

Stop 6 Glacial Lake Penticton from the KVR

[00:05] We've come up the KVR today to take a look at some of the remains of Glacial Lake Penticton. Not the beautiful lake that we see over here on my right I'll show you in just a moment, but the lake that existed when there was a giant ice dam further to our south at McIntyre Bluff. So, the dam at McIntyre Bluff actually caused Glacial Lake Penticton to flow north the complete opposite direction to the way that the Okanagan River flows today. Back in this time the lake drained into the Shuswap River approximately near Enderby. Now when was this? So Glacial Lake Penticton existed between about thirteen thousand and ten thousand years ago. At its maximum the surface of Glacial Lake Penticton was approximately 100 meters higher than the current surface level and that explains why I can stand above today's lake level and show you remains of what was deposited on the base of Glacial Lake Penticton.

[01:07] So the sediments that we see here were deposited on the bottom of Glacial Lake Penticton. Today we see them as silt cliffs on either side of Okanagan Lake. The really interesting thing about the silt cliffs on either side of Okanagan Lake is that this layering that we find um, the varves, doesn't actually match up on both sides of the lake; and what that tells us or has led to is this hypothesis that Glacial Lake Penticton actually had an ice core at its center. So back to our varves, like all varves we see this layering in the system. So, we have layers of very fine sediment that were deposited during winter when flow conditions were um slow to stopped, and then we have these thinner the coarser layers which were deposited it deposited in summer. Now these silt cliffs were um oh sorry are primarily made up of silt and fine sand there's very little clay present. Also, it's important to note that this um apparent rock isn't rock, it was never lithified. It has never been subjected to enough pressure to turn it into rock and so the cliffs, although they look stable, they are not and that has led to a number of slope stability issues.

[02:37] So these slope stability issues have happened or continue to happen at a number of different scales. Here we have a really small slope failure, but back in 1949 about 300 meters that way up the KVR, in the middle of the night, the train actually had to divert and plunge off the cliff down towards the lake because of a landslide. Now luckily nobody was hurt, but it does really emphasize the lack of stability we have in these silt cliffs.

[03:10] As many of you are probably aware, the Okanagan and especially Naramata Bench, which is what we're on here, is a really prime wine growing region and part of the reason for that is this silt material. It's really um great at holding onto water and nutrients, so makes it really um great for agriculture. However, it's also really susceptible to being over irrigated. So, the producers on the bench have to find that balance between putting enough water into their soil to help the vines grow and making sure they don't over irrigate and lead to slope failure.

[03:46] So let's finish off this stop with a bit of a view out over the location where we are. So this trail that you see here is what used to be the KVR, bring it around to um Okanagan Lake you'll spy Giant's Head in the background, which you've already visited, and then over on the other side see those silt cliffs on the other side and remember in between when this was Glacial Lake Penticton there was a giant ice core.