GeothermEx
A Schlumberger Company

3260 BLUME DRIVE, SUITE 220
RICHMOND, CALIFORNIA 94806 USA
PHONE: (510) 527-9876
FAX: (510) 527-8164
www.geothermex.com

WILLIAM M. THOMAS

PRESENT POSITION

Geologist and Drilling Specialist

EXPERTISE

- Design and implementation of geothermal exploration programs
- Drilling engineering
- Well targeting and design of drilling programs
- Drilling supervision of geothermal exploration wells
- Instrumentation and supervision of geothermal well tests
- Coordination and execution of all aspects of geothermal well-site geology and logging
- Tectonic geomorphology, fault characterization and mountain-block hydrology
- Coordination and interpretation of geophysical surveys
- Hydrologic monitoring and evaluation
- Application and interpretation of isotopes in hydrogeology ($\delta^{18}O$, $\delta^{2}H$, tritium)

EDUCATION

M.S. in Earth Sciences, CICESE (Centro de Investigación Científica y de Educación Superior de Ensenada), 2010

B.S. in Geological Sciences, San Diego State University, 2005

Fluent in Spanish

TRAINING

Operational Drilling Technology and Advanced Well Control (2012) – Murchison Drilling Schools

IADC Well Control Accreditation Program (Certificate Number: A402651) – Murchison Drilling Schools, December 2012

Drilling Course – University of Texas Petroleum Extension Service (PETEX), 2012

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EXPERIENCE

Geologist and Drilling Specialist at GeothermEx, Inc, 2011 – present

Since joining GeothermEx, Mr. Thomas has worked in Argentina, Portugal, Turkey, Kenya, Indonesia and the United States, focusing on geothermal resource assessment, drilling engineering and well testing. Recent projects include:

- Design and well site drilling supervision for multi-well drilling program in a high altitude environment in the Andes Mountains, Argentina, 2013
- Geothermal well testing and reservoir assessment, downhole interference pressure monitoring and downhole measurements at Pico Alto, Azores (Portugal) and Olkaria, Kenya, 2012-2013
- Resource assessment, well targeting and preparation of drilling programs for temperature-gradient and slim-holes at the Salton Sea geothermal field, Imperial Valley, California, 2011-2013
- Review and evaluate structural geology studies, geophysical surveys and field development plans; prepare drilling programs, assess local expertise requirements, prepare drilling emergency programs and resource assessment for drilling large diameter geothermal exploration wells in West Java, Indonesia, 2013
- Resource assessment for geothermal prospects near mining operations in northern Chile, 2012
- Integrated resource review and assessment for geothermal potential on Tenerife Island, Spain, 2012
- Geologic modeling, geophysical evaluation, interpretation of temperature data from deep gradient wells, and geothermal resource assessment for various projects throughout western Turkey, 2011-2012
- Country-wide resource assessment for geothermal potential in Turkey, 2012
- Drilling completion reports and interpretation of injection capacity and downhole surveys in commercial geothermal wells at Sao Miguel, Azores (Portugal), 2011

Project Geologist at Ram Power, Inc., 2010 – 2011

As project geologist for the Orita geothermal project in Imperial Valley, California, Mr. Thomas was responsible for geologic activities at Orita, and involved in all drilling and well testing decisions, including:

- Well targeting and directional drilling program
- Well testing (production and injection tests)

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- Coordination of pressure-temperature-spinner surveys
- Interpretation of seismic and magnetotelluric data for well placement
- Well-site geology; management of mud-logging operation
- Research and evaluation of existing well data
- Coordination and interpretation of open-hole geophysical (electrical) logs
- Interpretation of brine chemistry
- Preparation of drill cuttings for fluid inclusion analysis
- Well-completion reports

Mud Logger at Horizon Well Logging, Inc., 2010

- Provided on-site geologic and drilling support to oil, gas and geothermal wells in Kern and Imperial Counties, United States
- Identified rock and mineral assemblages, including secondary (hydrothermally altered) minerals in high-temperature geothermal systems
- Identification of fractured intervals in geothermal reservoirs

Earth Sciences Instructor at CETYS University (Ensenada, B.C., Mexico), 2008-2009

- Prepared lectures and assignments for class groups of 25 students
- Coordinated geologic fieldtrips

Environmental Technician (Water Dept.) at Imperial Irrigation District, 2005-2007

- Conducted near-surface electromagnetic surveys using an EM-34 (by Geonics) to determine salinity concentrations in agricultural land throughout the Imperial Valley, California
- Measured piezometric head of groundwater to aid in construction of the All-American Canal Lining Project, Imperial County, California
- Installed piezometers to determine groundwater seepage from the East Highline Canal, Imperial County, California
- Researched an environmental hazard case-study on subsurface water saturation and landslide risk on a “pumpback” irrigation pond along the New River, Imperial County, California
- Measured surface water flow using ultrasonic Doppler sensors

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MEMBERSHIPS

- Geothermal Resources Council (Field Trip Guide for GRC 2011 Annual Conference)
- Geologic Society of America

CITIZENSHIP

USA

PUBLICATIONS / GUIDES

Thomas, W.M., Kretzschmar, T., 2009, Mountain-Block Recharge in the Santo Tómas Valley, Baja California, Mexico, Earth Science Frontiers Abstracts with Programs, vol.16, p.33.

Thomas, W.M., 2011, Imperial Valley Fieldtrip Guidebook (Geothermal Resources Council, 2011 Annual Meeting, San Diego).