

# WESTERN GEOLOGIC, LLC

---

## KEVIN J. THOMAS

**Title** Environmental Professional

**Expertise** Environmental Due Diligence  
Groundwater Geology  
Borehole Geophysics  
Structural Geology

**Academic Background** B.A. Geology, Utah State University, 1998, cum laude

**Experience** Mr. Thomas has over 10 years of experience working in geology in Utah. His expertise is in groundwater geology and borehole geophysics. He has collected and analyzed geophysical logs from water wells, designed monitoring-well completions, measured stream flows, analyzed drill cuttings, collected groundwater samples for testing, and worked on aquifer storage and recovery projects. He has completed the ASTM training course on the Phase I & Phase II Environmental Site Assessment Processes.

### **Environmental Site Assessments**

- Conducted over 60 Phase I Environmental Site Assessments and Transaction Screens for a variety of commercial, agricultural, residential, and industrial properties in Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Washington.
- Conducted Phase II Environmental Site Assessments to evaluate the extent and magnitude of contamination.
- Conducted remediation projects to remove contaminated soil.

### **Hydrogeology**

- Maintained network of monitoring wells in Snake Valley, including collection and processing of water-level data from transducers. Designed and maintained an online database for hosting the water-level data.
- Assisted in selecting sites and planning completions of over 70 monitoring wells for the Utah Geological Survey (UGS) Snake Valley groundwater monitoring network, using borehole-geophysical logs and well cuttings to determine optimal screen depths.
- Selected wells and springs statewide to sample for Utah's participation in the National Ground Water Monitoring Network.
- Collected groundwater samples for water-quality testing from wells and springs throughout Utah.
- Conducted an Aquifer Storage and Recovery (ASR) pilot project in Cache Valley, UT, including: identifying and evaluating potential surface-ponding and well-injection sites, monitoring a surface-ponding project to determine infiltration rates, and tracking subsurface water flow through micro-gravity surveys.
- Created basin-fill isopach and piezometric surface maps to investigate sources of poor quality groundwater in the Bothwell area, northern Utah. We determined that salt water from the nearby Great Salt Lake was not being pulled into the local groundwater by high rates of pumping in agricultural wells, and that the source of salt in the groundwater was likely dissolution of salt deposits in the soil that had been left by previous high stands of the Great Salt Lake.
- Delineated recharge and discharge areas in the basin-fill aquifer of the Beryl-Enterprise area in southwestern Utah.
- Measured stream flow with flumes and velocity meters in the Snyderville Basin, Sanpete Valley, and Snake Valley.

**Geophysics**

- Conducted borehole geophysical logging, processed, and analyzed the resulting well logs on nearly 100 water wells throughout Utah.
- Collected, processed, and interpreted Bouguer Gravity data in Morgan Valley, Utah, and along Ash Creek in southwestern Utah to help determine the thickness of the basin-fill aquifer systems, and to improve understanding of the regional groundwater system in the area of the Hurricane fault.
- Taught continuing education classes for water-well drillers on geophysical logs.

**Structural Geology**

- Identified characteristic geophysical well-log signatures of sub-seismic faults in eolian sandstone. Used core logging, well logs, thin sections, and permeability data taken from cores to establish the most useful logs to recognize sub-seismic faults and stratigraphic heterogeneities in eolian sandstone and quantify their hydrologic properties. Worked with reservoir engineers to create a hydrologic model for flow simulation.
- Conducted structural analysis of a range-bounding normal fault near Wendover, Nevada, by measuring fault plane and slickenline orientations. Determined state of stress on the fault by using computer software to analyze data.

**Professional History**

Environmental Professional, Western GeoLogic, Salt Lake City, UT (2015- present)  
Geologist, Utah Geological Survey, Salt Lake City, UT (2005-2015)

**Citizenship**

United States

**Countries Worked In**

United States

**Language Proficiency**

English, Spanish, Portuguese

**Publications**

Blackett, R.E., Jordan, J.L., Thomas, K., Wallace, J., and Biek, R.F., 2009, A Concealed Geothermal System near Corner Canyon, Salt Lake County, Utah, *in* Tripp, B.T., Krahulec, K., and Jordan, J.L., editors, *Geology and Geologic Resources and Issues of Western Utah*: Utah Geological Association Publication 38, p. 235-250, CD.

Hurlow, H., Jordan, J.L., and Thomas, K., 2015, UGS Groundwater-Monitoring Network, *in* Hurlow, H., editor, *Hydrogeologic Studies and Groundwater Monitoring in Snake Valley and Adjacent Hydrographic Areas, West-Central Utah and East-Central Nevada*: Utah Geological Survey Bulletin 135, p. 91-124, DVD.

Inkenbrandt, P., Thomas, K., and Hardwick, C., 2013, Cache Valley Aquifer Storage and Recovery – Phase II: Utah Geological Survey Open File Report 615, 39 p., CD, online, <http://geology.utah.gov/online/ofr/ofr-615.pdf>.

Inkenbrandt, P., Thomas, K., and Jordan, J.L., 2013, Regional Groundwater Flow and Water Quality in the Virgin River Basin and Surrounding Areas, Utah and Arizona: Utah Geological Survey Report of Investigation 272, 46 p., CD, online, <http://geology.utah.gov/online/ri/ri-272.pdf>.

Shipton, Z.K., Evans, J.P., Lachmar, T., Thomas, K., Forster, C., and Snelgrove, S., 2001, The Three-Dimensional Structure of Fault Damage Zones and Implications for Permeability: Big Hole Fault Drilling Project: Logan, Utah, unpublished project report for US Dept. of Energy and petroleum industry consortium, variously paginated.

Thomas, K., Oaks, R.Q., Jr., Inkenbrandt, P., Sabbah, W., and Lowe, M., 2012, Cache Valley Principal Aquifer Storage and Recovery Site Assessment – Phase I: Utah Geological Survey Open File Report 579, 34 p., CD, online, <http://geology.utah.gov/online/ofr/ofr-579.pdf>.

Thomas, K., and Lowe, M., 2007, Recharge and Discharge Areas for the Principal Basin-Fill Aquifer, Beryl-Enterprise Area, Iron, Washington, and Beaver Counties, Utah: Utah Geological Survey Map 225, 14 p., CD, online, <http://geology.utah.gov/online/m/m-225/m-225.pdf>.

Thomas, K., 2006, Borehole-Geophysical Logging Program at the Utah Geological Survey [abs]: Geological Society of America Abstracts with Programs, Vol. 38, No.6, p. 6, online, [https://gsa.confex.com/gsa/2006RM/finalprogram/abstract\\_104880.htm](https://gsa.confex.com/gsa/2006RM/finalprogram/abstract_104880.htm).

Wallace, J., Lowe, M., King, J., Sabbah, W., and Thomas, K., 2012, Hydrogeology of Morgan Valley, Morgan County, Utah: Utah Geological Survey Special Study 139, 146 p., CD, online, <http://geology.utah.gov/online/ss/ss-139/ss-139txt.pdf>.

Wallace, J., Thomas, K., and Lowe, M., 2010, Evaluation of Sources of Poor Quality Ground Water in the Bothwell Pocket Area, Lower Bear River Valley, Eastern Box Elder County, Utah: Utah Geological Survey Special Study 135, 50 p., CD, online, <http://geology.utah.gov/online/ss/ss-135.pdf>.