

Version No: 03 Issue Date: 01/06/2021 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: Page: 1 of 15
horizons <small>regional council</small> 	Hydrology Operations Manual	

Didymo Monitoring Run Guide

Rangitikei Didymo

DIDYMO SAMPLING
(Quarterly 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 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"/>	

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/streams 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 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]

Known Hazard	Significant		Can it be Eliminated		Can it be Isolated		Method of control
	Yes	No	Yes	No	Yes	No	
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 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 be 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]

Site Information

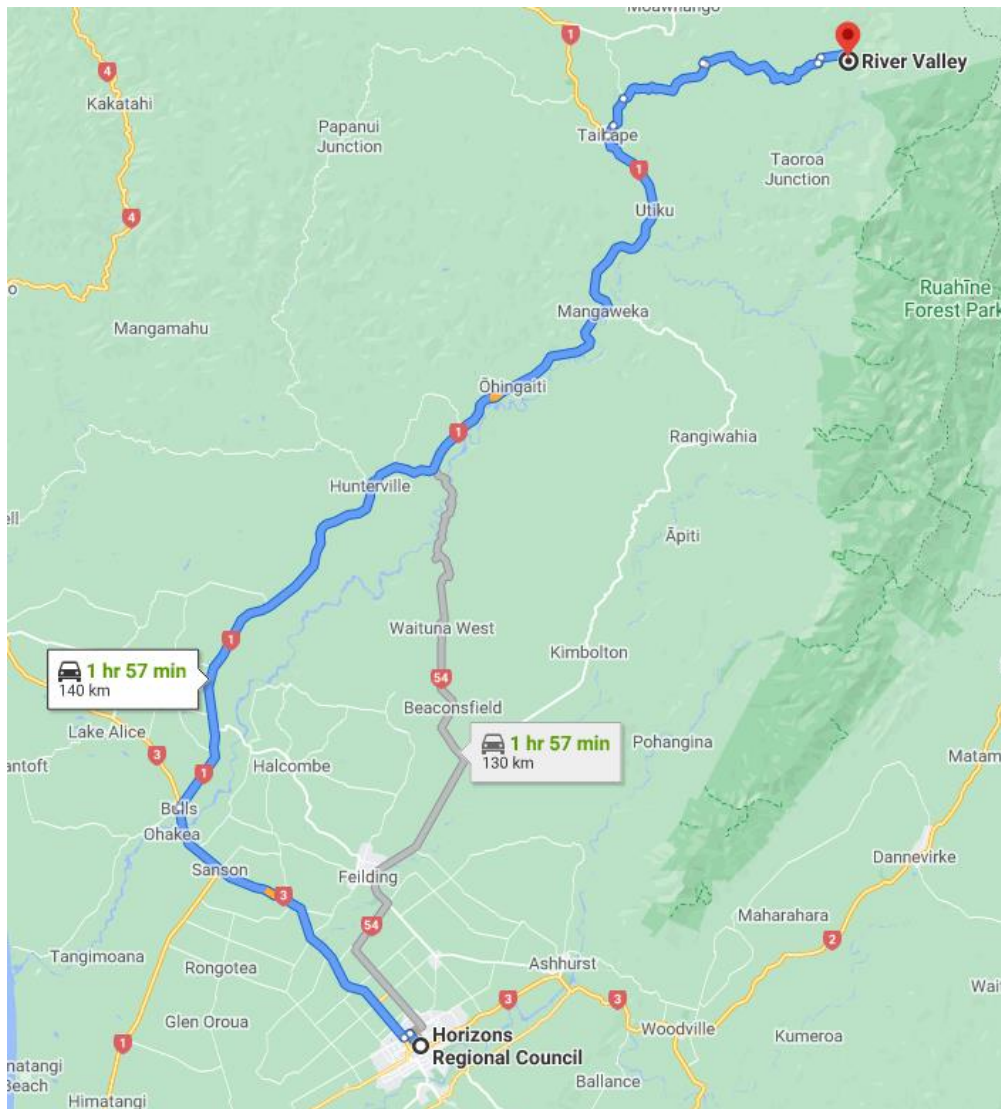
Hilltop Site Name	Easting/Long (NZTM)	Northing/Lat (NZTM)
Rangitikei River at Pukeokahu	1861280	5609098
Kawhatau River at Potaka Rd	1847470	5592056
Rangitikei River at Mangaweka	1840390	5589457
Rangitikei River at Onepuhi	1811126	5560862
Rangitikei River at McKelvies	1795310	5538801

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

Equipment Required

Equipment	<ul style="list-style-type: none"> • Sample preservative (70%) ethanol • Wash bottle with screw cap lid • Funnel • Plastic clip-lid box • Pen/pencil (sharpened) • Sharpie (fine tip) • Falcon tube stand (container with hole in lid) • Travel box to contain everything • Net handle (3 parts that screw together – one that has two hole along the pole) • Net and mesh cod end to screw to end of net • Bucket for decontamination between sites • Bleach for decontamination between sites • 2x wing nuts (plus 2x spares) • 2x screws (plus 2x spares) • Slikka pads and chilly bin • Waders • PFD, PLB, Throw bag, hand sanitiser, sunscreen <p>Consumables</p> <ul style="list-style-type: none"> • Falcon tubes • Parafilm strips • Rubber bands • Small zip lock bags • Paper towels • Rubbish bags • Gloves
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SITE LOCATION MAP – Rangitikei at Pukeokahu



POSSIBLE SITE HAZARDS

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:

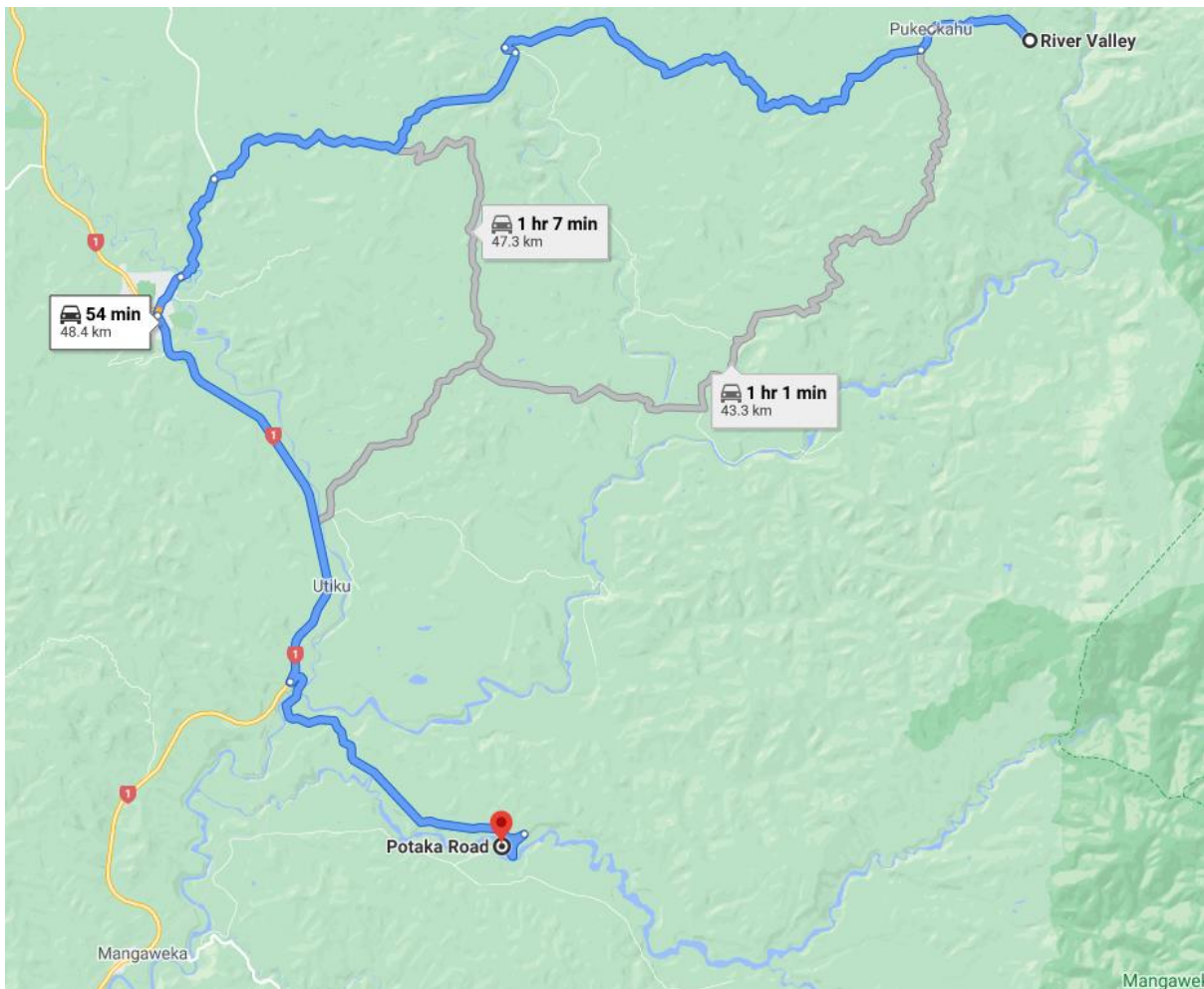
- Travel north until you get to Taihape.
- Once in Taihape, drive through the main township. There will be a sharp left bend in SH1 which will continue onto Waiouru and a road going straight. At this intersection continue on straight through onto Hautapu Rd. This is signposted as heading towards Napier.
- Continue along this road until you come to an intersection with Pungatawa Rd on your right. Take this road. There will also be a sign post of River Valley Lodge. From here,

every intersection you come to will have a sign for River Valley Lodge. Continue to follow these signs.

- Stay on Pungatawa Road for approximately 7km. You will come to an intersection with Moawhango Rd just after a bridge with stock yards on the left and continue to the 'left'/straight. You will now be on Moawhango Rd and you will go up a steep hill. Half way up the hill there will be an intersection on your left but continue to the right up the hill. The road changes to Otuarei Rd.
- Follow Otuarei Rd for approximately 12km and this will continue onto Matawhero Rd. A short way on there is another road called Mangahoata Rd coming off to the right. There is a set of stock sheds at the corner of these two roads. Take Mangahoata Road on the right and follow this road to the end. This will lead you to River Valley Lodge where you will do your sampling.
- Drive through the camp ground and down the steep hill (carefully as this can be slippery and is rutted. A low gear is a good idea). You will drive towards the front of the lodge. The track follows around to the left of the lodge. Follow this around the front of the lodge and you will come to an area with a round-a-bout in the middle with buildings all around.
- Park here somewhere out of the way. Head downstream below the pool area. This is where most people swim so has the biggest chance of being the location of the incursion. There is a run below the pool where it is appropriate to sample.



SITE LOCATION MAP – Kawhatau River at Potaka Road



POSSIBLE SITE HAZARDS

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:

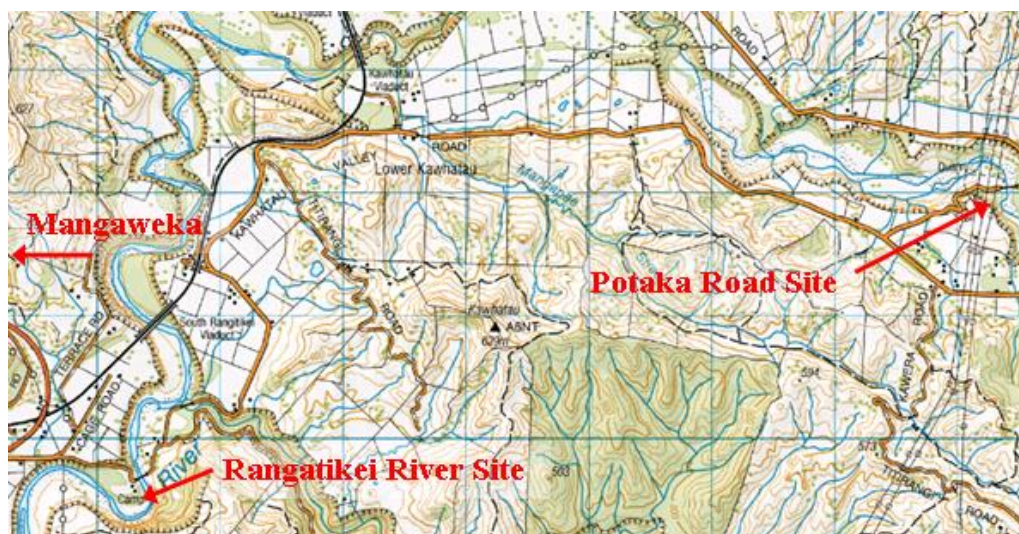
- From Pukeokahu travel back the way you came to Taihape. From Taihape return south along SH1 towards Mangaweka.

Fastest route via ToeToe Rd

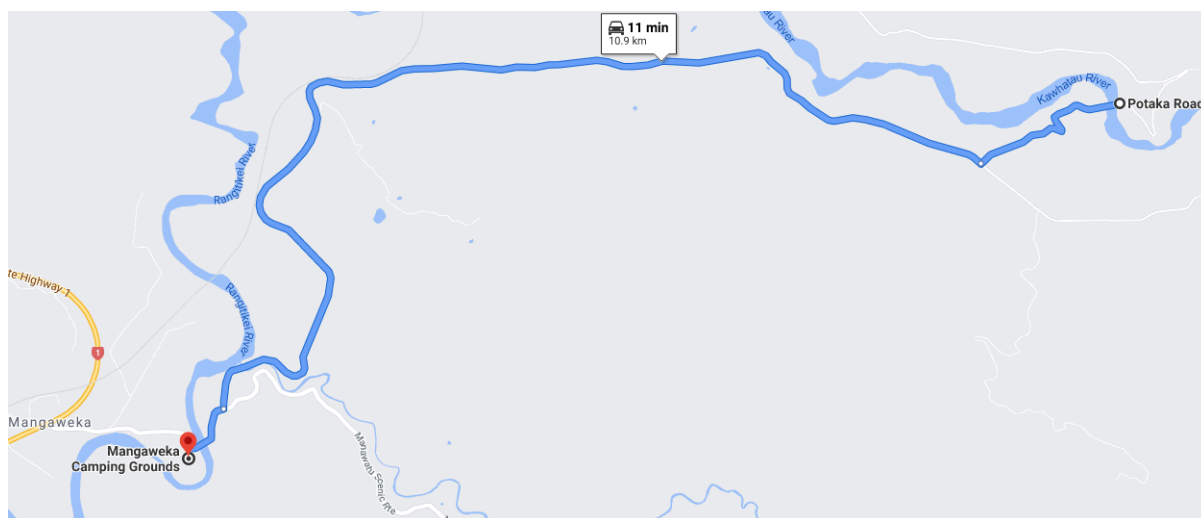
- Drive approximately 10 minutes out of Taihape and then turn left onto Toe Toe Rd.
- Follow Toe Toe Road until you reach the first intersection. This will be Potaka Road. Turn right onto Potaka road and follow until you come to a bridge. Park on the road side before the bridge. Climb the fence to your left, make your way down to the river and sample upstream of the bridge.

Slower route via Mangaweka campground

- Just before reaching the 70km signs at Mangaweka, turn left onto Ruahine Road which heads down to the Mangaweka Campground.
- Drive down and across the bridge. On the right just before you go over the bridge there is a campsite. Take note of this as this will be your next site. For now, travel across the bridge and take the first left onto Kawhatau Valley Road.
- Travel along Kawhatau Valley Road for approximately 10km. On your left there will be a road called Potaka Rd. Take this.
- Approximately 1km down this road there will be a bridge (first bridge you come to).
- It is best to cross the bridge and turn around. Park on the left hand side of the road, climb over the fence, make your way down to the river and sample upstream of the bridge.



SITE LOCATION MAP – Rangitikei River at Mangaweka

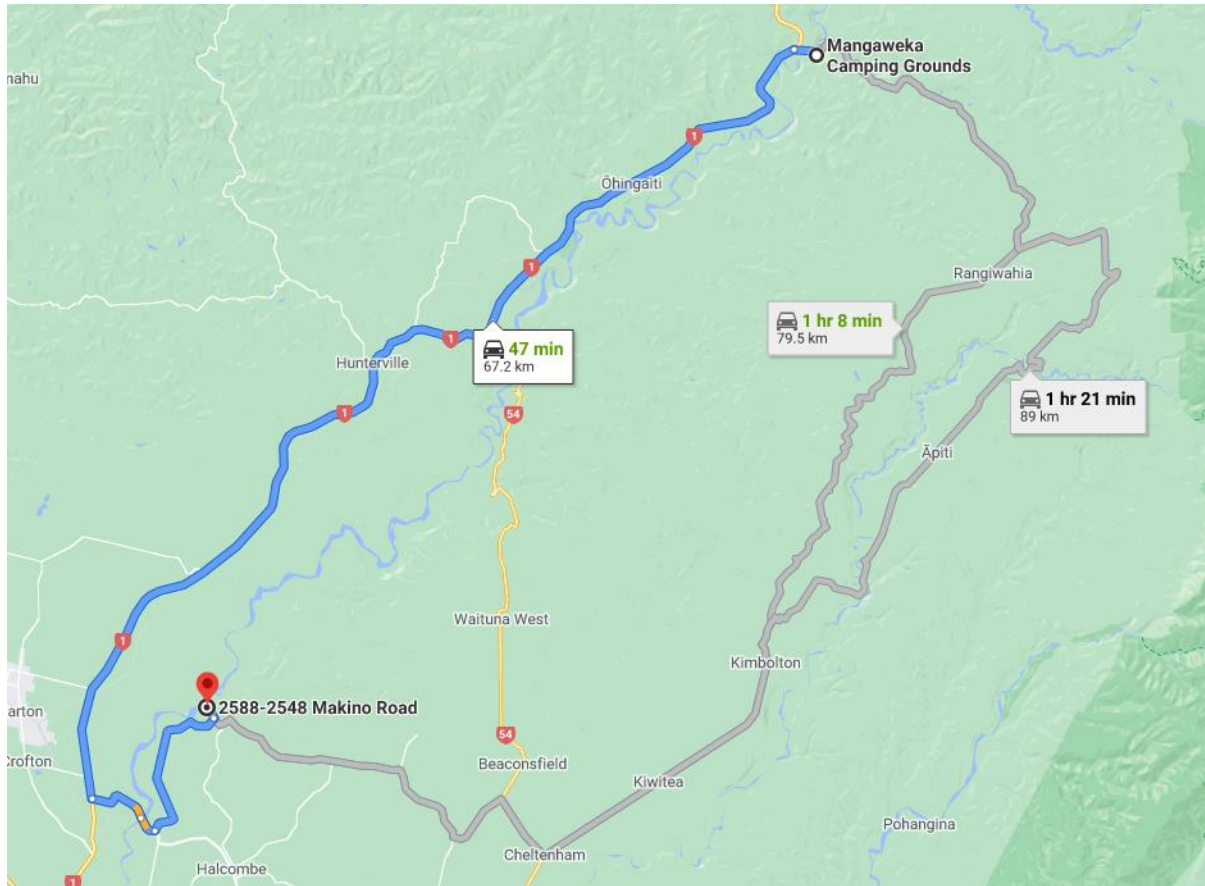


POSSIBLE SITE HAZARDS							
Drowning		UV Radiation		Slippery surfaces		Trip hazards	
Difficult entry/exit		Potential for difficult rescue		Machinery- mobile plant		Traffic / Vehicle Movements	
Weather/Temperature Extremes							
REQUIRED PPE (in accordance with above hazards – this does not negate undertaking 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: <ul style="list-style-type: none">• Head back across the bridge and turn right onto Kawhatau Road.• Follow this to the end and then turn right onto Ruahine Road.• Cross the bridge and immediately after turn left into the campground.• Drive down through the camp and you will see a track which leads down to a camping area adjacent to the gravel bed.• Sample in a suitable run.							



Rangitikei river during high flows looking downstream from road bridge.

SITE LOCATION MAP – Rangitikei River at Onepuhi



POSSIBLE SITE HAZARDS

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

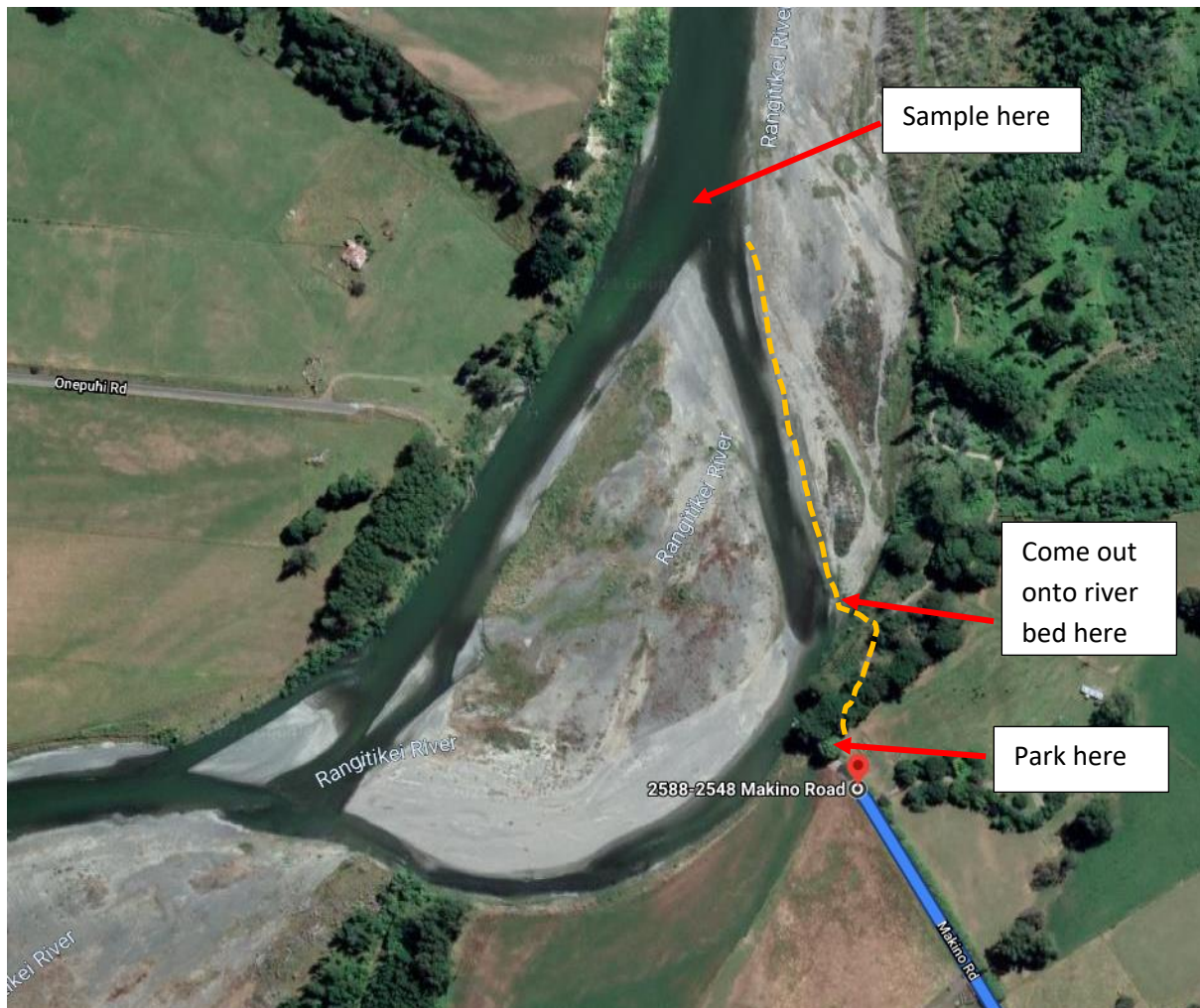
REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

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

- Drive back up onto SH1 and turn left to go through Mangaweka. Continue south towards Palmerston North.
- Once you go through Hunterville, and after approximately 26km turn left onto Kakariki Rd (signs for Fielding).
- After approximately 4km you will cross the Rangitikei River. Take the next left onto Pryces line. Follow this for about 8km and then turn left onto Makino Rd.
- Makino Rd will turn into a gravel road. Follow this until you reach a sharp right hand corner. Park on the grass off the road.
- Walk along the gravel track until you come to an intersection on your left. Walk down here to the river. NOTE the river can be deep in places so be careful where you cross.

- The river is extremely dynamic and these images may not be the most up-to-date. Ensure you sample in the main stem of the Rangitikei. It often splits into two or more channels so you may need to walk upstream of split.



SITE LOCATION MAP – Rangitikei River at McKelvies



POSSIBLE SITE HAZARDS

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 Onepuhi site head back to the first intersection and turn right on to Pryces Line.
- Continue to the end and turn right onto Kakariki Rd, continue to the end
- Turn left onto SH1 head back to Bulls, turn left to stay on SH1.
- Travel through Bulls and over the bridge across the Rangitikei River. Immediately after this bridge on the right is Tangimoana Road. Take this road.
- Follow Tangimoana Road for approximately 16 kilometres until you reach Rosina Road. Turn right onto Rosina Road.

- Rosina Road will turn into a gravelled road. You will go through a gateway and around a left hand turn, with shrubs surrounding. The road will split with the right hand track dropping down. Take this right hand track. The track continues along around a left hand bend, where there is a small parking area that the river can be sampled in low flows over summer, alternatively continue around to the left. Take the first right and continue to the end. Park up and walk downstream a little bit and find a spot to sample



Looking downstream