



Water Level Update, Knight-Dillacort Area, High Prairie

High Prairie Community Meeting
December 17, 2014

Presented by
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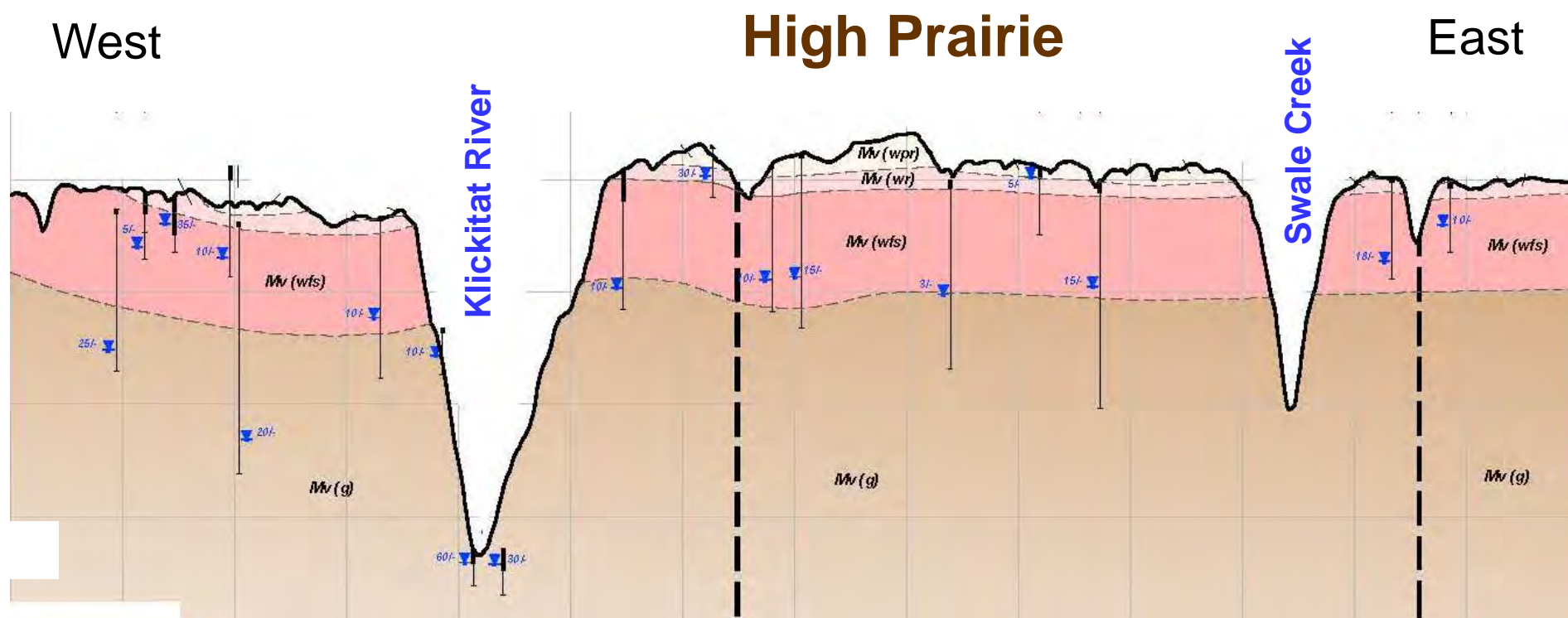


earth+water

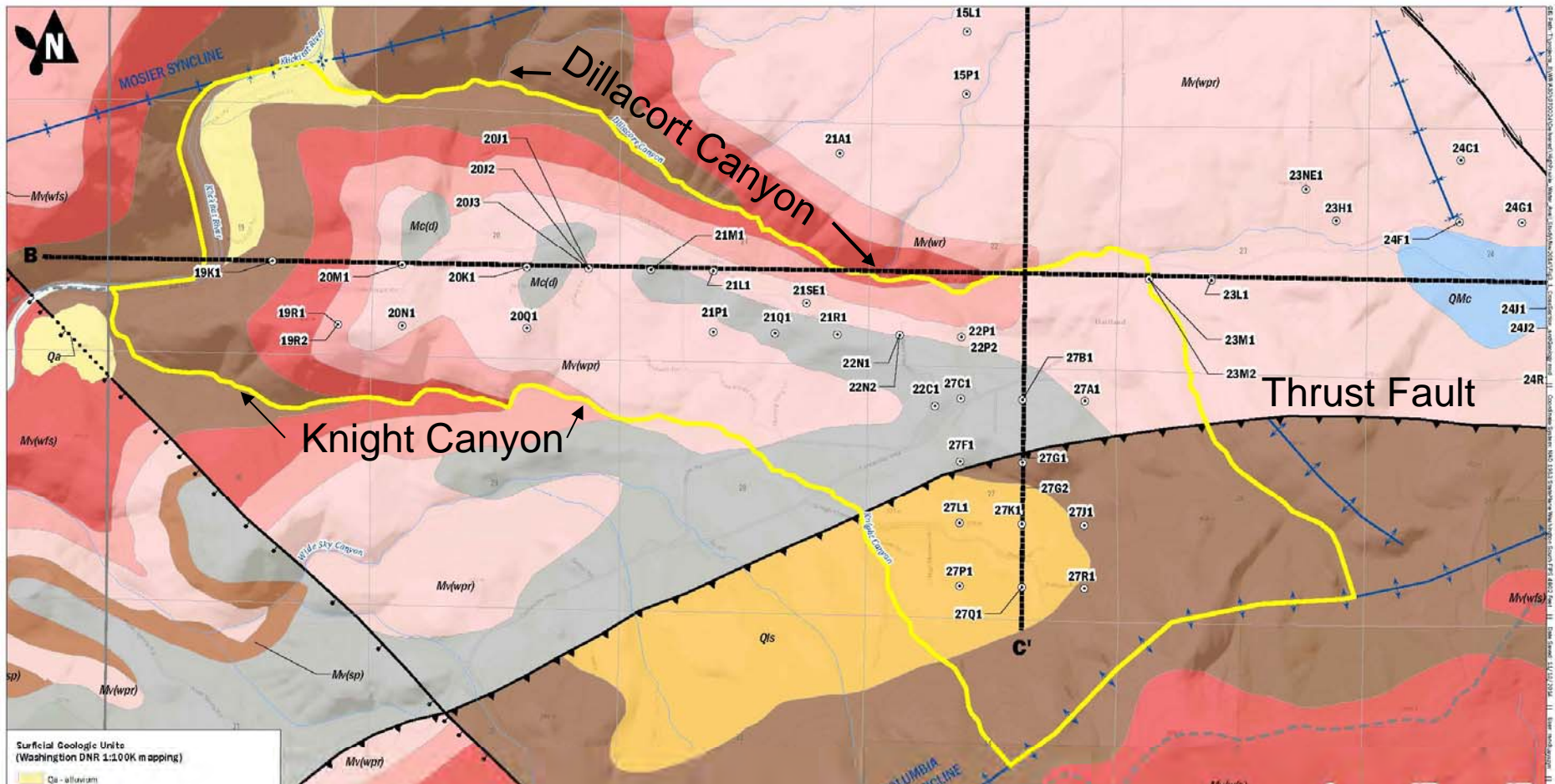
Study Background

- 2011 – High Prairie Water Availability Study
 - Available from: <http://www.klickitatcounty.org/NaturalR/>*
 - Basin-scale assessment
 - Started water level monitoring in 2007
 - Water level declines identified in 3 wells (Knight-Dillacort)
- 2013 – High Prairie Water Level Update Report
 - 2 additional years of monitoring data
 - Water level declines persist in 3 wells
 - Increased community awareness and concern
- 2014 – Focused Knight-Dillacort Area Study
 - Several wells are being deepened and/or going dry

Regional Hydrogeologic Cross Section



Geology – Map View



Knight-Dillacort Area is **Hydraulically Isolated**

- Geologic Structures to N, W, and S
- Dillacort Canyon to NE
- Knight Canyon to SW

Basalt Hydrogeology 101

What's in a Basalt Flow?

Permeable **Flow Top**

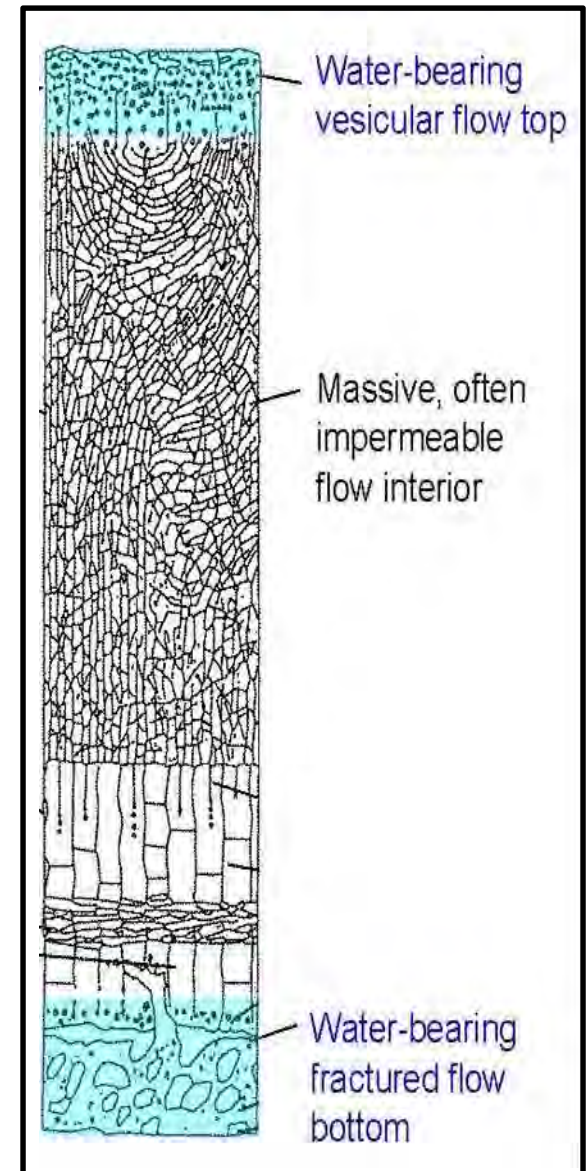
“Impermeable” **Flow Interior**

Permeable **Flow Bottom**

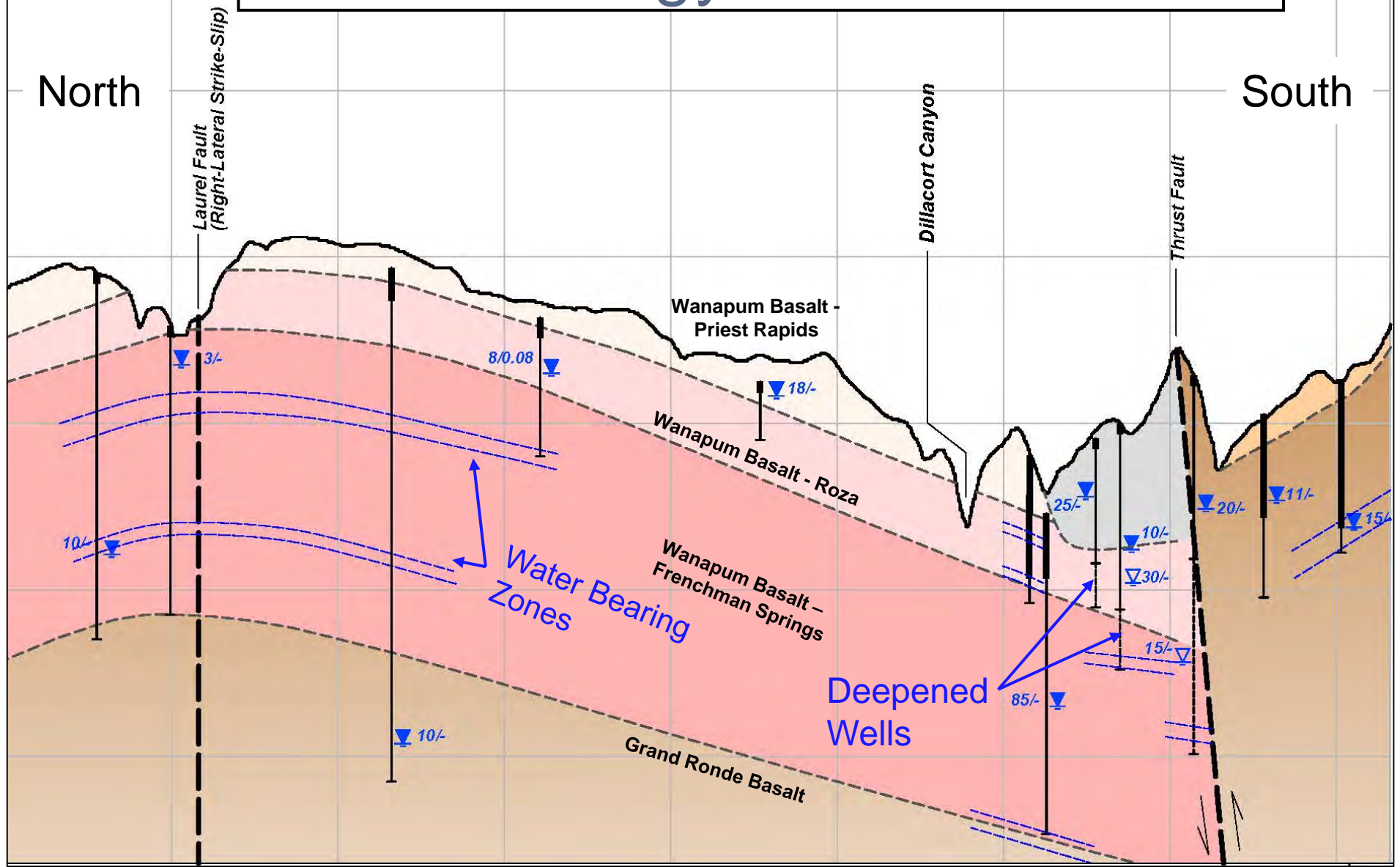
Flow Top + Bottom = **Interflow Zone**

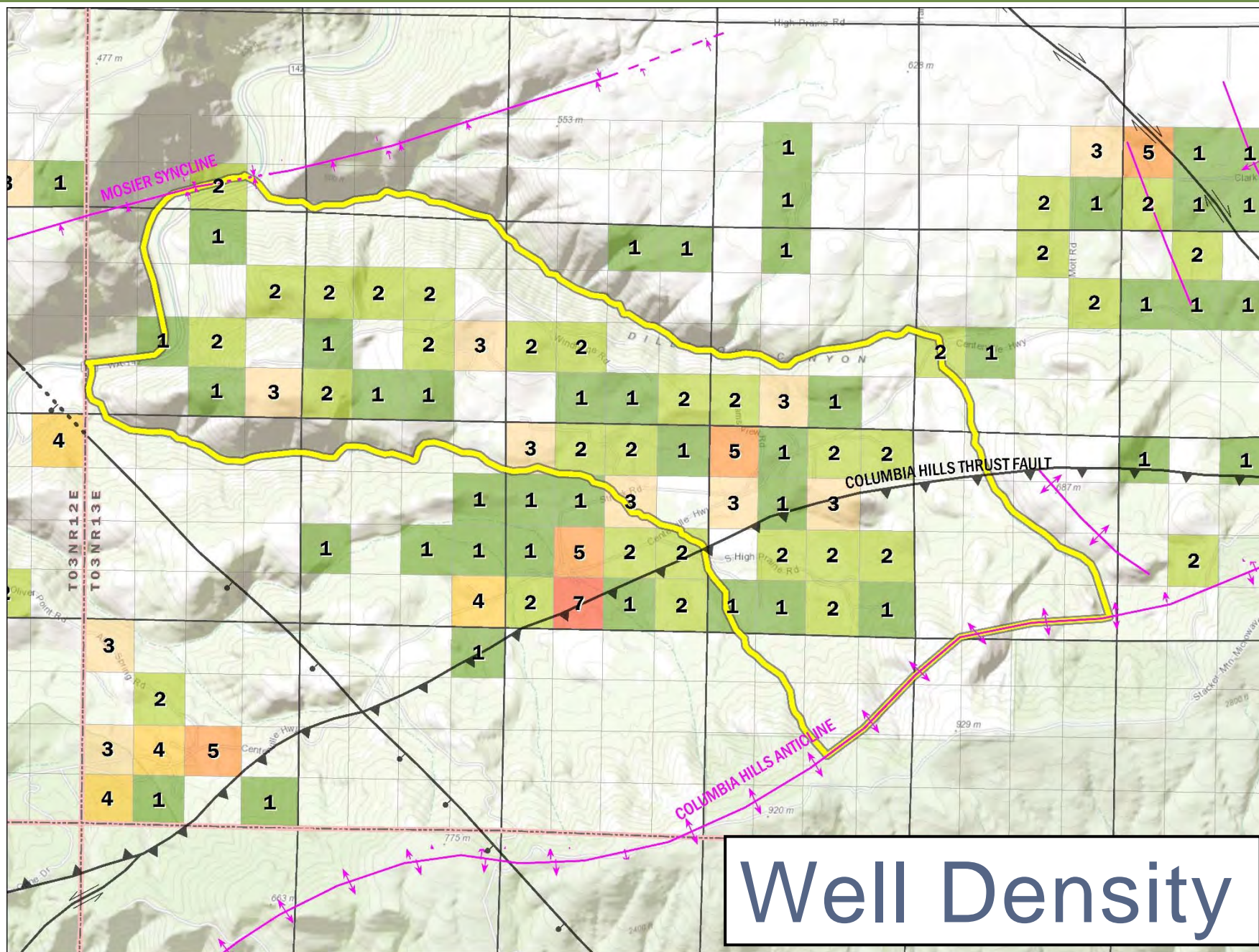
Where is the Groundwater?

- In the interflow zones between basalt flows
- Flow interiors are aquitards, which create vertically distinct aquifer zones
- Geologic structures disrupt water-bearing zones



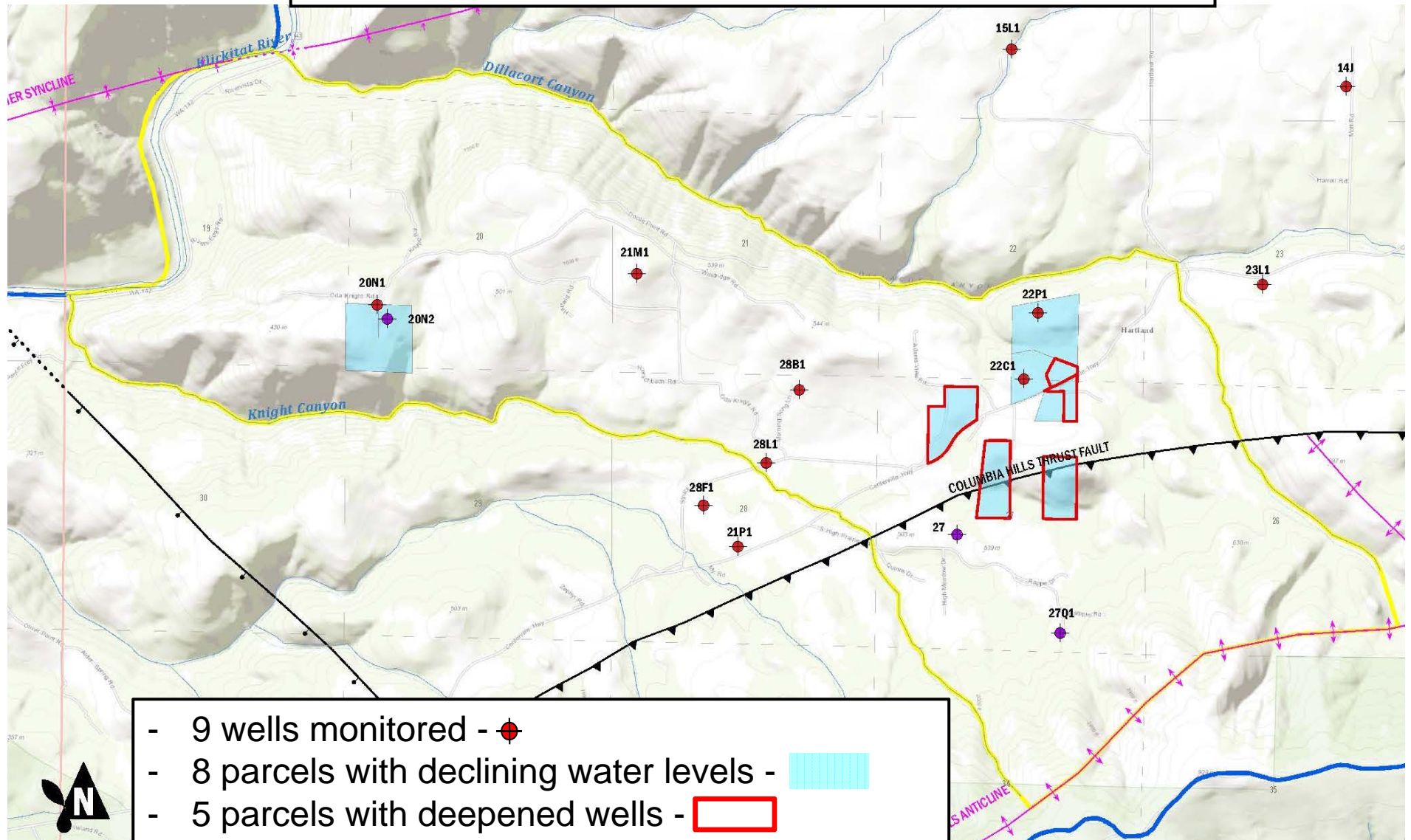
Local Geology – Section View



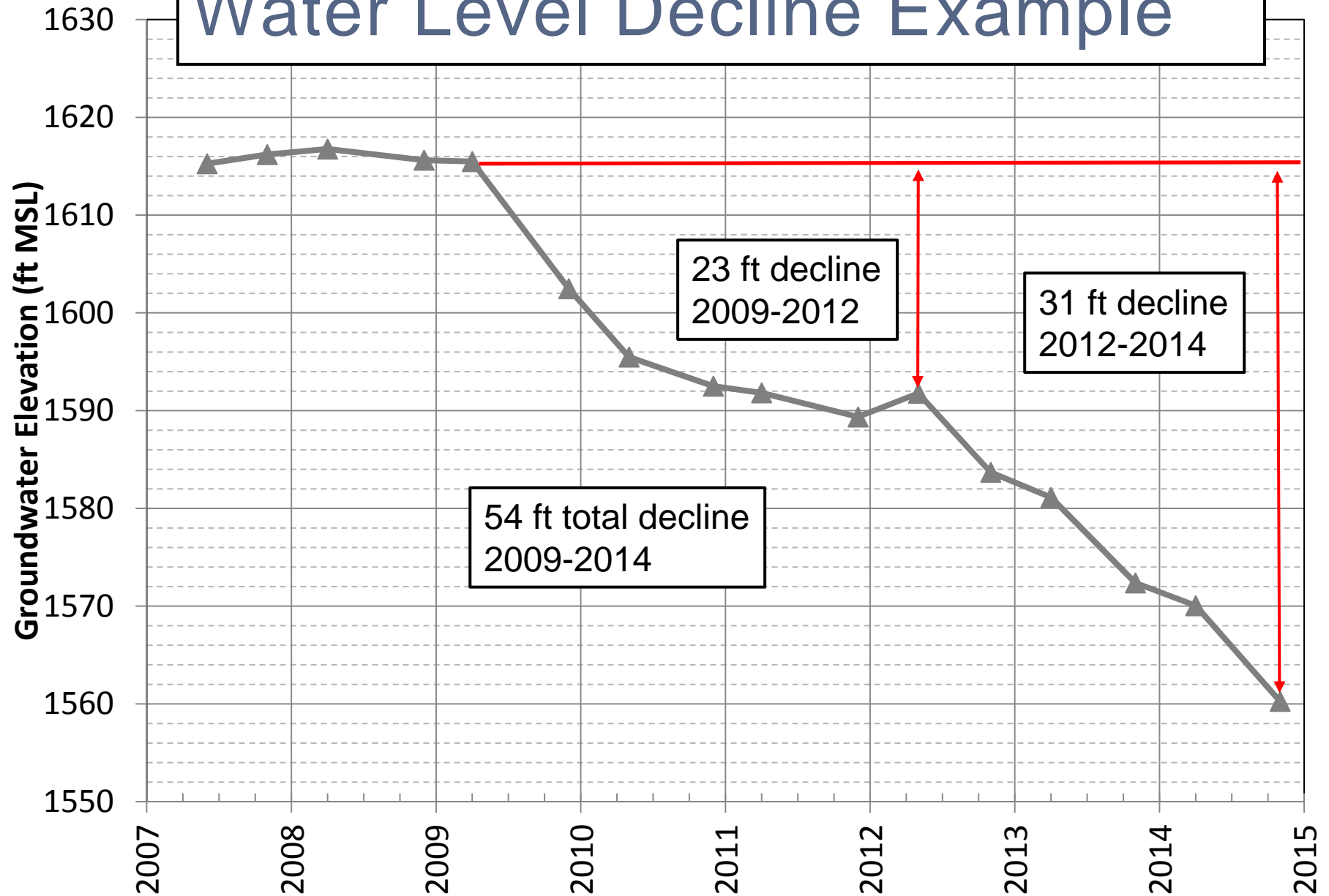


Well Density

Water Level Declines



Water Level Decline Example



Path Forward

■ Continue Water Level Monitoring

- Helps to provide early warning of water level declines
- Provides feedback on water use and conservation strategies
- Add wells to monitoring network?

■ Voluntary Water Conservation

- Reduce outdoor water use
- Indoor conservation measures (e.g., water-efficient appliances)
- Rainwater harvesting?

■ Well Management

- Allow time between high water demand events (e.g., showers/laundry/garden)
- Pump timers and holding tanks can cope with a lower yield or slow recovery well (e.g., Well Manager[®] system)

Discussion



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