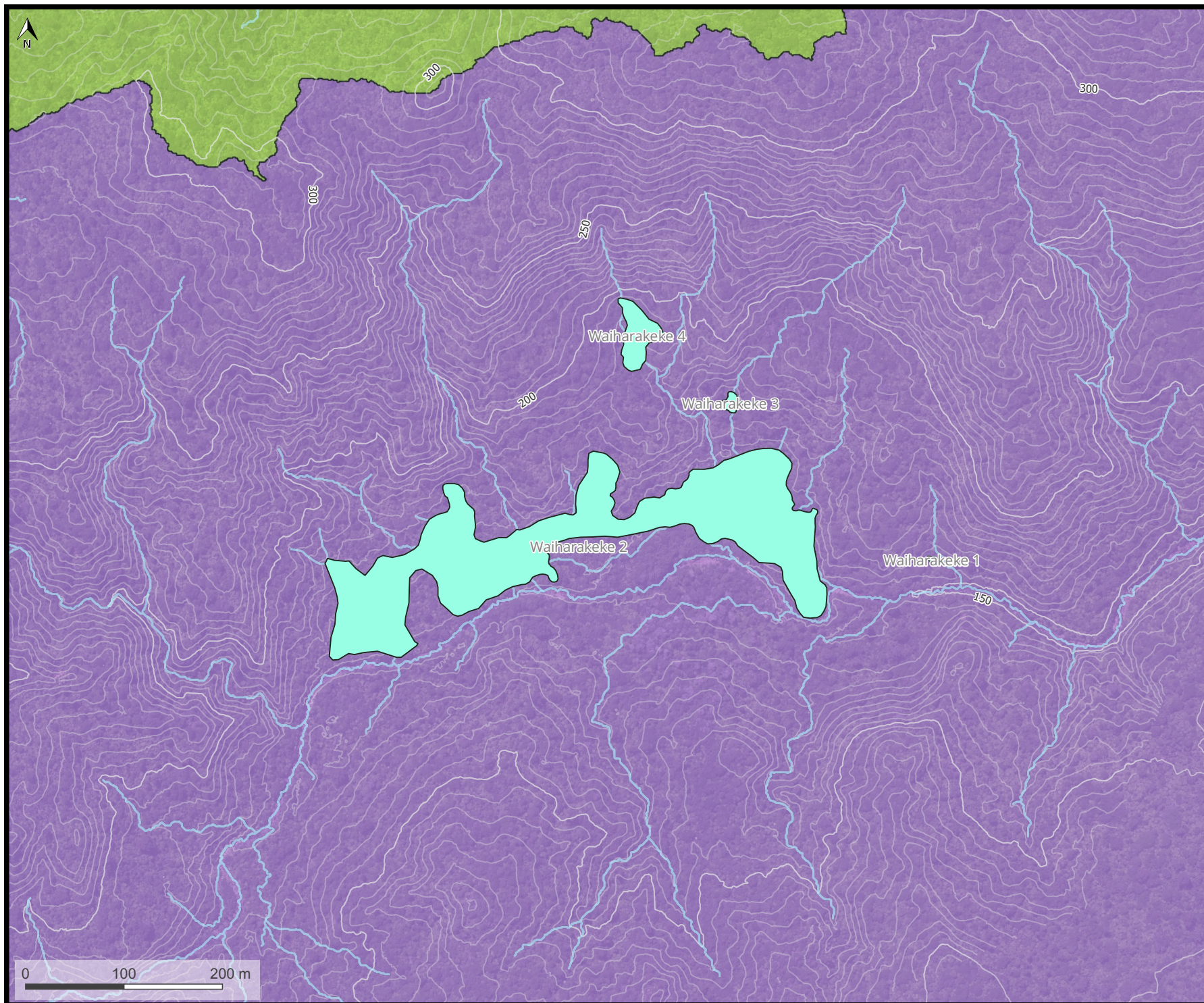
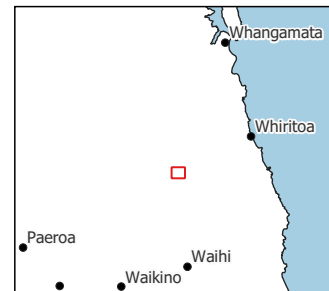




Map Title:  
**Waiharakeke Stream  
Catchment**

Project:  
**Wetland Delineation**

Client:  
**Oceana Gold**



**Legend**

- Stream
- Contour (m)
- Wetland
- Thompsons
- Waiharakeke Stream

**Data Provenance**  
Aerial imagery and land parcels from Land  
Information New Zealand

**Drawn by:** Jaide Derbyshire  
04/10/2024

**Layout Name**  
Catchments G:\Shared drives\Projects\Oceana Gold\WWLA0996\_WKP  
Wetland Identification\_Delineation\Technical\GIS\OGIS project files\OGL\_WKP  
Wetland Fieldwork.gpx



**Figure 13.**



### 2.2.3 Otahu Catchment

Two wetlands were identified in the Otahu catchment, one of which is classisupported as a depression with hydrology feature, whilst the other is classified as a depression with interflow.

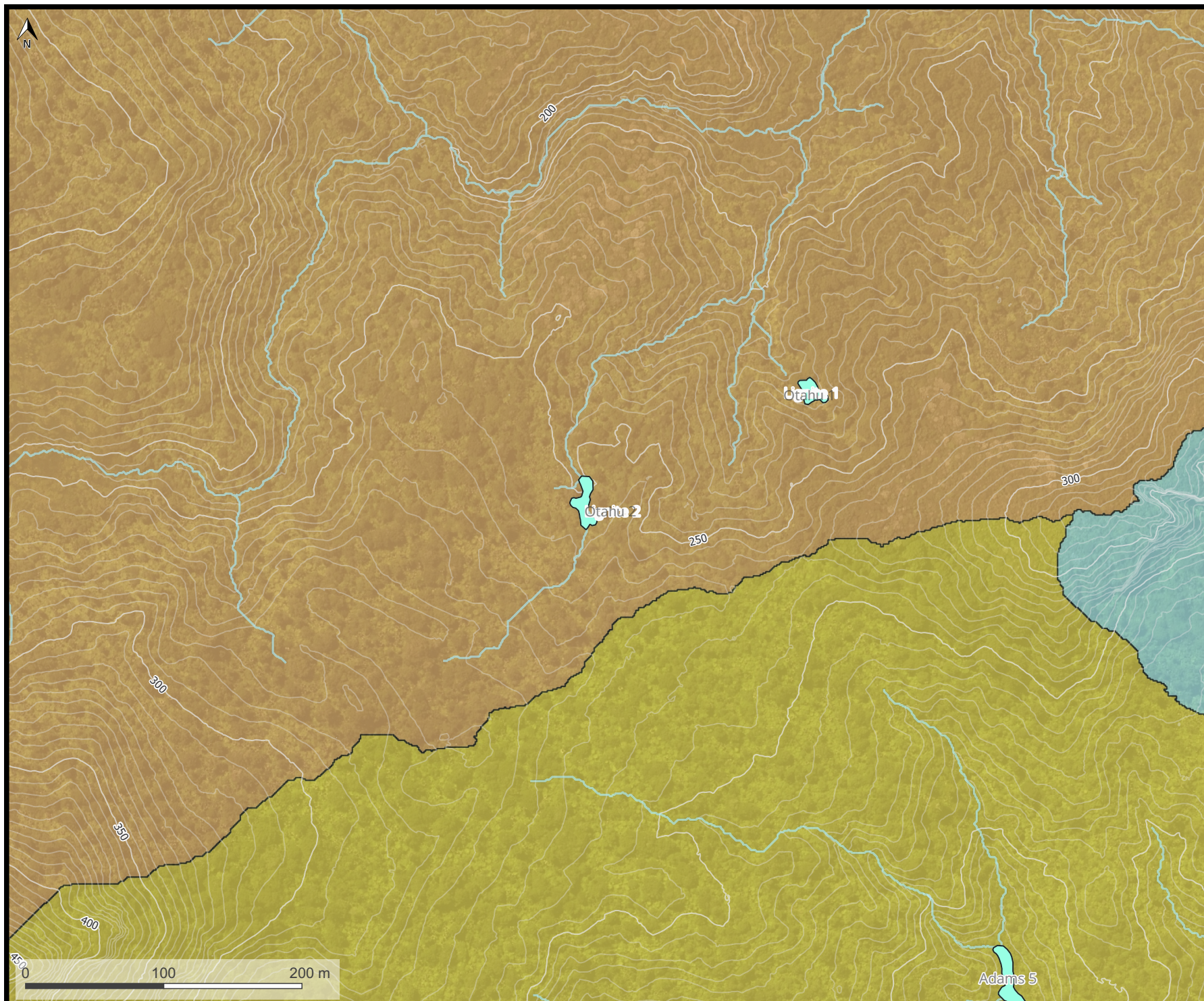
The wetlands were located at the base of very steep banks and were bound by topography. One wetland had a small stream running through the area whilst the other was formed from seepage from a bank (**Figure 14 – photo 1**). The seepage appeared to be surface run-off forming a small stream in the wetland.

Both wetlands were characterised by dark brown, or black topsoils (**Figure 14 – photo 2**), underlain by clear redox conditions with orange and grey mottling (**Figure 14 – photo 3**). No peat was identified, and this is likely due to the steep surrounding topography which creates a fast-flowing, flashy catchment. As a result, vegetation cannot settle to decay and form peat.



Figure 14. Otahu catchment photos.

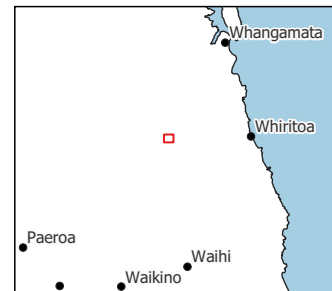




Map Title:  
**Otahu Stream Catchment**

Project:  
**Wetland Delineation**

Client:  
**Oceana Gold**



**Legend**

- Stream
- Contour (m)
- Wetland
- Otahu Stream
- Wharekirauponga Stream
- Adams Stream

**Data Provenance**  
Aerial imagery and land parcels from Land Information New Zealand

**Drawn by:** Jaide Derbyshire  
04/10/2024

**Layout Name**  
Catchments G:\Shared drives\Projects\Oceana Gold\WWLA0996\_WKP  
Wetland Identification\_Delineation\Technical\GIS\OGIS project files\OGL WKP  
Wetland Fieldwork.gpr



**Figure 15.**



#### 2.2.4 Wharekirauponga Catchment

Two wetlands were identified in the Wharekirauponga catchment, one of which is considered to be a combined groundwater and surface water wetland, whilst the other is considered to be a closed depression wetland.

Both wetlands are located adjacent to the main Wharkirauponga walking track and were situated on flat areas at the base of slopes. The closed depression wetland has no obvious hydrology features and appears to be supported purely by run-off during rainfall.

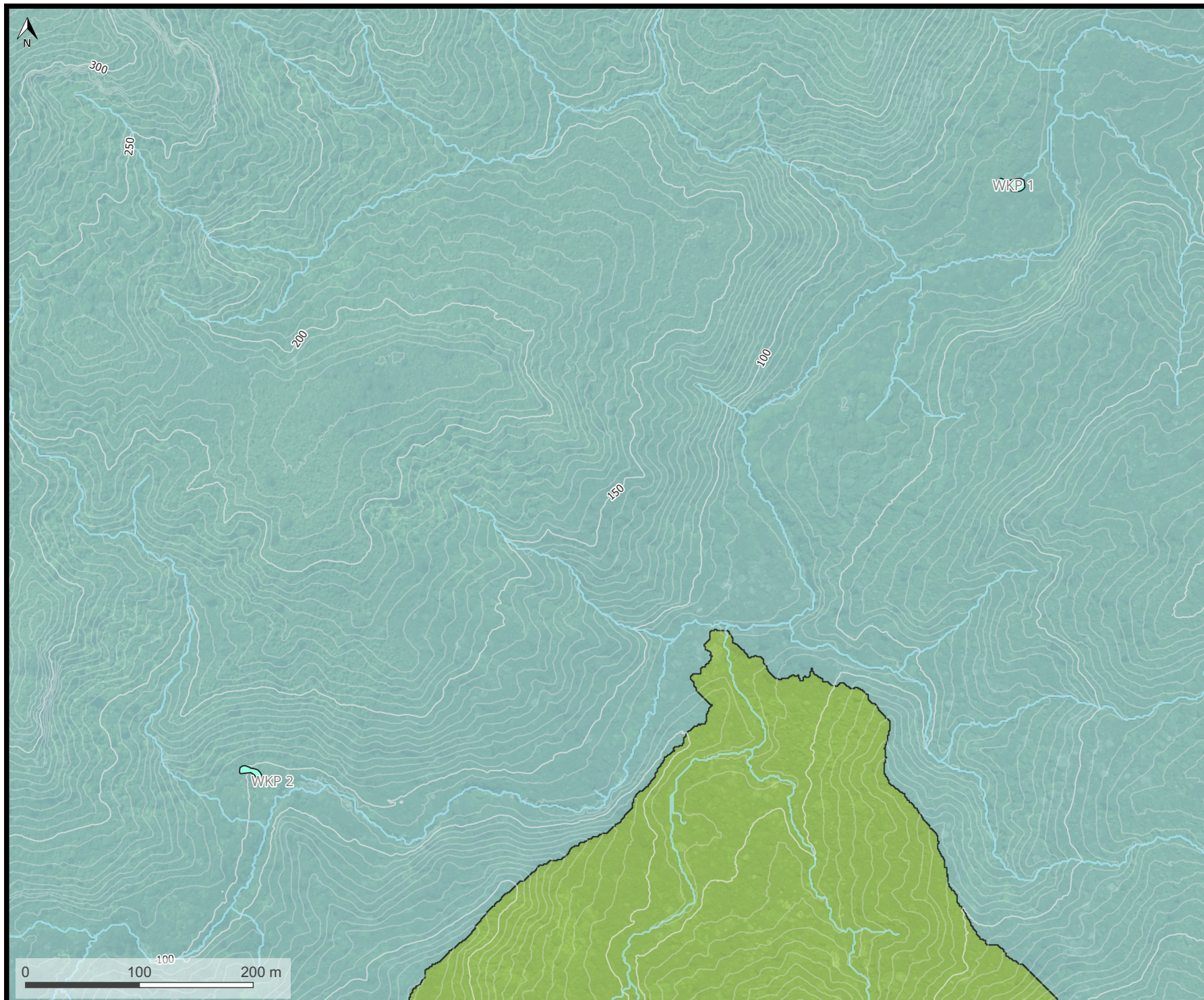
In the combined groundwater and surface water wetland, seepage was observed directly from the banks forming ponding across the area. This could potentially be interflow, but the seepage was observed at the same elevation in multiple locations along the bank and appeared to be a groundwater seepage line or spring.

Both wetlands were characterised by dark brown, or black topsoils (**Figure 16 – Photo 1**), underlain by clear redox conditions with orange and grey mottling (**Figure 16 – Photo 2**). No peat was identified. This is likely due to the steep surrounding topography which creates a fast-flowing, flashy catchment. As a result, vegetation cannot settle to decay and form peat.



Figure 16. Wharekirauponga catchment photos.

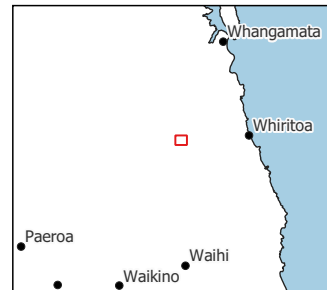




Map Title:  
**Wharekirauponga Stream  
Catchment**

Project:  
**Wetland Delineation**

Client:  
**Oceana Gold**



**Legend**

- Stream
- Contour (m)
- Wetland
- Wharekirauponga Stream
- Thompsons

**Data Provenance**  
Aerial imagery and land parcels from Land Information New Zealand

**Drawn by:** Jaide Derbyshire  
04/10/2024

**Layout Name**  
Catchments G:\Shared drives\Projects\Oceana Gold\WWLA096\_WKP  
Wetland Identification\_Delineation\Technical\GIS\OGIS project files\OGL\_WKP  
Wetland Fieldwork.gpr



**Figure 17.**



### 2.2.5 Tributary R Catchment

Two wetlands were identified in the Trib R catchment, one of which is classified as a depression with hydrology feature whilst the other wetland is a groundwater supported wetland.

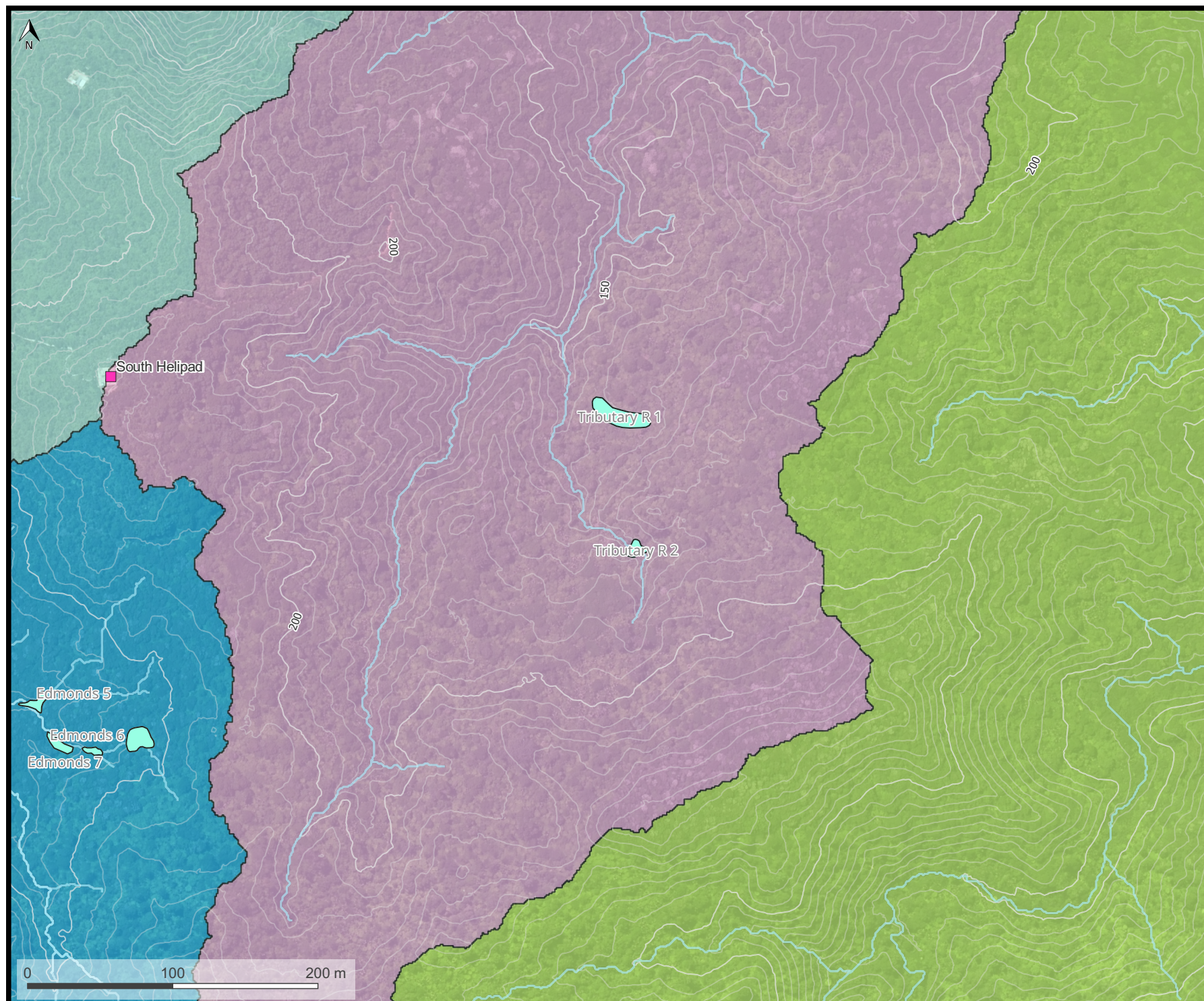
The depression wetland is located at the base of a valley, with a stream running through the site. The groundwater supported wetland was located in a flatter area along a slope and appeared to have a spring emerging at the surface that was observed seeping down the bank (**Figure 18 – Photo 1**). The spring created ponding and saturation in the wetland.

Both wetlands were characterised by dark brown topsoils (**Figure 18 – Photo 2**) underlain by orange/grey subsoils showing redox conditions (**Figure 18 – Photo 3**).



Figure 18. Tributary R catchment photos.





Map Title:  
**Tributary R Catchment**

Project:  
**Wetland Delineation**

Client:  
**Oceana Gold**



**Legend**

- Helipad
- Stream
- Contour (m)
- Wetland
- Wharekirauponga Stream
- Edmonds Stream
- Trib R
- Thompsons

**Data Provenance**  
Aerial imagery and land parcels from Land Information New Zealand

**Drawn by:** Jaide Derbyshire  
04/10/2024

**Layout Name**  
Catchments G:\Shared drives\Projects\Oceana Gold\WWLA0996\_WKP  
Wetland Identification\_Delineation\Technical\GIS\OGIS project files\OGL\_WKP  
Wetland Fieldwork.gpx



**Figure 19.**



## 2.2.6 Teawaotemutu Stream Catchment

There were three wetlands identified in the T-Stream Catchment with two along the north tributary and one along the south tributary. One of the wetlands is considered to be a closed depression wetland, whilst the other two are considered to be either a combined depression with hydrology feature and groundwater.

The wetlands were covered by dense vegetation limiting light and heat from reaching the surface and were located in flatter areas at the base of steeper slopes.

The topsoils and subsoils in surface water-supported wetland were observed to be very dark brown, or black (**Figure 20 – Photo 1**), but no peat was identified. This is likely due to the steep surrounding topography which creates a fast-flowing, flashy catchment. As a result, the movement of water into the wetland is preventing any peat from forming. There was significant ponding throughout (**Figure 20 – Photo 2**).

The topsoils in the two groundwater supported wetlands were generally also dark brown or black, but in some cases a bright orange soil was observed (**Figure 20 – Photo 3**). The soils were coated with the slimy, iron-oxidising bacteria seen in other groundwater wetlands in the project area (**Figure 20 – Photo 4**).



Figure 20. Teawaotemutu Stream photos.