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## RAYSA ROQUE-RIVERA

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### **PRESENT POSITION**

Hydrogeologist / GIS Specialist and PETREL Specialist

### **EXPERTISE**

- Collection, organization, and analysis of geoscientific data
- GIS spatial analysis including surface, subsurface, and 3-D environments
- Data organization and database creation in numerous formats (geodatabase, shapefile, grid, tabular, KML, graphical formats, etc.)
- Extensive experience with different software platforms, including PETREL, ESRI ArcGIS, AutoCAD, GW Vistas (MODFLOW GUI), VisualMODFLOW, HydroGeoAnalyst (and others)

### **EDUCATION**

MS in Hydrogeology, University of Nevada Reno, December 2009

BS in Environmental Sciences, Universidad de Puerto Rico, May 2007

Fluent in Spanish and English

### **EXPERIENCE**

#### ***GeothermEx, Inc., 2011- Present***

Hydrogeologist / GIS Specialist / PETREL Specialist

Responsibilities include data acquisition, creation, integration, analysis, and management. Evaluation of geoscientific data, GIS analysis and cartographic design in support of senior geologists and engineers. Analysis of geothermal markets and trends, and development of on-line and print-media marketing collateral.

Recent project examples include:

- Development of a 3-D temperature representations of geothermal fields in Indonesia, the United States, Chile and Portugal
- Preparation of regional and local base maps, development of a database containing infrastructure and geothermal resource data, and preparation of maps at various scales in support of a regional analysis of geothermal resources in Chile, Guatemala, Turkey, the Canary Islands, and the western United States

- Investigation of water well data to find anomalously warm waters, and development of maps, cross-sections and three-dimensional models in support of a geothermal prospect evaluations in Idaho, California, and Washington, USA
- Identification and characterization of multiple geothermal fields in Central and South America, facilitated by the development and utilization of comprehensive geochemical databases of several regions
- Research and resolution of a highly complicated land and mineral ownership situation for a geothermal prospect in the Coast Ranges of California, USA
- Collection and analysis of environmental, infrastructure and geothermal resource data for assessments of geothermal potential in island environments (*e.g.*, the Big Island of Hawai'i and Tenerife, Canary Islands)
- In support of geoscientific and reservoir engineering analyses, manipulation of disparate data sets at various map scales to create a unified set of geospatially referenced maps and cross-sections displaying the salient features of a Kenyan geothermal field at the exploration stage
- Evaluation of the relationship between geothermal production, hot spring activity and groundwater levels at a planned geothermal project in South America
- Analysis and processing of ASTER data to identify, characterize and correlate surface geology and heat flow
- Analysis and interpretation geochemical and geophysical data for geothermal exploration in Guatemala
- Integration of multi-disciplinary data into Petrel (the Schlumberger 3-D visualization and analysis platform) for several geothermal projects in the United States and overseas
- Data organization and analysis, and preparation of comprehensive geochemical databases of various geothermal regions
- Translation of technical documents into Spanish for clients and partners in Latin America
- Design and production of advertisements and other marketing collateral
- Market studies of several major geothermal countries, including situational analysis (legal, regulatory, financial), survey of existing geothermal projects, field-by-field breakdown of status and activities, quantification and identification of trends in resource expenditure, and forecasting of market growth

## ***Schlumberger Water Services, 2009 - 2011***

### Project Hydrogeologist

Prior to joining GeothermEx, Raysa was employed at Schlumberger Water Services where she assisted in various projects in analysis and processing of spatial data especially with the use of ESRI ArcGIS software as well as in the creation and maintenance of database for large

scale projects. Her work also included field set-up of data collection systems in remote wells and collection of data from such locations. Staff support for current company projects such as mine dewatering, environmental mitigations of mine impacts, pump tests, and groundwater modeling.

Examples include:

- Ruth Pit Dewatering: Pit modeling, pit lake geochemical modeling, quarterly oversight and database management, Robinson Mining Company, Ely, NV.
- Database management and data analysis for large scale aquifer testing, Rincon Lithium, Salta Argentina
- Database creation and management for a large mine operation, Newmont Mine; Carlin, Nevada
- Developed, implemented and monitored a groundwater level monitoring program around an underground silver mine in Guatemala, and trained local mine employees in the monitoring and operation of water level equipment

***University of Nevada Reno, Natural Resources & Environmental Sciences Department,  
2007 –2009***

Graduate Research Assistant

Collection and analysis of data used for an interdisciplinary research project funded by the US Department of Energy. Organized and managed the study, and supervised student employees. Carbon, soil, water and vegetation analysis.

***University of Nevada Reno, Geography Department, Dendrochronology Lab,  
June – December 2007***

Graduate Research Assistant

Extensive field data collection in the Great Basin Region. Analyzed and interpreted dendrochronological data and processed geospatial data.

***Universidad de Puerto Rico, Programa de Ciencias Ambientales, January – May 2007***

GIS Technician

Analyzed spatial data and processed large datasets.

**CITIZENSHIP**

USA

**PUBLICATIONS**

Roque-Rivera, R., Talhelm, A.F., Johnson, D.W., Chiang, V.L., Pregitzer, K.S. (2011). Effects of lignin-modified *Populus tremuloides* on soil organic carbon. *Journal of Plant Nutrition and Soil Science*, Volume 174, Issue 5, 818-826.