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SoE and Periphyton Monitoring Run Guide

Oroua Run

POINT DISCHARGE/STATE OF ENVIRONMENT (Monthly Sampling)

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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"/>	

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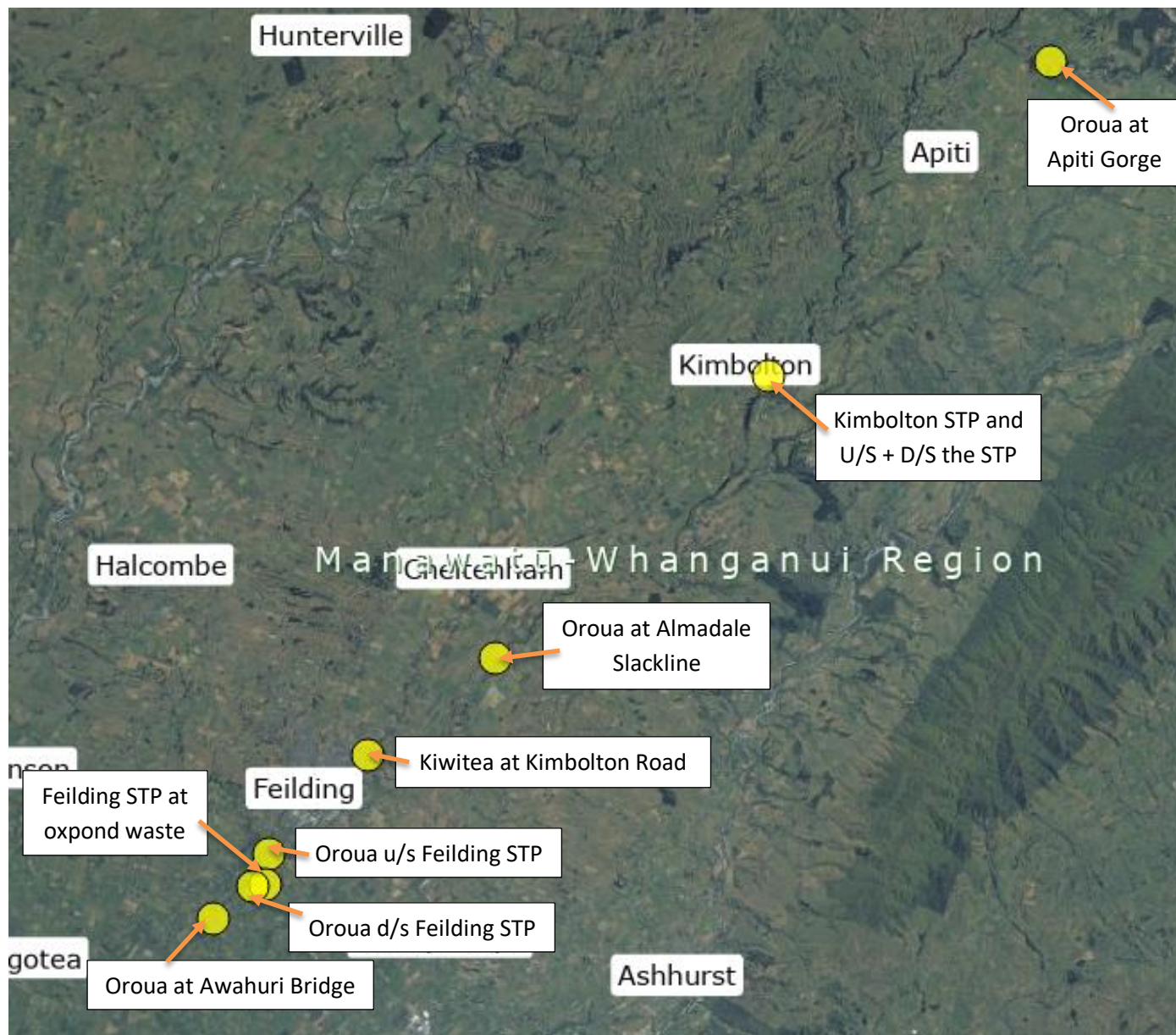
Known Hazard	Significant		Can it be Eliminated		Can it be Isolated		Method of control
	Yes	No	Yes	No	Yes	No	
Drowning	✓			✓		✓	Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff. Always carry a throw bag when working around water and have a personal 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/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]
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.

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

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Site Map



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Site Information

Hilltop Site Name	Easting/Long (NZTM)	Northing/Lat (NZTM)	Comments
Oroua at Apiti	1849982	5575012	Chlorophyll a Sample, Visual Assessment, WQ samples, Smartroll and Black disk.
Kimbolton STP at oxpond waste	1837985	5561648	WQ samples ONLY
Oroua Trib at U/S Kimbolton STP	1837985	5561648	WQ samples, Smartroll and Black disk (clarity tube)
Oroua tributary at d/s Kimbolton STP	1837985	5561648	WQ samples, Smartroll and Black disk (clarity tube)
Oroua at Almadale Slackline	1826381	5549635	Chlorophyll a Sample, Visual Assessment, WQ samples, Smartroll, Black disk and gauging.
Kiwitea at Kimbolton Road	1821002	5545499	WQ samples, Smartroll, Black disk and gauging
Feilding STP at Secondary oxpond waste	1816748	5541312	WQ sample ONLY
Oroua at u/s Feilding STP	1816594	5540022	Chlorophyll a Sample, Visual Assessment, WQ samples, Smartroll and Black disk.
Oroua at d/s Feilding STP	1816085	5539898	Chlorophyll a Sample, Visual Assessment, WQ samples, Smartroll and Black disk.
Oroua at Awahuri Bridge	1814388	5538558	Chlorophyll a Sample, Visual Assessment, WQ samples, Smartroll and Black disk.

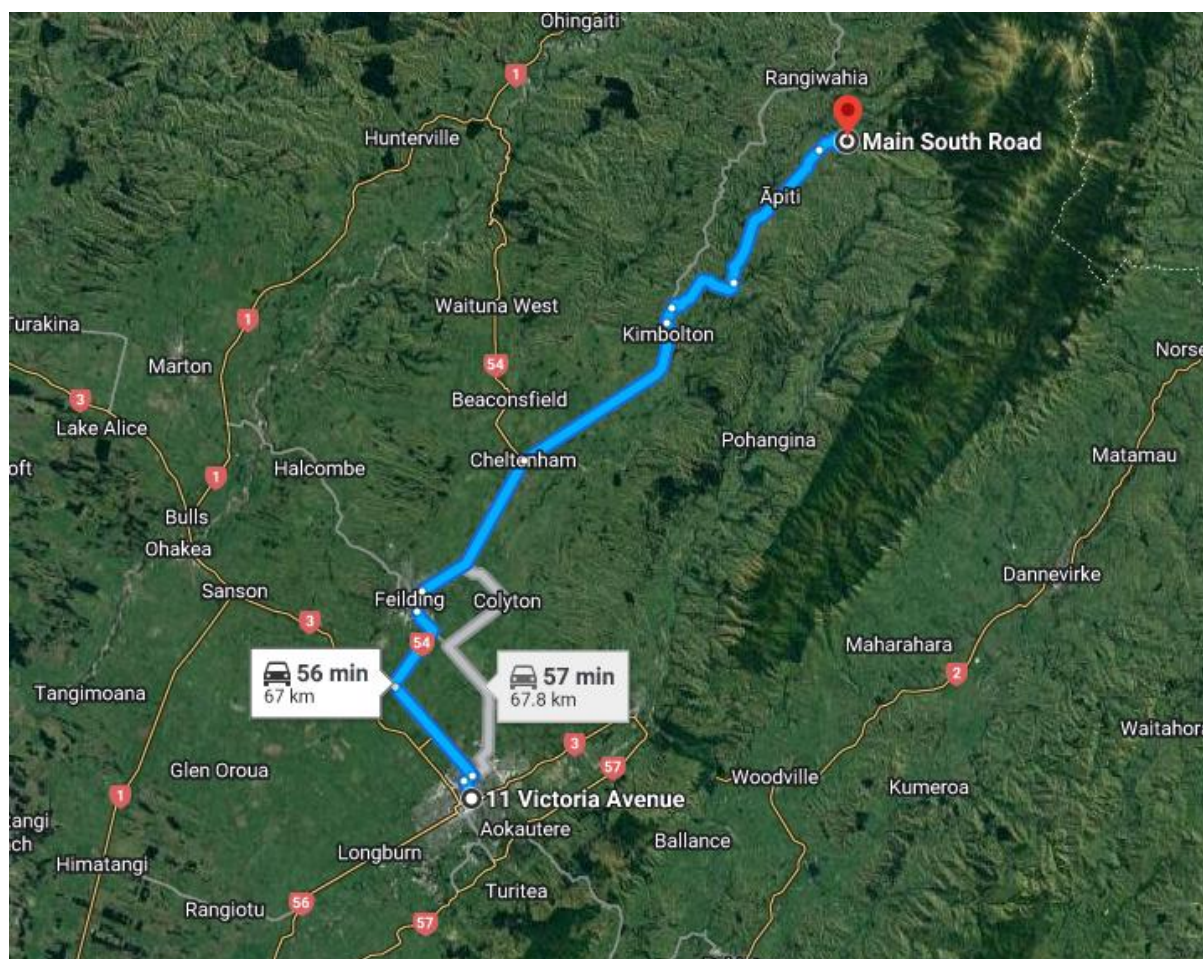
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Equipment Required

Sample numbers	10 (Water Quality) 5 (Periphyton)
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 • Pottles (Approx 10) • Scrubbing brush, tooth brush washer bottle, yellow sample bottle lid and 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 – Oroua at Apiti



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		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">From the Palmerston North office travel to Feilding and then head north east out of Feilding along State highway 54 (Kimbolton Road).							

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- Continue on this road for approximately 25 kilometres and you will come to Kimbolton. Continue through Kimbolton for approximately a further 1.5 kilometres until you get to the intersection by the lookout to Apiti- turn right here onto Apiti Road.
- Stay on Apiti Road which will eventually turn into Oroua-Valley Road and drive through Apiti. The road name will change from Oroua-Valley Road to Main South Road after you drive through Apiti. Continue on Main South Road for approximately 7 kilometres.
- You will head down into the Apiti Gorge. At the bottom of this there will be the bridge across the Oroua River. Just before you reach the bridge, on the left hand side of the road there is a track which leads to the river. Take this track.
- Drive to the end of this track and sample here, approximately 50 metres downstream of the bridge. Be aware that there is a small tributary that comes into the river on the true right hand side of the river. Sampling must be done upstream of this if at all possible.



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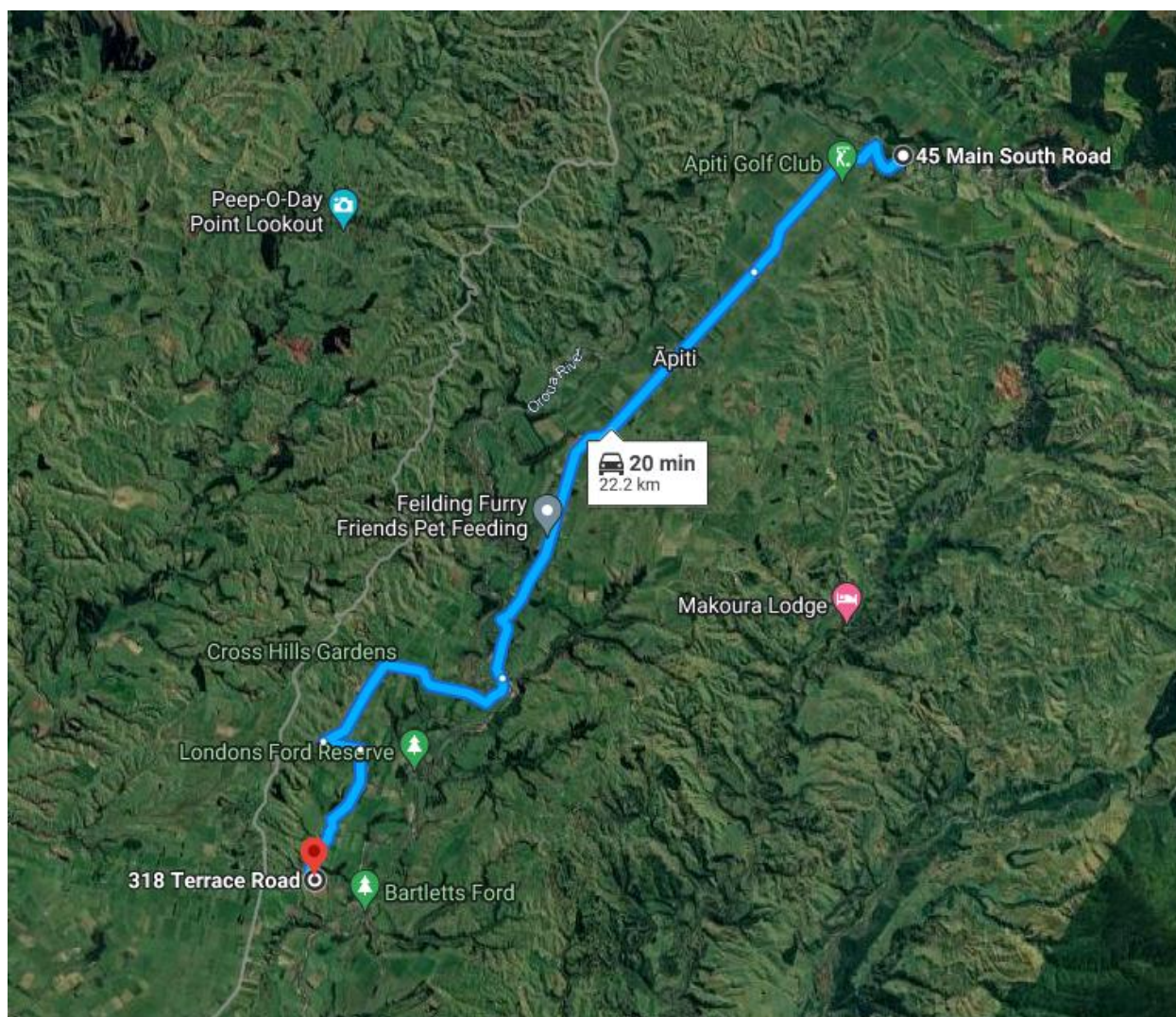


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SITE LOCATION MAP – Kimbolton STP at oxpond waste

Oroua Trib at u/s Kimbolton STP

Oroua Trib at d/s Kimbolton STP



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	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

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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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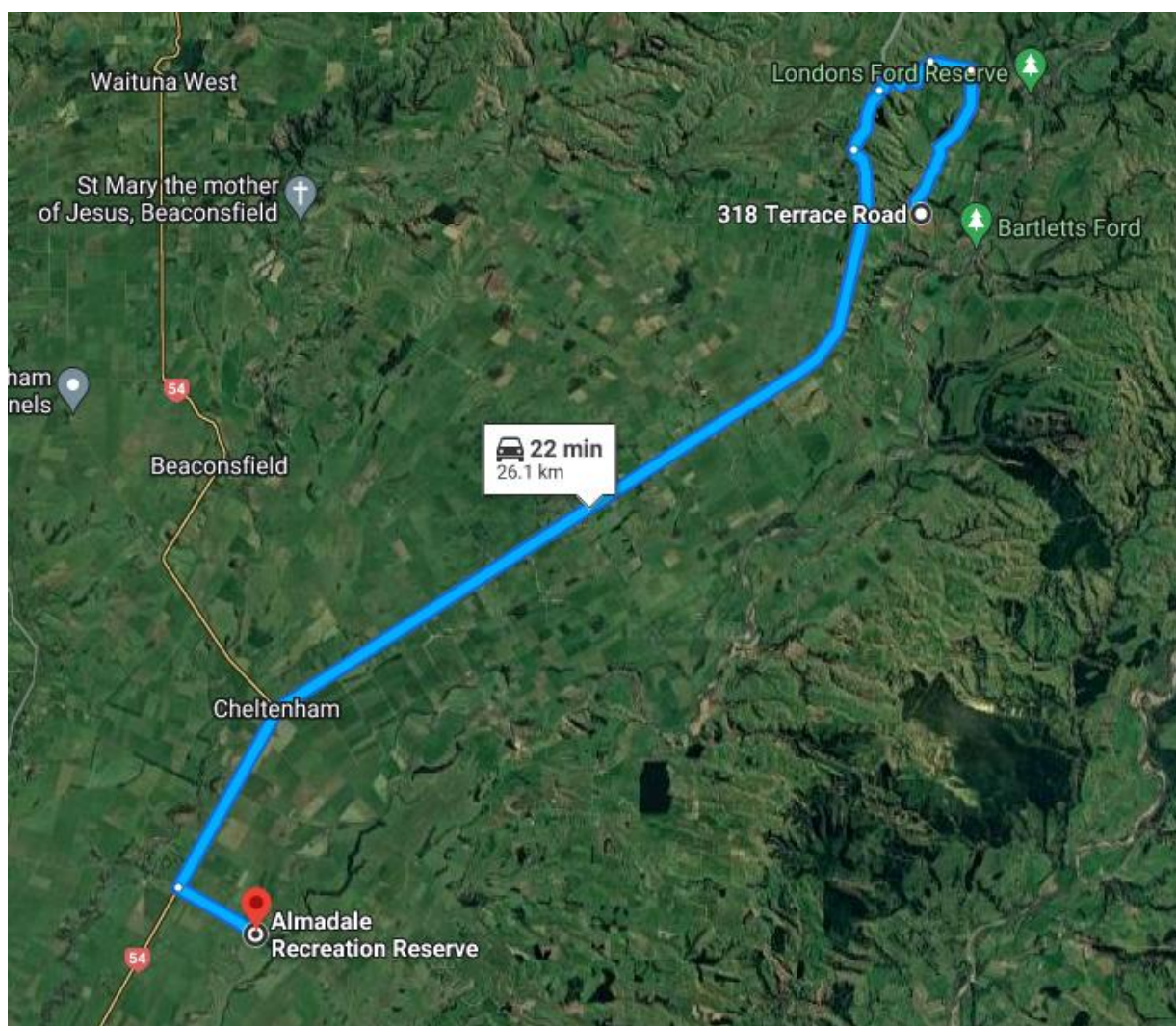
DIRECTIONS:

- Return the way you came down Manawatu Scenic Route and back through Apiti.
- Travel for about 19km until you reach London Fords Road, turn left down here.
- After about 500m turn right onto Terrace Road. Continue down the hill and onto the flats (3.3km) and enter the gate just beyond hay shed and on the bend
- **SAMPLE:** No need to drive across stream, can park by the gate
- 1. >10m upstream of discharge. Discharge is at the Southern fence line to the left of where you drive through the stream
- 2. from pipe outlet (drilled holes) at top of fenced wetland area.
- 3. >10m downstream of discharge. This is on the other side of the Southern fence – Sample above culvert inflow from road.



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SITE LOCATION MAP – Oroua at Almadale



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		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 back the way you came along Terrace Road, turn left onto Londons Ford Road and left again onto Apiti Road. At the top of Apiti Road turn left onto Rangiwahia Road and travel back through Kimbolton.
- Travel through Cheltenham and stay on Kimbolton Road for about 3km. Turn left onto Almadale Road.
- Drive down Almadale Road for about 2 mins, down the hill and then turn right into the reserve.
- Drive through the reserve to the footbridge and park next to the hydro shed.

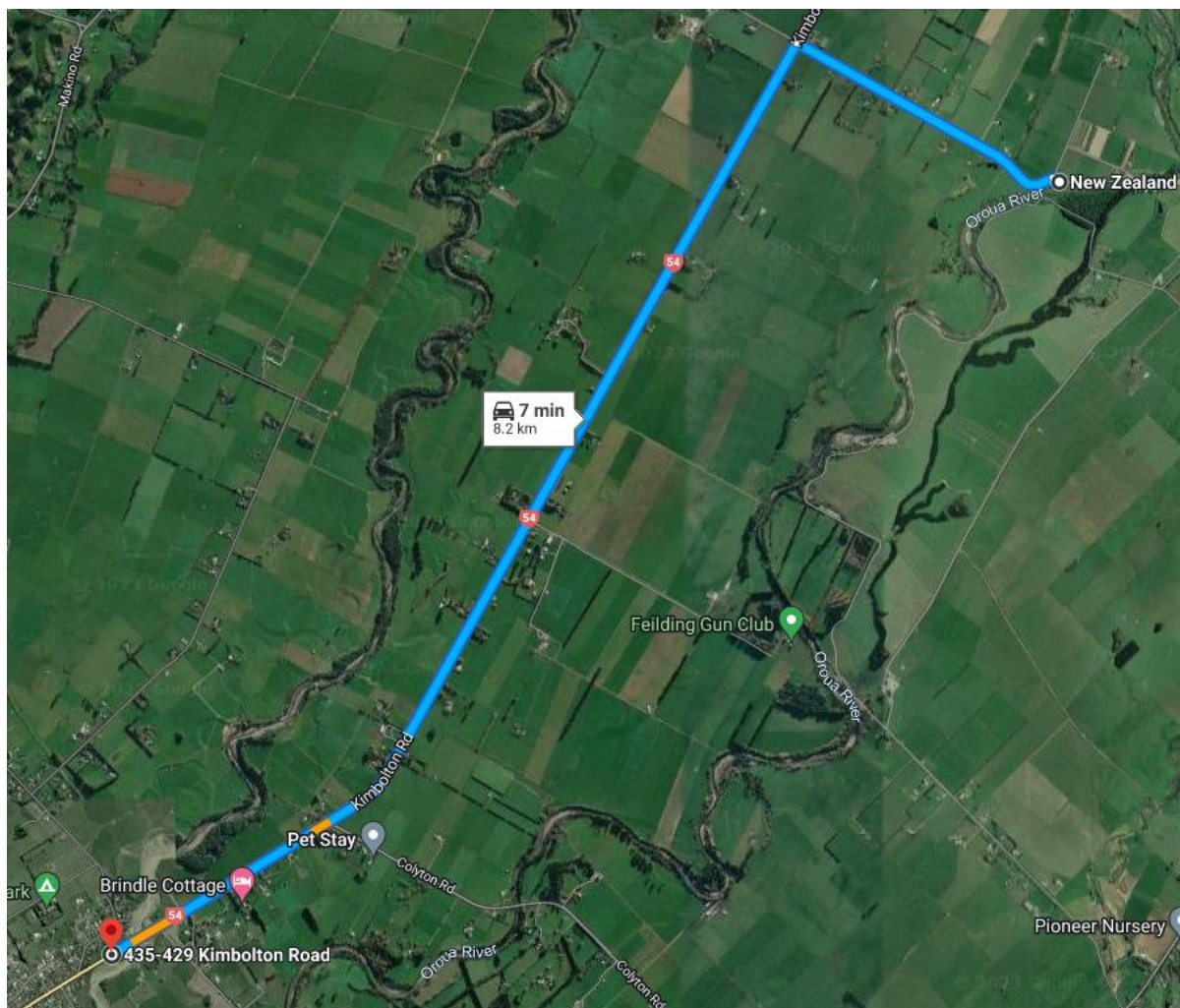
ACCESS:

- Enter the river via a path next to the footbridge, can be slippery.



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SITE LOCATION MAP – Kiwitea at Kimbolton 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		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"> Go back the way you came out of Almadale Road and turn left onto Kimbolton Road. 							

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- Stay on Kimbolton Road for about 6km as you come into Feilding.
- As you cross the Kiwitea Bridge coming into Feilding, there is a little reserve immediately on your left, turn into this reserve and park up in the parking area.

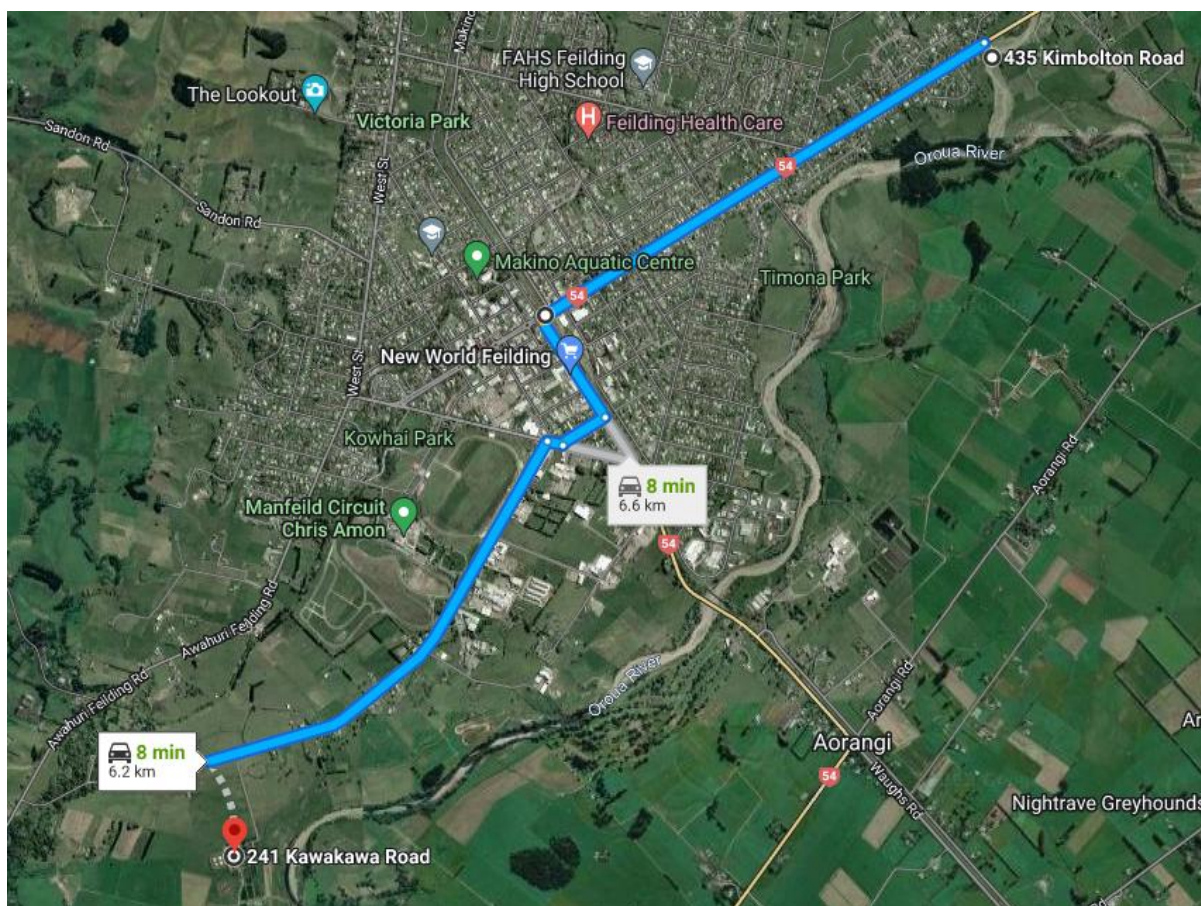
ACCESS:

- Walk down to the river and find somewhere suitable for a gauging and WQ samples downstream of the bridge.



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SITE LOCATION MAP – Feilding STP at secondary oxpond waste



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		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">• Turn left out of the reserve and continue down Kimbolton Road towards Feilding.• At the roundabout turn left onto SH54/Aorangi Street.• After a couple of minutes turn right onto South Street and then left onto Kawakawa Road							

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- Stay on Kawakawa Road as you head out of Feilding and turn left at the Manawatu Wastewater Treatment Plant (which has two brick pillars lining the driveway). Drive down the driveway and sign in at the office. **Wear high-vis at all times.**
- Drive towards the ponds after checking in and sample at the point where discharge enters the outfall pipe just after the UV treatment.

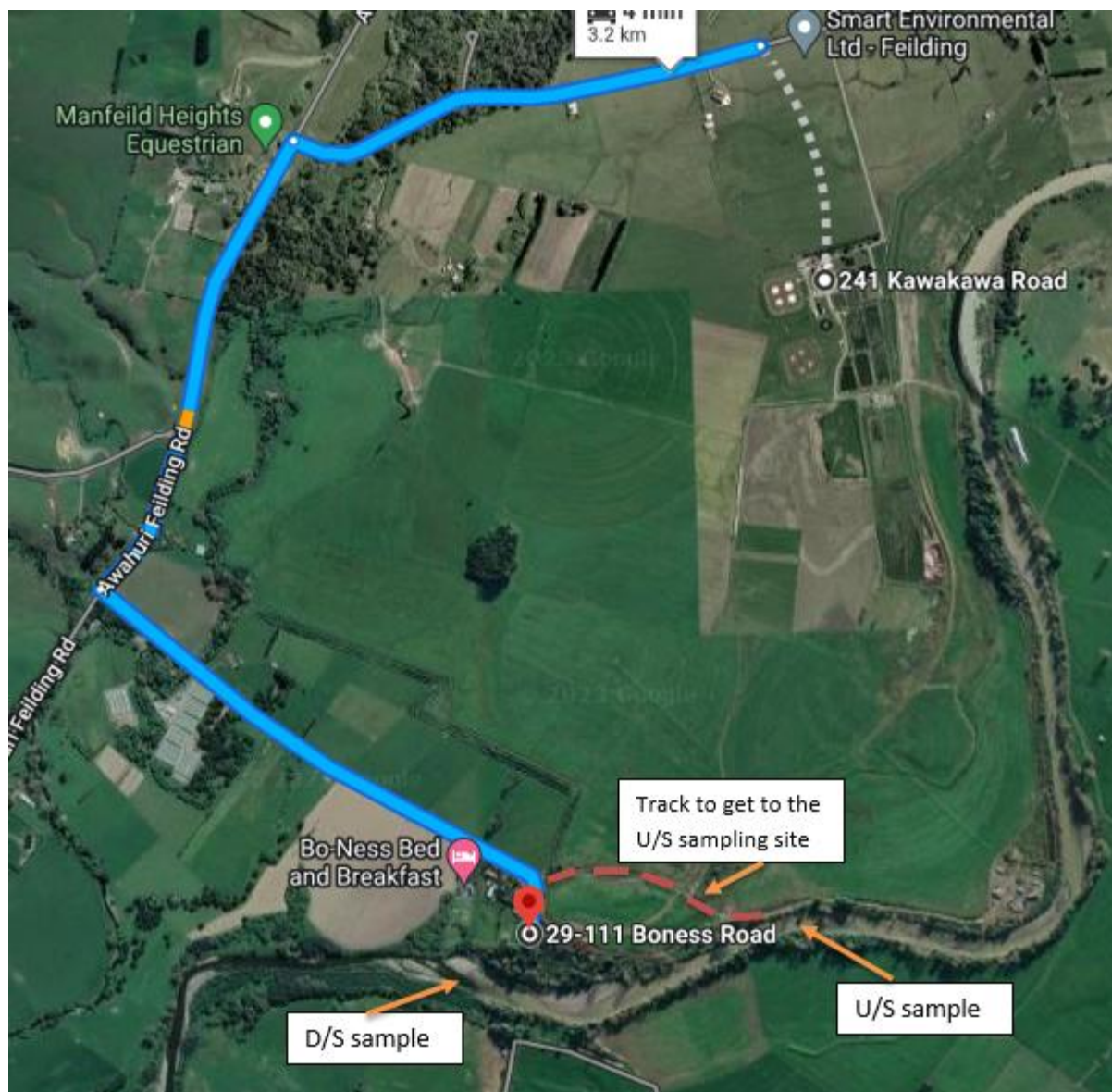


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SITE LOCATION MAP – Oroua at U/S Feilding STP AND Oroua at D/S Feilding STP



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	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

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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:

- Turn left out of the treatment plant gates and then left again onto Awahuri-Feilding Road at the end of the road.
- Follow Awahuri-Feilding Road for about a minute before turning left onto Boness Road.
- Continue to the end of Boness Road and park up somewhere on the river channel out of the way.

ACCESS: U/S STP

- To sample the upstream STP site you can either walk along the river if it is low enough or drive along the construction road over the stopbank (entrance to this is just before Boness Road curves around to the right). Find a suitable place to take periphyton and water samples.

D/S STP

- At the end of Boness Road, walk slightly to the right and find a suitable place to do periphyton and water samples.

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Oroua at U/S Feilding STP



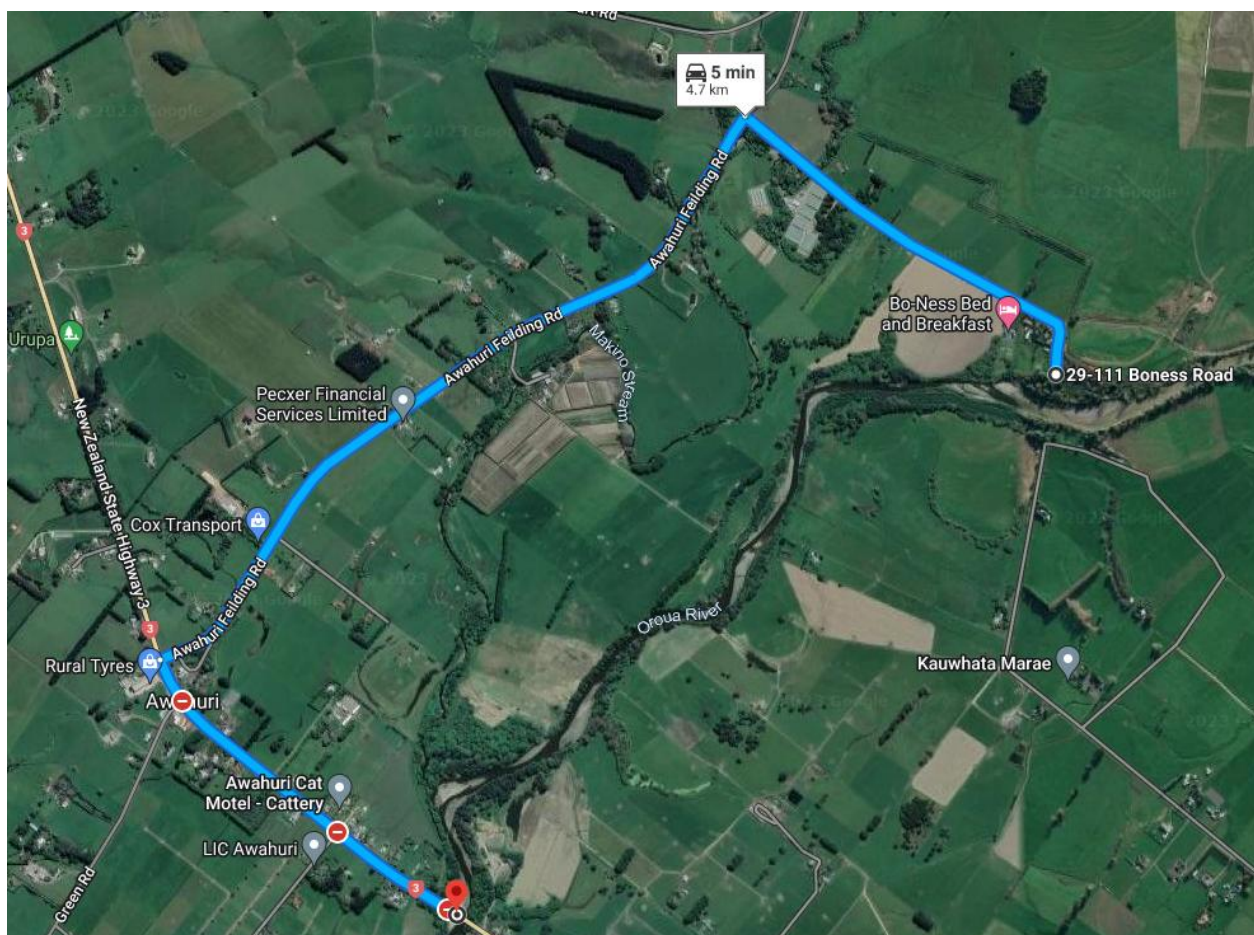
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Oroua at D/S Feilding STP



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SITE LOCATION MAP – Oroua at Awahuri Bridge



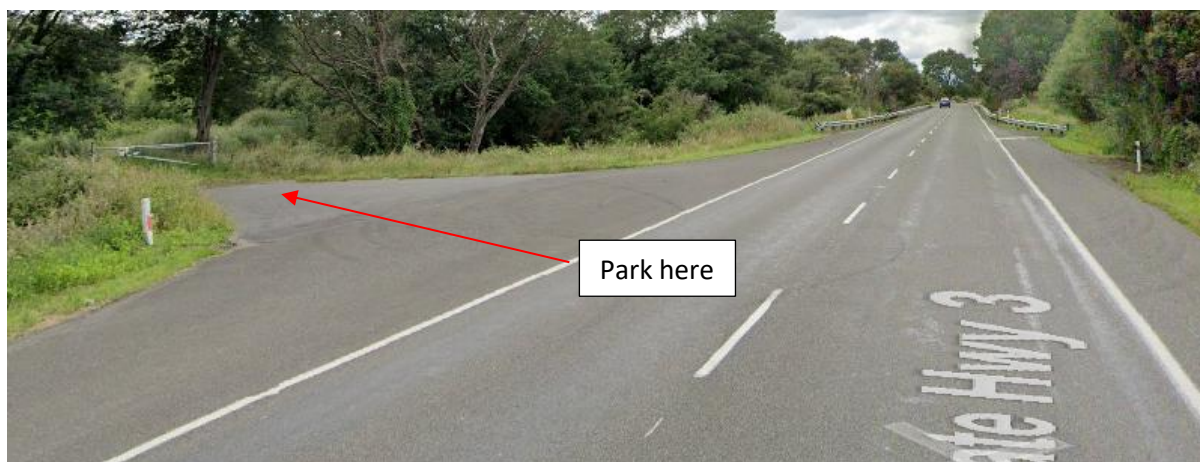
POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day):							
Drowning		UV Radiation		Slippery surfaces		Trip hazards	
Difficult entry/exit		Potential for difficult rescue		Machinery- mobile plant		Traffic / Vehicle Movements	
Weather/Temperature Extremes							
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 towards Awahuri-Feilding Road and turn left.• Travel for a couple of minutes down Awahuri-Feilding Rd and turn left when you get to the T-intersection with SH3.							

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- After about a minute of travel, before you cross the bridge going over the Oroua River, pull into the track leading to the river and park in front of the barrier well off the road.

ACCESS:

- Walk down to the river following the track and find a suitable place to sample



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Return to office.