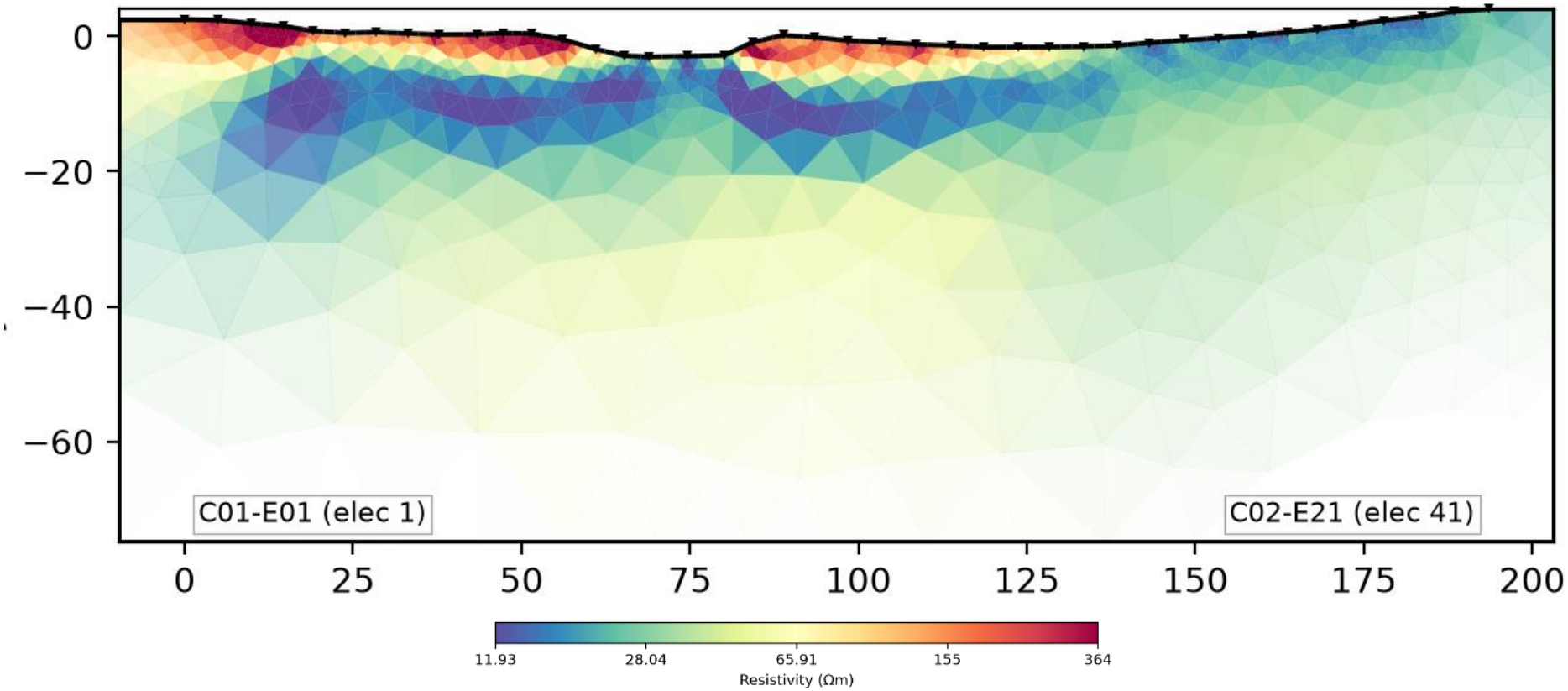

Imaging groundwater storage with geophysics

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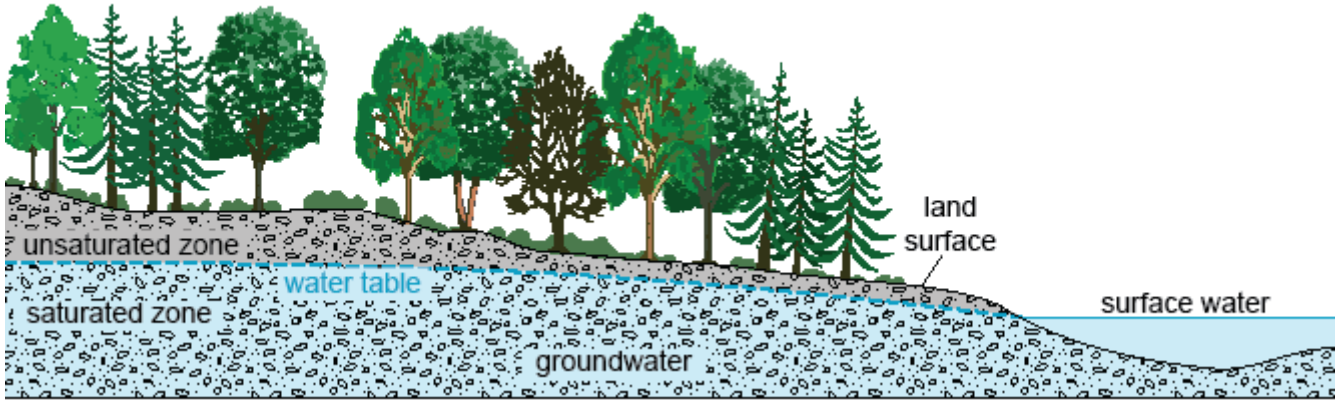
With support from Siobhan Klassen (*UNBC*), James Laing (*UNBC*), Wayne Salewski (*NEWSS*), Chelton van Geloven (*LTFN*), Jun Yin (*MoF*), Dudley Phillips (*Avison*)

Shallow groundwater is not well understood

- Observation wells are rare, only part of the story
- Geophysics can help!
- We tested Electrical resistivity tomography (ERT) in summer 2026
- ERT creates an electrical circuit using the subsurface
- The resistivity is controlled by 1) materials
  2) temperature
  3) moisture



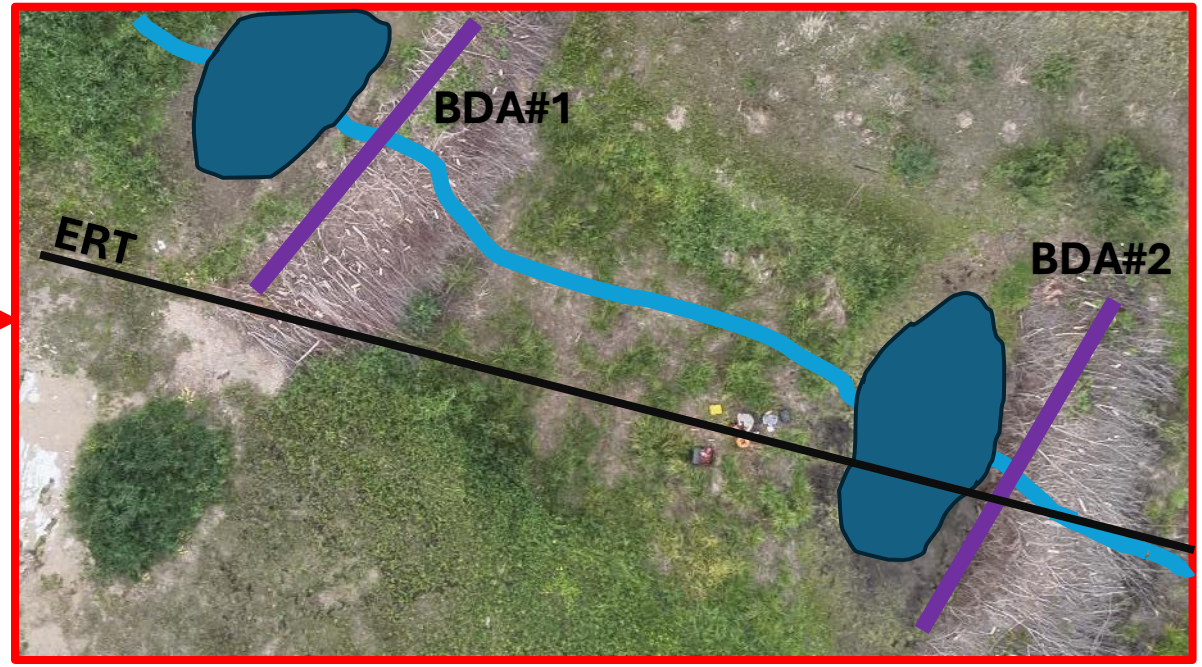
https://www.usgs.gov/media/images/diagram-how-groundwater-occurs-underground



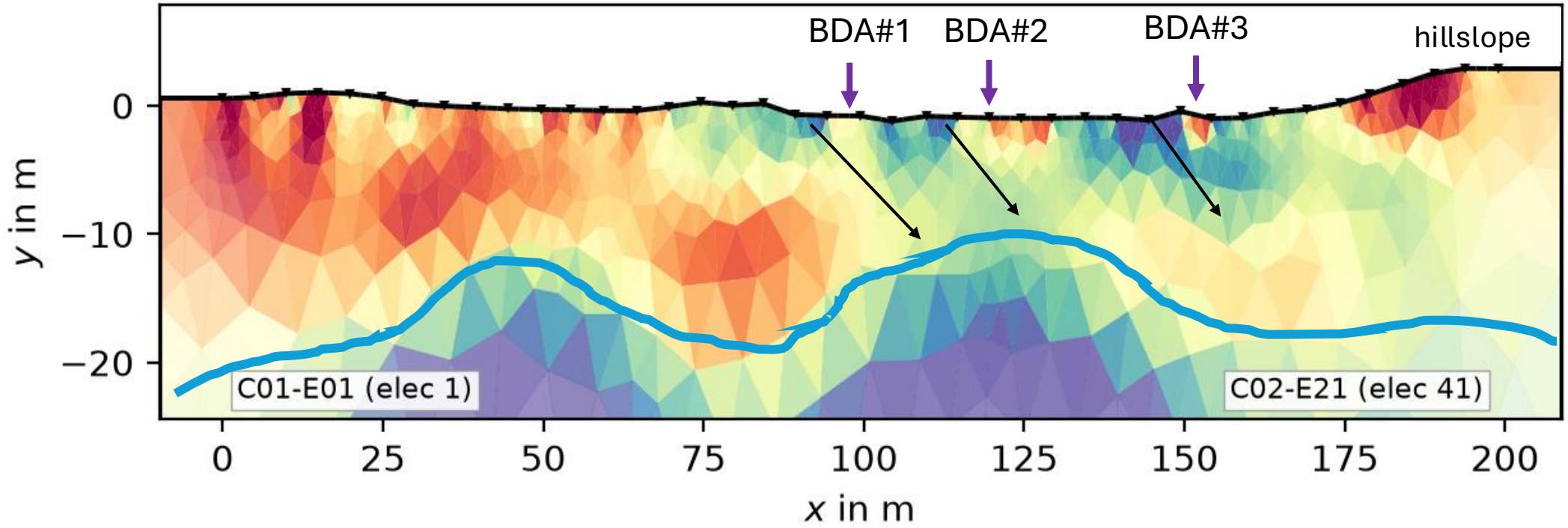


Unnamed dry creek, Vanderhoof, July 27, 2026





Flow direction



Next steps: 3D and Timelapse

- Buy equipment or rent often
- Repeat imaging through freshet, rainfall, drought to assess changes
- 3D imaging with a grid pattern of surveys
- Use this to inform how we model the subsurface

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