

Version No: 1.0 Issue Date: 24/05/2021 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: XX Page: 1 of 17
horizons regional council 	Hydrology Operations Manual	

Version 1.0 24/05/2021

Invertebrate Monitoring Run Guide

Kahuterawa

STATE OF ENVIRONMENT (Annual 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 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 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.

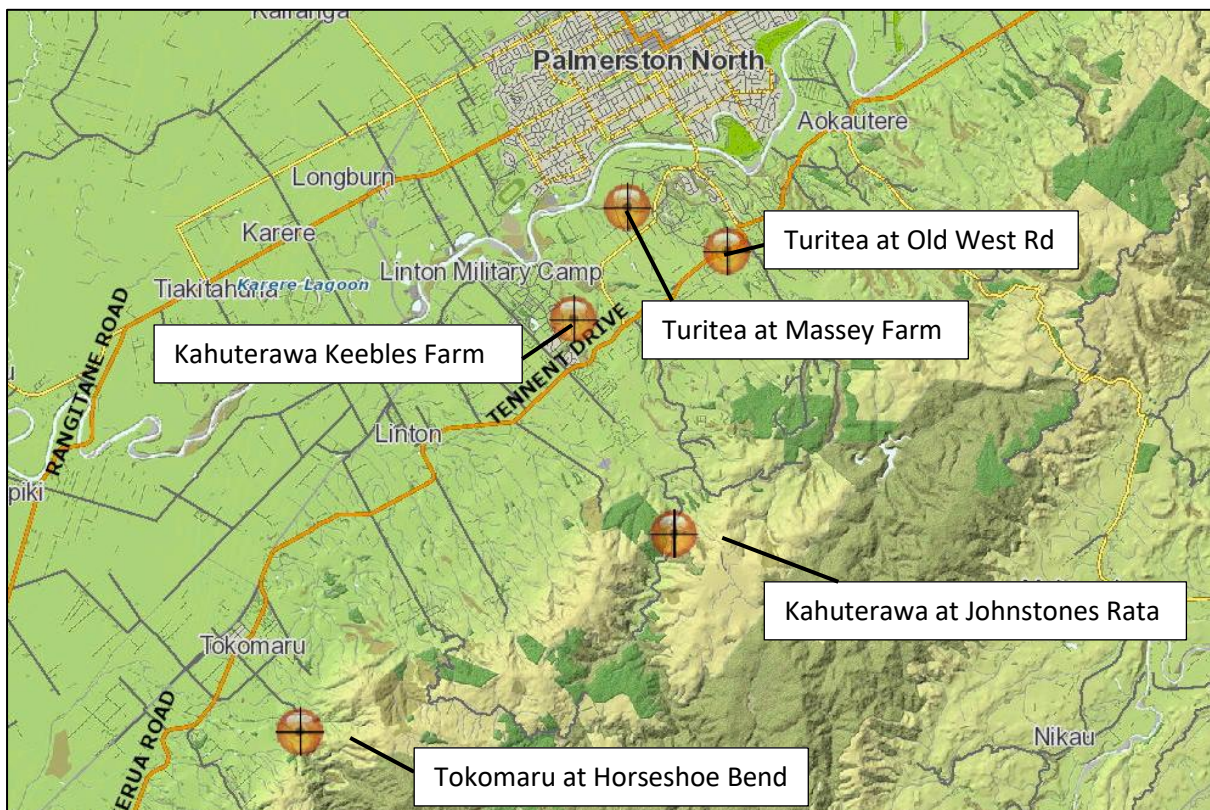
SAMPLING GLOVES	EAR PROTECTION	HARD HAT	SAFETY GLASSES / GOGGLES	WORK BOOTS / WADERS	PROTECTIVE GLOVES	PERSONAL FLOATATION DEVICE (PFD)
						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<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]
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]
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.

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

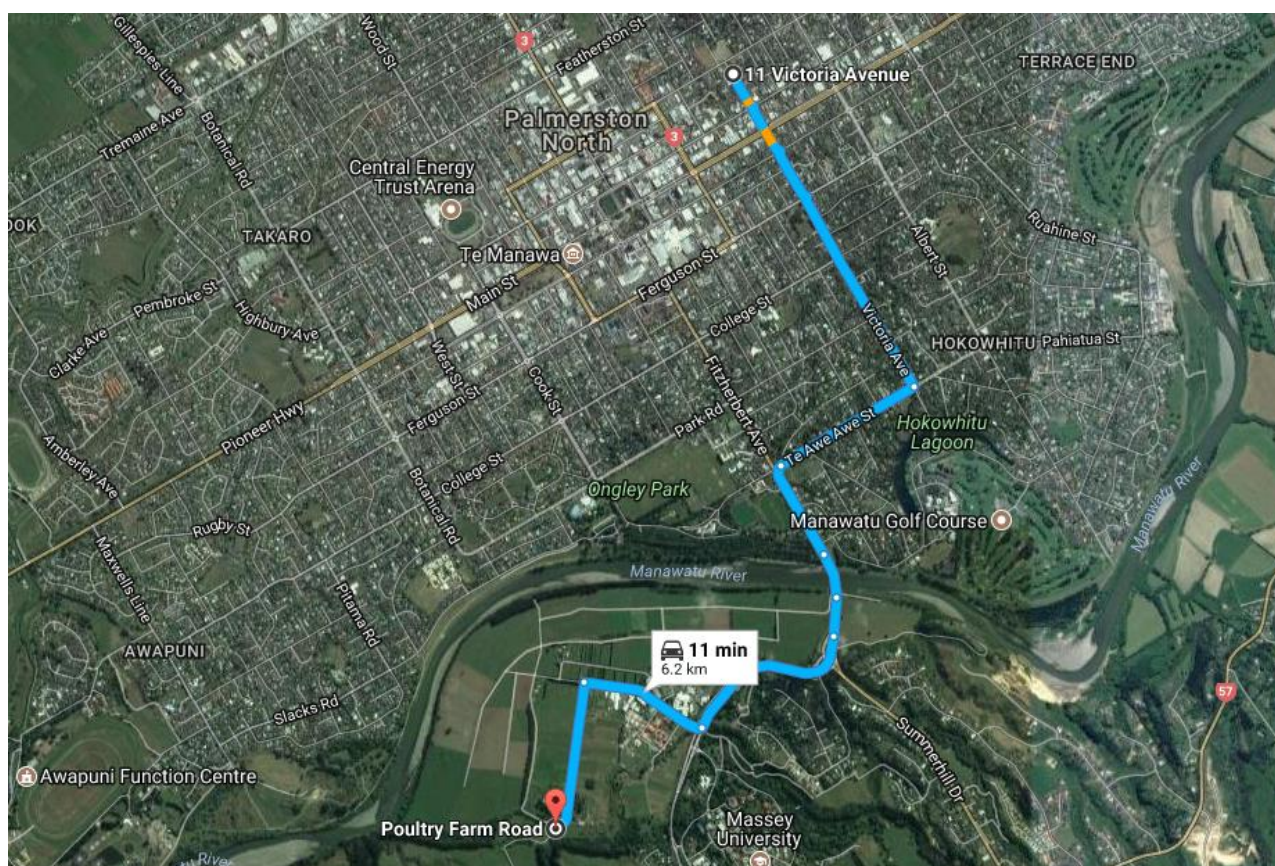
Hilltop Site Name	Easting/Long (NZTM)	Northing/Lat (NZTM)
Turitea at Massey Farm	1821307	5526181
Kahuterawa at Keebles Farm	1820137	5523751
Tokomaru at Horseshoe Bend	1814181	5514785
Kahuterawa at Johnstones Rata	1822320	5519088
Turitea at Old West Road	1823472	5525227



Equipment Required

Equipment	<ul style="list-style-type: none"> • Camera and GPS • Kick net • Invertebrate Pottles and Propan-2-ol • White plastic tray • Metal ruler • Gravelometer • Sampling Worksheet and Pencil • Bathoscope / Viewer • Scrubbing brush, tooth brush, washer bottle, yellow sample bottle lid and ice cream container • Pottles (Approx 10), chilly bins and ice-packs • Personal Locator Beacon • 4WD Vehicle equipped with VHF Radio • Throw Bag
Additional Comments/ Instructions	<p>Turitea at Massey Farm: NOTE bridge has changed from pictures.</p> <p>Kahuterawa at Keebles Farm: Sign in at the Woolshed.</p>

SITE LOCATION MAP – Turitea at Massey Farm



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

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Stock/Farm Animals	Traffic / Vehicle Movements
Weather/Temperature Extremes	Electrical- low/high voltage		

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 Palmerston North office head out of town towards Massey University across the Fitzherbert Bridge and onto Tennent Drive.
- Just before the turn off to Massey University, turn right onto Dairy Farm Rd towards AgResearch.
- Follow Dairy Farm Rd past all the buildings and then turn left onto Poultry Farm Rd.
- Follow Poultry Farm Road for about 1.5km until you come to a bridge. Park up just before the bridge and then cut across the paddock down to the stream.
- Find a riffle to sample.

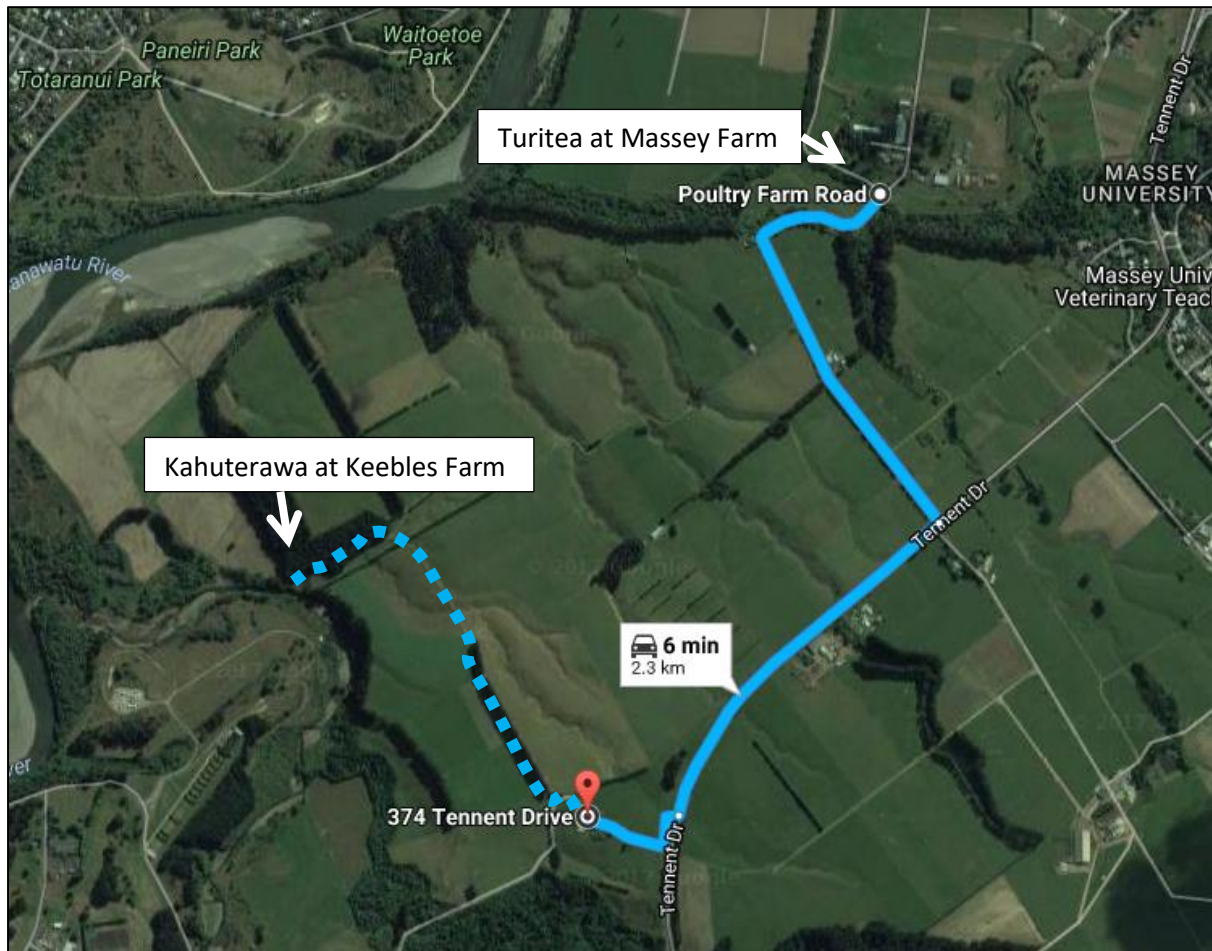


Turitea at Massey Farm looking downstream.



Park up next to the bridge over the Turitea Stream.

SITE LOCATION MAP – Kahuterawa at Keebles Farm



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

Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Stock/Farm Animals	Traffic / Vehicle Movements
Weather/Temperature Extremes	Electrical- low/high voltage		

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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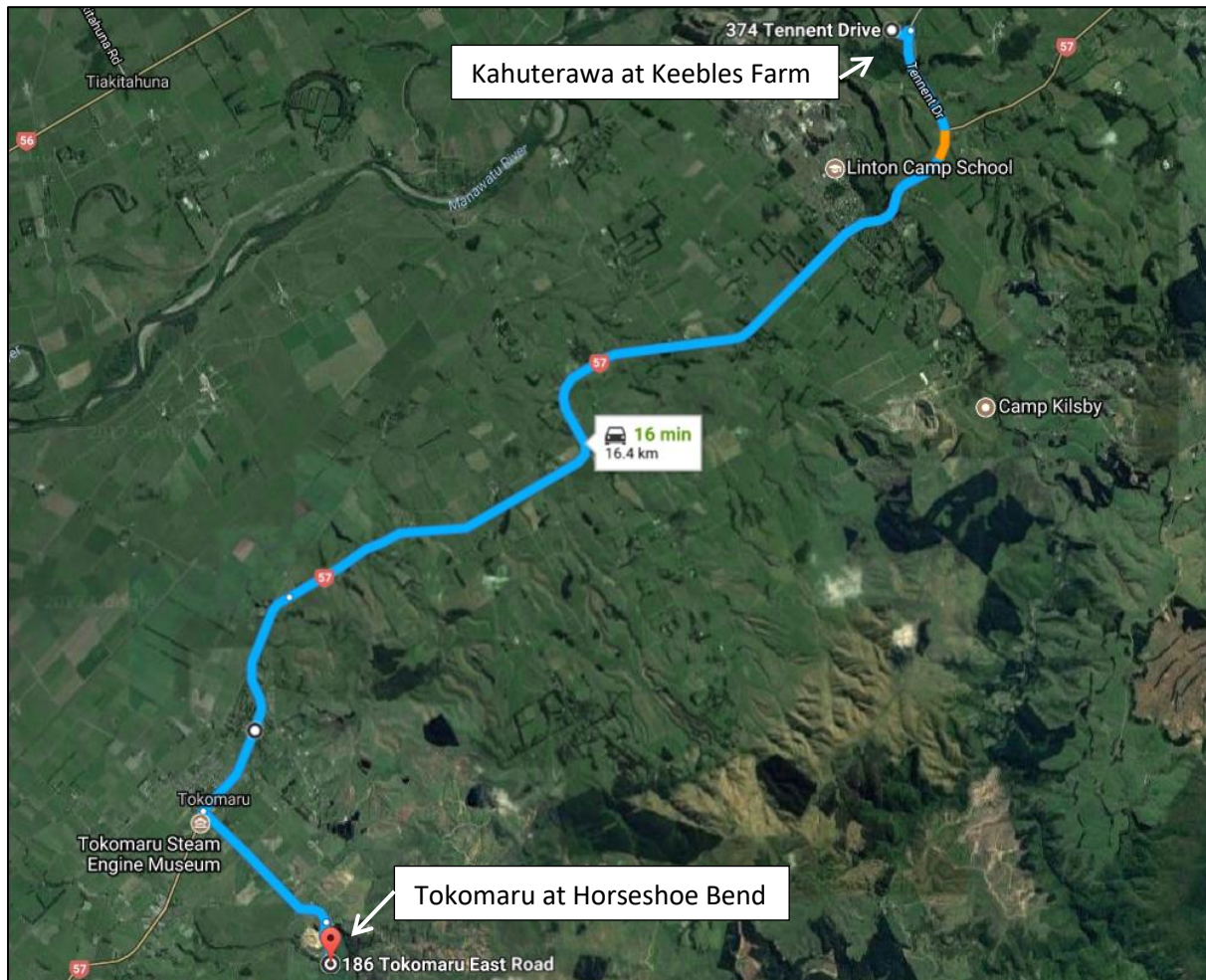
DIRECTIONS:

- From the Turitea at Massey Farm site continue along Poultry Farm Rd until you come back to Tennent Drive and turn right.
- Follow Tennent Drive for about 900m then turn right towards Keebles Farm. You will see a large sign just before you go down a hill saying Keebles Farm to show you where to turn.
- Drive through the yard taking the track to the right. This then forks again not far from the yard, take the right track along the pine trees. This then goes down and back up.
- Stay on the track and then turn left at the T-Intersection. Follow the track, as it turns fairly hard to the right stop on the corner, you should be just a few meters from the Kahuterawa Stream. Find a riffle to sample.



Kahuterawa at Keebles Farm sample site looking downstream.

SITE LOCATION MAP – Tokomaru at Horseshoe Bend



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

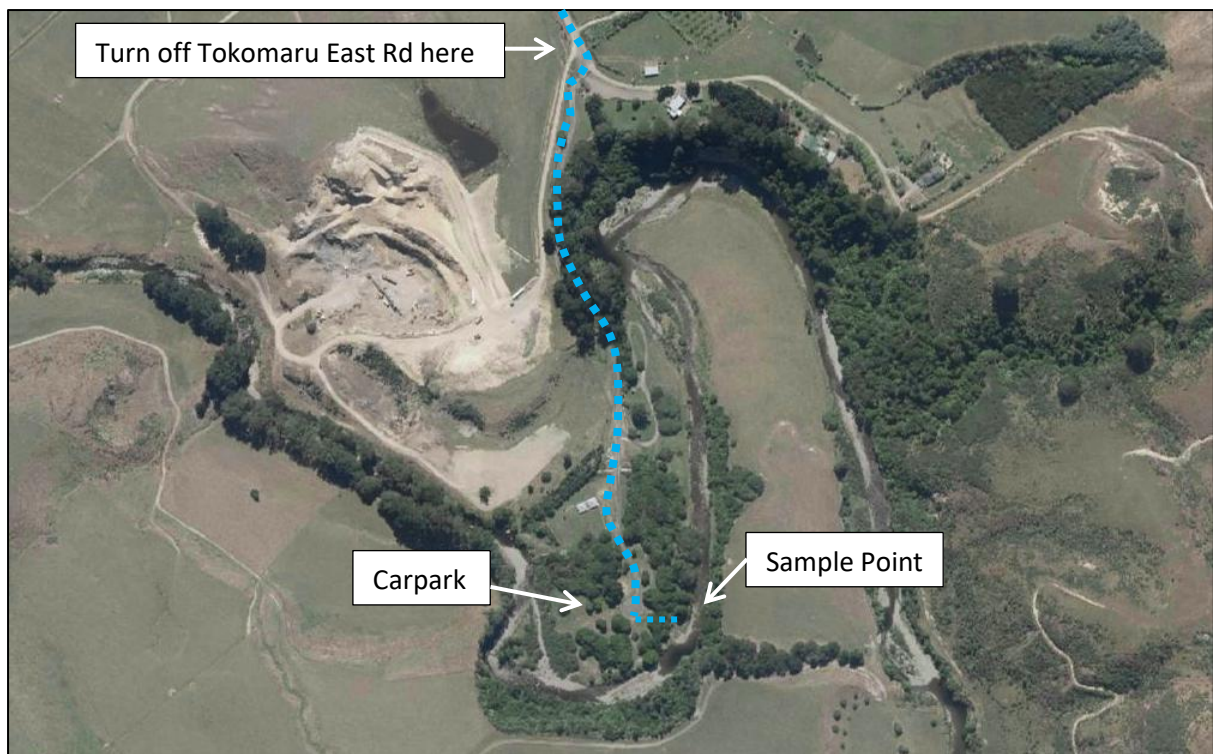
Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Weather/Temperature Extremes	Traffic / Vehicle Movements

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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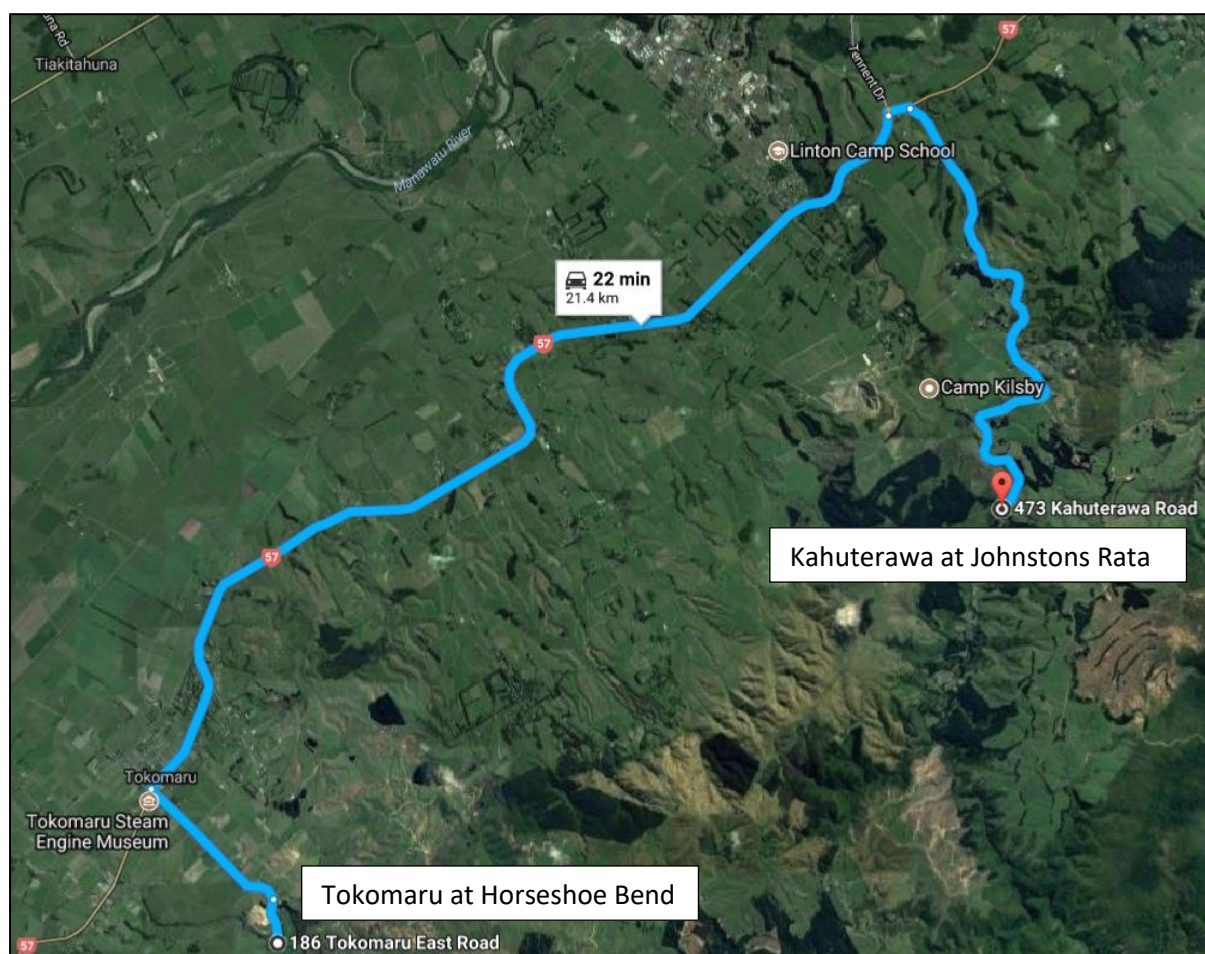
DIRECTIONS:

- From the Kahuterawa at Keebles Farm site, head back the way you came towards Tennent Drive. Turn right onto Tennent Drive (SH57) and follow for about 14km until you come into Tokomaru.
- You will see a school to your left, turn left here down Tokomaru East Road. Follow for about 2km. You will see on your right a sign saying Horseshoe Bend turn in here and drive to the end of the Carpark.
- On your left as you are driving to the end of the Carpark you will see a trail to the stream. Park up and walk down this trail. Find a suitable riffle to sample.



Tokomaru at Horseshoe Bend looking downstream.

SITE LOCATION MAP – Kahuterawa at Johnstones Rata



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

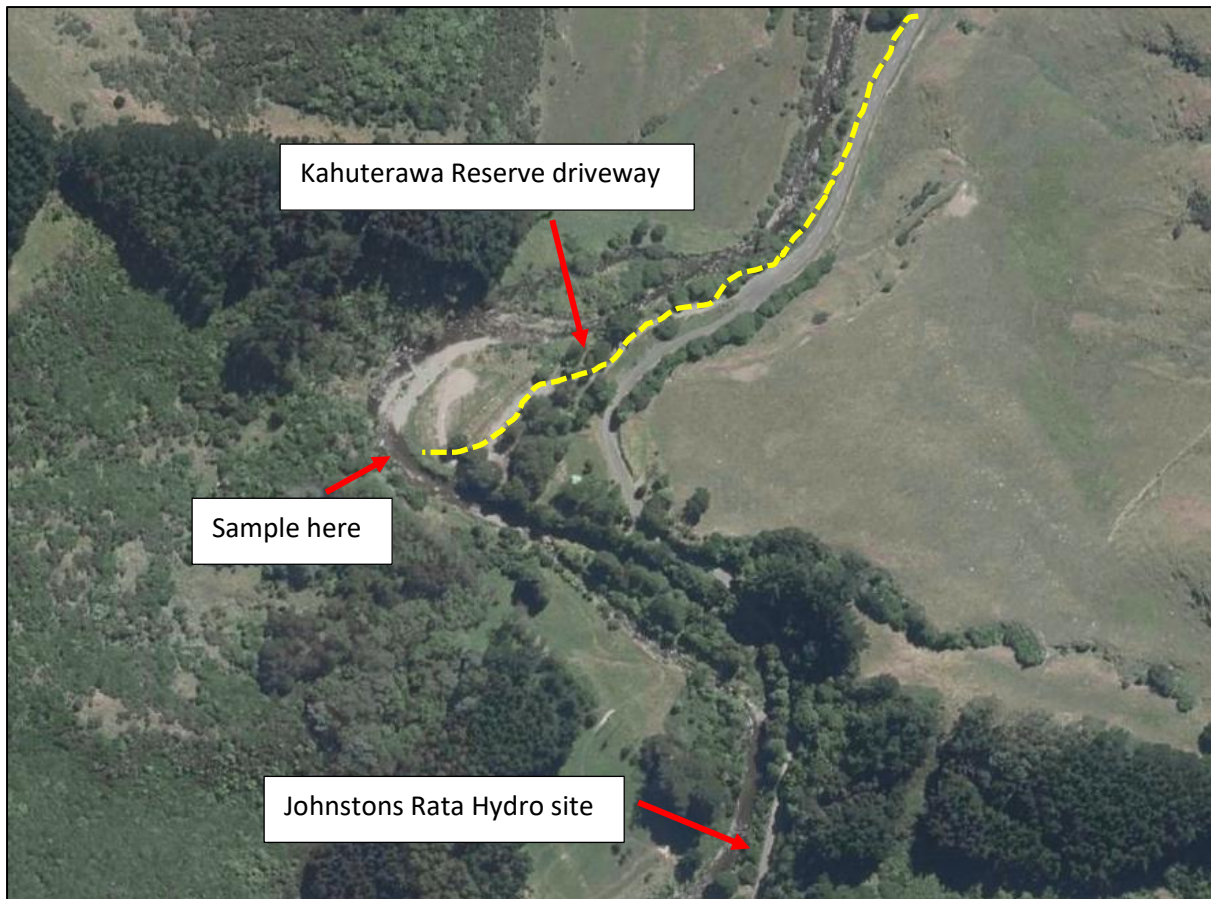
Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Weather/Temperature Extremes	Traffic / Vehicle Movements

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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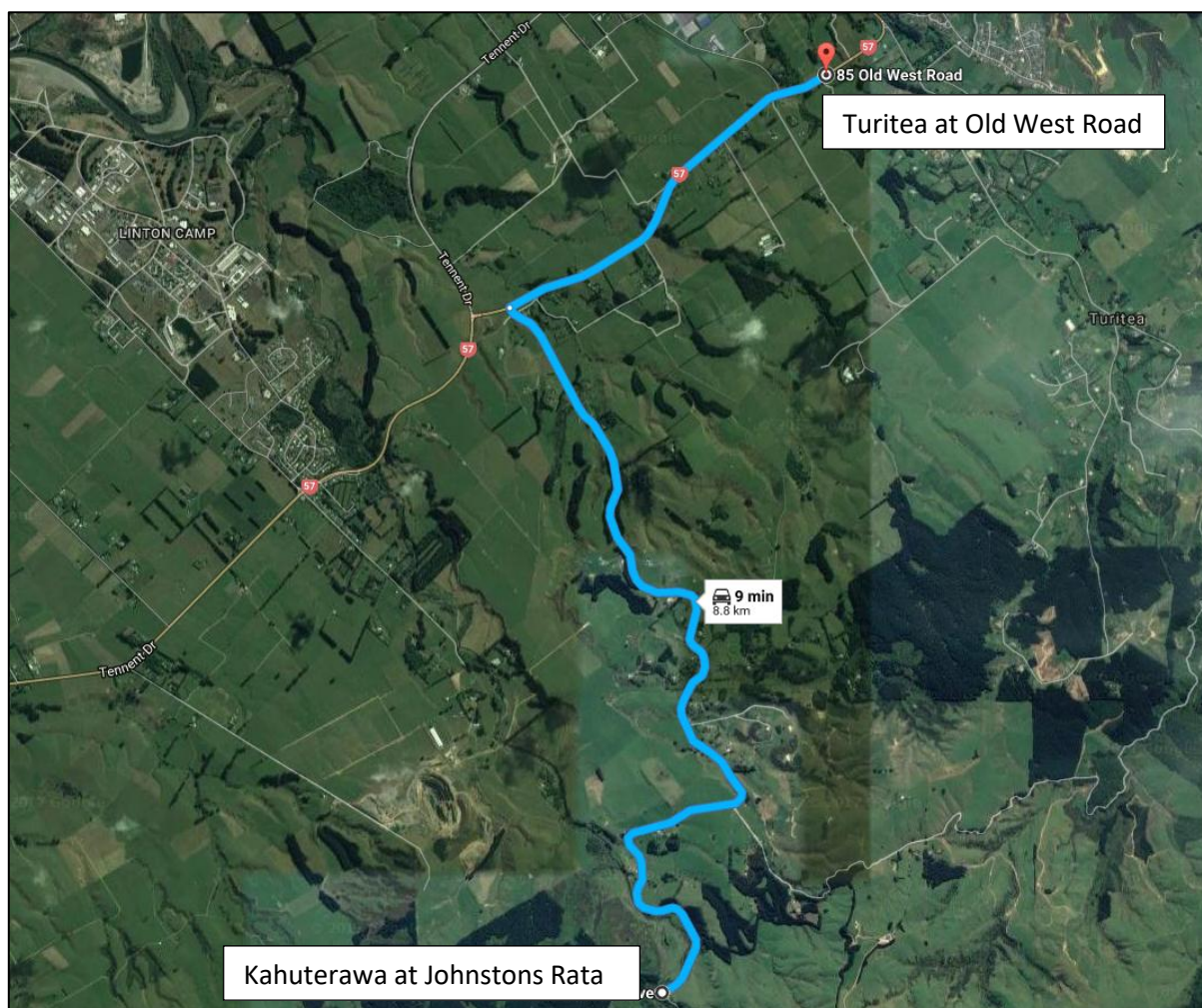
DIRECTIONS:

- From Tokomaru at Horseshoe Bend head back the way you came down Tokomaru East Rd and then turn right back onto SH57.
- Stay on SH57 for about 13km, you will go down a hill where the road swoops to the left around a corner. On the right of that corner there will be a turn-off onto Old West Road, this road is the continuation of SH57; turn off onto Old West Rd (SH57) and follow for about 300m then take the first right turn onto Kahuterawa Rd.
- Follow Kahuterawa Rd for about 6.2km, you come to the Kahuterawa Reserve which is well sign posted on your right. Drive in here and commence sampling upstream of the reserve in an ideal riffle. The actual Johnstones Rata Hydrosite is about 300m upstream of the reserve, however the stream is much easier to sample from the reserve.



Kahuterawa at Johnstons Rata looking downstream.

SITE LOCATION MAP – Turitea at Old West Road



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

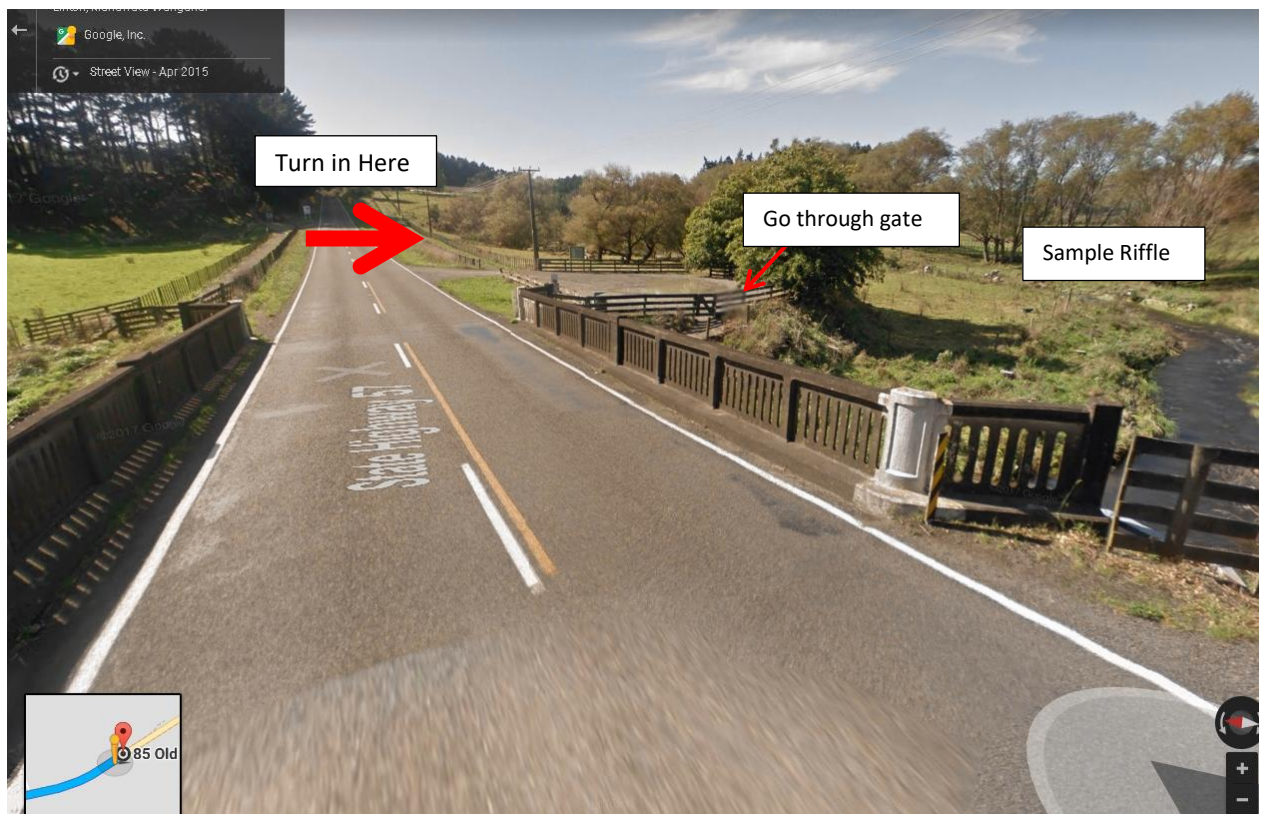
Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Weather/Temperature Extremes	Traffic / Vehicle Movements

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 Kahuterawa at Johnstons Rata (Reserve) head back the way you came down Kahuterawa Rd until you come back to the intersection with Old West Rd (SH57). Turn right onto Old West Rd.
- Follow Old West for about 2.6km, you will go down a hill which has a small bridge over a stream. Immediately after this bridge there is a Carpark on the right side of the road. Turn in and park here.
- There is a gate at the far end of the Carpark which opens up to a path that goes under the bridge, go through this gate and find an ideal riffle to sample.

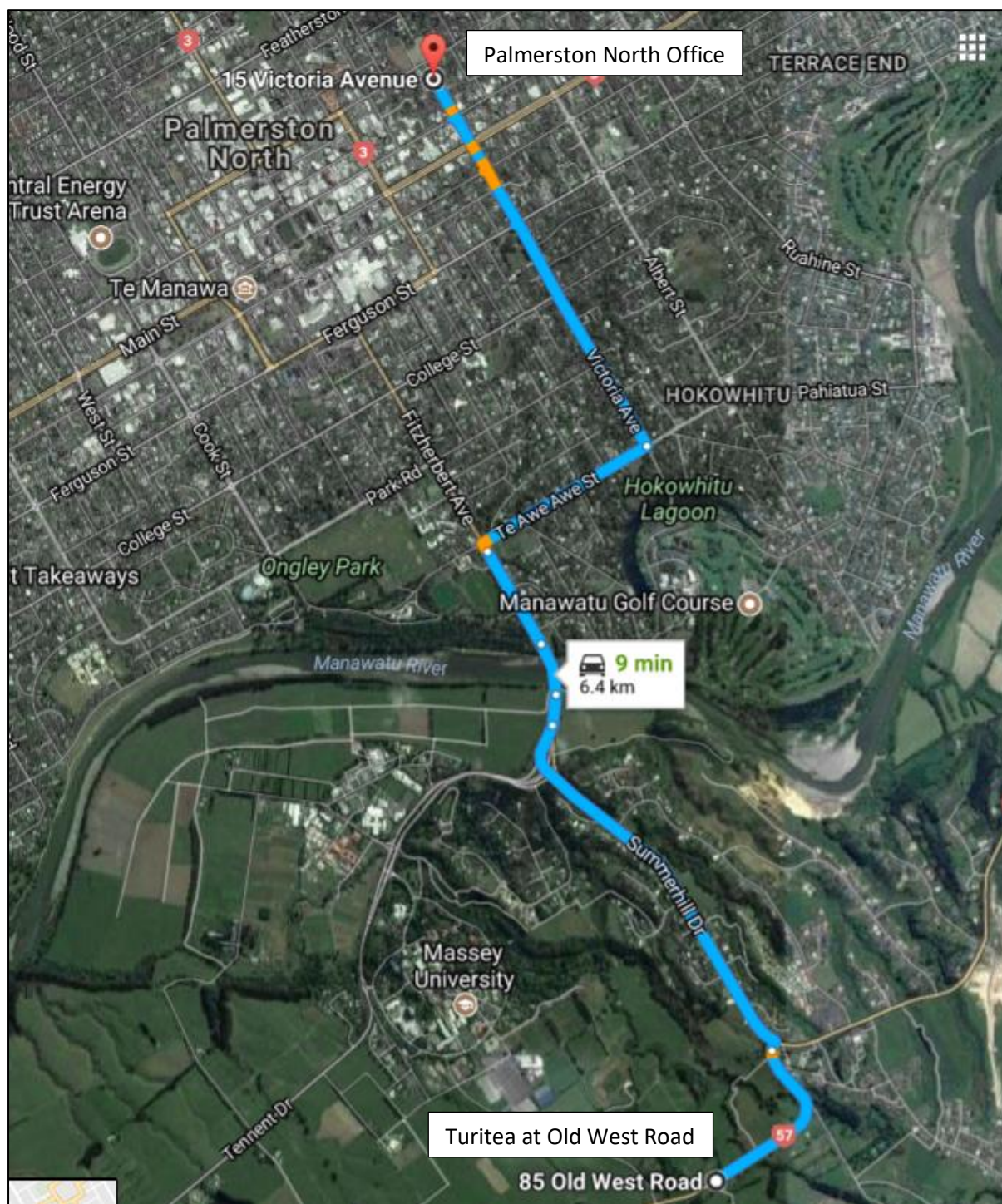


Turitea at Old West Road Bridge and Carpark.



Turitea looking downstream.

RETURNING TO THE PALMERSTON NORTH OFFICE



DIRECTIONS:

- From the Turitea at Old West Rd site turn right onto Old West Rd and continue on up the hill until you reach the intersection with Summerhill Dr.
- Turn left onto Summerhill Dr and follow this down towards the Fitzherbert Bridge.
- After the Fitzherbert Bridge drive approximately 600m and at the first set of lights turn right onto Te Awe Awe St.
- Follow Te Awe Awe St for about 900m then turn left onto Victoria Ave. Drive down Victoria Ave until you reach the Horizons Office on your right.