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SoE and Periphyton Monitoring Run Guide

Mangatainoka SoE Run

**POINT DISCHARGE/STATE OF ENVIRONMENT
(Monthly Sampling)**

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Job Hazard & Task Analysis- FILL OUT

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 checked="" 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 checked="" type="checkbox"/>
Explosive gas	<input type="checkbox"/>	Trip hazards	<input checked="" type="checkbox"/>	Reduced visibility	<input checked="" 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 checked="" type="checkbox"/>	Pressurized fluids	<input type="checkbox"/>	General waste	<input type="checkbox"/>
UV Radiation	<input checked="" type="checkbox"/>	Pressurized air/gas	<input type="checkbox"/>	Hazardous waste	<input type="checkbox"/>
Electrical – low /high voltage	<input checked="" 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 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 checked="" type="checkbox"/>	Stock/Farm Animals	<input checked="" type="checkbox"/>		

Required PPE & Safety Equipment– 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 / WADERS	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	SUN BLOCK & HAND SANITISER	VHF RADIO	THROW BAG	PERSONAL LOCATOR BEACON	
						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

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Known Hazard	Significant		Can it be Eliminated		Can it be Isolated		Method of control
	Yes	No	Yes	No	Yes	No	
Drowning	✓			✓		✓	Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at all times when working around water [HMP 18]
UV Radiation	✓			✓	✓		Horizons provide sunscreen and hats. Staff are encouraged to make use of these. [HMP 17]
Engulfment	✓			✓		✓	Rivers/stream are prone to flash flooding creating the potential for engulfment. Staff must be alert and aware at all times of how the waterways are behaving around them, especially in areas where water is dammed or has structures such as intakes and aqueducts. PFD's must be worn by staff and staff must be trained for working around water. Vehicles must be driven a sensible distance from any river or pond edges. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at all times when working around water [HMP18]
Difficult Entry/Exit	✓			✓	✓		Entry and exit into waterways poses many risks and should be treated with caution. Sampling must be done from stable level ground. Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff and staff must be trained for working around water. [HMP18]
Electrical-Low/High Voltage	✓			✓	✓		Many of the rural sampling sites require traversing across farm paddocks equipped with electric fences that contain stock. If unknown, treat every farm fence as electric and avoid direct contact. Contact the landowner for advise on whether or not the fence is live and discuss alternative routes or options for avoiding the fence if possible.
Potential for Difficult Rescue	✓			✓		✓	Sampling must always be done from stable level ground. Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff and staff must be trained for working around water. Vehicles must be driven a sensible distance from any river or pond edges. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at

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Known Hazard	Significant		Can it be Eliminated		Can it be Isolated		Method of control
	Yes	No	Yes	No	Yes	No	
							all times when working around water [HMP18]
Trip Hazards	✓			✓	✓		Prior to sampling, staff must check area is clear of items that pose a risk. Trip Hazards 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	✓			✓	✓		Sampling must be done from stable level. Vehicles must be driven a sensible distance from any river or pond edges. [HMP 18]. Staff driving four wheel drive vehicles must have adequate training [HMP 9]
Manual Handling	✓			✓	✓		Staff must wear sampling gloves, eye protection and have access to anti-bacterial hand-gel to sample treated effluent. Hepatitis B vaccinations are offered by HRC. [HMP 30] [HMP 35]
Traffic Vehicle Movements							The designated driver of a vehicle is responsible for ensuring the safety and operational requirements and recommendations are met. All staff working within the road reserve must wear high visibility clothing to AS/NZS 1906.4:2010. This clothing must be fluorescent red orange in colour unless the individual is the site STMS then the garment must be fluorescent lime yellow. [HMP 9] [HMP 16] [HMP 20].
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]
Communications-Means of							Cell phone coverage is not available at all sites. Staff must be capable of communicating via VHF radio in an equipped vehicle. [HMP 24]
Remote Area	✓			✓		✓	Most council vehicles are fitted with the E-Road vehicle locator system. Many vehicles are also fitted with a radio operating on the Horizons digital radio network providing communication and tracking coverages across a majority of the region. [HMP 24]
Temperature/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 to additional and appropriate clothing. Staff must have

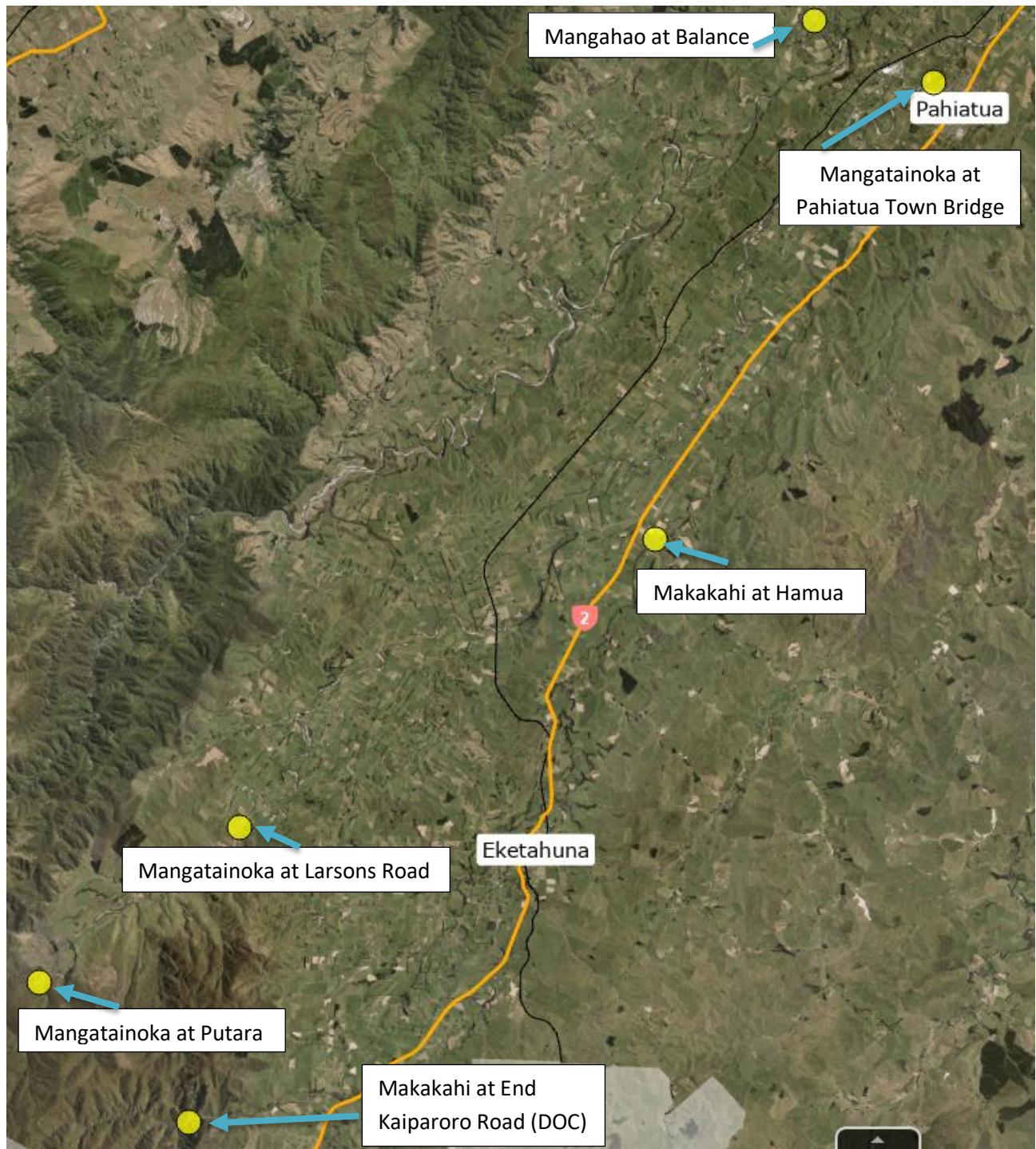
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Known Hazard	Significant		Can it be Eliminated		Can it be Isolated		Method of control
	Yes	No	Yes	No	Yes	No	
							access to suitable PPE and spare clothing within their vehicle. [HMP 18]
Reduced Visibility	✓			✓		✓	If you find you are driving in limited visibility slow your driving speed and turn your fog lights on and watch out for vehicles that aren't using their lights. When working in limited visibility if you cease to able to make out your surrounding environment stop work immediately. If working at night it is advisable to traverse the property in daylight first to map out an action plan outlining walking tracks, vehicle tracks, fence lines, stock positions, ponds, waterways, houses, and sheds as well as other significant items of interest. [HMP12]

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Site Information

Hilltop Site Name	Easting/Long (NZTM)	Northing/Lat (NZTM)	Comments
Mangatainoka at Putara	1815288	5493586	Water Quality Samples, SmarTroll, Black Disc. Chlorophyll a Sample and Visual Assessment Hydro Inspection
Mangatainoka at Larsons Road	1820856	5497900	Water Quality Samples, SmarTroll, Black Disc. Chlorophyll a Sample and Visual Assessment Hydro Inspection and Gauge
Makakahi at End Kaiparoro Road	1819443	5489677	Water Quality Samples, SmarTroll, Black Disc. Chlorophyll a Sample and Visual Assessment
Makakahi at Hamua	1832423	5505922	Water Quality Samples, SmarTroll, Black Disc. Chlorophyll a Sample and Visual Assessment Hydro Inspection
Mangatainoka at Pahiatua Town Bridge	1840208	5518648	Water Quality Samples, SmarTroll, Black Disc. Chlorophyll a Sample and Visual Assessment Hydro Inspection
Mangahao at Balance	1836866	5520350	Water Quality Samples, SmarTroll, Black Disc. Hydro Inspection



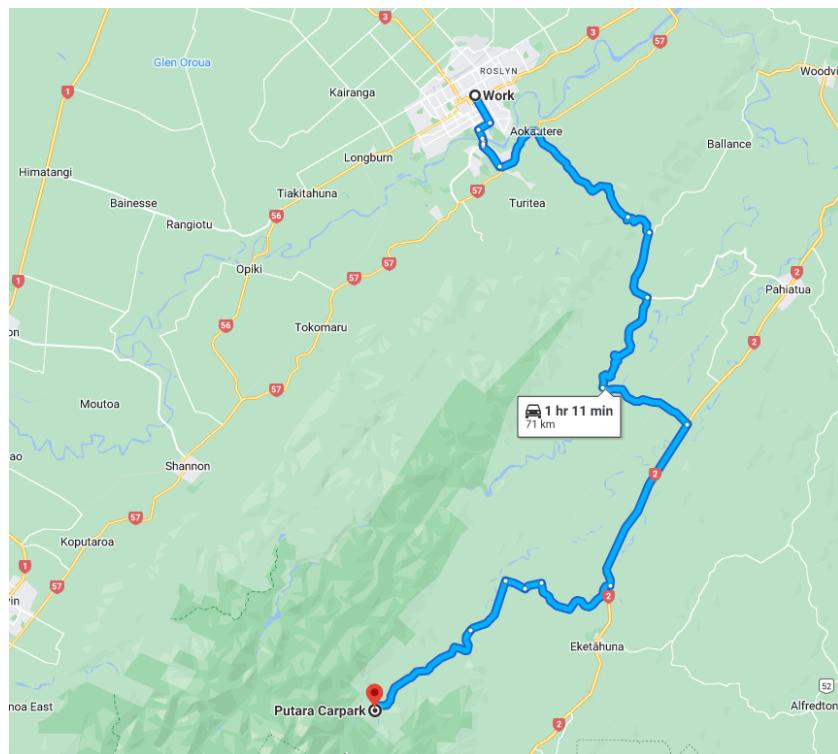
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Equipment Required

Equipment	<ul style="list-style-type: none"> • Handheld multi-parameter instrument (calibrated) – including iPad/screen WITH CADDIS INSTALLED • Black disc, viewer, tape measure • Clarity Tube • Bathoscope / Viewer • Pottles (Approx 10) • Scrubbing brush, tooth brush and washer bottle • Yellow sample bottle lid • Ice cream container • 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) • Gloves for wastewater and effluent samples • Alcohol gel • Personal Locator Beacon • 4WD Vehicle equipped with VHF Radio • Throw Bag
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SITE LOCATION MAP – Mangatainoka at Putara



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): These should link back to first page

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

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):

WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	

DIRECTIONS:

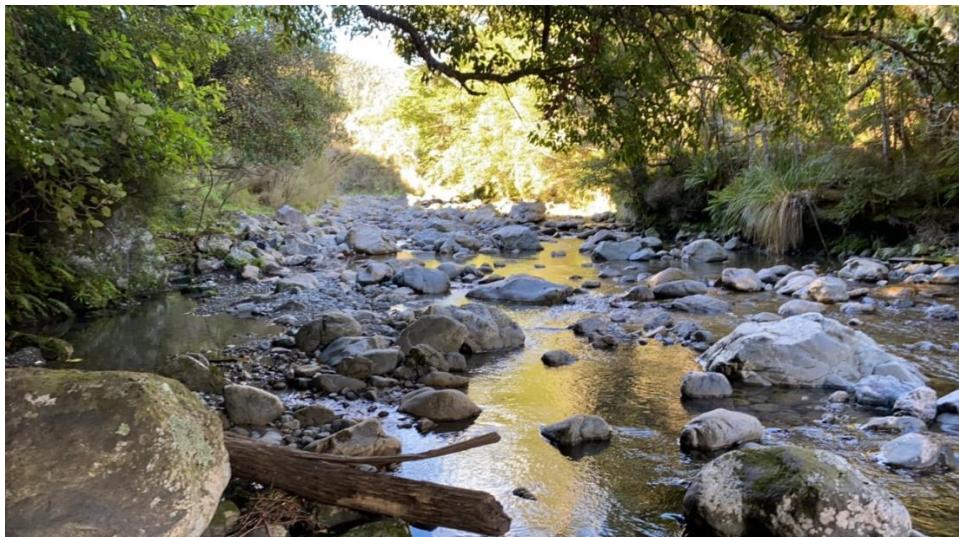
- From the Palmerston North office travel out of Palmerston North via Summerhill and onto Pahiatua-Aokautere Road (Pahiatua Track).
- Continue along Pahiatua- Aokautere Road, it will eventually turn into Makomako Road.
- Keep following this road straight until you see Nikau Road on the right. Take this turn.
- Follow Nikau road, this will eventually turn into Tutaekaea Road. Follow Tutaekaea Road until you reach the junction with SH2. Turn right onto SH2.
- Continue along SH2 until you see North Road on the right, there will be a big green sign saying Nireaha. Take this turn.

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- Follow North Road until it comes to an intersection with Nireaha-Hukanui Road and turn left here. Follow this until you come to another intersection. You should be able to see a town hall at this intersection. Turn right here onto Mangaroa Road.
- Follow this road for a few minutes to the first left turning road which is Mangatainoka Valley Road. Take this road.
- Continue on this road until the end. It will become gravelled and turn into Putara Road. At the end there is a turning around area. Park here.

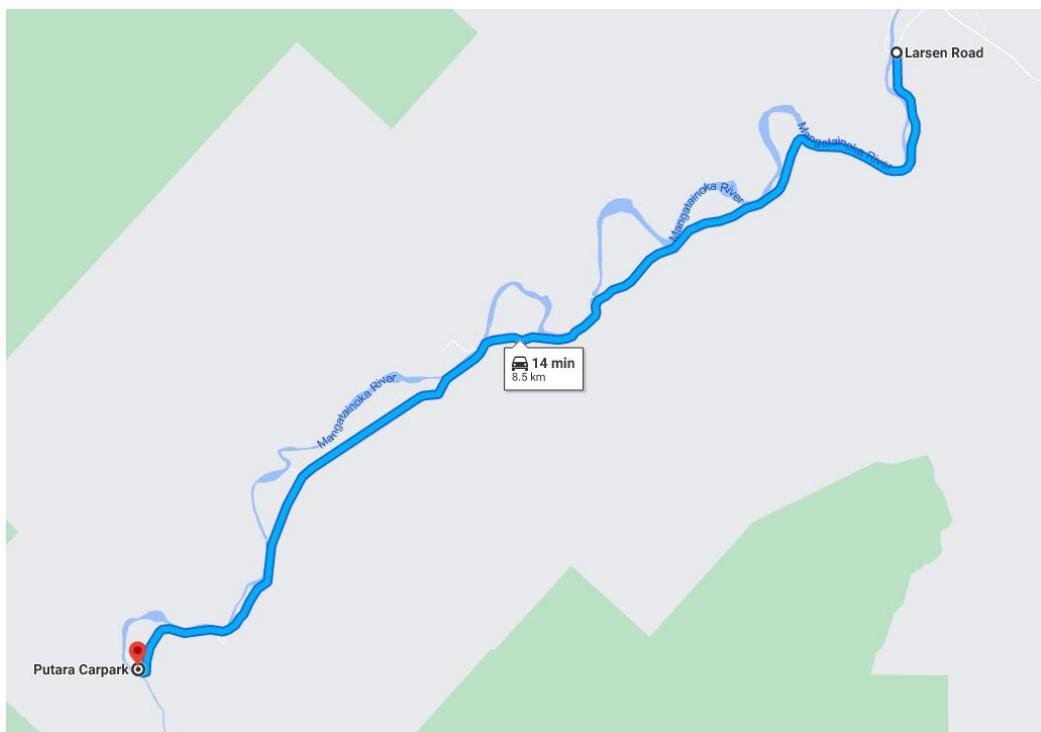
ACCESS:

- The hydro/ water quality site is slightly down stream of the parking area.
- To get to the periphyton site head up the DOC track to the left and through the small gate.
- Keep going down the path for a couple hundred meters until you see a small path going down to the right toward the river – take this
- Be careful as it can be slippery and boggy.



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SITE LOCATION MAP – Mangatainoka at Larsons Road



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): These should link back to first page

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

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):

WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	
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DIRECTIONS:

- Head back down Putara Road for 5km, until you come to a bridge on the left (Larsons Road). Turn left here and drive across the bridge.
- The science person will need to be dropped off here to access the site for periphyton and water quality.
- The hydro person can then drive back across the bridge and park on the left by their hydro shed.

ACCESS:

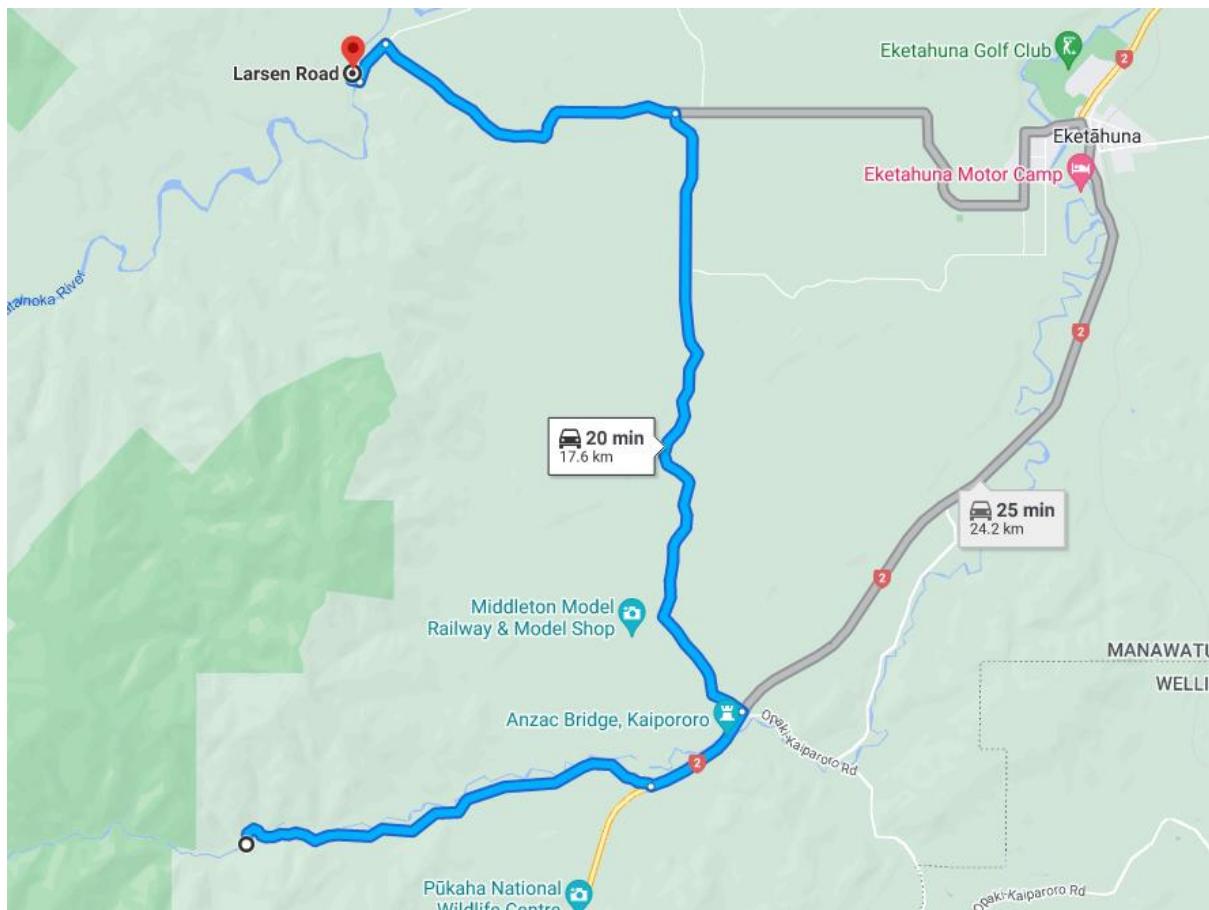
- Enter the paddock through the gate and head down to the river towards the left.
- Sample here.

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SITE LOCATION MAP – Makakahi at End Kaiparoro Road



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): These should link back to first page

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

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):

WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	
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DIRECTIONS:

- From the bridge turn left onto Putara road and continue for 500m before turning right onto Priest Road, continue on Priest road for 4km.
- After 4km turn right onto South Road No 2 and continue on this road for 7km.
- When you get to SH2 turn right.
- Only follow SH2 for 1km before turning right onto Kaiparoro Road.

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- Travel down Kaiparoro Road for about 10 minutes, you will reach a section that widens with a parking area and a bridge over the river to your right, park here. This is just before the road becomes quite narrow.

ACCESS:

- Cross the bridge and turn left to head further upstream
- Sample here where the river bends

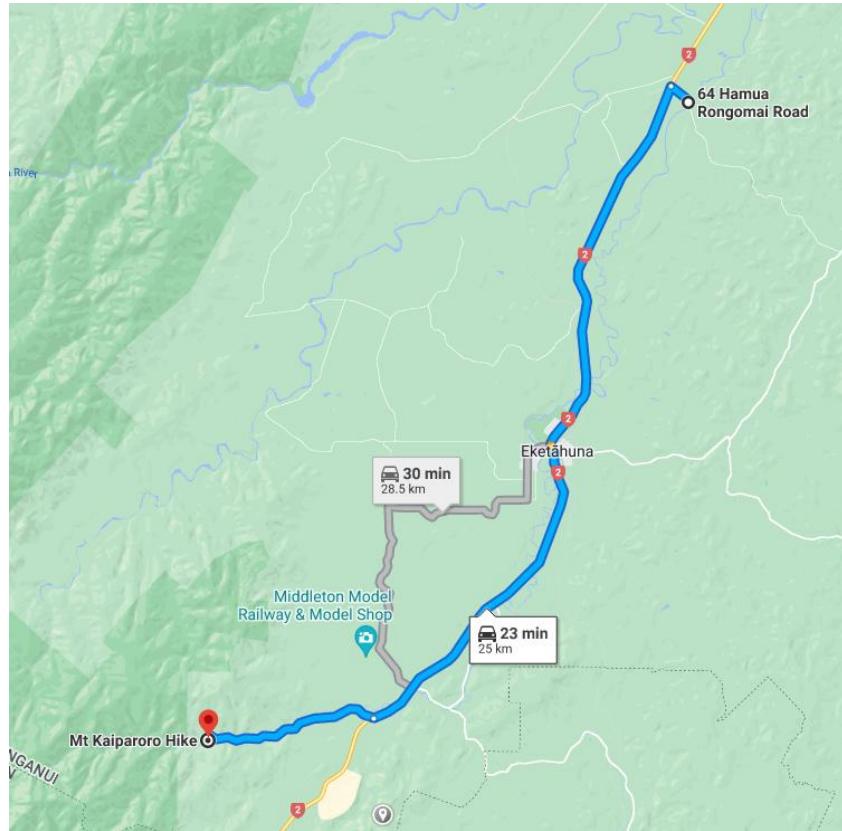


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SITE LOCATION MAP – Makakahi at Hamua



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): **These should link back to first page**

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

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):

WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	

DIRECTIONS:

- From Kaiparoro road head back towards SH2 and turn left.
- Travel down SH2 for 20km, you will pass through Eketahuna.
- After 20km you will see a green sign for Rongomai, turn right here onto Hamua-Rongomai Road.
- Travel down here for a couple minutes until you get to the first bridge.
- The science person will need to be dropped off on this side of the bridge



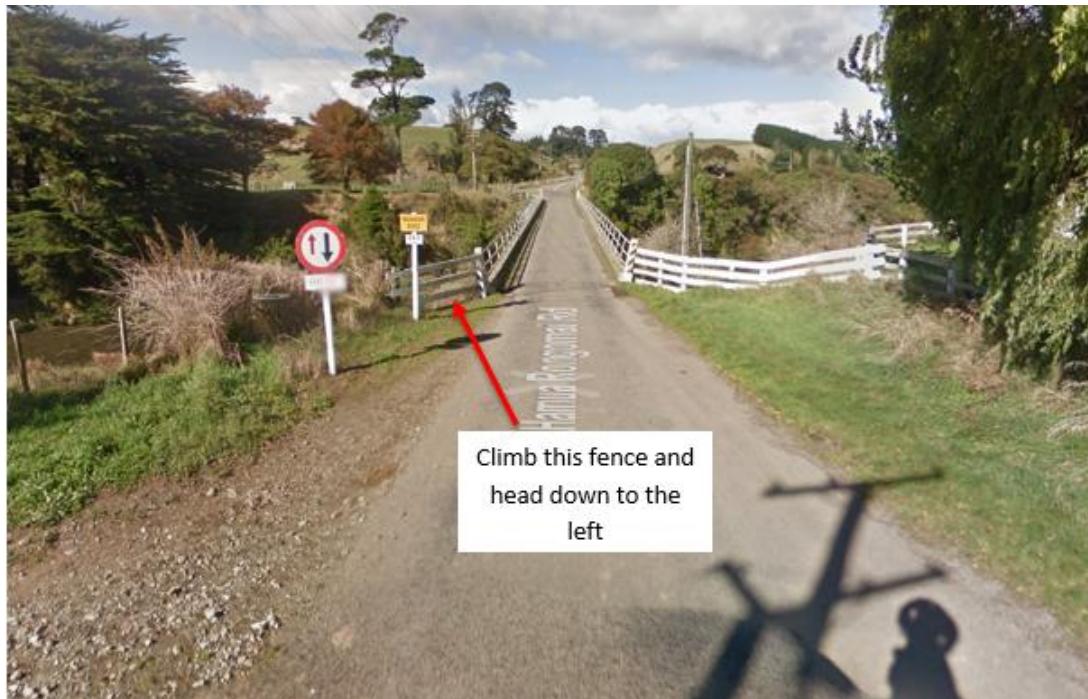
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- The hydro person can continue across the bridge and park on the left just after the bridge – this is where the hydro box is.

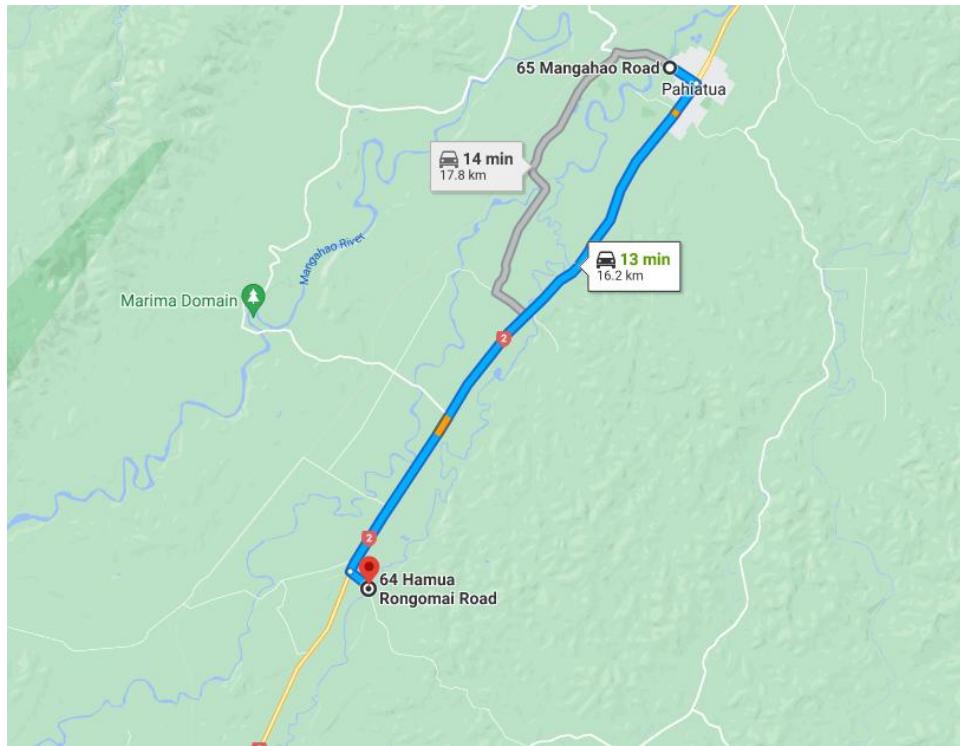
ACCESS:

- To get to the periphyton sampling site, climb the wooden fence to the left of the bridge and walk down to the river.



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SITE LOCATION MAP – Mangatainoka at Pahiatua Town Bridge



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): These should link back to first page

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

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):

WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	

DIRECTIONS:

- Head back to SH2 and turn right.
- Follow SH2 into Pahiatua town
- In town turn left onto Mangahao road towards the bridge
- Park on the left side of the road before the bridge by the hydro shed

ACCESS:

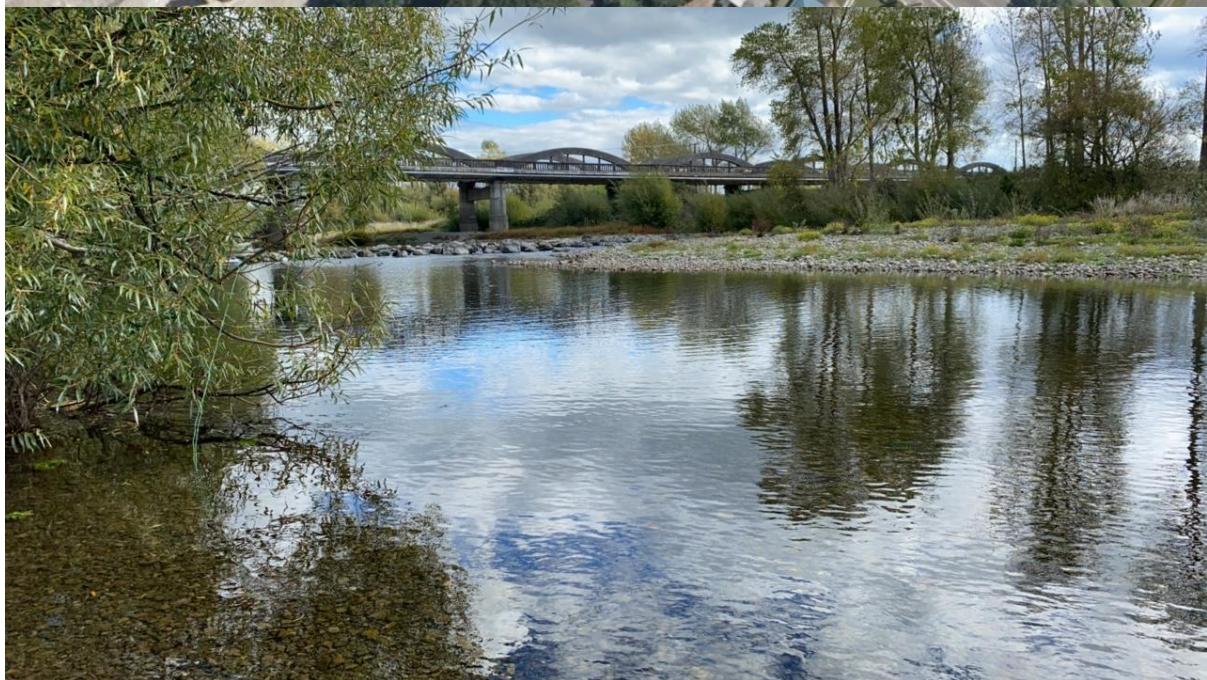
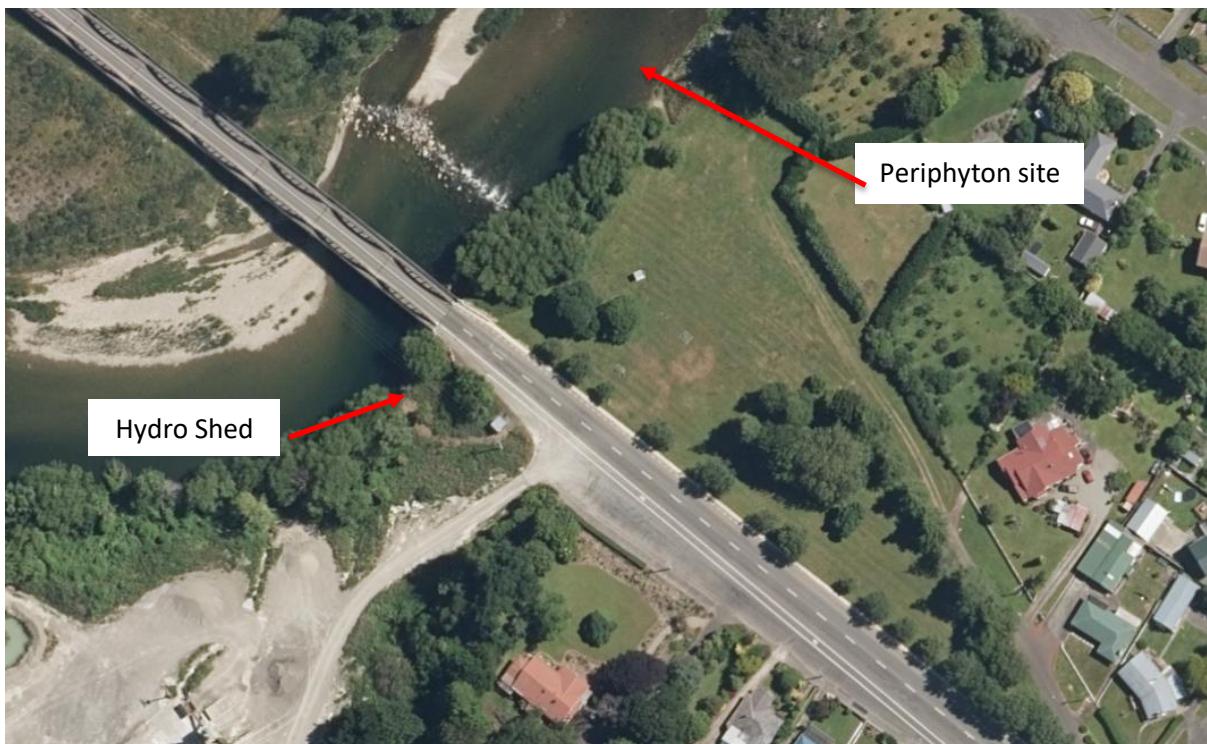
- There is a small track heading down to the river from the hydro shed – water quality can be done here



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- The periphyton site is on the other side of the road, cross the road and head to the far side past the tree line, you should see a small track heading down to the river – sample here.

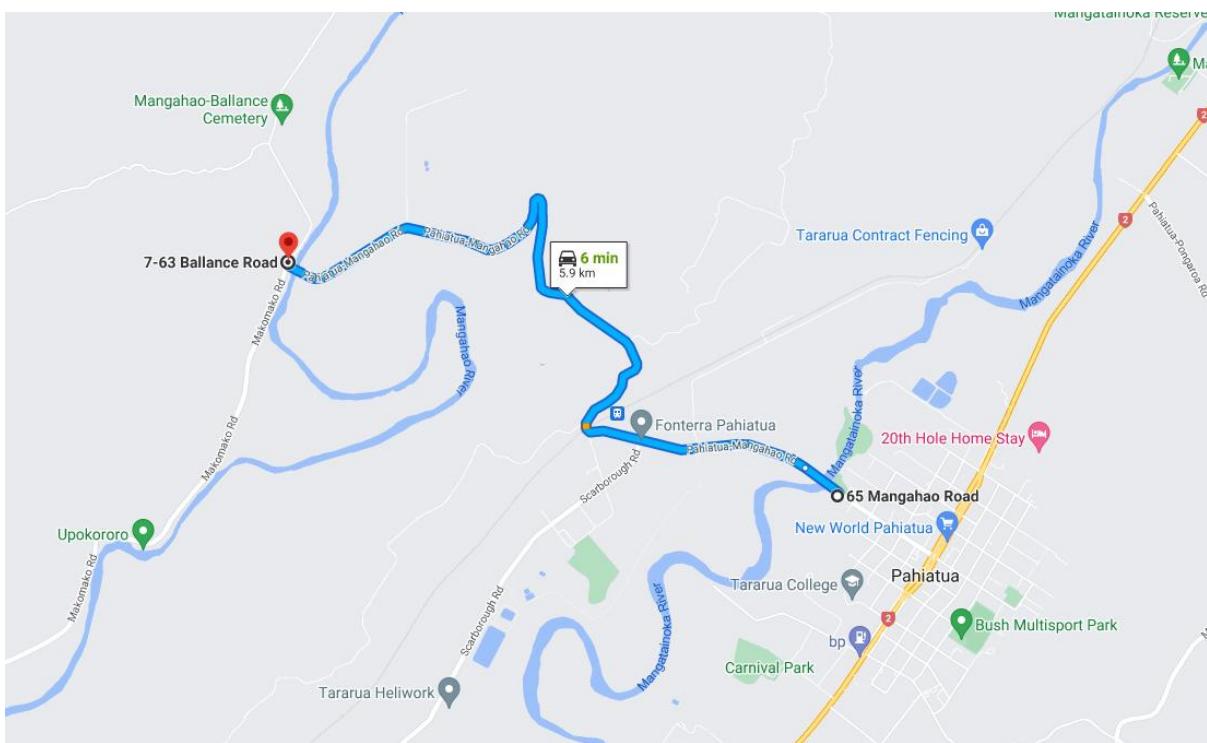




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SITE LOCATION MAP – Mangahao at Balance



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): These should link back to first page

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

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):

WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS

DIRECTIONS:

- Continue over the town bridge and onto the Pahiatua-Mangahao Road
- Follow this road up the hill, after the Fonterra factory you will come to Balance Bridge.
- At the end of the bridge turn right onto Balance Gorge road, the hydro shed is here on this corner, however the water quality sample is taken a further 300m downstream, where the road turns left there is a farm gate on the right, turn in here and park.

ACCESS:

- To get to the water quality site climb the fence and head down to the river, sample here.
- After this, head back to the hydro shed to do the inspection.

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