

<b>Version No:</b> 04 <b>Issue Date:</b> 01/06/2021 <b>Portfolio:</b> Discrete Water Quality	<b>Horizons Regional Council</b>	<b>Section No:</b> 15.7 <b>Appendix No:</b> <b>Page:</b> 1 of 9
<b>horizons</b> <small>regional council</small> 	<b>Hydrology Operations Manual</b>	

## Didymo Monitoring Run Guide

# Ohakune 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

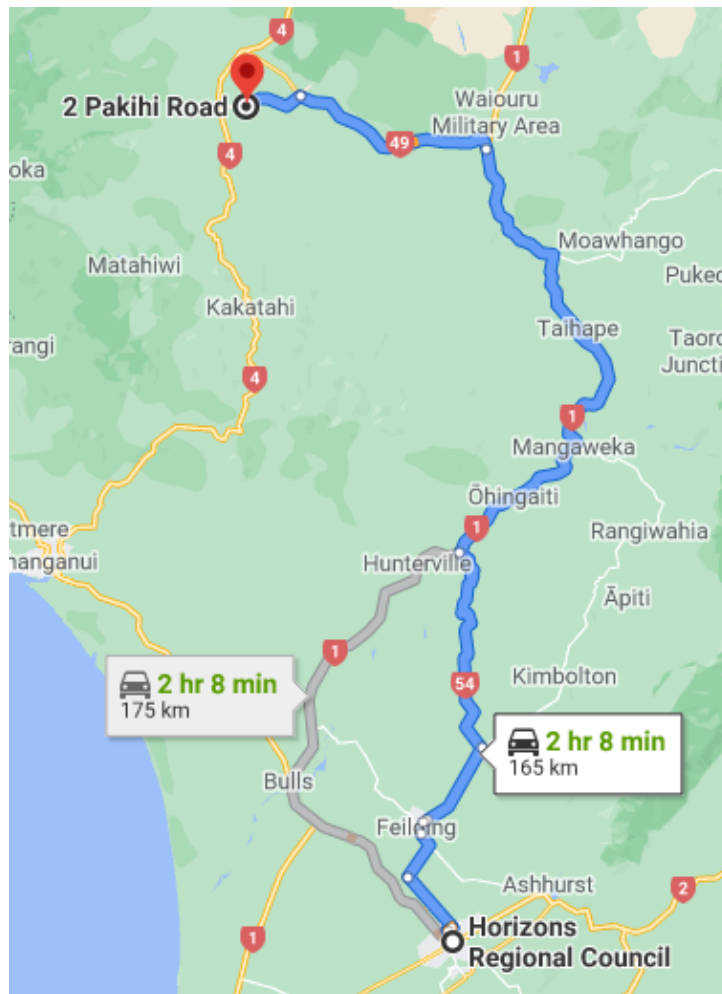
Hilltop Site Name	Easting/Long (NZTM)	Northing/Lat (NZTM)
Mangawhero River at Pakihi Road Bridge	1799897.1	5632848.4
Makotuku River at Raetihi	1796457.49	5633984.14

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

## Equipment Required

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

## SITE LOCATION MAP – Mangawhero River at Pakihi 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	
---------------------	-----	----------------------------	-------------------------	-----------	-----------	--------	--

### DIRECTIONS:

- Travel north up SH1 until you get to Waikaremu
- Turn left at the police station in Waikaremu, signs to Ohakune
- When you drive into Ohakune there will be a BP station on your left, turn left onto the road immediately after this called Raetihi Ohakune Rd which leads to Raetihi.
- Approximately 7.5km along this road you will come to Pakihi Road on the left hand side. This is the bottom of a dip in the road. Take this road.
- A few hundred meters into Pakihi Road you will come to a bridge. Go over the bridge and immediately on your left there will be two farm gates into a paddock.
- Using the far gate, drive into the paddock and park by the hydro shed (green shed).



**Warning it is quite a sharp turn into the farm paddock across the other side of the bridge. If you feel necessary, drive up the road past the paddock turn off and find a safe place to turn around and then drive back into the paddock.**

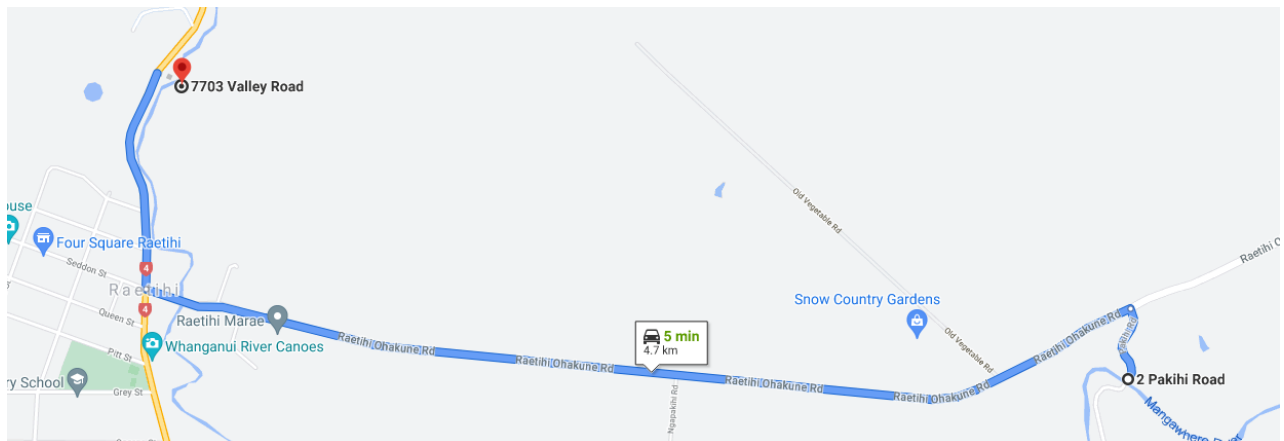
- Walk down to the river and sample above the rock weir. Note sometimes this can get very deep so you can find an alternative point to sample from. A good place can be just upstream of the bridge



Looking upstream ^ and looking downstream v



## SITE LOCATION MAP – Makotuku River at Raetihi



### 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:

- Drive back out onto Raetihi Ohakune Road and turn left.
- Head into Raetihi and once you meet the intersection with SH4 (called Valley Rd) turn right.
- Drive along SH4 until you leave the 50km zone. Follow the road around a gentle right hand curve and on your right hand side there is a very old bridge going across the Makotuku River.
- Just after this on the right is an open area of grass. Drive in here and park. There is a large concrete slab with a small green hydro station (green box) on top of it. Beside the concrete slab is a track leading down to the river.
- Sample just upstream of the bottom of the track. This is also above the large concrete weir across the river.
- Return to the office and put the samples in the fridge if they aren't being sent out immediately.





**Looking upstream**



**Looking downstream**