



PASSCAL Installation Strategies

from vault to posthole

- ◆ Sensor data quality depends on site selection and sensor emplacement.
- ◆ Site selection and sensor emplacement for both vaults and postholes is a series of trying to make the best compromises possible.

Site Selection and Sensor Emplacement Issues

- ◆ cultural noise: trains, pumps, heavy machinery
- ◆ tall poles and trees
- ◆ solar insolation
- ◆ site setup (what components go where)
- ◆ vandalism (human or critter)
- ◆ and . . .

Water, Water, Water



- ◆ Vault designs are built around trying to keep water away from the sensor.
- ◆ Postholes have solved the water problem.

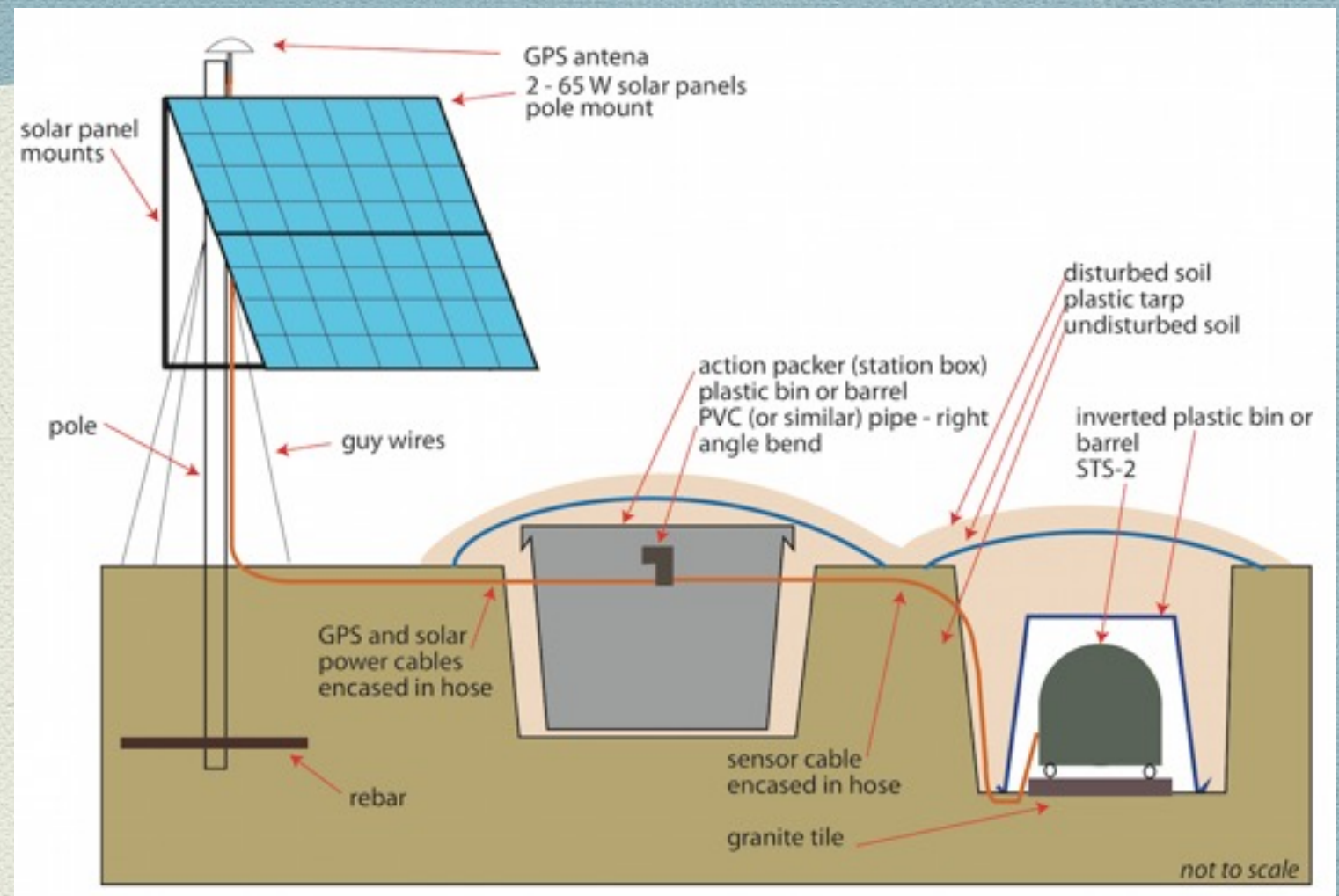
Vault: Sealed

- ❖ Good for wet climates or where there is a known high water table
- ❖ Drawback is that if water gets in, it has no way to get out (and usually water gets in)



Vault: Single Barrel Style

- ❖ For use in drier areas
- ❖ Good for shorter term deployments
- ❖ Requires good drainage
- ❖ Could be difficult to remove if the sensor needs to be replaced



Vault: Diving Bell Style (double barrel)

- ◆ Most commonly used type for recent broadband deployments
- ◆ Is a very good vault if done well and it takes time and planning to do this vault style well
- ◆ Very effective at keeping water away from the sensor when paired with a drainage system



Posthole Installation

- ◆ Hole can either be angled or dug
- ◆ No extra bulky construction materials needed
- ◆ Use native soil to fill in around posthole
- ◆ Taping the connector helps with cleaning on removal
- ◆ Orientation and leveling is checked as the material around the posthole is filled in and tamped down



Portable Experience with Posthole Sensors

- ◆ Trillium-120PH
 - ◆ San Jacinto Fault Zone: deployed since 2012
- ◆ Trillium-120PHQ
 - ◆ Sweetwater: 2 month deployment (returned)
 - ◆ OIINK: 18 month deployment (returned)
 - ◆ RIS: deployed since Antarctic season 2014-15
 - ◆ DRIS: deployed since Antarctic season 2014-15
 - ◆ Polenet MiniArray: deployed since Antarctic season 2014-15
- ◆ Trillium-CompactPH
 - ◆ ENAM Cape Hatteras: deployed since 2014
 - ◆ Ice-Ocean Greenland: deployed since 2013

