CUSP – Arizona: CCUS in Arizona

CUSP Annual Meeting
Sept. 10-12, 2024
Santa Fe, NM

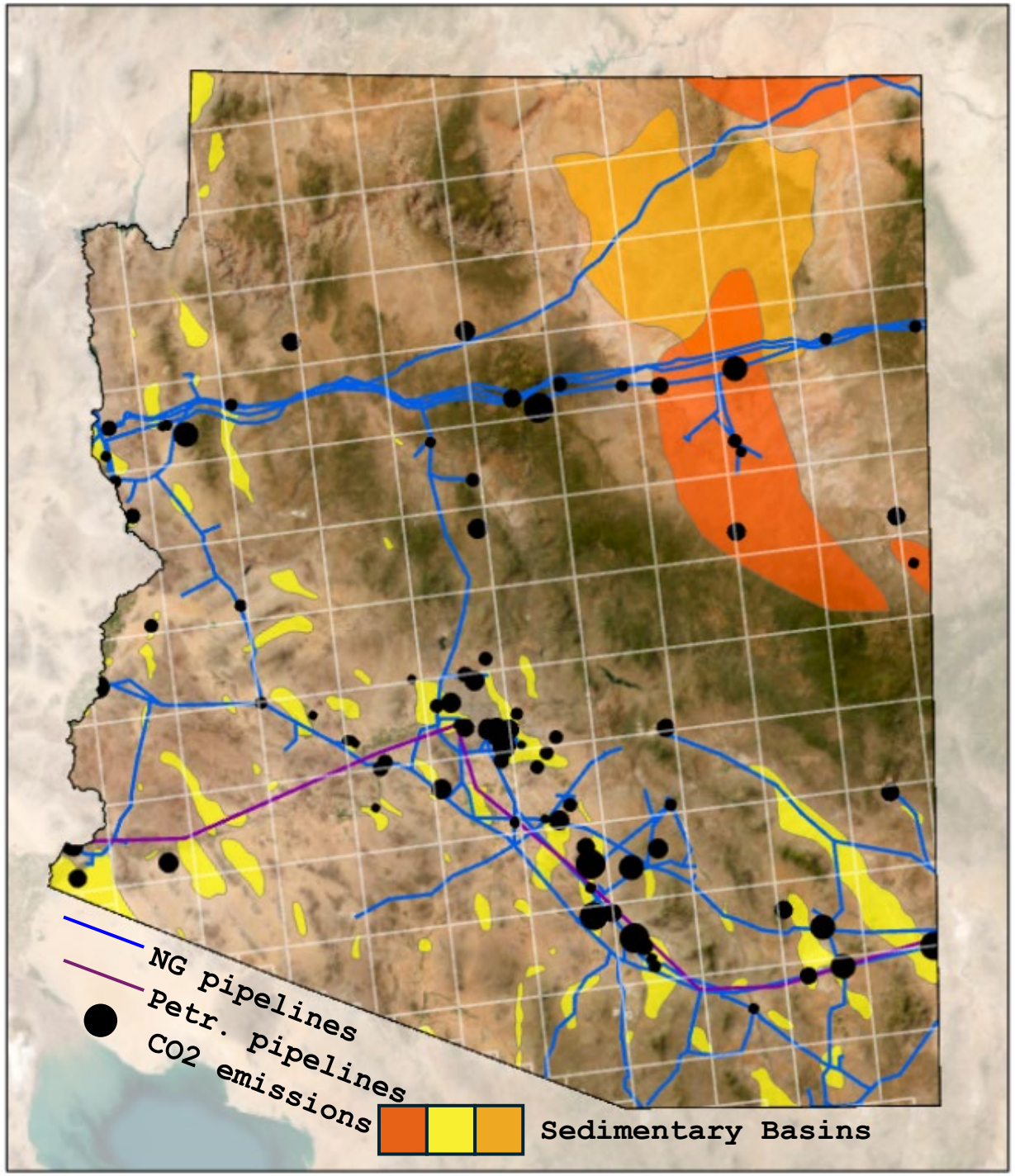
By Arizona Geological Survey
University of Arizona
Basin Analysis Group
Tawnya Wilson – Lisa Thompson – Brian Gootee

UA SCIENCE ARIZONA GEOLOGICAL SURVEY

CUSP West

DEPARTMENT OF ENERGY · UNITED STATES OF AMERICA ·

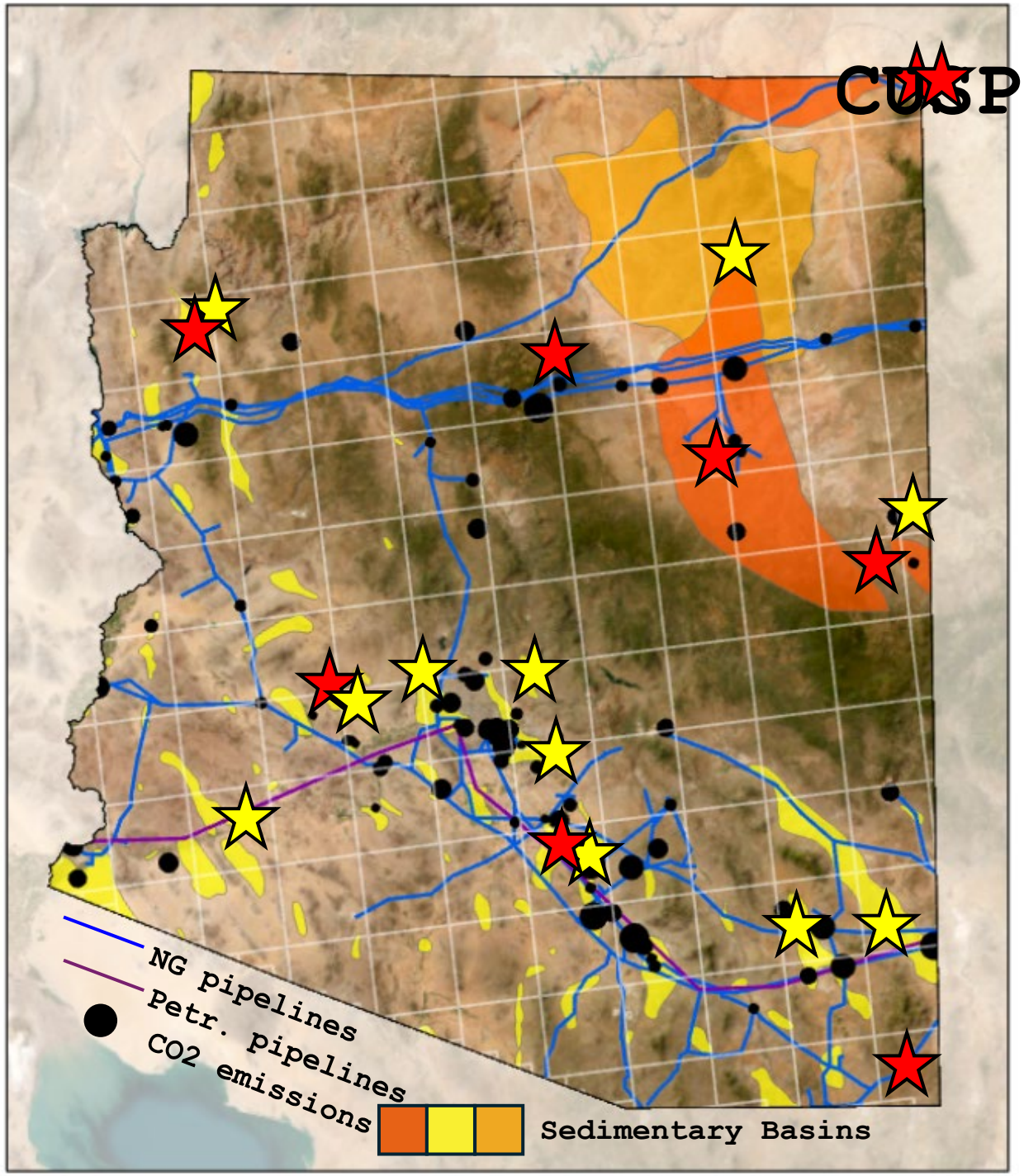
CarbonSAFE II Harquahala Basin, SW-Centra



Arizona CCUS Basins

- ~60 Arizona basins with known/potential CCS
  - Stacked saline
  - Mafic rocks
  - Bedded evaporites
  - Unconventional
- Ranked on source-to-sink scenarios (not shown)
- Readiness & SCOT 50km still in progress (NCE)
- CCUS Ecosystem in AZ: Wind, Solar, DAC, Geothermal, Hydrogen, 2

CUSP-CCS Research Activity



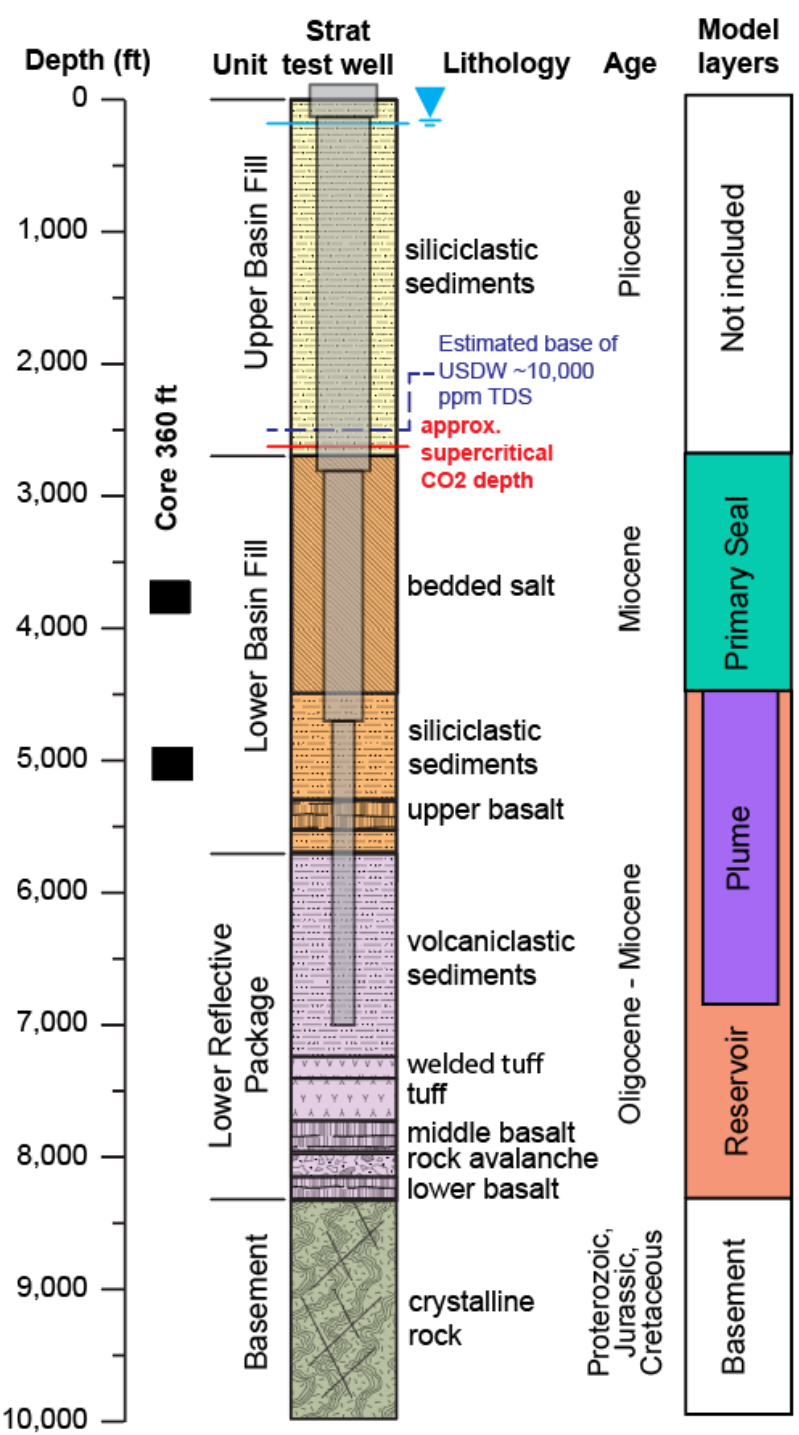
Past Projects

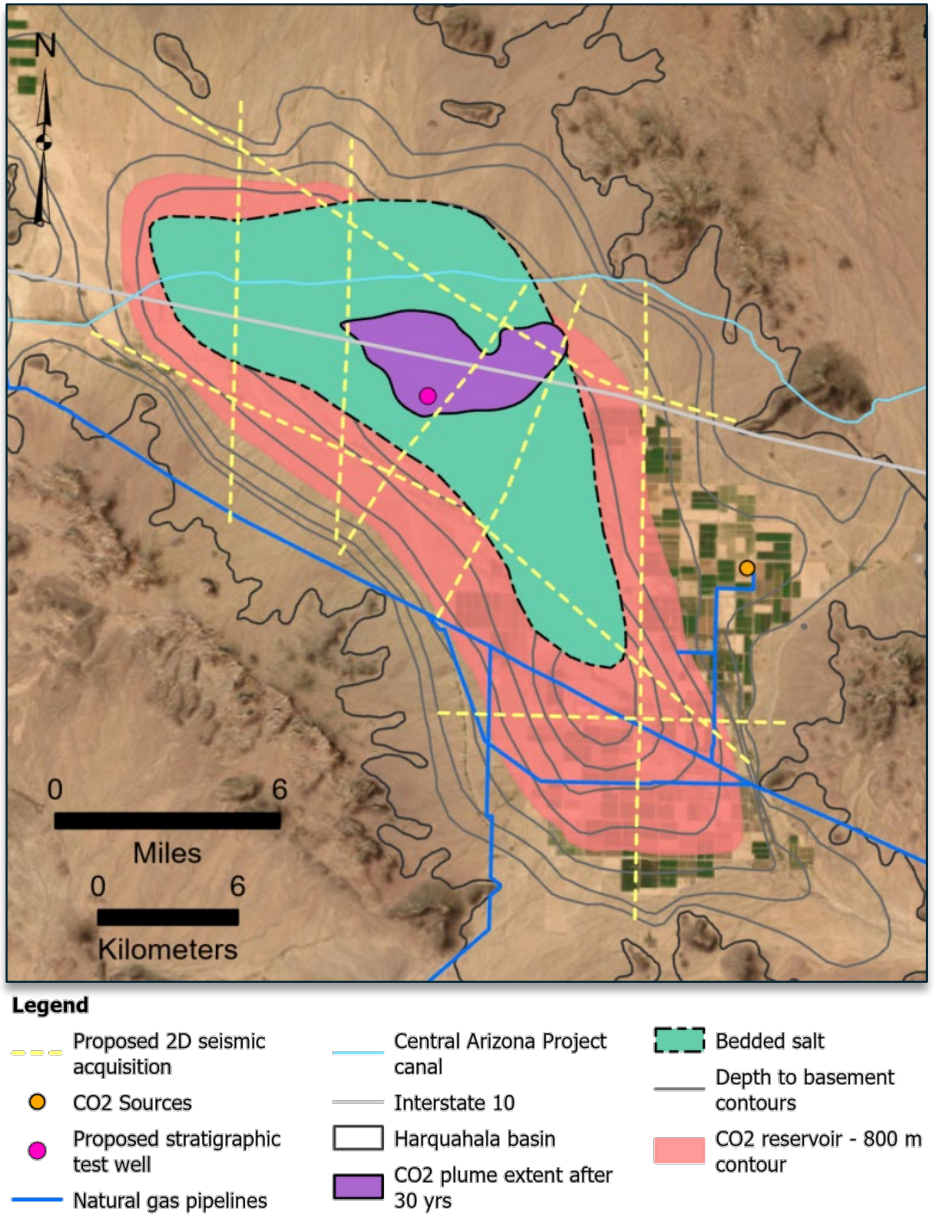
- 14 CCS-related OFR's dating back to 2008
- Cholla Phase-I well (EPRI) (2009)

Active/completed projects/sites

- CUSP Regional Initiative (DOI-NMT)
- Harquahala Phase-I **CCS** (UA-AZGS)
- Ex-Situ Mafic **Mineralization** (UA-AZGS)
- Regional **DAC** Hub (ASU)
- Four Corners Regional Initiative (NMT)
- LANL **Bedded Salt** gas storage

CUSP Focused Project - CarbonSAFE Phase II





- 105 miles 2D seismic
- 7,000 ft deep strat test well - BLM land
- Cuttings collection and analysis
- Two cores totaling 360 ft
- Wireline logging
- Fluid samples

tory Updates and Risk Mitigation

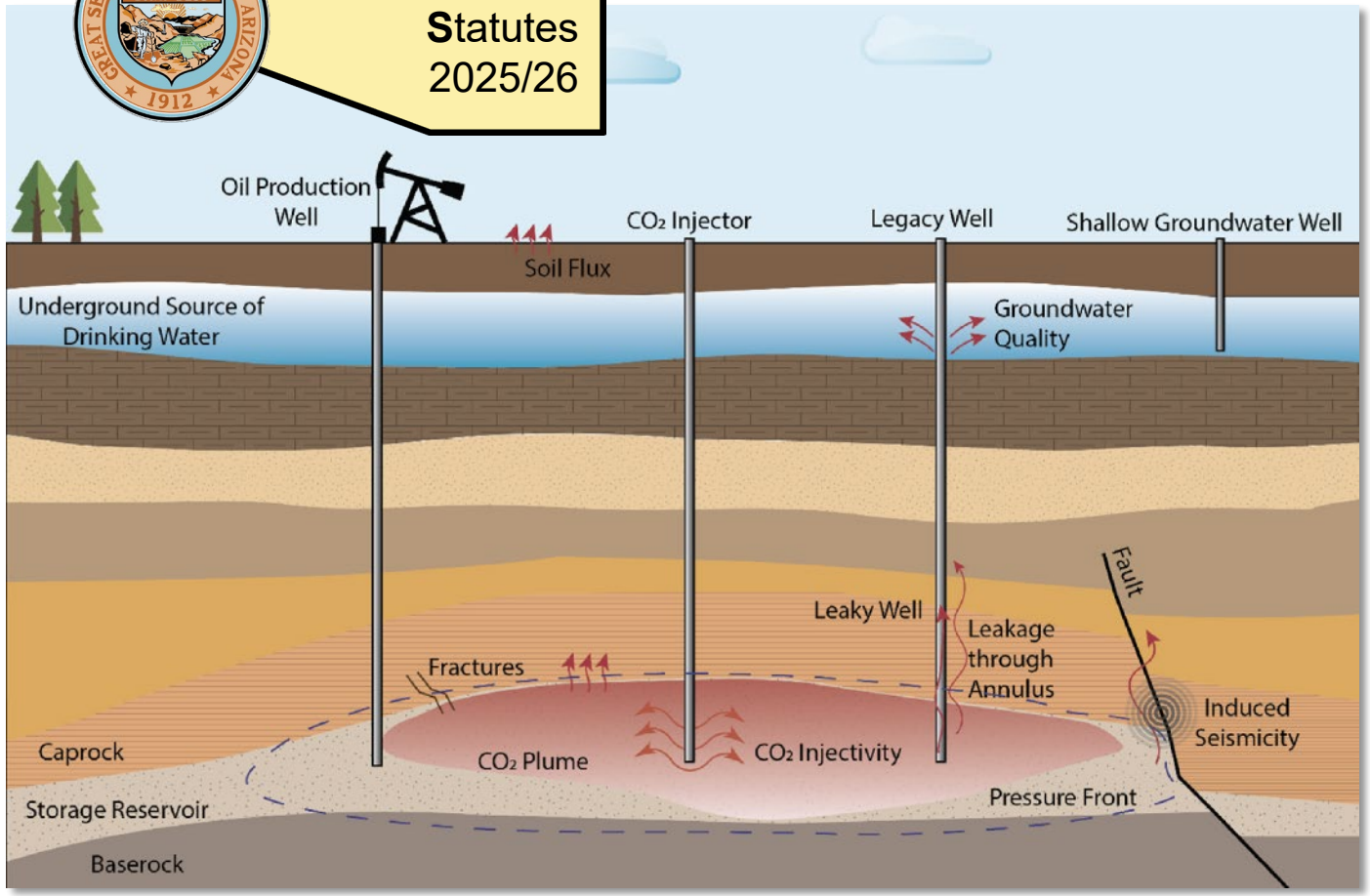
ADEQ Arizona Department of Environmental Quality

UIC primacy
~October 2025!

For Classes I, II, III, V, and VI

Pore space
Arizona **R**evised **S**tatutes
2025/26

Diagram of potential risks associated with CCS from injected CO2 (Xia et al., 2024)



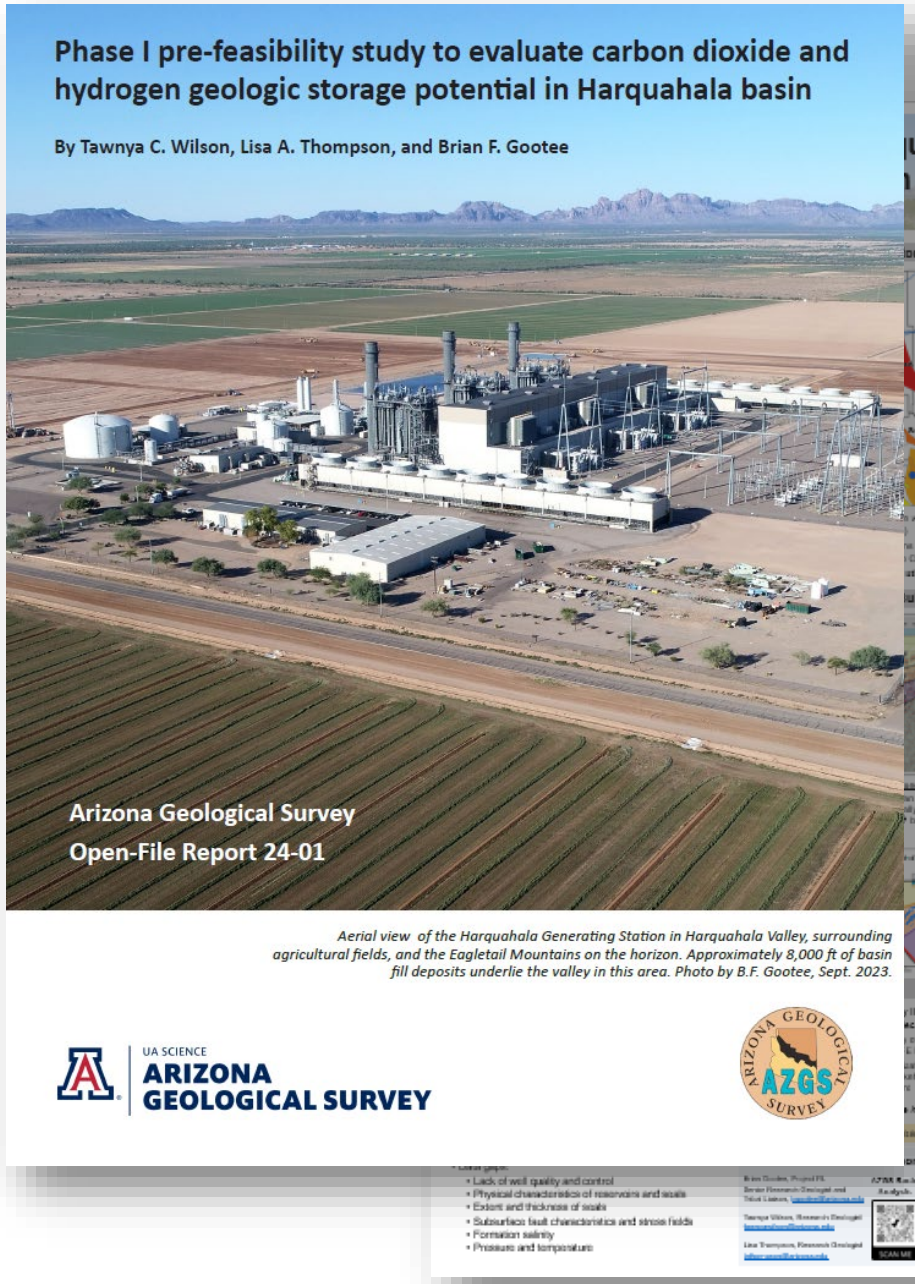
Regulatory Updates

- Arizona Primacy (I-III, V-VI) 10/25
- 9-month turnaround
- Pore-space ownership
- Risk & liability

MRV Planning (AZ-focused)

- Baseline collection critical
- Plume migration & infringement
- Pressure infringement
- Induced seismicity
- Leakage to USDW

AZGS-CUSP Publications



Open-File Report & Poster

Permanent Underground CO2 Storage in Southern Arizona

ArcGIS Story Map