



Version No: 07 Issue Date: 19/02/2025 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 12 Page: 1 of 24
horizons <small>regional council</small> 	Hydrology Operations Manual	

Water Quality Monitoring Run Guide

SoE Lower Rangitikei

**STATE OF ENVIRONMENT
(Monthly 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 type="checkbox"/>	Falling objects	<input type="checkbox"/>	Communication – means of	<input type="checkbox"/>
Oxygen deficiency/excess	<input type="checkbox"/>	Working near cranes and crane runways	<input type="checkbox"/>	Remote area	<input type="checkbox"/>
Poisonous fumes/gas	<input type="checkbox"/>	Live rails-gantry cranes	<input type="checkbox"/>	Temperature extremes	<input type="checkbox"/>
Explosive gas	<input type="checkbox"/>	Trip hazards	<input checked="" type="checkbox"/>	Reduced visibility	<input 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 checked="" 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 type="checkbox"/>	Stock/Farm Animals	<input checked="" type="checkbox"/>	Difficult access/egress	<input type="checkbox"/>

Required PPE– 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	PROTECTIVE GLOVES	PERSONAL FLOATATION DEVICE (PFD)
						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HI VIZ	SAFETY HARNESS	WADERS	HAND SANITISER	VEHICLE BEACON		
						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Known Hazard	Significant		Can it be Eliminated		Can it be Minimised		Method of control
	Yes	No	Yes	No	Yes	No	
Trip Hazards	✓			✓	✓		Prior to sampling staff must check area is clear of any items that pose a risk. If there is any these 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 – STP PONDS	✓			✓	✓		Pond edges and river banks can be slippery at any time. Sampling from the pond edge must always be done from stable level ground using a sample pole. PFD's must be worn by staff. Vehicles must be driven a sensible distance from any pond edges. [HMP18 & 30]
Slippery Surfaces – RIVER ACCESS	✓			✓	✓		River banks can be slippery at any time. Care should be taken in all conditions. PFD's must be available to staff for use is deemed appropriate. [HMP18]
Drowning - STP PONDS	✓			✓		✓	The STP ponds can be deep, full of sediments, and have operating equipment on/within them. Typically, HRC staff do not need to sample from the STP pond/Pond edge. Sampling direct from the pond must always be done from stable level ground using a sample pole. PFD's must be worn by staff. Vehicles must be driven a sensible distance from any pond edges. [HMP18 & 30]
Drowning - FLOWING WATER	✓			✓		✓	Staff should be trained in alignment with HRCs training requirements. PFD's must be available to staff for use is deemed appropriate [HMP18]
Traffic Vehicle movements	✓			✓		✓	Parking for sample site is in close proximity to roadsides Requires Hi Vis, park as far from the roadside as possible. [HMP 16] [HMP 20]
UV Radiation	✓			✓	✓		Horizons provide sunscreen and hats.
Electrical – low /high voltage	✓			✓	✓		Electric fences are present at sites and should be avoided. Isolated handles are attached in order to open/shut and potentially live tape gates. [HMP 23]
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]

Known Hazard	Significant		Can it be Eliminated		Can it be Minimised		Method of control
	Yes	No	Yes	No	Yes	No	
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 of additional and appropriate clothing.
Temperature Extremes - Hypothermia: following emersion	✓			✓		✓	Staff must have access to suitable PPE and spare clothing within their vehicle. [HMP18] [HMP18]
Traffic Vehicle movements	✓			✓		✓	Sample site requires parking beside a main road. The vehicle must be parked as far off of the road surface as safe and practicable to do so. Use of hazards lights must be considered. Hi-vis clothing must be worn. [HMP 16] [HMP 20]

Site Information

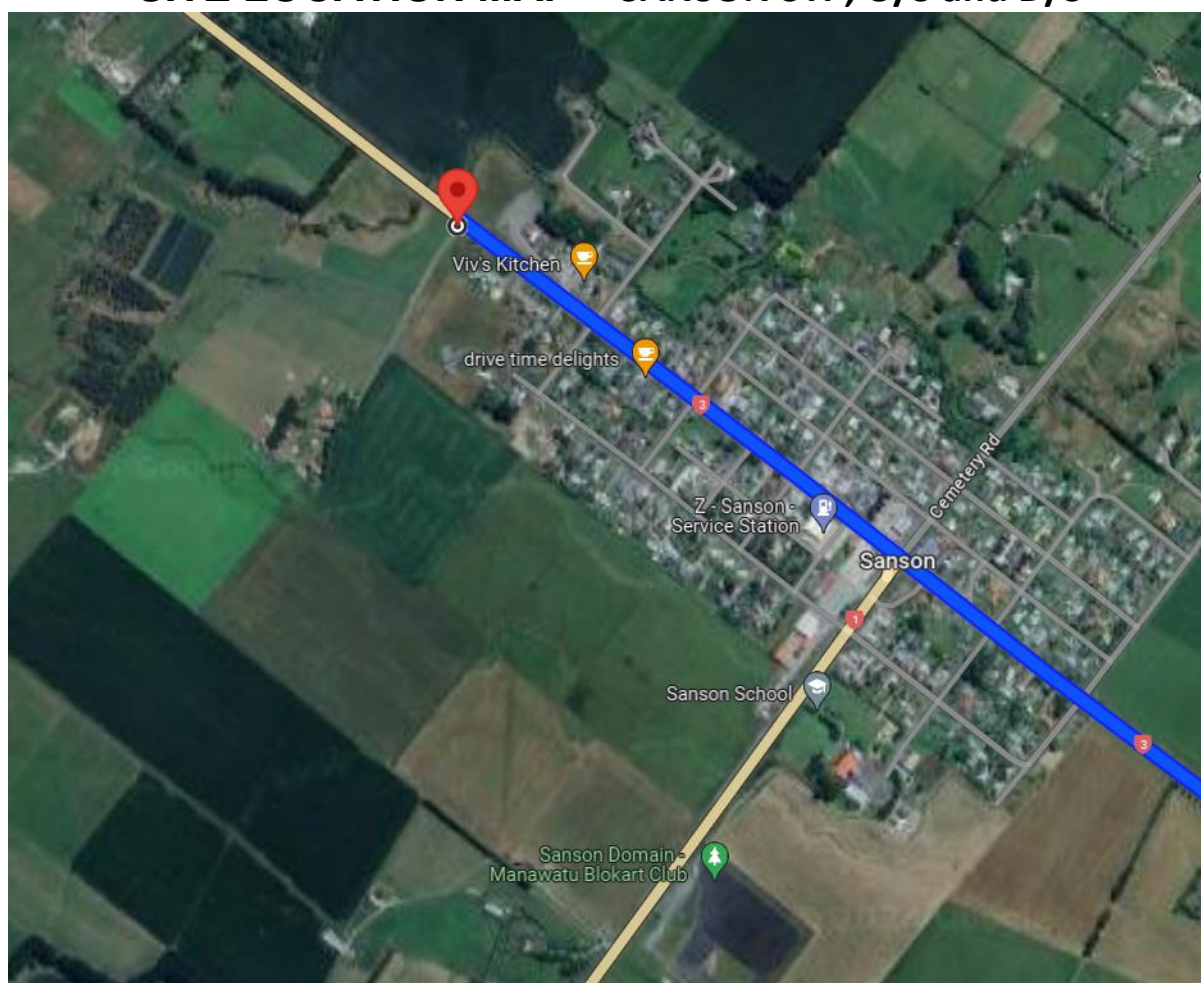
Hilltop Site Name	Easting/Longitude		Northing/Lat	Comments
Sanson STP at Secondary Oxpond	NZMG	2715165	6107164	
Piakatutu at us Sanson STP	NZMG	2715151	6107181	Gauged
Piakatutu at ds Sanson STP	NZMG	2715153	6107143	
Rangitikei at u/s Bulls STP	NZMG	2713557	6110482	
Riverlands at Industrial Wastewater	NZMG	2712157	6110391	Induction required on first visit.
Bulls STP at Secondary oxpond waste	NZMG	2712521	6110420	Access via gravel works - caution
Rangitikei at us Riverlands STP	NZMG	2712133	6110249	Access via gravel works - caution
Rangitikei at ds Riverlands STP	NZMG	2711899	6110276	Access via gravel works - caution

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

Equipment Required

Sample Bottles	8 {EIGHT} sample bottle sets - refer to http://tgm.horizons.govt.nz/Hydrology/SOPs/cd_om_15.4_Appendix_4_ELS%20Bottle%20Guide.xlsx
Sample numbers	8 [EIGHT]
Equipment	<ul style="list-style-type: none"> • Handheld multi-parameter instrument (calibrated) – including iPad/screen • Black disc, viewer, tape measure • Clarity Tube • 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) • Use gloves for wastewater and effluent samples • Alcohol gel
Additional Comments/Instructions	<ul style="list-style-type: none"> • Riverlands at Industrial Wastewater - requires INDUCTION (for first visit) and sampler to sign in and out. Hi-Vis to be worn at all times. • Bulls STP at Secondary oxpond waste – access to site via gravel works; works traffic has right of way at all times. SIGN IN/OUT of OFFICE. Hi-Vis to be worn at all times.

SITE LOCATION MAP – SANSON STP, U/S and D/S



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 – River	Traffic / vehicle movements – Roadside parking	Electric Fences	
Trip hazards – cobbles ,uneven ground	UV Radiation	Hazardous Waste – treated Effluent	
Slippery surfaces – mud, periphyton	Stock/Farm animals		

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):

VEHICLE BEACON	HI VIZ	PFD	WADERS	HAND SANITISER	SAFETY GLASSES / GOGGLES	SAMPLING GLOVES	
							

DIRECTIONS:

- Drive to Sanson and continue along SH3.
- Just after the 100kph out of Sanson is the access track to the STP on your left. It is the first driveway on the left after the 100kph sign.

ACCESS:

- Continue down the driveway, the track to the STP is on the right, the second paddock. The access track is raised above the surrounding paddocks.
- Proceed through several gates (leaving them as you find them after passing).
- Park up the outside the gate into the STP compound. In winter the paddocks gets very wet and you are limited to the raised pathway (this may involve lots of reversing!).
- All three sites can be collected in one trip from the vehicle – pack up 3 lots of sample kit.
- Walk around the outside of the compound past the two ponds and wetland area (which is now dry). Go through the fence on your left and follow the fence line until you reach the stream and blocked off discharge pipe.
- Due to low velocities, it sample the downstream site before the upstream site.

SANSON STP at SECONDARY OXPOND:

- The discharge pipe has been blocked off and the wetland is not in use as the Sanson STP discharge is now being piped to Feilding.

PIAKATUTU STREAM at US SANSON STP:

- Sample 20m upstream of the discharge pipe.

PIAKATUTU STREAM at DS SANSON STP:

- Sample 20m downstream of the discharge pipe.

SITE NOTES:

- The Piakatutu is generally very slow moving or not flowing at all.
- Generally, Black disc readings are not possible due to the amount of weed – use a clarity tube to record the visual clarity of both sites.
- If there is discharge from the STP, do not do visual clarity readings at the downstream site, as the volume of discharge is very high in relation to the flow of the Piakatutu.
- Wear gloves when sampling the downstream site due to the STP impacts.
- Over summer/low flow conditions both up and downstream sites can reduce to 0 l/s flow. Only sample if there is observable flow.
- **All three of these sites may be removed from sampling soon with the discharge being pumped to Feilding.**

SANSON STP SAMPLE LOCATIONS:



Aerial View



Street view of driveway entrance from SH3



View from first gate facing the raised track to the STP compound



Sanson STP at Secondary Oxpond – view of sample point looking in the downstream direction.

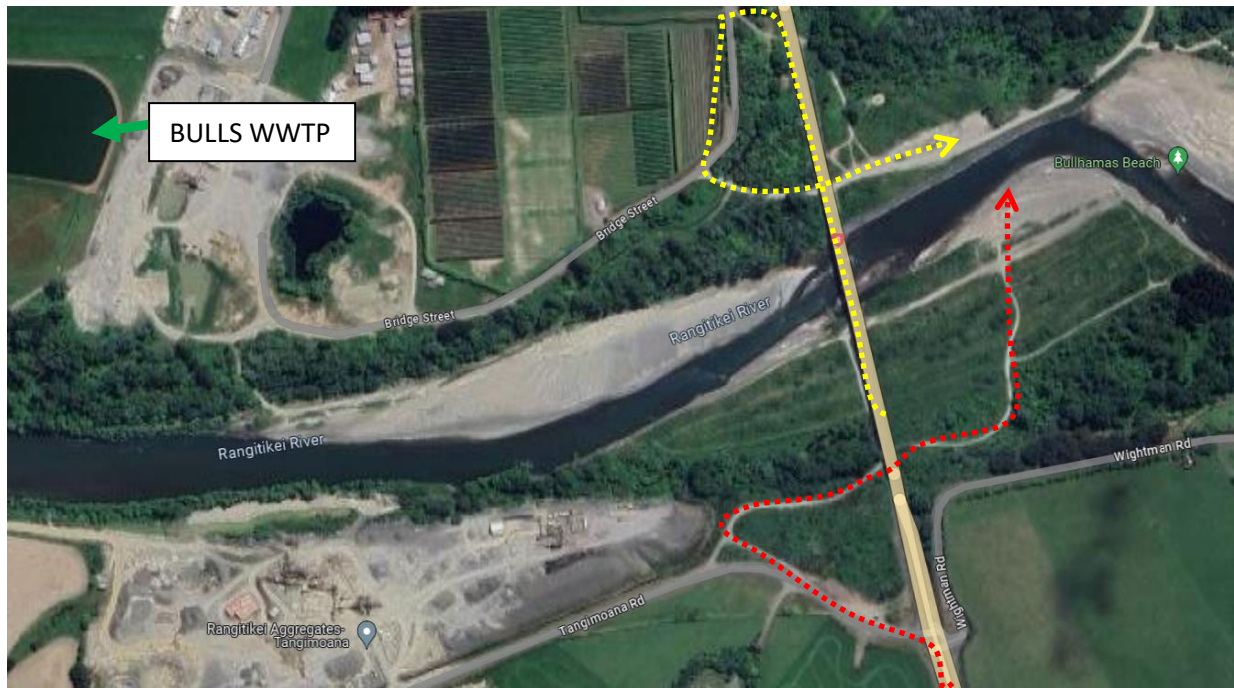


Piakatutu Stream at u/s Sanson STP– view from Discharge sample point looking upstream to upstream sample point



Piakatutu Stream at d/s Sanson STP– view from Discharge sample point looking downstream toward downstream sample point

SITE LOCATION MAP – RANGITIKEI US BULLS STP



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 – River	Traffic / vehicle movements – Roadside parking	Slippery surfaces – mud, periphyton	Stock/Farm animals
Trip hazards – cobbles ,uneven ground	UV Radiation		

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):

VEHICLE BEACON	HI VIZ	PFD	WADERS	HAND SANITISER	SAFETY GLASSES / GOGGLES	SAMPLING GLOVES	
							

DIRECTIONS:

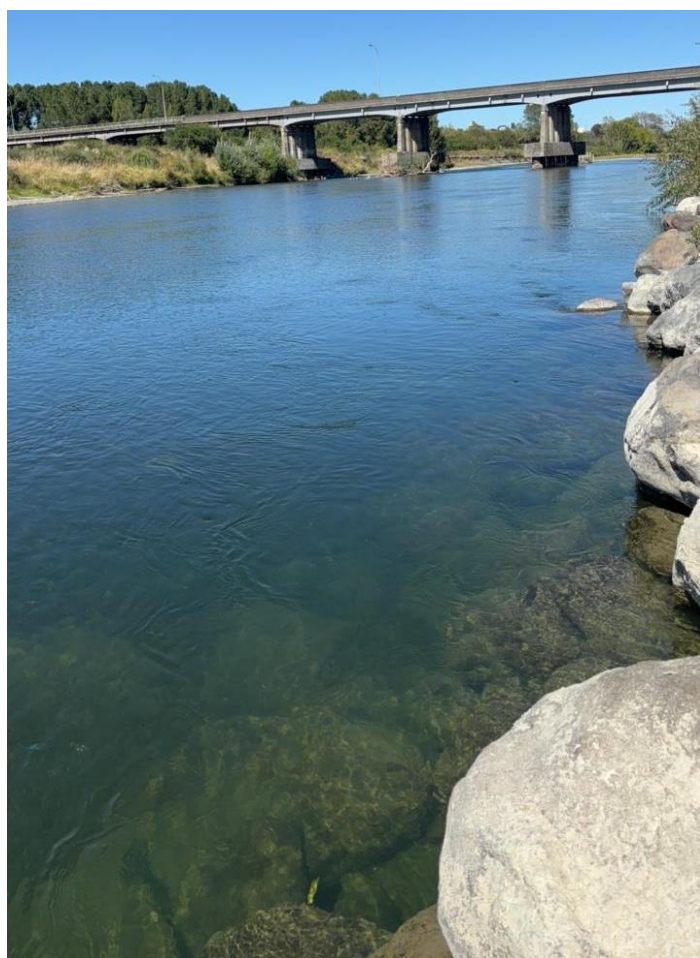
- Head toward Bulls.
 - Before the bridge turn left onto Tangimoana Road and then right to access the track running to the Rangitikei.
 - Follow the track under the bridge heading upstream.
 - Be aware of fly tipping and wet conditions in winter.
 - Head toward the meander above the bridge and sample from the most appropriate and safe location along this reach.
- Use a sample pole and clarity tube.

ALTERNATIVE SAMPLE POINT:

- Go this way if the access is blocked on the normal track.
- Head over the bridge and take the first left follow the track around and park in the carpark.
- Climb down the rock stock bank carefully and use a sample pole and clarity tube.



Rangitikei at us Bulls STP – view from the sample location looking D/S towards the bridge



Rangitikei at us Bulls STP – view from the sample location looking D/S towards the bridge on right hand bank via alternative access

SITE LOCATION MAP – RIVERLANDS AT INDUSTRIAL WASTEWATER



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 – River	Traffic / vehicle movements – Roadside parking	Electric Fences	Traffic/Plant –machinery
Trip hazards – cobbles, uneven ground	UV Radiation	Hazardous Waste – treated Effluent	Stock/Farm animals
Slippery surfaces – mud,			

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):

VEHICLE BEACON	HI VIZ	SAMPLING GLOVES	SAFETY BOOTS	HAND SANITISER	SAFETY GLASSES / GOGGLES		
							

DIRECTIONS:

- Turn left out of the access track onto Tangimoana Road.
- Turn left at the SH1 junction toward Bulls.



- Continue over the bridge and turn left onto Taumaihi Street as you enter the 50kpm zone going uphill into Bulls proper.
- Follow Taumaihi Street and turn left onto High Street (becomes Parewanui Road).
- After approx. 700m turn left onto Ferry Road (signposted AFFCO Manawatu).
- Follow this down to the plant – go to the right and park in the visitor carparks outside reception.

ACCESS:

- **AN INDUCTION IS REQUIRED PRIOR TO ARRIVAL** [Contact details can be found here.](#)
- Wear appropriate PPE
- **Enter reception and sign in (purpose of visit is an effluent sample).**
- Drive to the rear of the plant - **Give way to plant equipment at all times and follow all signage and instruction given**
- Continue to the ponds between the waste containers and pulping machines.
- To your right is a wetland. The sample point is from an access chamber from the discharge pipe of the wetland (this continues to the centre of the Rangitikei).
- To get to the sample point follow the track between ponds and wetland and down some steps. To your left is an access stile. Go over this.
- Sample from the pipe by the inspection chamber – screw off the lid. If the flow volume is low use a spare digitube to fill, the larger bottles (sample the smaller bottles from the filled 1litre bottle as usual etc.)
- **Once you have completed all work on site –sign out**



Riverlands at Industrial Wastewater - detail map

Version No: 07 Issue Date: 19/02/2025 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 12 Page: 16 of 24
horizons regional council 	Hydrology Operations Manual	



Riverlands at Industrial Wastewater – Sample point

SITE LOCATION MAP – BULLS STP at SECONDARY OXPOND WASTE



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 – River	Traffic / vehicle movements – Roadside parking	Electric Fences	Stock/Farm animals
Trip hazards – cobbles uneven ground	UV Radiation	Hazardous Waste – treated Effluent	Slippery surfaces – mud, periphyton
Traffic/Plant – Quarry/crushing machinery			

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):

VEHICLE BEACON	HI VIZ	SAMPLING GLOVES	SAFETY BOOTS	HAND SANITISER	SAFETY GLASSES / GOGGLES		
							

DIRECTIONS:

- Sign out of the Riverlands facility
- Head back to Bulls via Ferry Road, turn right onto Parewanui Rd.
- Turn right back onto Taumaihi St.
- Turn right onto SH1 back toward the bridge.
- At the bottom of the hill, turn right onto Bridge Street which kind of runs parallel to SH1.
- Then turn right toward the STP via a track that leads to a gravel pit/quarry and Bullocks house movers.
- Keep your Hi-Vis on.

ACCESS:

- Continue down this track past various houses on oil drums.
- **Wear appropriate PPE**
- **Enter the office and sign in (purpose of visit is STP & river sampling).**
- **Give way to plant at all times and follow all signage and instruction given**
- Drive to the right behind the office and park next to the gate on the right hand side of the yard the leads to the STP discharge pipe. **NOTE the site changes rapidly so safe and appropriate access routes will vary.**
- Walk through the gate to the sample point. Use a sample pole.
- Sample from the pipe discharging into the channel.



Bulls at Secondary Oxpond Waste - detail map #1



Bulls at Secondary Oxpond Waste - detail map #2



Bulls at Secondary Oxpond Waste – access off of Bridge Street



Bulls at Secondary Oxpond Waste – sample location





SITE LOCATION MAP – RANGITIKEI US RIVERLANDS STP & RANGITIKEI DS RIVERLANDS STP



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 – River	Traffic / vehicle movements – Roadside parking	Stock/Farm animals	Slippery surfaces – mud, periphyton
Trip hazards – cobbles ,uneven ground	UV Radiation		

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):

VEHICLE BEACON	HI VIZ	PFD	WADERS				
							

DIRECTIONS:

- From the Bulls STP drive toward the river – you should see a track to your right, take this.
- The track should be taking you parallel to the Rangitikei River back toward Riverlands.
- Follow to the where it turns left towards the river and park up to the right out the way. The large vehicles from the quarry may come past so there needs to be enough room for them to get by.

ACCESS:

RANGITIKEI US RIVERLANDS STP:

- Sample immediately upstream the discharge point from Riverlands – i.e. straight on the river bed and to the left in the flow.

- The discharge is piped to the centre of the river channel – on clear fine days the discharge is visible!

RANGITIKEI DS RIVERLANDS STP:

- The sampling point is approx. 200m ds of the sample point (i.e. the end of the track) – this is the point shown on the overview map.
- Either follow the track from the U/S site down to the D/S or walk out onto the river bed where the quarry vehicles have now created a path down and the river has been moved to the left hand bank. The D/S site is in line with where the track comes onto the river bed just before the track goes up of the hill.
- The channel can change after big event. Sample at the most appropriate spots for sample quality and your safety.



Rangitikei at us Riverlands STP - location map



Looking towards US Riverlands STP access from near parking spot. Old quarry track to the right.



Rangitikei at us Riverlands STP – view looking U/S at sample point



Rangitikei at ds Riverlands STP - location map (River channel is different D/S currently than image with the river running the whole way across the channel)



Rangitikei at ds Riverlands STP – left image view looking U/S & right image view looking D/S at sample point