'KNOWN' ISSUES WITH THE RUN/SITES WITH APPROPRIATE METHODS STATED
Confined Spaces	✓		✓		✓		Taumarunui STP at Tertiary Treated Waste: Sample ONLY using the pump to sample outside of the sample pit. UNDER NO CIRCUMSTANCES ARE STAFF TO ENTER THE SAMPLING SHED/PIT.
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	✓			✓	✓		Pond edges can be slippery at any time. Sampling from the pond edge must always be done from stable level ground using a sample pole. PFD's must be worn by staff. Vehicles must be driven a sensible distance from any pond edges. [HMP18]
Drowning	✓			✓		✓	The STP ponds can be deep, full of sediments, and have operating equipment on/within them. Sampling of the pond must always be done from stable level ground using a sample pole. PFD's must be worn by staff. Vehicles must be driven a sensible distance from any pond edges. [HMP18]
Machinery – mobile plant	✓			✓		✓	Sample site is within an operating waste water treatment plant, plant and machinery may be on-site during sampling. Staff to wear appropriate PPE, obey on site signage and instruction, and give way to all operational traffic.
Traffic Vehicle movements	✓			✓		✓	Sample site is within an operating waste water treatment plant with council and contractor vehicles liable to be present at any time. Staff to obey on site signage and instruction. HRC Vehicle to be parked in a safe and appropriate location. [HMP 16] [HMP 20]
Noise – plant and equipment	✓			✓	✓		Plant operation can create high levels of noise. Ear protection to be carried in HRC vehicle at all times. Ear protection to be worn when machinery is running [HMP 4]
Hazardous Waste – treated Effluent	✓			✓	✓		Sampling activities require the collection of a sample of treated effluent. Staff must wear sampling gloves, eye protection and have access to anti-bacterial hand-gel to

Known Hazard	Significant		Can it be Eliminated		Can it be Minimised		Method of control
	Yes	No	Yes	No	Yes	No	
							sample. Hepatitis B vaccinations are offered by HRC [HMP 30] [HMP 35]
General Waste		✓		✓	✓		General waste can be stored on site depending on operating activity. 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.
Manual Handling	✓			✓	✓		There should be no need for sample staff to move any equipment etc. in order to carry out sampling activities. Sampling activities require the collection of a sample of treated effluent. Staff must wear sampling gloves, eye protection and have access to anti-bacterial hand-gel to sample. Hepatitis B vaccinations are offered by HRC. [HMP 30] [HMP 35]
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]
Stock/Farm Animals	✓			✓	✓		Although generally docile farm animals can still be hazardous. The risk should be isolated by finding alternative access routes to the sample location or contacting the owner for assistance. [HMP26]
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	✓			✓		✓	Sample site requires 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] – Relevant TMP applies

Site Information

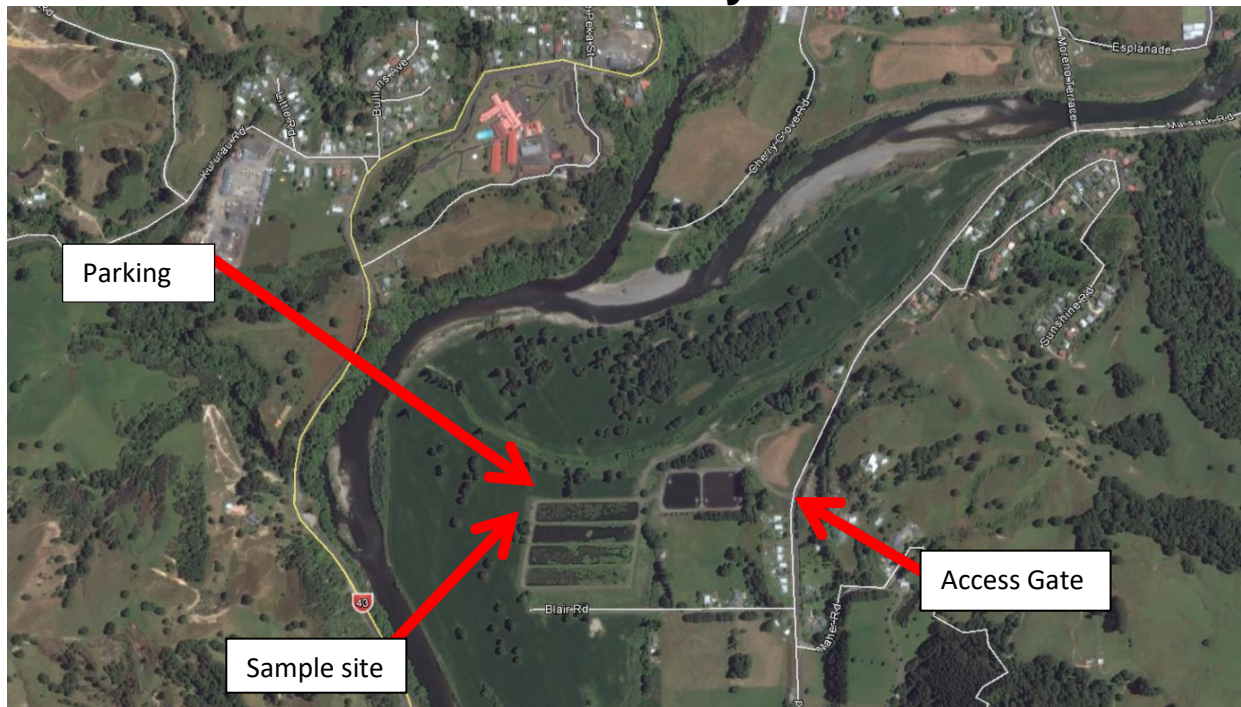
Hilltop Site Name	Easting/Longitude		Northing/Lat	Comments
Taumarunui STP at Tertiary Treated Waste	NZMG:	2705417	6254009	Key Required!
	NZTM:	1795319	569234	SAMPLE ONLY USING THE PUMP TO SAMPLE OUTSIDE OF THE SHED/PIT
	WGS84:	175 15 08 E	38 53 46 S	
Whanganui at Cherry Grove	NZMG:	2705671	6250764	Public Access
	NZTM:	1795577	5689095	
	WGS84:	175 15 22 E	38 55 31 S	
Ongarue at Cherry Grove	NZMG:	2705???	6250???	Public Access
	NZTM:	1795???	5689???	
	WGS84:	175 15 ?? E	38 55 ?? S	
Ongarue at Taringamotu	NZMG:			Difficult driving through culvert, consider walking
	NZTM:			
	WGS84:			
Whanganui at Te Maire	NZMG:	2699802	6248969	Genesis owned. 100km/h zone, TMP applies
	NZTM:	1789707	5687294	
	WGS84:	175.188953	-38.942782	
Ohura at Tokorima	NZMG:	2686214	6252121	100km/h zone, TMP applies
	NZTM:	1776114	5690435	
	WGS84:	175.031392	-38.917332	

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

Equipment Required

Sample Bottles	Six (06) sample bottle sets - refer to http://tgm.horizons.govt.nz/Hydrology/SOPs/cd_om 15.4 Appendix 4 E LS%20Bottle%20Guide.xlsx
Sample numbers	Six (06)
Equipment	<ul style="list-style-type: none"> • Handheld multi-parameter instrument (calibrated) – including iPad/screen • Black disc, viewer, tape measure • Clarity Tube • Sampling pole • Chilly bins and ice-packs • Bags for isolating effluent samples • Disinfectant equipment for sampling equipment • Field sampling books • Sampling ID labels (created using Hilltop Sampler) • Use gloves for wastewater and effluent samples • Alcohol gel

Taumarunui STP at Tertiary Treated Waste






Location map

POSSIBLE SITE HAZARDS:

Drowning – River	Traffic / vehicle movements – sales yard	Slippery surfaces – mud	UV Radiation
Trip hazards – cobbles, uneven ground	Limited comms		

REQUIRED PPE:

WORK BOOTS	PFD	HI VIZ					
							

DIRECTIONS:

- Directions are from National Park as this is where staff will be starting from.
- Head left/Northbound onto SH4 towards Taumarunui.
- After 41.5km (you will be in Taumarunui), take a left onto Turaki Street.
- Take the next right Morero Terrace.
- Take the next left which is still Morero Terrace.
- At the end of the road (after the bridge) take a right onto Hikumutu Road.
- After 950m on the right is the site access.

ACCESS:

- **You Need a Taumarunui STP Key** to open the gate.
- Follow the track to the right past the buildings and around behind the oxidation ponds.
- Continue through the gate and to the right of the bottom ponds.
- Park by the shed in the bottom right corner.

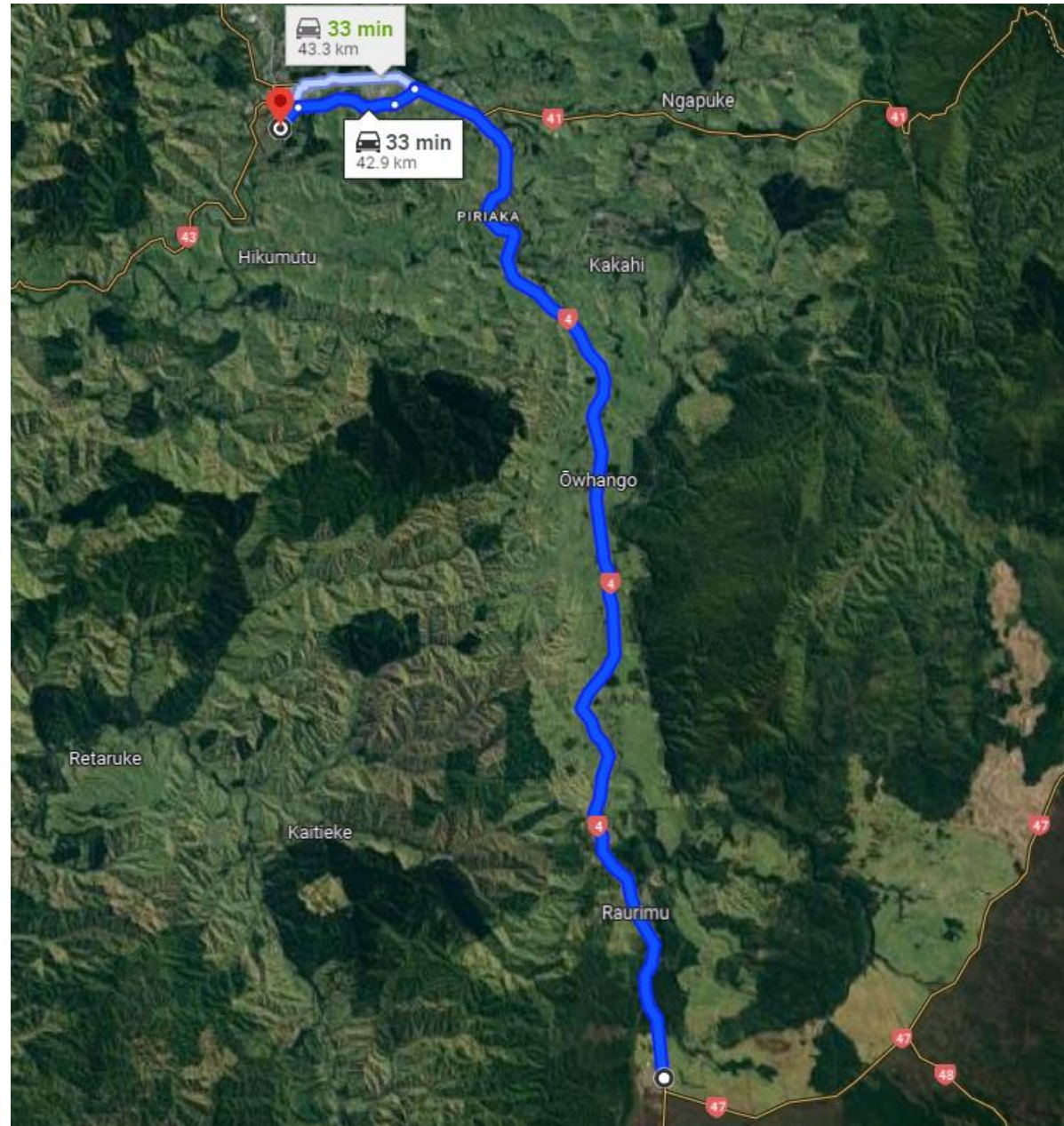
NOTES:

- Drive slowly, you wouldn't want to end up in one of the ponds
- This is a sewage treatment facility, don't touch the water directly
- **DO NOT go into the shed/pit as it is a confined space**
- Other workers use the facility at this time, so park off the track
- If other workers are on site, the gate can be left unlocked and open

SAMPLING INSTRUCTIONS:

- Sub-sample from the grey pipe (tap is generally left on)
- Turn on the water pump using the switch on the other side of the post. The pressure varies, so be careful of splashes
- Take care to not spill this water on yourself. Although it is treated, consider it untreated
- **If the pump is not operating DO NOT go into pit/shed. Mark it as NO SAMPLE – PUMP NOT OPERATING**

MAP:



PHOTOS:

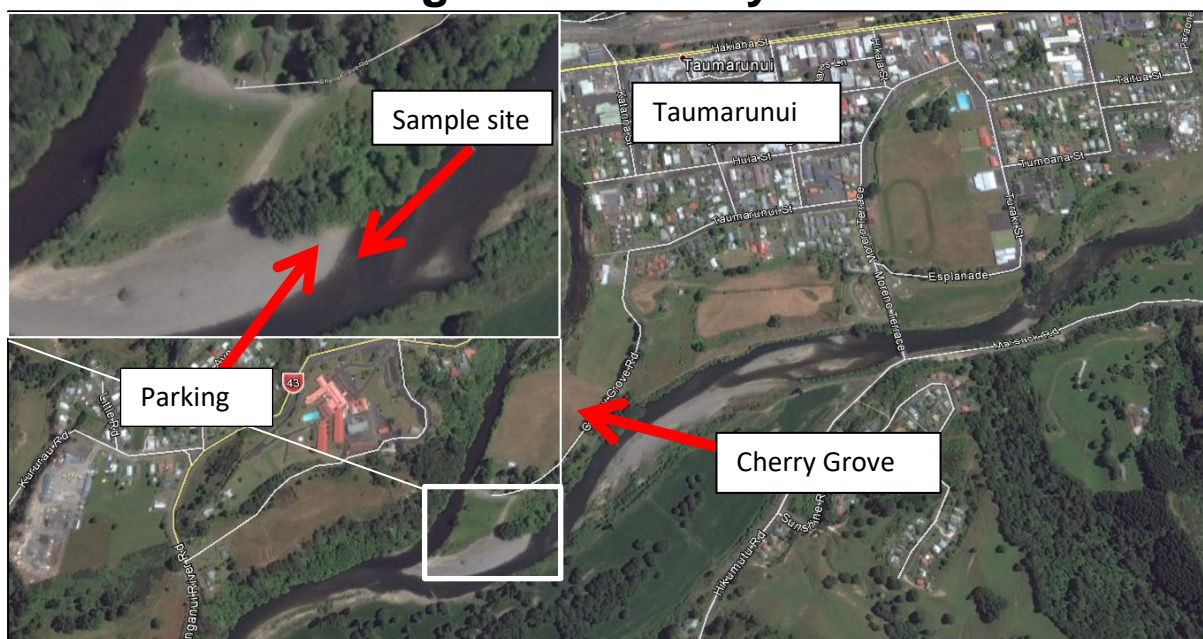


Site entrance



Sample Site – pump switch.

Whanganui at Cherry Grove






Location map

POSSIBLE SITE HAZARDS:

Drowning – River	Traffic / vehicle movements – sales yard	Slippery surfaces – mud	UV Radiation
Trip hazards – cobbles, uneven ground	Limited comms		

REQUIRED PPE:

WORK BOOTS	PFD	HI VIZ					
							

DIRECTIONS:

- Head left out of the STP compound.
- Turn left on Morero Terrace (back over the bridge).
- Take the next left onto Taumarunui Street.
- At the end of the street it veers left and changes to Cherry Grove Road.
- Follow this down through Cherry Grove Domain.

ACCESS:

- At the DOC building turn left down the dirt track to the river and on to the gravel bar.
- Sample site is at the upstream tip of this gravel bar.

NOTES:

- When the river is up there is a lot of water flowing in the Whanganui River, take care.
- There is no telemetry site here.

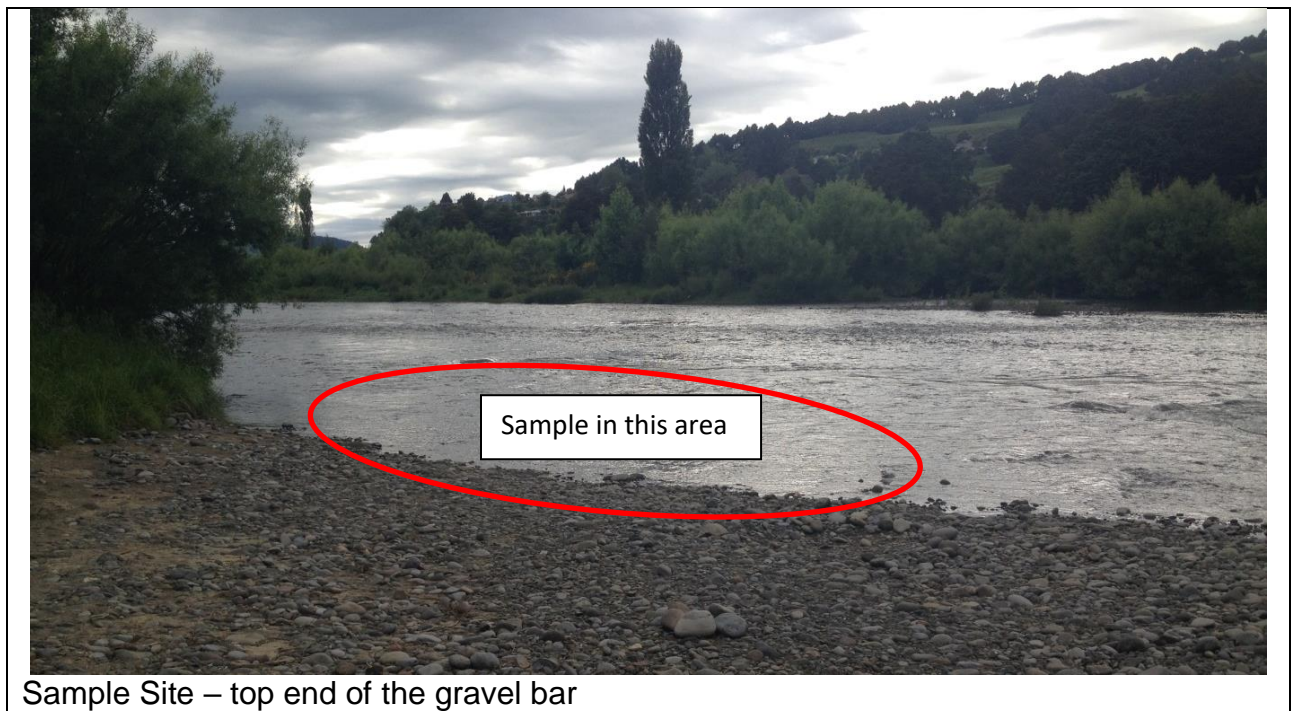
MAP:



PHOTOS:

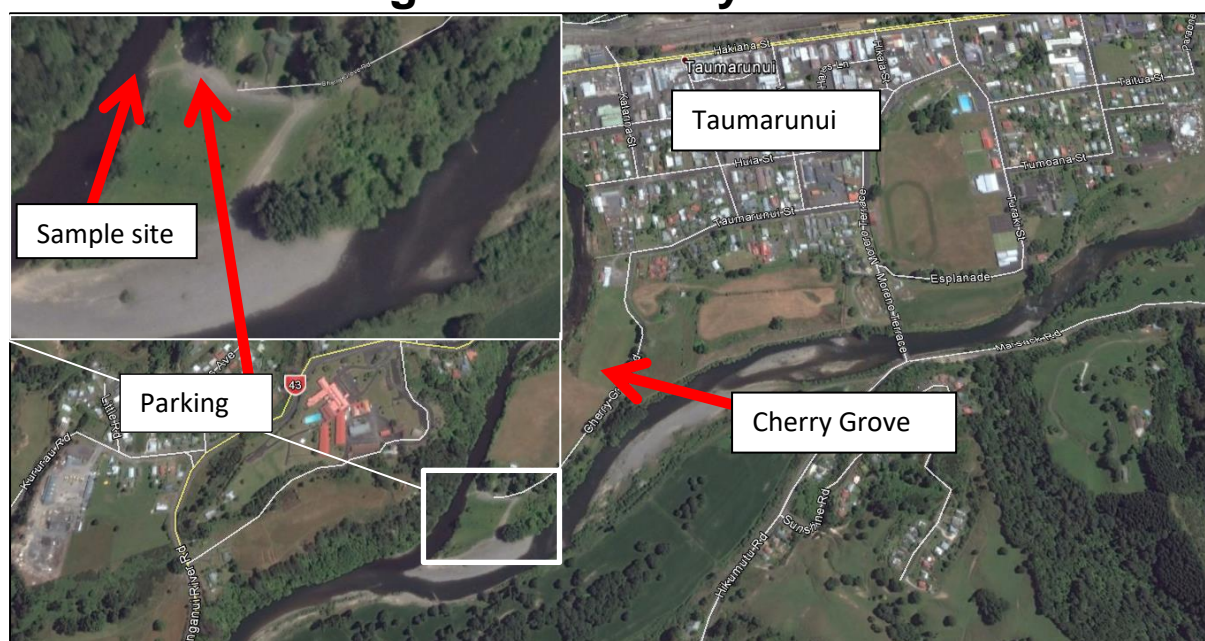


Domain entrance



Sample Site – top end of the gravel bar

Ongarue at Cherry Grove






Location map

POSSIBLE SITE HAZARDS:

Drowning – River	Traffic / vehicle movements – sales yard	Slippery surfaces – mud	UV Radiation
Trip hazards – cobbles, uneven ground	Limited comms		

REQUIRED PPE:

WORK BOOTS	PFD	HI VIZ					
							

DIRECTIONS:

- From Whanganui at Cherry grove site head back towards the DOC hut and turn left.

ACCESS:

- Sample at the boat ramp.
-

NOTES:

- When the river is up there is a lot of water flowing in the Ongarue and Whanganui River, take care.
- There is no telemetry site here.

MAP:

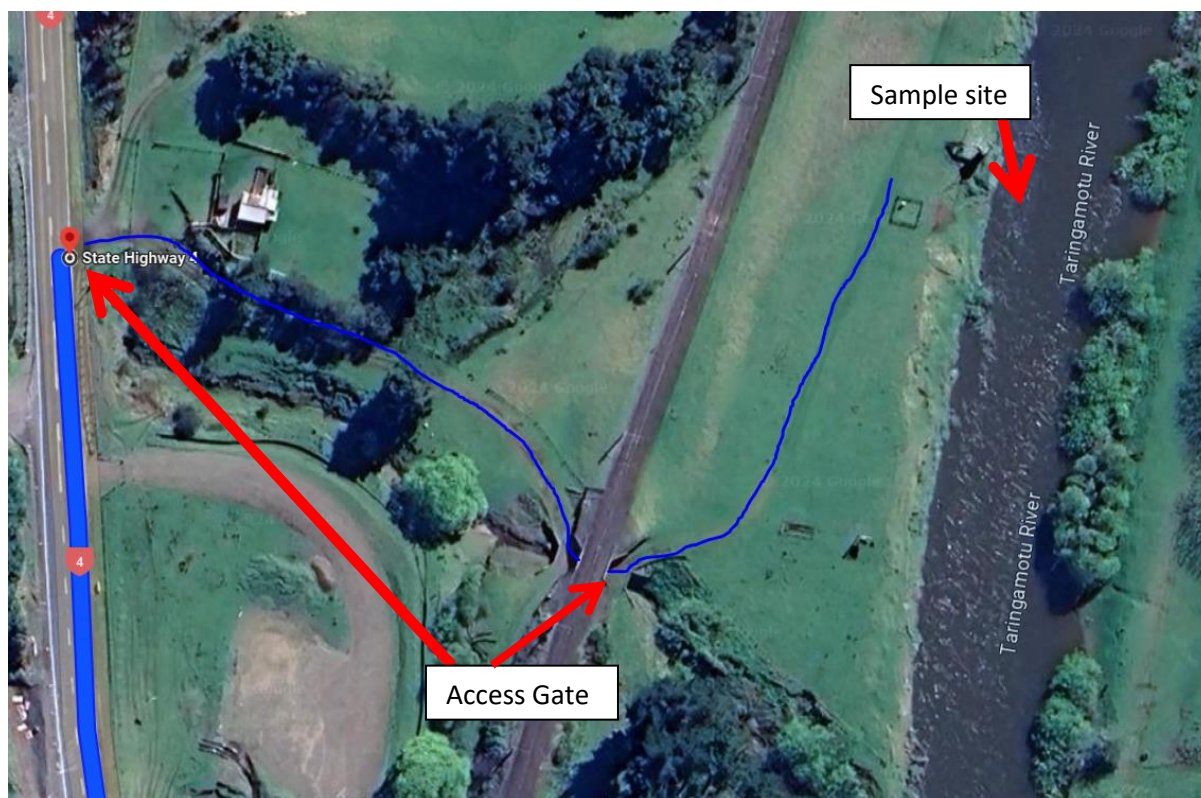


PHOTOS:



Sample site – sample upstream of the boat ramp

Ongarue at Taringamotu






Location map

POSSIBLE SITE HAZARDS:

Drowning – River	Traffic / vehicle movements – sales yard	Slippery surfaces – mud	UV Radiation
Trip hazards – cobbles, uneven ground	Limited comms		

REQUIRED PPE:

WORK BOOTS	PFD	HI VIZ					
							

DIRECTIONS:

- Drive back through the Cherry Grove Domain and turn right onto Taumaranui Street.
- Take the first left onto Marae Street.
- At the end of the road turn left onto Hakiaha Street/SH4.
- Turn right at the big intersection to remain on SH4 (signs for Hamilton).
- Follow the road for 3.7km and at the base of a sweeping right hand corner is the access gate is on your right.

ACCESS:

- Go through the access gate and follow the track that leads to the underpass of the railway tracks.

- The underpass is very tight, but a vehicle will fit through. If you are not confident then park by the underpass and walk to the site (150m).
- Drive up to the tower to park.

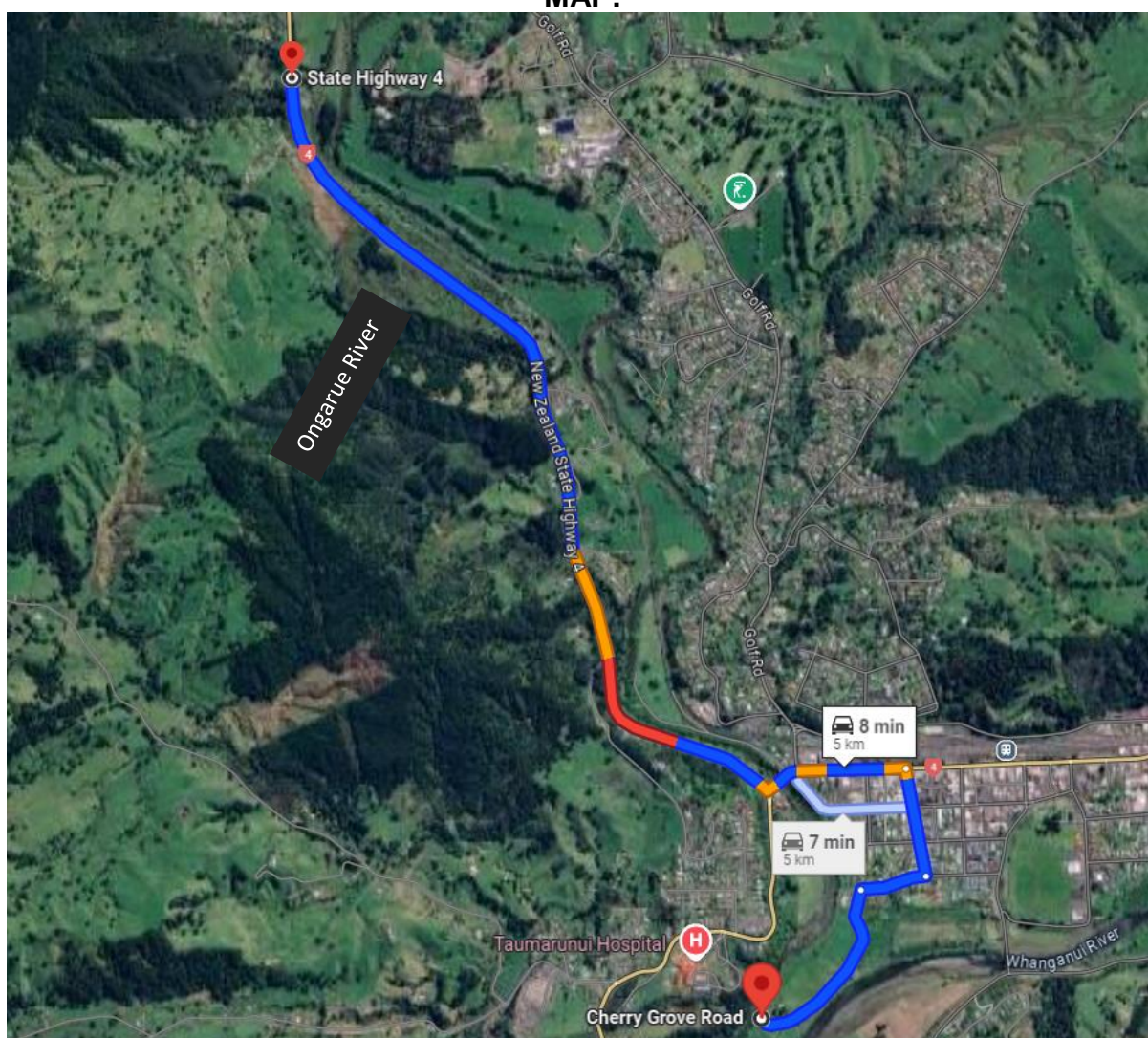
NOTES:

- Cattle are often in these paddocks.
- Although relatively shallow the current is fast through this section, consider PFD.
- Banks are unstable and can slip in near the water's edge.
- The steps on the tower can be slippery, use the handrails.
- Use the NIWA key, the lock has a double action. Give the door a shove with your shoulder as you turn the key when unlocking or locking.

SAMPLING INSTRUCTIONS:

- The sample site is near the base of the tower as close to the staff gauge as possible. The stability of the banks may force you to access slightly up or down from this point.
- A sample pole is helpful.

MAP:



PHOTOS:

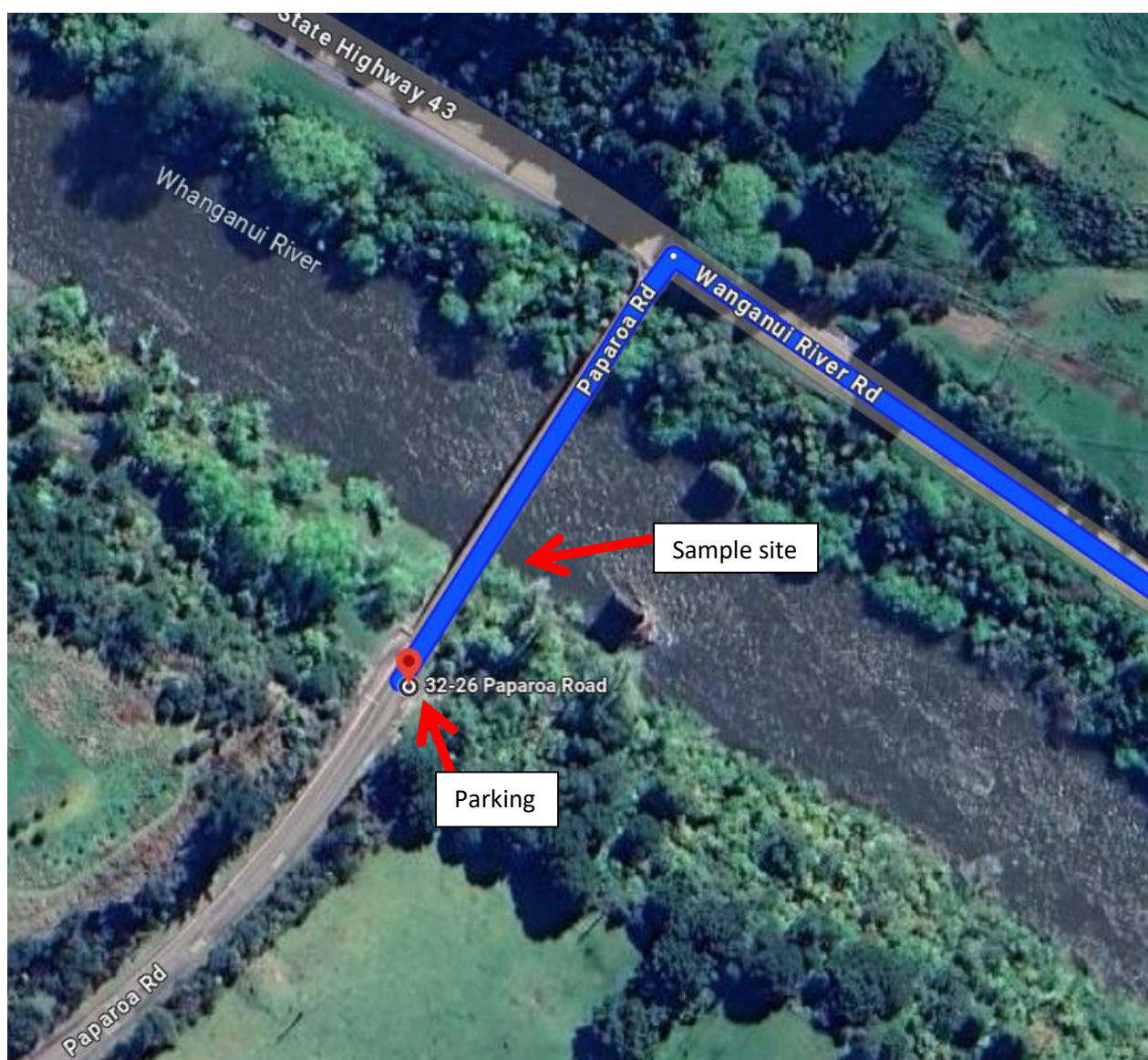


Street view - access gate and path to site.



Sample site – tower and ESG's

Whanganui at Te Maire






Location map

POSSIBLE SITE HAZARDS:

Drowning – River	Traffic / vehicle movements – sales yard	Slippery surfaces – mud	UV Radiation
Trip hazards – cobbles, uneven ground	Limited comms		

REQUIRED PPE:

WORK BOOTS	PFD	HI VIZ					
							

DIRECTIONS:

- Head left out of previous site, back toward Taumaranui on SH4.

- Continue on this road, the road becomes SH43/Forgotten World Highway.
- Follow this for another 12.4km.
- Take a left over the bridge onto Paparoa Road.
- Site is on opposite end of bridge at Paparoa Road.

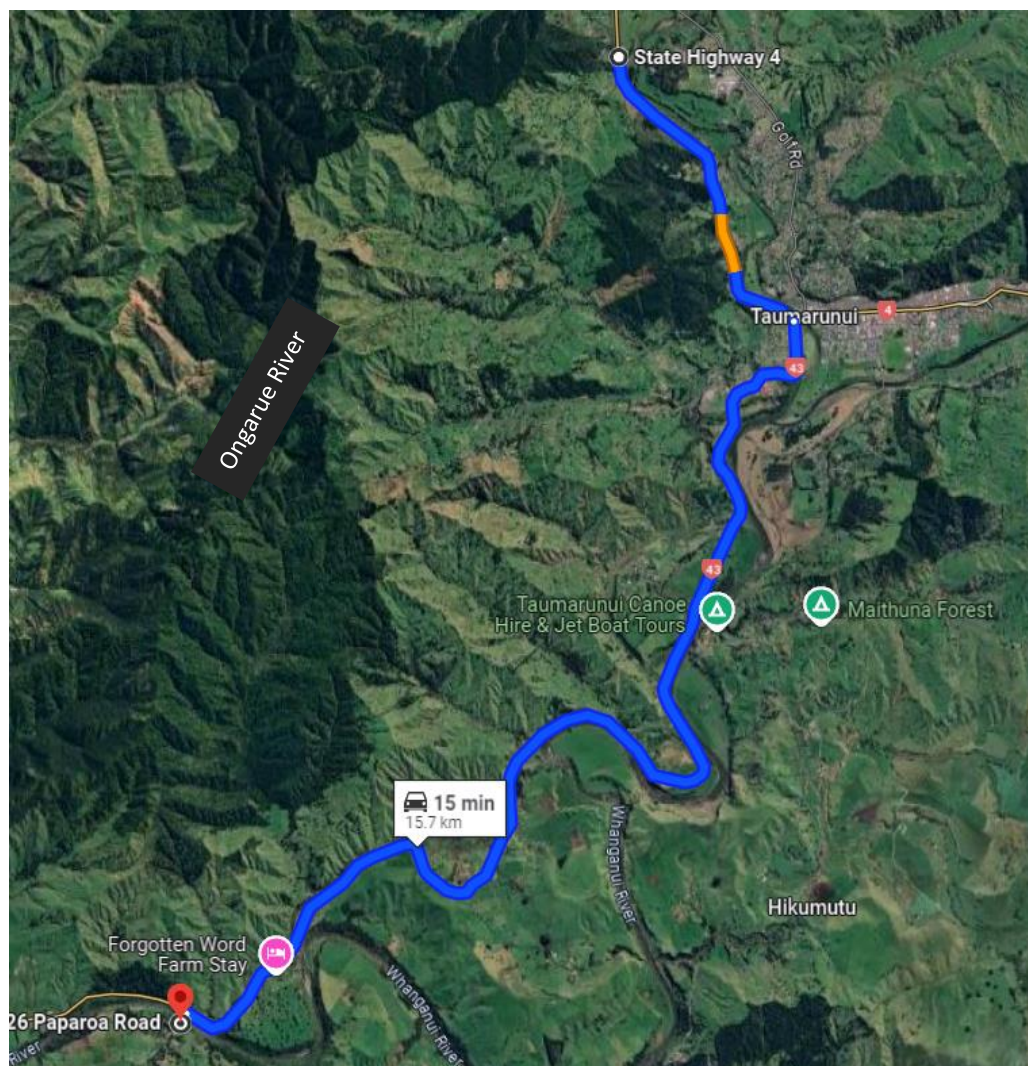
ACCESS:

- Park on left just off the bridge.
- Follow the path down from the parking area to the tower catwalk.
- Use the stairs to the right of the catwalk to access the lower platform.
- Climb railing and use warratahs to get down to the water's edge.

NOTES:

- If accessing tower you must check in with Genesis control in Turangi before arrival (no cell coverage at site) and check out after leaving (once back in coverage). **Genesis control (07) 384 7210.**
- Steps can be slippery, use handrails.
- Water is swift and deep, use a PFD.
- Banks are very slippery outside of railing.
- Staff Gauge is only usable at very high flows.
- Turbidity sensor can only be cleaned at low flows.

MAP:



PHOTOS:



Street view – park to the left after the bridge.



Sample site – tower, stairs, turbidity sensor and sample point.

Ohura at Tokorima






Location map

POSSIBLE SITE HAZARDS:

Drowning – River	Traffic / vehicle movements – sales yard	Slippery surfaces – mud	UV Radiation
Trip hazards – cobbles, uneven ground	Limited comms		

REQUIRED PPE:

WORK BOOTS	PFD	HI VIZ					
							

DIRECTIONS:

- Head back across the bridge and left back onto SH43.
- Continue for 16.7km until you reach the bridge over the Ohura River.

ACCESS:

- The site is just before the bridge on the left.
- Park facing back towards Taumarunui on the other side of the road.
- The site is in the green container, but the sample area is accessed from the opposite side of the road and down the beaten track.

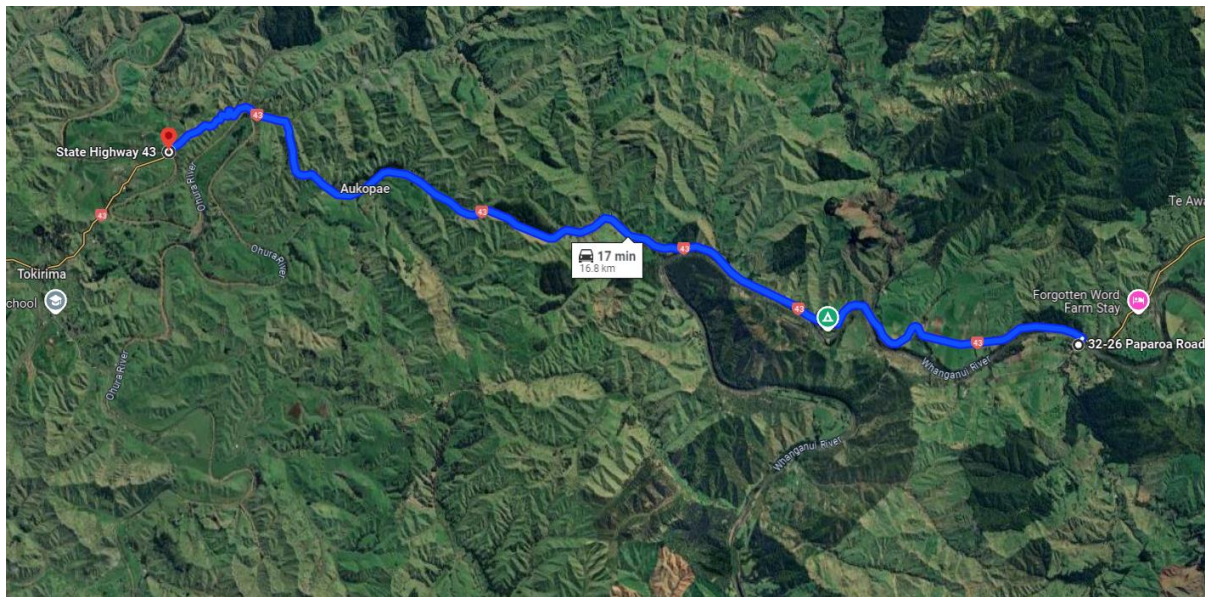
NOTES:

- TMP applies. Hi viz is essential as you will need to cross the road and possibly the bridge.
- Wasps can be an issue in summer.
- The bank by the sensors is very slippery with small cut out steps in the clay.
- Water is deep and faster than it appears, wear a PFD.
- Obstacles and piping can often be covered by grass along the path down to the sensors and poses a trip hazard.
- Sample before flushing the sensors as the water used in the flush is not clean.

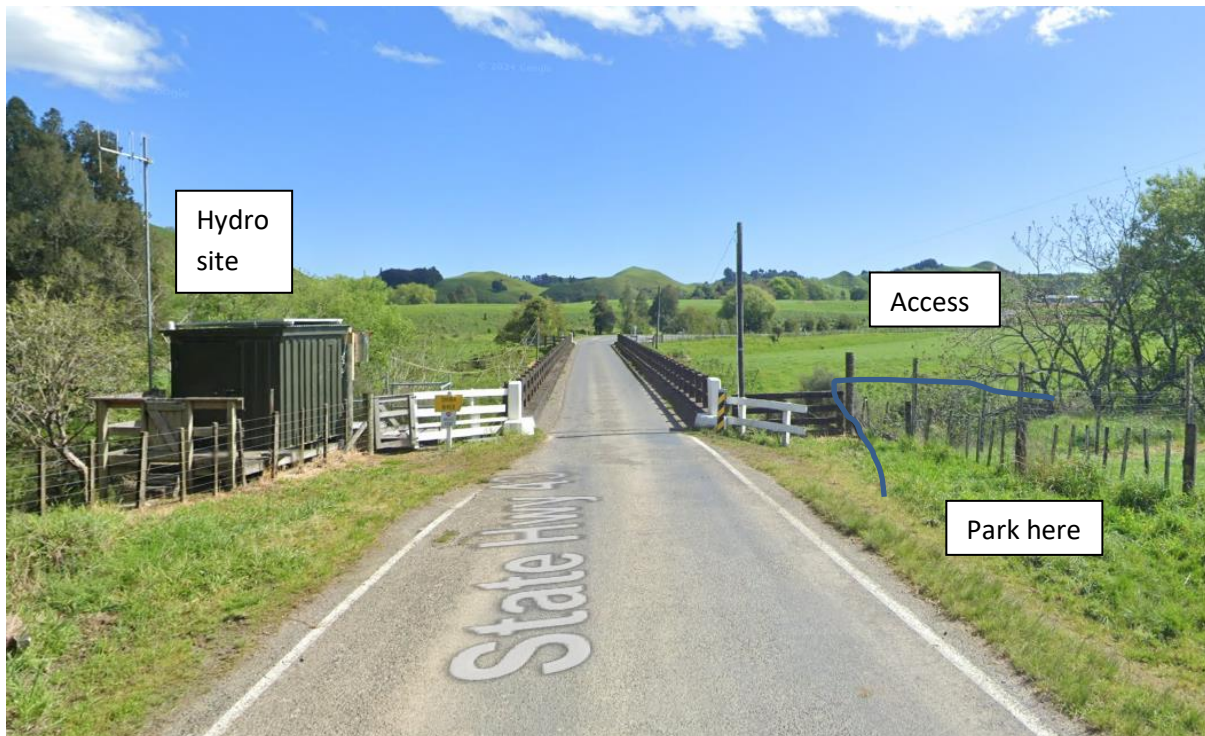
SAMPLING INSTRUCTIONS:

- Sample by the sensors which are down the bank below the green flushing tank that you can see from the road. This is over the road from the container, follow the beaten track.
- Staff gauge is across the river on the bridge pier and can be read (as long as it is clean) from the sample site.

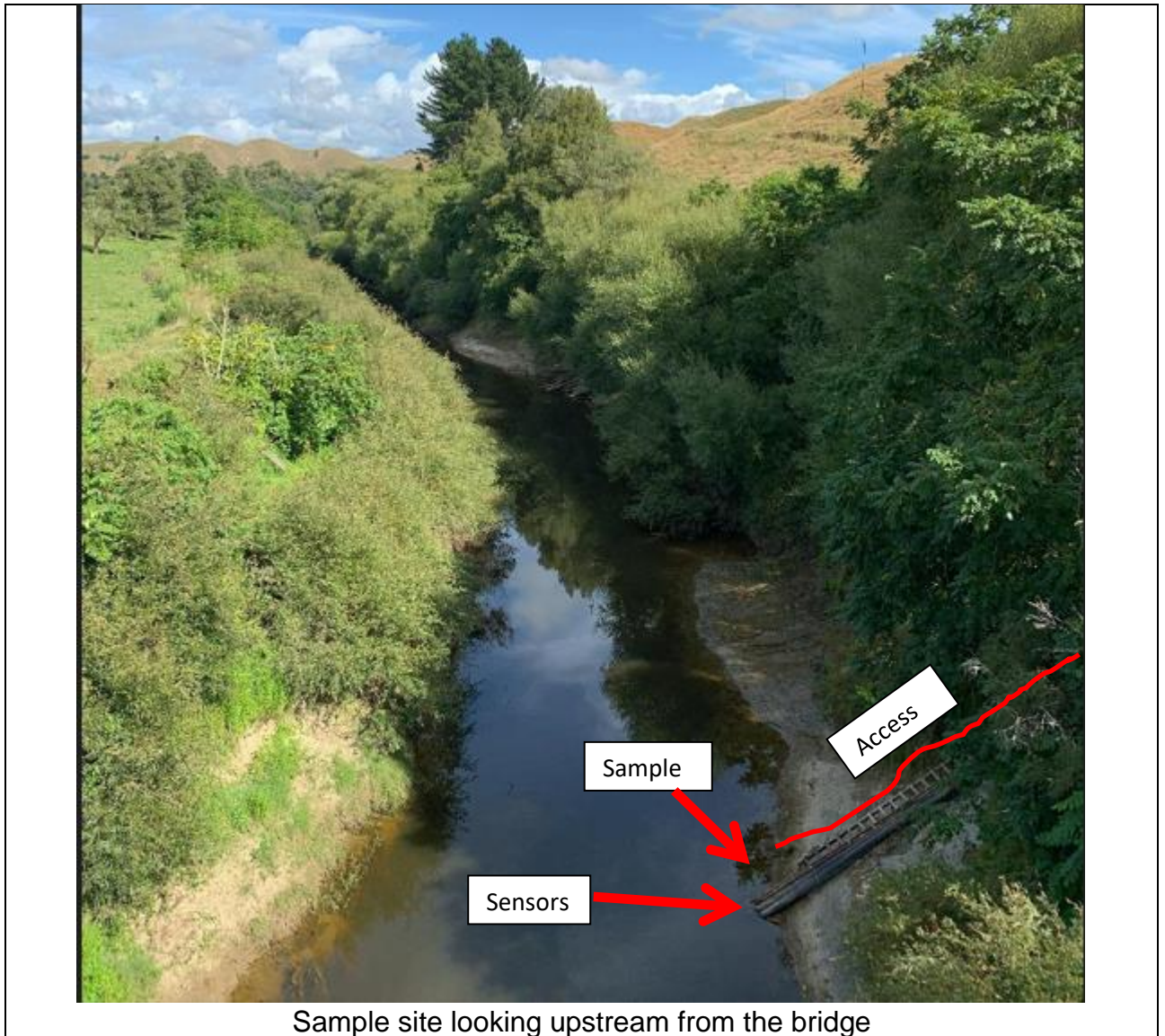
MAP:



PHOTOS:



Hydro site to the left – parking to the right and access to sample site.



Sample site looking upstream from the bridge