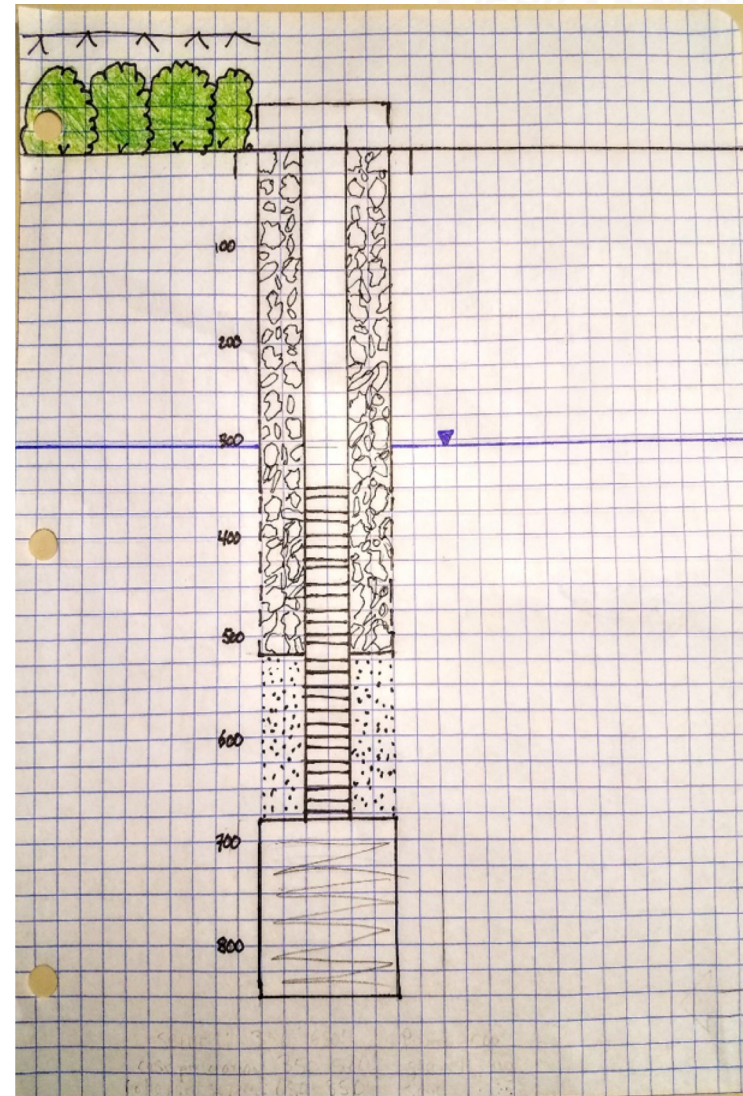




# Effective Well Maintenance – Total Coliform, Nitrogen Species, Metals

- Best practices for operating, calibration, and maintenance procedures regarding your well/sampling
- Once a year, remove all dedicated pumps from the wells in order to:
  - Visually inspect the pump and service it if needed
  - Measure total depth of the well
- Malfunctioning pumps → serviced or replaced
- Inspect integrity of well screen and casing
- Well development (every 5 years)

- A proper surface seal ensures that cross contamination of any kind is prevented from the surface / other sections of the aquifer.
- This also allows to seal off the proper formation in ensure representative groundwater samples.



- Inspect Wellhead
  - Loose cap?
  - Cracks/holes?
- Was work recently performed on well?
- Standing water around well? Drainage?
- Sampling equipment at wellhead contamination?
- Well near another body of water?





What to look for  
downhole:

- Scaling/biofouling
- Cascading water
- Casing holes
- Casing breaks
- Critters/debris

This allows you to make proper well rehabilitations to not only help you get clean groundwater results but extend the life of your well



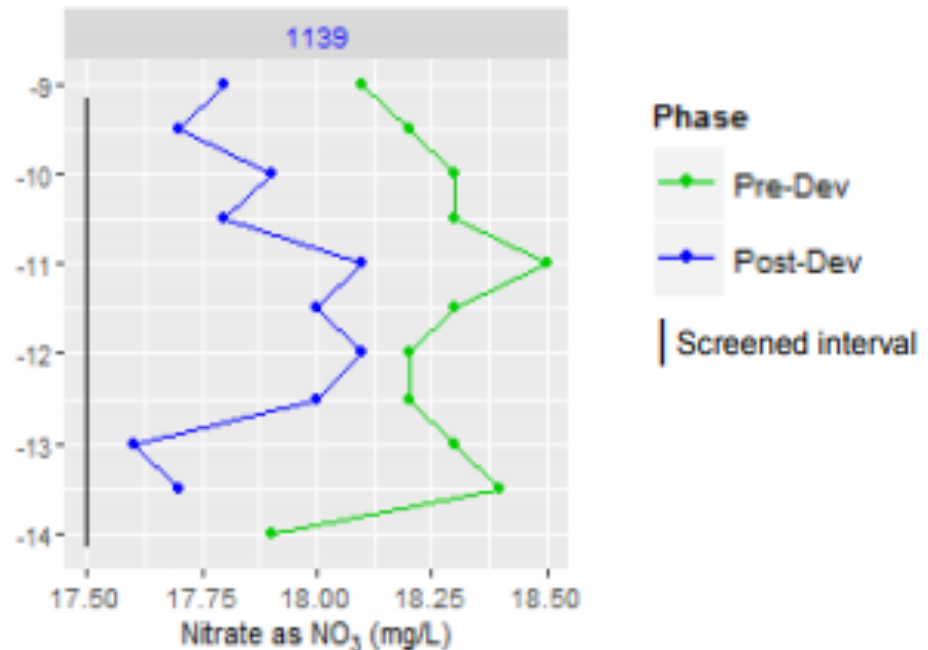
- Good practice to disinfect wells after maintenance
- Chlorine/acid shock alone may not permanently solve the issue, however, it is the cheaper option
- A scrub would be the better option, along with shocking, for a more long term solution



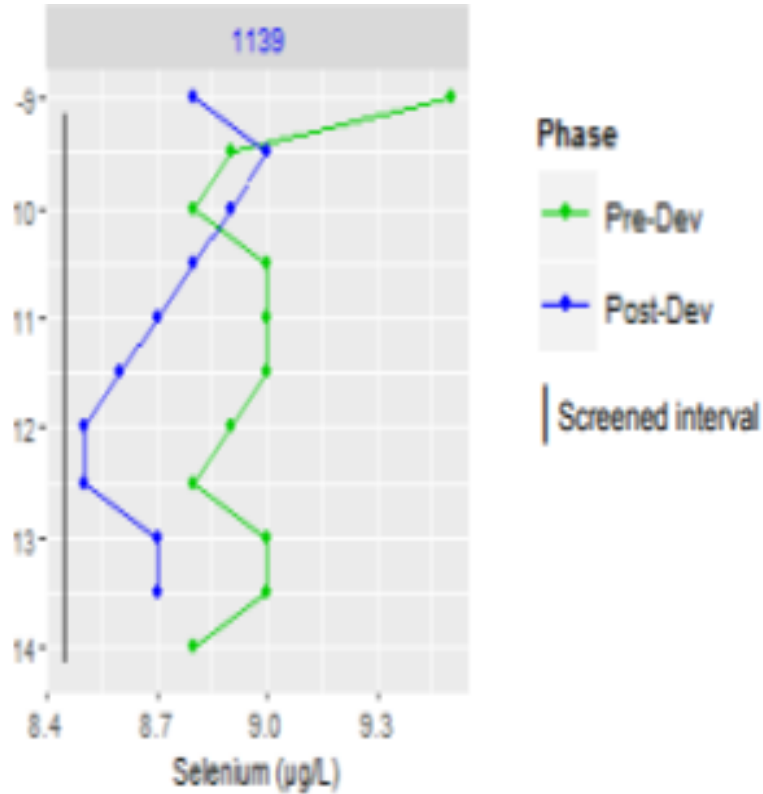
## Why Develop the Well?

- Well development roughly every 5-10 years is suggested
- This allows to remove a majority of sediment from inside the well
- Also opens up the surrounding formation and sand pack around the screen

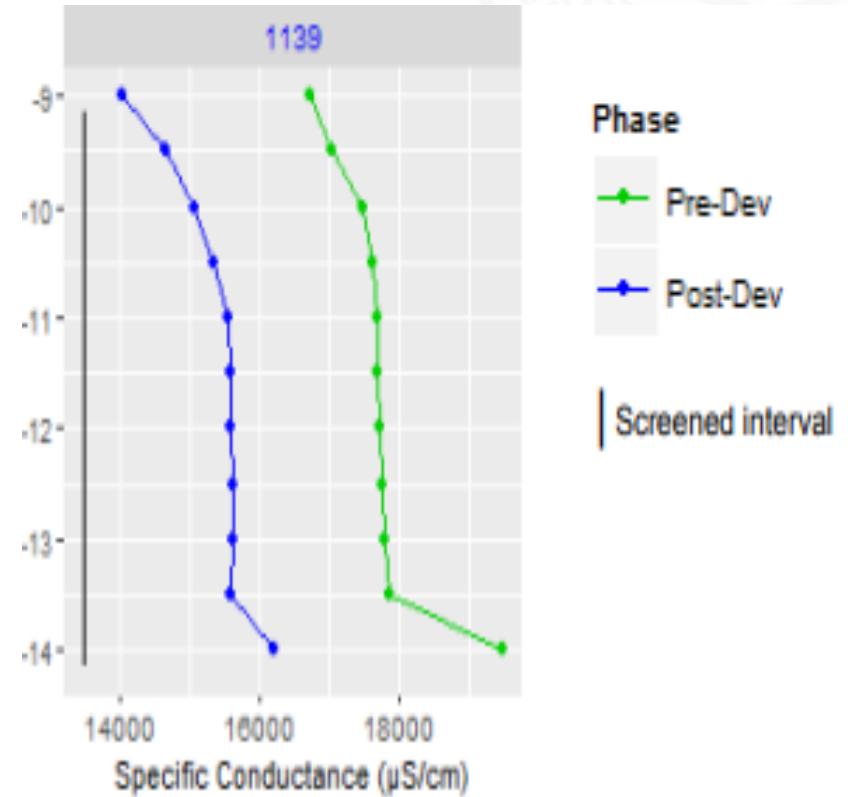
## Helps lower nitrate



## Helps lower metals



## Helps improve water quality





- Investigate if you are down gradient from a potential source(mine, gas station, etc.)
- Is there reason to believe that the groundwater concentrations were pre-existing?

