Groundwater Monitoring and Protocols

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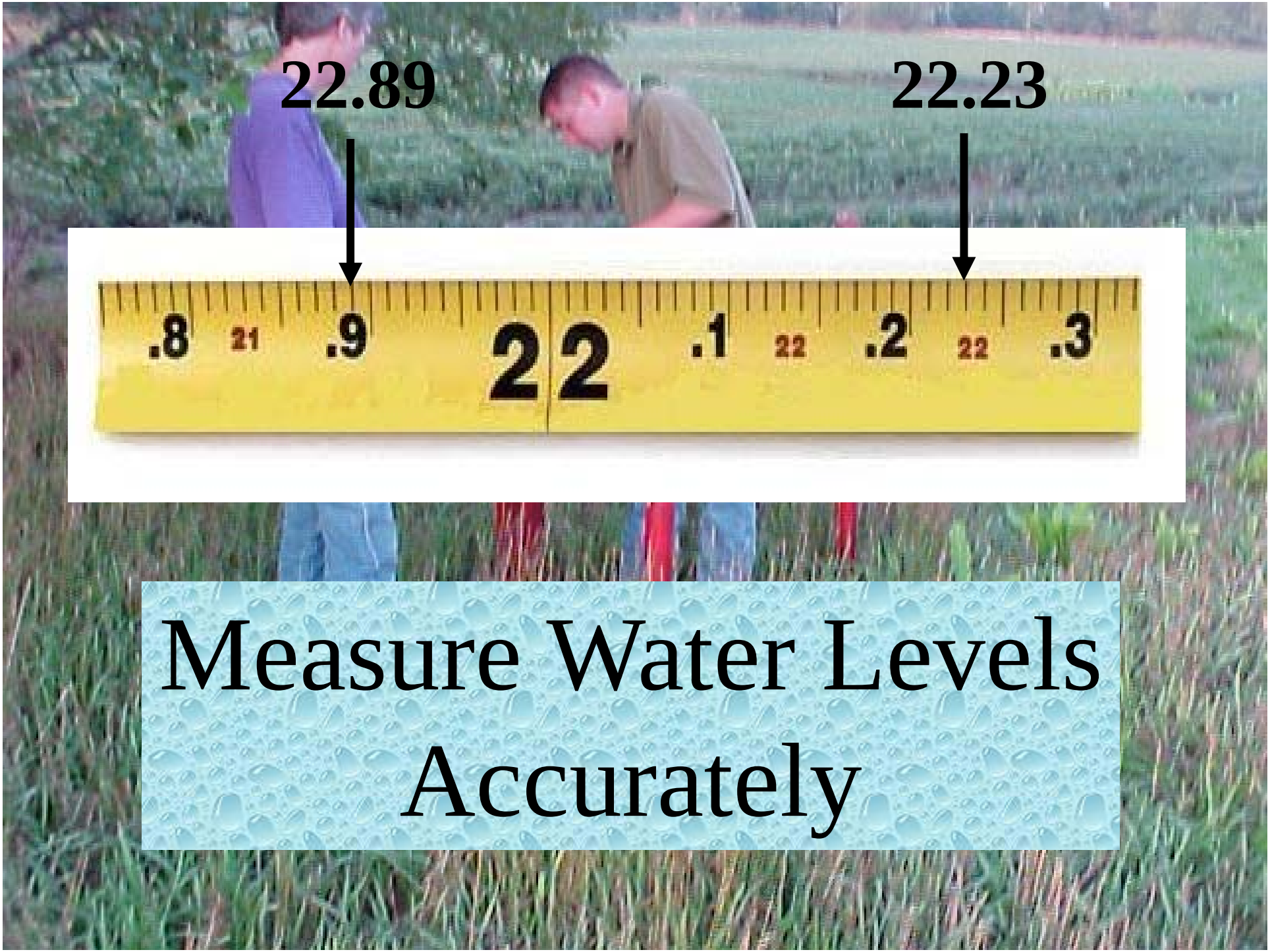
•SOPs
•QAPPs
•Methods
Follow a Sampling Plan!

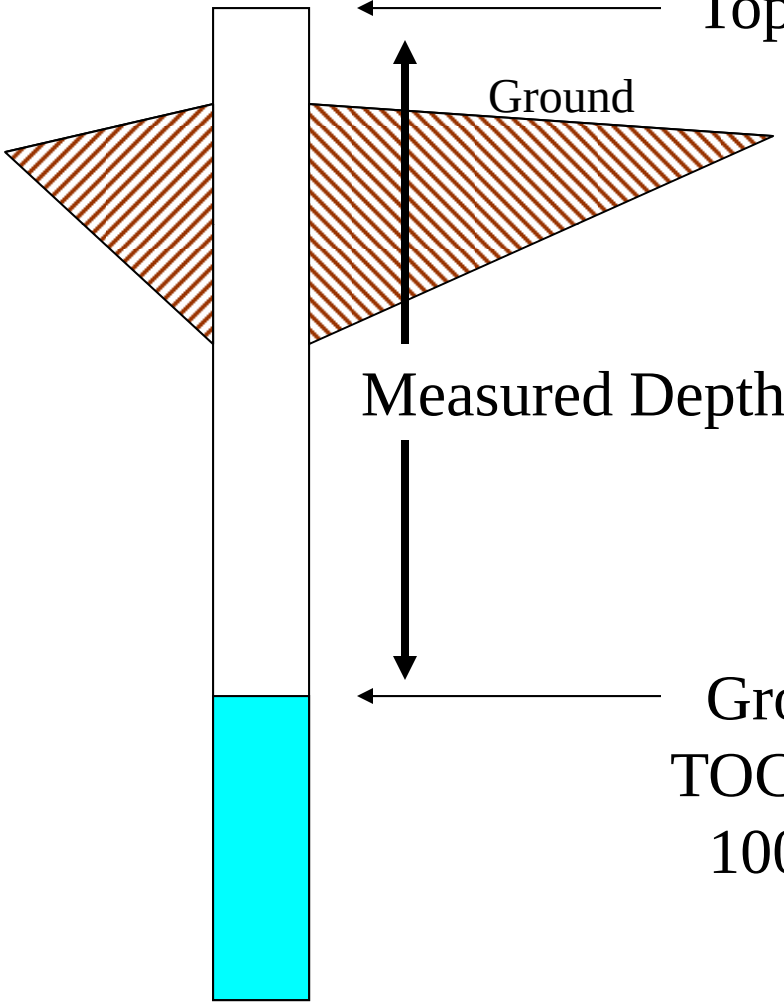
Who Can Open Wells?

- Water Well Monitoring Technician
- Natural Resources Groundwater Technician
- Pump Installation Supervisor/Contractor
- State Electrical Inspector
- Licensed Water Operator (city wells)
- Owner of the well (must live there)



Measure Water Levels Accurately

Converting water level to water elevation



Surveyed

Top of Casing (TOC) Elevation

(100.00)

Measured Depth to Groundwater (DTW)

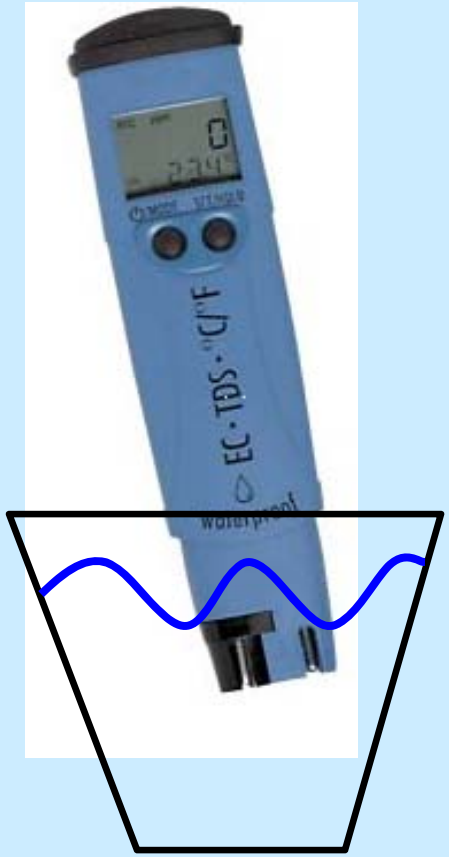
(21.89)

Groundwater Elevation

TOC – DTW = GW Elev.

100.00 – 21.89 = 78.11

Collecting Field Parameters



Stabilized – 2 consecutive readings within 10% of each other (pH, conductivity, temp.).

Example

Temperature = 12º C

Calculate 10% 12 ÷ 10 = **1.2**

Calculate range 12 – 1.2 = **10.8**

12 + 1.2 = **13.2**

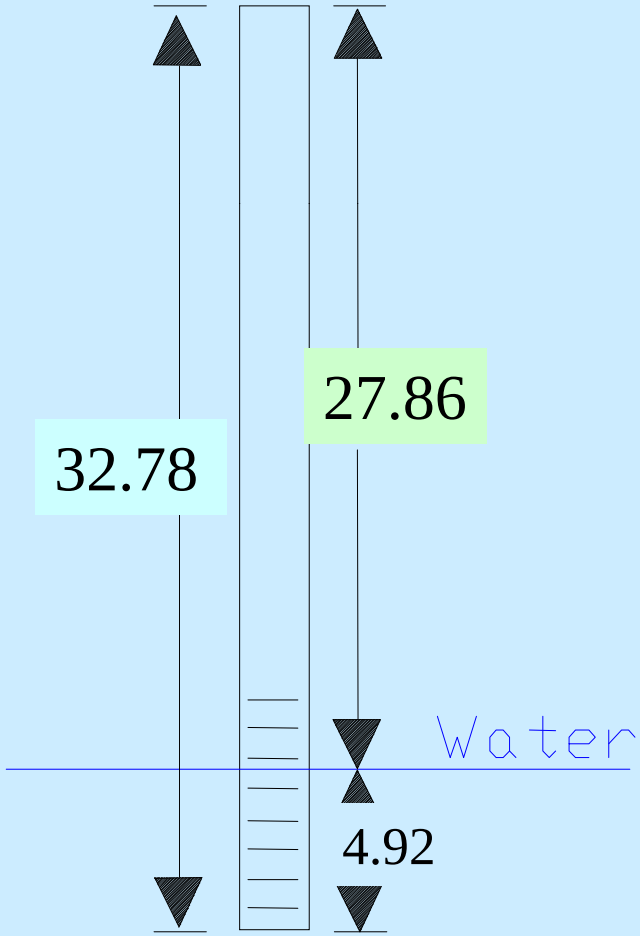
Next 2 temperatures should fall between **10.8** and **13.2** in order to be stabilized

Must be done for low flow and purging methods

Why Purge?

Calculating Well Volume

32.78 – 27.86 = 4.92



2-inch diameter well casing

4.92 ft x 0.17 gal/ft = 0.8 gals

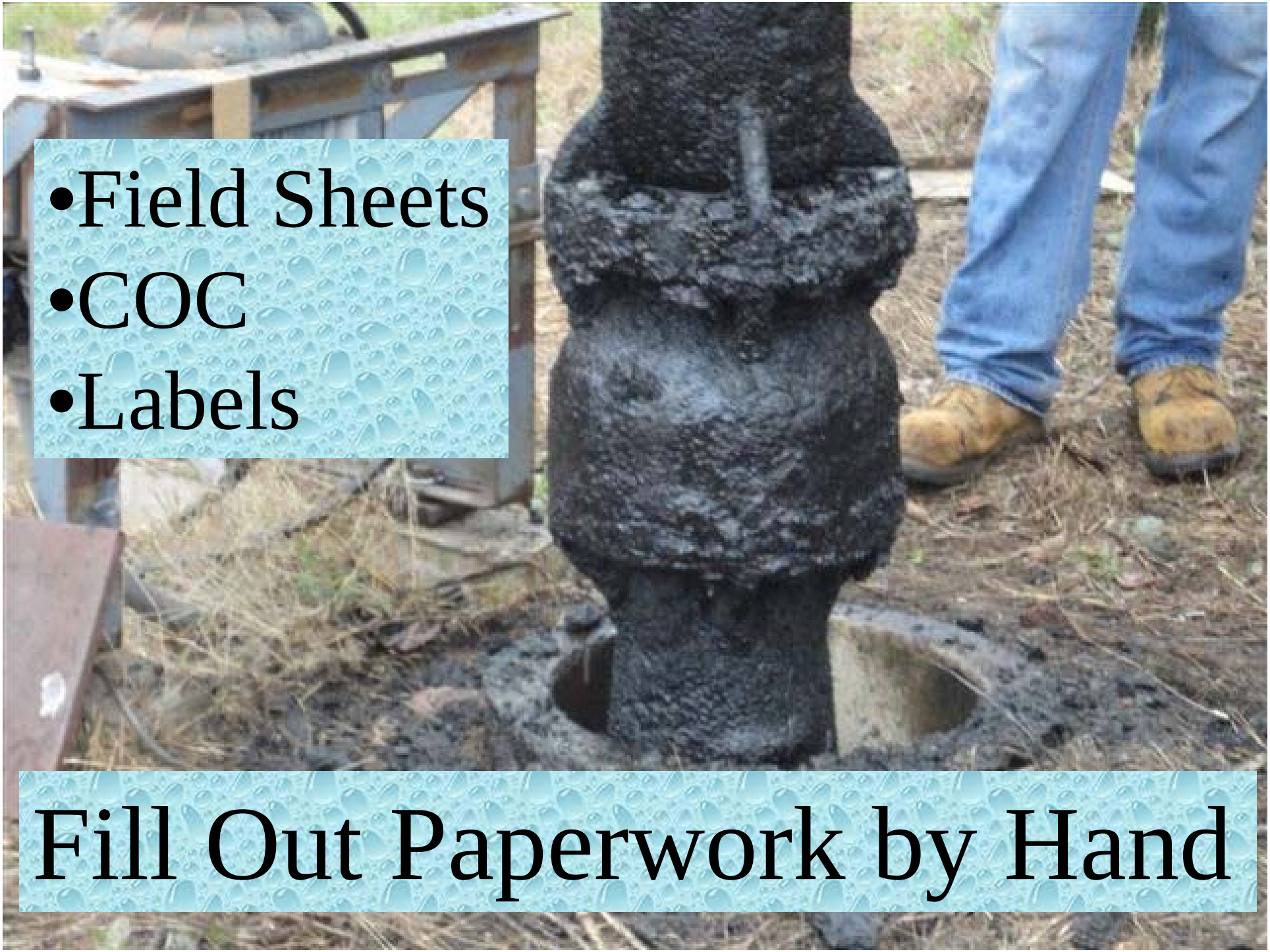
0.8 gals x 3 = 2.4 gals

0.8 gals x 5 = 4.0 gals

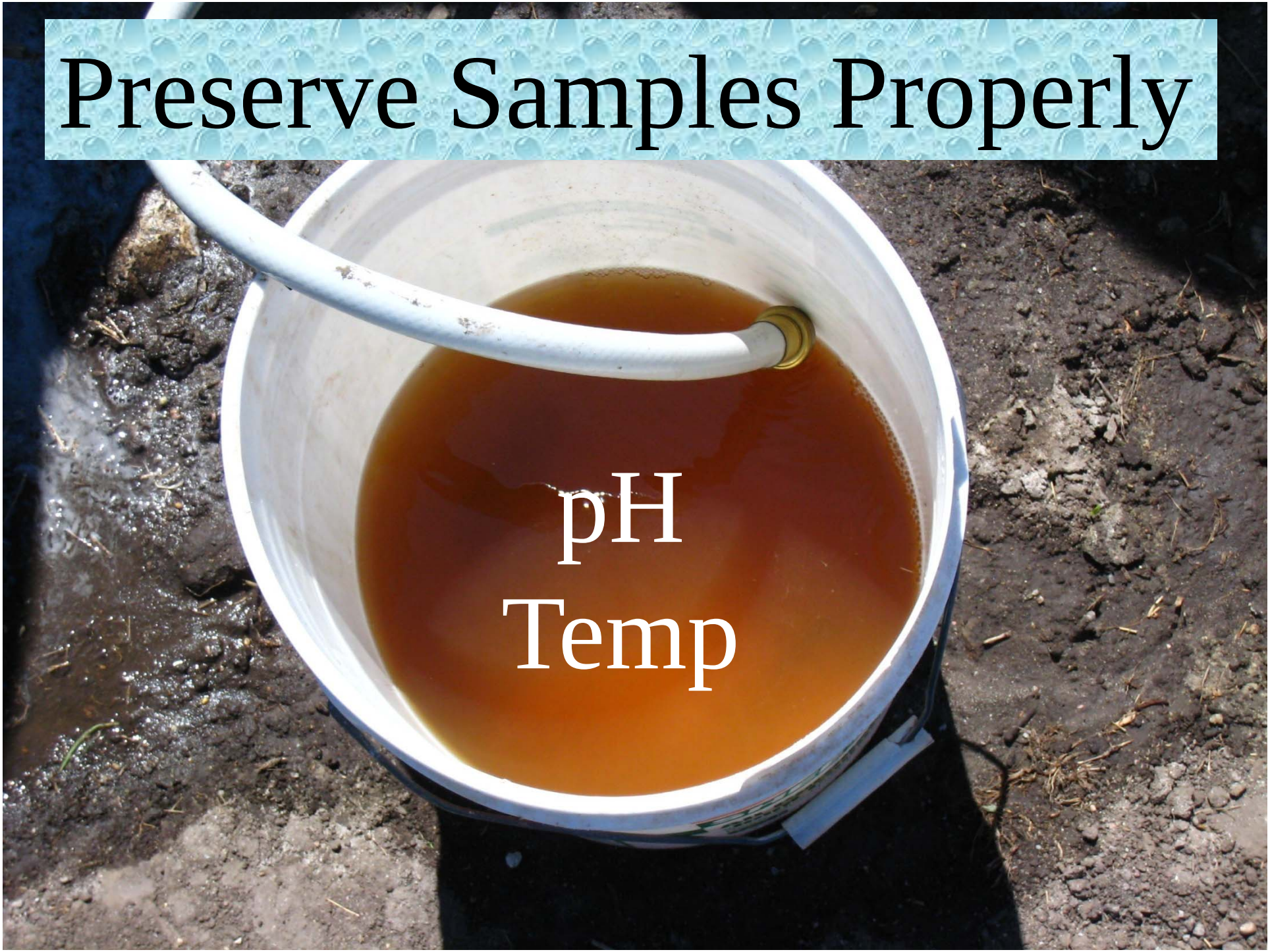
Volume of Schedule 40 PVC Pipe	
Pipe Diameter	**Gallon/Linear Foot**
2-inch	0.17
4-inch	0.66
6-inch	1.5
8-inch	2.6

Why Not Purge?

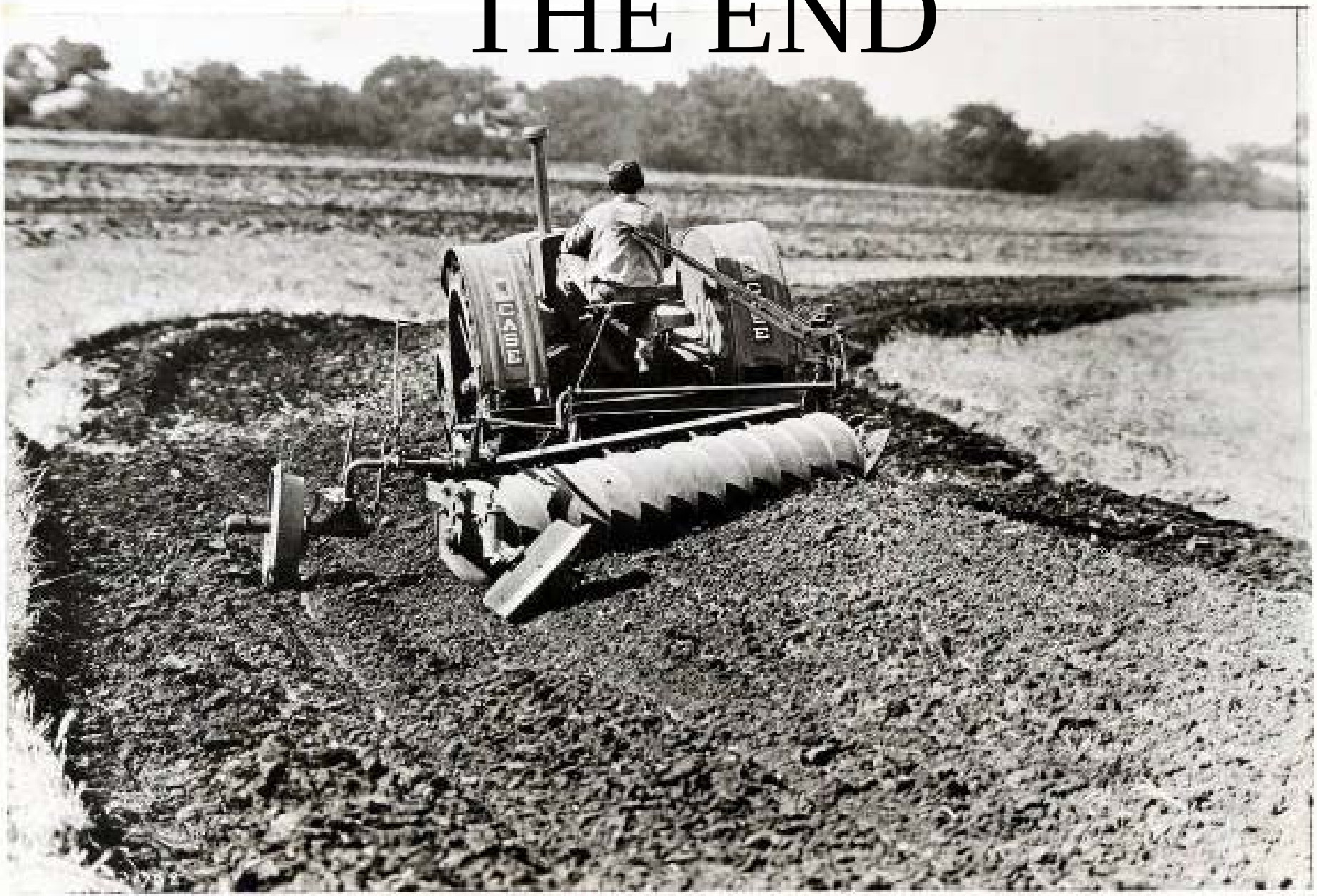
- Long Screens
- Large Dia. Casing
- Discrete Sample


•Field Sheets
•COC
•Labels
Fill Out Paperwork by Hand

Preserve Samples Properly



Quality Assurance/Quality Control (QA/QC)

- Field Blanks
- Duplicates
- Instrument Calibration
- Laboratory QA/QC

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