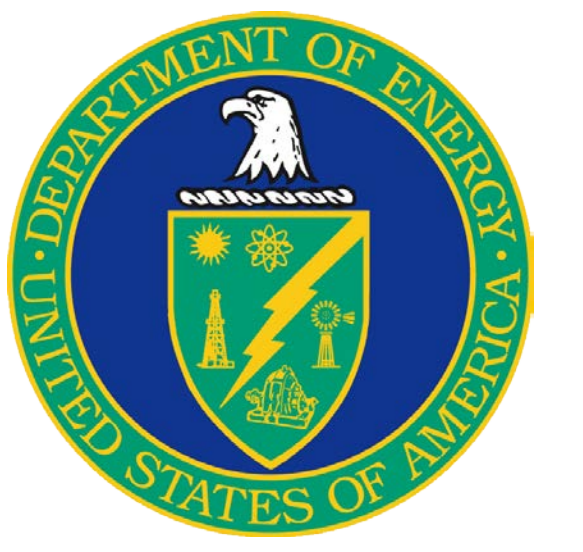


# Geothermal Exploration for Direct Use of Hot Water in Wells, Nevada

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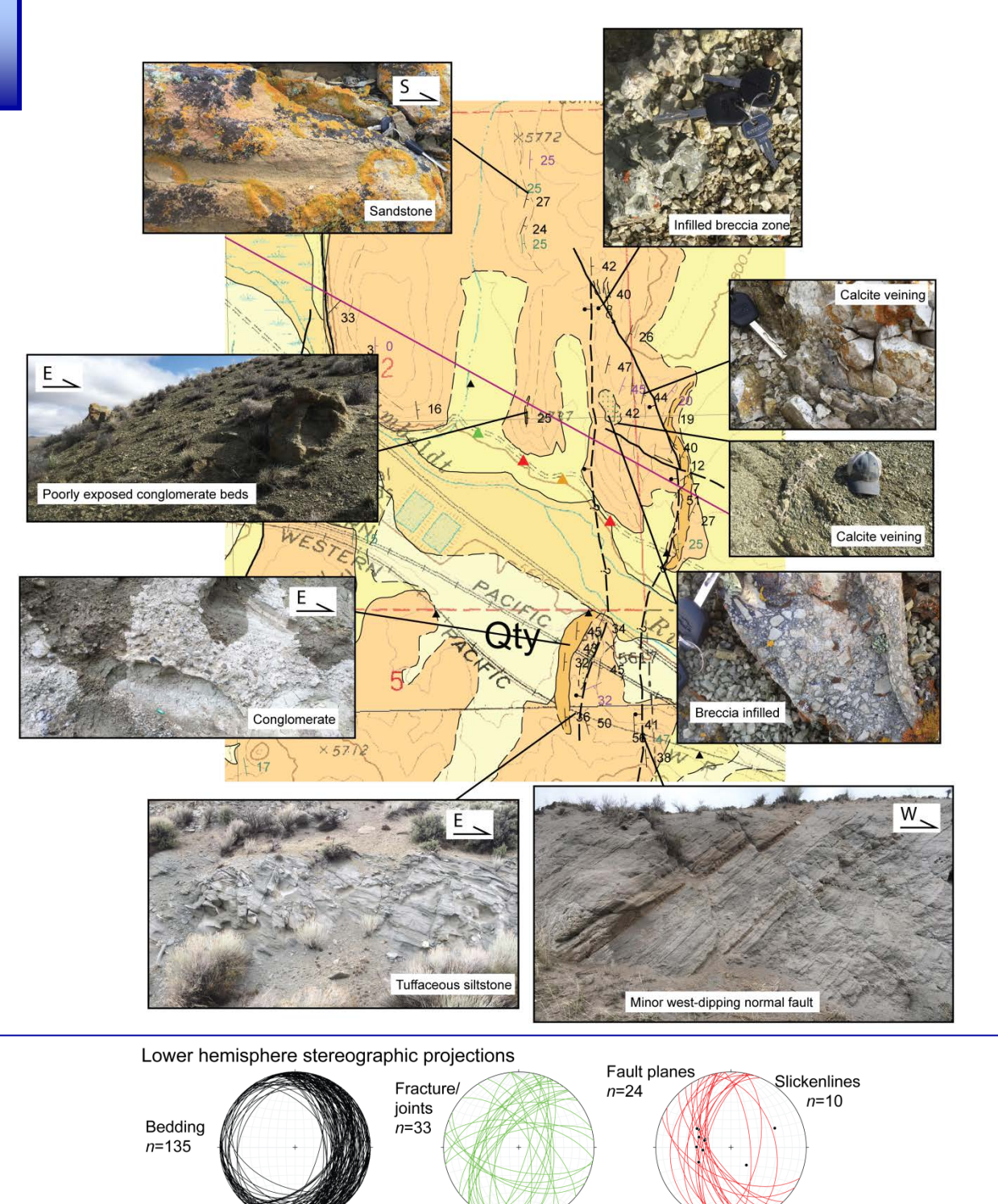
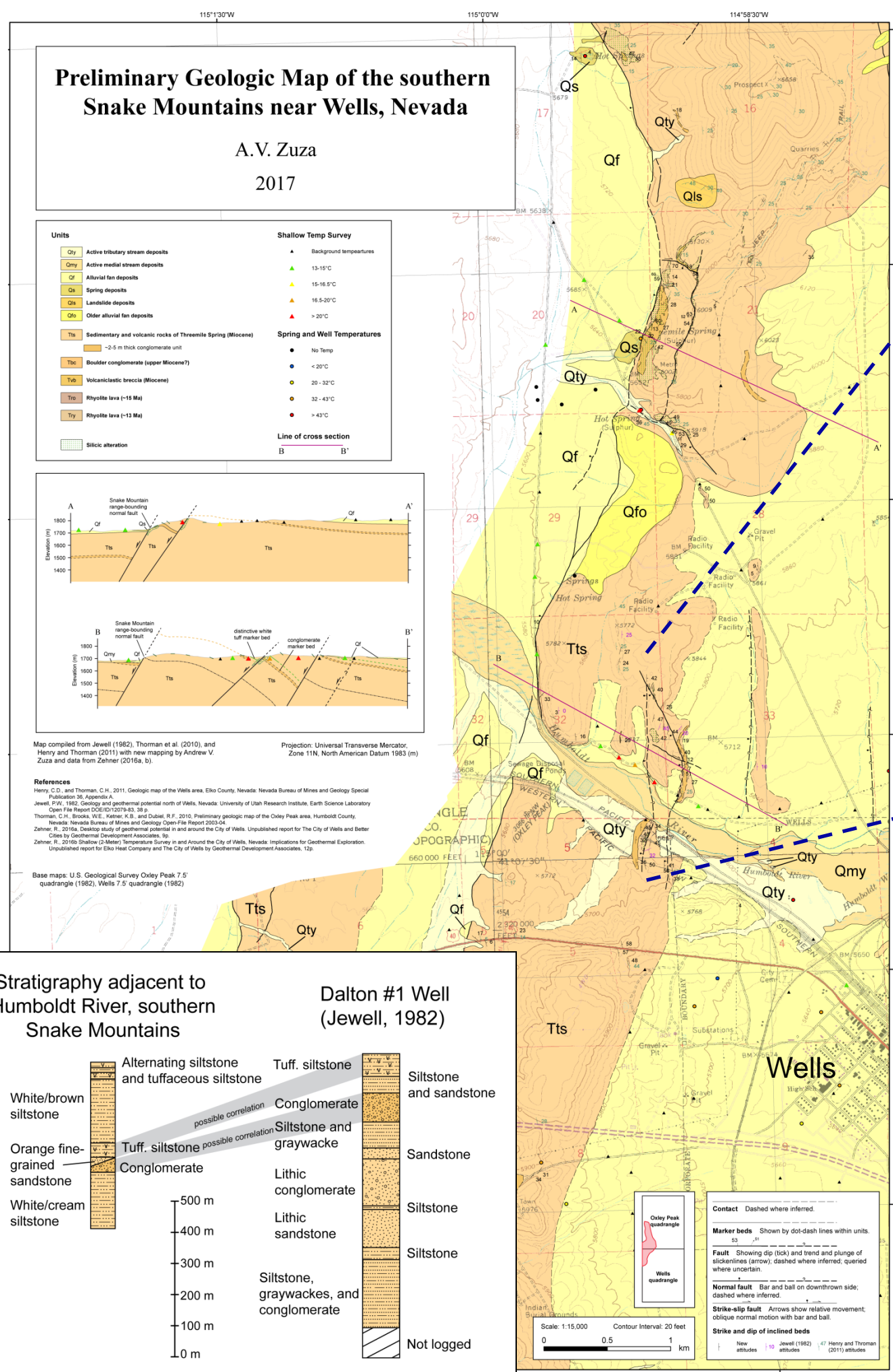
## BACKGROUND & OBJECTIVE

Geothermal activity in and around the City of Wells, Nevada, is evidenced by hot springs and hot waters in several private and municipal wells. Under the U.S. Department of Energy's Small Business Vouchers Pilot Program, research teams from Lawrence Berkeley National Laboratory (LBNL) and the National Energy Technology Laboratory (NETL), in collaboration with the University of Nevada, Reno (UNR), worked closely with the Elko Heat Company and the City of Wells with the objective to evaluate this geothermal resource and site a well for district heating and other direct use applications for the Wells community.

## APPROACH

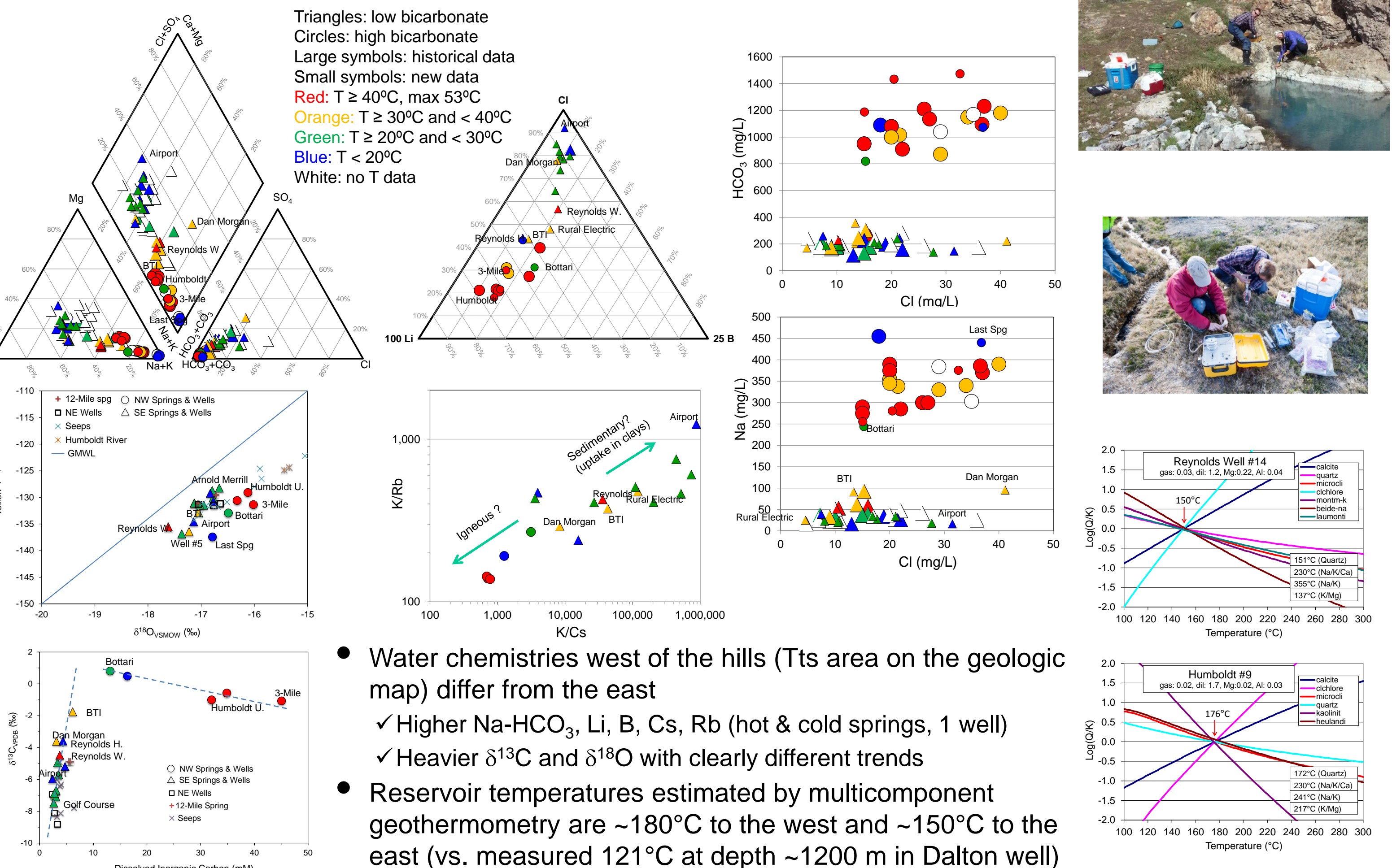
- Review of existing structural, geochemical, and geophysical information for the area
- Ground temperature surveys with 2-meter probes and deeper Geoprobe holes
- Collection and geochemical analysis of water samples from springs and wells
- Geologic and structural mapping
- Ground resistivity and EM geophysical surveys
- Data integration into a GIS geodatabase and a 3D conceptual geological model

## STRUCTURAL AND GEOLOGICAL MAPPING



- Two dominant fault/fracture orientations
  - ✓ NNE-striking and steeply dipping (~70°E or W) seem to dominate
  - ✓ WNW-striking and moderately dipping (~50-60°N or S)
- NNE faults are interpreted to be dip-slip normal faults with the hanging wall located to the west of the faults
- In several areas the rocks are altered and silicified
- Hot springs and alteration are located near mapped faults
- All rocks exposed are Cenozoic or younger in age

## WATER GEOCHEMISTRY AND GEOTHERMOMETRY



## SELECTED REFERENCES

Jewell, P.W., 1982, Geology and geothermal potential north of Wells, Nevada: University of Utah Research Earth Science Laboratory Open File Report DOE/ID/12079-83, 38 p.  
 Jewell, P.W., Rahn, T.A., and Bowman, J.R., 1994, Hydrology and chemistry of thermal waters near Wells, Nevada. Ground Water, v. 32 (4), 657-665.  
 Zehner, R., 2017, Shallow (2-Meter) Temperature Survey in and Around the City of Wells, Nevada: Implications for Geothermal Exploration. Unpublished report for Elko Heat Company and The City of Wells by Zehner Geologic Consulting LLC, 12p.  
 Zehner, R., 2016, Desktop study of geothermal potential in and around the City of Wells. Unpublished report for The City of Wells and Better City by Zehner Geologic Consulting LLC, 9p.

## TEMPERATURE AND GEOPHYSICAL SURVEYS

