GEOLOGICA Geothermal Group
Geothermal Resource Solutions

Name: Leland C. Davis

Position: Vice President of Operations/Sr. Project Geoscientist
Technical Expertise: Environmental Geologist
Geothermal Resource Evaluation
Computer-Based Mapping and Modeling

EXPERIENCE SUMMARY

Leland Davis has nearly ten years of experience in the Geothermal and Environmental Consulting Industry. Mr. Davis specializes in well test planning and implementation, sampling of gases, liquids, and vapors, and 3-D conceptual model development as they pertain to resource evaluation and project due diligence. Mr. Davis has participated in all stages of geothermal project development including early-stage exploration, wellfield drilling and development, and long-term reservoir management. He has provided technical oversight and implementation for geological, environmental, and geochemical support for resource analysis, reservoir modeling, and resource exploration for geothermal projects as well as geological and hydrogeological tasks on environmental, redevelopment, and water resources projects. He has field experience at a broad range of locations in California, the San Francisco Bay Area, the Western US, Turkey, the South Pacific, Southeast Asia, and the Caribbean.

EXPERTISE

Single and Two-Phase Geothermal Well Test Planning and Implementation
Geothermal Steam, Gas, and Brine collection
ArcGIS, Rockware, and Other Computer Based Mapping and Modeling
Field-based geothermal resource exploration
Phase I and II Environmental Site Assessments
Soil and groundwater sampling
Thermal Fluid Surface Sampling
Monitoring well installation/development

EDUCATION

B.A. in Environmental Studies, Minor in Geology 2007, Middlebury College, Middlebury, VT.
Independent Groundwater Study, Professors Assistant, summer 2007, Middlebury College/Vermont Geological Survey, Middlebury, VT

AWARDS AND CERTIFICATIONS

OSHA HAZWOPR 40-hour training (since July 2008)
USDOT HazMat and IATA DG Certified
National Geothermal Academy 2012 – Environmental and Business Development Module

PUBLICATIONS

Kim, J., Ryan, P., Klepeis,, K., Gleeson, T., North, K., Bean, J., **Davis, L.,** and Filoon, J., 2014. *Tectonic evolution of a Paleozoic thrust fault influences the hydrogeology of a fractured rock aquifer, northeastern Appalachian foreland.* Geofluids. 19 Feb 2014: DOI 10.1111/gfl.12076

REPRESENTATIVE PROJECT EXPERIENCE
Selected Geothermal Resource Development Projects

Open Mountain Energy
- Geothermal resource evaluation, project planning, and project due diligence for multiple geothermal prospects and fields in **Western United States**.

CalEnergy Operating Corporation
- Geochemical reservoir evaluation and monitoring, 3-D Modeling and GIS mapping of key resource parameters, and reservoir tracer test planning in the **Salton Sea Geothermal Field, CA**.

City of Akutan (Geothermal Resource Group)
- Well Test Supervisor during the test set-up, production flow, and geochemical resource sampling of an exploration slim hole in the **Akutan Geothermal Exploration Project, Aleutian Islands, AK**.

INPEX (Global Power Solutions)
- Geothermal Resource Assessment, resource and environmental due diligence, resource and development cost estimates of 330 MW developments in a large **Geothermal License Area, North Sumatra**
- Review of Geothermal Opportunities, **Java, Sumatra and North Sulawesi**, Indonesia.

Electricite de Djibouti
- Geothermal resource evaluation and target confirmation and deputy project manager for the planning, oversight, and evaluation of multiple exploration wells in the **Lake Asal region of Djibouti**.

Surprise Valley Electric Company
- Geothermal Resource Assessment and evaluation of reservoir capacity of a small low enthalpy geothermal field in **Paisley, Oregon**. Activities included planning and conducting single and multi-well pressure transient interference tests, fluid and gas sampling, and downhole temperature and pressure surveys.

Sis Enerji
- Geothermal Resource Assessment and reservoir evaluation testing of moderate temperature geothermal fields in **Sogukyurt and Tepekoy, Turkey**. Activities included planning and implementing a multi-well pressure transient interference tests, fluid and gas sampling, and downhole temperature and pressure surveys.

Maspo Enerji/Gurmen Group
- Preliminary Resource Assessment and Exploration Plan Review, Well Test Design, Planning and Execution, Geophysical, Geochemical and Geologic Modeling for Resource Assessment, **Gediz-Alasehir Graben, Turkey**

Imparator Enerji/Wasabi Energy
- Resource Due Diligence of Confidential Field in Biga Penninsula, **Turkey**

Zorlu Energy/Power Engineers
- Contributed to a preliminary resource evaluation, developed conceptual model of reservoir, production and injection strategy for a Feasibility Study. Provided flow

testing and flow test evaluation, geochemical sampling environmental assessment and resource development plan for the 60MW expansion of the **Kizildere Geothermal Field, Denizli Province, Turkey**

- Preliminary Resource Assessment of Alasehir Geothermal Project, **Gediz Graben, Turkey.** Interference testing and analysis of Alasehir wells.
- Interference Testing of Alasheir Geothermal Project, **Gediz-Alasehir Graben,Turkey**
- Geothermal Resource Development Study Feasibility of Alasehir Geothermal Project, **Gediz-Alasehir Graben,Turkey.**

American Samoa

- Conducted a preliminary evaluation of the geothermal resource potential, developed conceptual model and managed exploration temperature gradient drilling program on **Tutuila Island, American Samoa**

USTDA

- Performed a preliminary resource evaluation, conceptual model of reservoir, production and injection strategy, environmental assessment and resource development plan for a feasibility study of geothermal power development of the **Kuyucak Geothermal Field, Aydin Province, Turkey** with Power Engineers as prime contractor**.**
- Performed a preliminary resource evaluation, conceptual model of reservoir, production and injection strategy, environmental assessment and resource development plan for a feasibility study of geothermal power development of the **Alasehir Geothermal Field, Manisa Provence, Turkey** with Veizades & Associates as prime contractor**.**

Coso Operating Company/TerraGen

- Analyzed reservoir properties and resource changes using geochemical data from steam and two phase wells in support of reservoir management, including tracking of injection fluids, boiling and reservoir saturation.
- Sampling and data evaluation of ongoing tracer testing.

Meridian Power, LLC

- Participated in a preliminary geothermal resource evaluation of potential geothermal resource areas across the state of **Colorado**.
- Worked closely with Meridian to explore the KGRAs in CO and create a possible development strategy for geothermal power generation in Colorado.
- Conducting a preliminary feasibility study of a potential geothermal resource in **south-central Colorado** with Meridian Power as the Prime for a confidential client.

Arizona PS/Salt River Project

- Performed a state-wide survey of geothermal potential in **Arizona**.
- Collected geochemical samples, reviewed available data and provided a preliminary resource review of **Clifton Hot Springs, Arizona.**

Allied Nevada Gold LLC

- Contributed to a preliminary geothermal resource assessment of Allied Nevada properties throughout **Nevada**.
- Supported Allied Nevada's geothermal leasing program.
- Providing geothermal resource exploration plans for multiple Allied Nevada geothermal and gold prospects including one active mine in Nevada.
- Performed geothermal exploration activities at an active gold mine in Nevada.

Presco Energy
- Contributed a data review and preliminary resource assessment, including modeling and mapping of the Star Peak-Rye Patch-Humbolt House geothermal resource area **Humbolt County, Nevada.**

Davenport Power
- Collected fluid and gas samples during flow tests of geothermal wells.
- Analyzed fluid, gas and isotope data for geothermal contributions.

U.S. Navy Geothermal Program Offices
- Currently evaluating Coso reservoir geochemistry for evaluation of resource characteristics related to production as part of U.S. Navy's monitoring of the **Coso Geothermal Resource**.

Gurmat Energy/Power Engineers
- Contributed to design criteria for a 45 MW geothermal power project, well test analysis reports, a conceptual resource model, and numerical simulation for the **Germencik Geothermal Field, Aydin Province, Turkey.**

BM Energy
- Contributed to data evaluation including reservoir characterization, well capacity, scaling potential at **Gumuskoy, Ortaklar,Turkey.**

EFLA Consulting Engineers (Confidential Client)
- Conducted a preliminary investigation of geothermal resource potential proximal to three confidential factory locations on the island of **West Java, Indonesia.**

Environmental Permitting and Regulatory Compliance for Geothermal Energy Developments

USTDA/Power Engineers
- Prepared a Preliminary Environmental Impact Assessment for a hypothetical geothermal power plant development in **Kenya** as a subcontractor to Power Engineers

Commonwealth of Dominica/Geothermal Resource Group
- Prepared an Environmental Impact Mitigation Assessment for Geothermal Exploration well drilling of the first five geothermal exploration wells drilled on the island of Dominica.
- Conducted a site assessment of Environmental Impact Mitigation at drilling sites in Dominica.

BLM (Bishop Field Offfice)/US Forest Service (Mammoth District) as subcontractor to ESA
- Contributing to hydrological, geochemical and geological evaluation of existing conditions, potential impacts and possible mitigations of expanded geothermal development, **Long Valley-Casa Diablo, CA** for environmental documentation and permitting.

BLM (Ridgecrest Field Offfice)
- Contributed to Hydrologic, Geologic, GeoHazard and Geothermal Resource evaluation of baseline and potential impacts and mitigations for a Programmatic EIS for geothermal leasing in Rose Valley, **Inyo County, CA.**

U.S. Navy Geothermal Program Offices

- As part of environmental mitigation and monitoring program for the 260 MW Coso Geothermal Field, physical and chemical aspects of the Coso surface manifestations which include **Coso Hot Springs**, fumaroles, steaming ground and mudpots have been monitored twice per year. Collate, assess and interpret the monitoring data and present results in annual reports for the Coso Hot Springs Monitoring Program (2008 to 2012) in compliance with MOA between local Indian tribal leaders and the U.S. Navy.

Western GeoPower Co.

- Performed sampling, analysis and reporting for air quality permitting and air permit compliance.