

Name: JILL ROBINSON HAIZLIP

Position: President/Principal Geochemist

Technical Expertise: Geothermal Resource Management

Reservoir Characterization

Geothermal Project Development



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EXPERIENCE SUMMARY

Jill Haizlip has over 30 years of professional experience in the fields of hydrogeochemistry and geothermal resource exploration, assessment and development. She has applied expertise in aqueous geochemistry and geology on a variety of geothermal projects at all stages of development as well as water supply, environmental assessment, and surface and groundwater investigations. She is an expert in geothermal exploration, well testing, geothermal plant chemistry, water sampling, water quality data evaluation—particularly as it relates to establishing the hydrogeological and geochemical characteristics and relationships between geothermal fluids, surface manifestations and cold-water systems and understanding the character of a geothermal system based on the chemistry of these components in the system. Ms. Haizlip has applied her experience working in numerous aspects of geothermal reservoir evaluation including well targeting, well testing, well test analysis and conceptual and numerical modeling leading to a successful record of quantitative resource assessment, resource development planning and reservoir management for sustainable geothermal fluid supplies. Her expertise in chemistry of geothermal fluids and natural waters has been applied frequently in the assessment of geothermal resources, geothermal development effects, and geothermal and hydrological issues such as: non-condensable gas loading, scaling and corrosion potential, air emissions, hydrogen sulfide abatement, steam treatment and other geochemical considerations of geothermal development.

Ms. Haizlip has managed numerous comprehensive geothermal resource exploration, assessment, and development planning projects, including resource capacity, production and injection plans. Working on many aspects of geothermal development from early exploration to operations and closure and from the wells through the plant, Ms. Haizlip brings a practical understanding of geothermal development to the team. In addition to this practical approach, because she has worked in operating fields for a geothermal developer as well as a consultant for private energy developers, financial institutions and governments around the world, she has also developed a multi-faceted and international perspective. She has been working on geothermal resource investigations and assessments in Turkey since 2004, primarily in the Menderes and Alasehir Grabens and Biga Peninsula, with other extensive involvement in geothermal systems in the US including in the Geysers, Nevada, and elsewhere in Western US and around the world in Africa, Indonesia, Pacific and Caribbean Islands, and Central and South America.

EXPERTISE

- Geothermal Reservoir Operations and Management
- Geothermal Exploration, Development and Operational Resource Assessment
- Applied Geochemistry and Hydrogeochemistry for Geothermal Use Applications
- Environmental Chemistry and Environmental Compliance
- Waste Characterization and Management
- Water Resources Management

EDUCATION

M.A. Geology, Columbia University, New York, NY, 1980

B.A. Geology (cum laude), Middlebury College, Middlebury, VT, 1976

Other Training :

- University of California Extension:
Environmental Chemistry 1994
Groundwater Modeling 1989
- U. S. Dept of Energy/Geothermal Resources Council:
Chemistry of Hydrothermal Systems
Introduction to Geothermal Systems
Geothermal Well Logging
Geothermal Well Testing and Analysis

REPRESENTATIVE PROJECT EXPERIENCE**Selected Geothermal Resource Development Projects**

International Projects (listed by primary client with prime contractor in parenthesis if Geologica was a subcontractor)

Sorik Marapi Geothermal Power

- Providing reservoir assessment and fluid geochemistry for geothermal development including conceptual modeling, exploration geology, well targeting, well test planning, implementation and analysis, and reservoir modeling of Sorik Marapi Geothermal Project on the northeastern flank of **Sorik Marapi Volcano, Sumatra, Indonesia.**

Electricite de Djibouti

- Providing project management, resource evaluation and testing, well targeting and project oversight and procurement for an exploration drilling program in the **Fiale Caldera, Assal Rift, Djibouti** (2015 to present) located in a challenging high-temperature high salinity volcanic rift environment.

Geothermal Development Company (GDC)

- Providing ongoing technical and environmental support to the Geothermal Development Company (GDC) of Kenya for development of the Menengai Geothermal Prospect, **Menengai Volcano, Kenya** as part of a Consortium led by GreenMax Capital, funded by AfDB Bank (2014-present).

KenGen

- Providing annual review from a geothermal reservoir and geochemical perspective of the geothermal development of **Olkaria, Kenya** as a member of the Board of Consultants for KenGen 2016 to present.

Kalahari GeoEnergy

- Review preliminary geothermal resource exploration data, perform a preliminary resource assessment, propose an exploration plan for the **Bwengwa River Geothermal Project, Zambia.**
- Provide drilling support, data interpretation for initial exploration drilling.
- Geophysical data review and update conceptual model.
- Leading USTDA-fund geoscience data gathering and project feasibility study for 10 MW power project.



Sis Enerji

- Performed Geothermal Resource Assessments 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, downhole temperature and pressure surveys, and resource design criteria for power plant design.

Zorlu Energy

- (Power Engineers) Performed a resource evaluation, developed conceptual model of reservoir, production and injection strategy for a Feasibility Study and resource development plan for the 60MW expansion of the **Kizildere Geothermal Field, Denizli Province, Turkey**
- (Power Engineers) Resource Design Criteria for Power Plant and Gathering System Design, **Kizildere II Geothermal Energy Expansion Project, Denizli Province, Turkey**
- 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-Alasehir Graben, Turkey**. Interference testing and analysis of Alasehir wells.
- Interference Testing of Alasehir Geothermal Project, **Gediz-Alasehir Graben, Turkey**
- Geothermal Resource Development Study Feasibility of Alasehir Geothermal Project, **Gediz-Alasehir Graben, Turkey**.

Pandawa Energy

- Prepared preliminary resource assessments of two concession areas for potential geothermal power generation: **Cibuni and Ciater in West Java, Indonesia**.

Mitsui (Marco Power)

- Performed a site visit and resource assessment review of a geothermal concession in an active volcanic area in **Central Java, Indonesia**.
- Geophysical Exploration Surveys in **Central Java, Indonesia**

INPEX (Global Power Solutions)

- Geothermal Resource Assessment and Development Plan Review of **Sarulla, Indonesia**
- Review of Geothermal Opportunities, **Java, Sumatra and North Sulawesi, Indonesia**.

Lihir Gold Ltd.

- Provided an active gold mine with an assessment of geothermal resources and power generation capability on **Lihir Island, Papua New Guinea**.

CalEnergy International

- Performed geochemical reconnaissance including warm, cold and hot spring and fumarole sampling and analysis, chemical surveys of creeks and soil at two geothermal project areas in Indonesia, **Patuha, West Java** and **Mt. Bedugal, Bali**.

Imparator Enerji/Wasabi Energy

- Resource Due Diligence of Confidential Field in Biga Peninsula, **Turkey**

Sonsuzluk/Geothermeon/Transmark

- Geochemical Evaluation of Geothermal Surface Manifestations, **Kula, Turkey**



Kayen Enerji/Kayi

- Preliminary Resource Assessment and Exploration Plan Review, **Simav-Kutahya, Turkey**

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**

Greeneco Enerji/Saray Holding

- Review the resource potential of an undeveloped license area in **Sarakoy/Tekkehammam, Turkey** and provide a Preliminary Feasibility Study with drilling targets.
- Perform well testing, well test analysis and provide resource design criteria.

Polaris Energy Nicaragua, SA/Ram Power

- Performed gas/steam measurement support and steam purity sampling oversight, training, and analysis for PENSA's power plant start-up and turbine warranty program for Unit 2 in **San Jacinto Geothermal Field, Nicaragua**.
- Performed silica scale evaluation of reservoir fluid at design separator conditions for the San Jacinto project in support of PENSA's Phase I and Phase II projects.
- Currently preparing a comprehensive resource monitoring and program for San Jacinto and Unit 3 start-up sampling in December 2012.

St. Vincent Geothermal Resources Trust, Soufriere Energy, Inc.

- Performed geochemical reconnaissance including warm and cold spring and fumarole sampling, analysis and interpretation of the results for purposes of geothermal resource characterization on the Island of **St. Vincent in the West Indies**.

International Finance Corporation (Global Power Solutions)

- Performed a preliminary resource and environmental evaluation for the IFC loan guarantee of northwest expansion of the **Olkaria Geothermal Field, Kenya**.

Commonwealth of Dominica, French Agency of Development (GRG)

- Prepared Well Testing and an Environmental Impact Mitigation Plan for the drilling of three exploration slimholes on the island of **Dominica**. Performed environmental site inspections and oversight during drilling and testing of the first geothermal exploration wells on the island.

USTDA

- Performed a preliminary resource evaluation, developed conceptual model of reservoir, production and injection strategy, environmental assessment and resource development plan for a feasibility study of geothermal power development of the **Germencik Geothermal Field, Aydin Province, Turkey** with Shaw Group as prime contractor.
- Performed preliminary geothermal resource assessment and environmental assessment for a geothermal power generation feasibility study of **Seulawah Agam, Northern Sumatra, Indonesia** with Shaw Group 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 **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 Province, Turkey** with Veizades & Associates as prime contractor.

Gurmat Energy

- Designed and performed short and long term wells at **Germencik Geothermal Field, Aydin Province, Turkey** in conjunction with reservoir and civil engineers, including geochemical sampling and analysis, on-site supervision of data collection and data interpretation. Provided data evaluation including reservoir characterization, scale inhibitor testing and additional well locations.

Gurmat Energy (Power Engineers)

- Collected resource data through well testing including production and injection tests, interference testing and geochemical sampling. Applied results to development of resource development plans and power plant design criteria for a 45 MW geothermal power project, a conceptual resource model and numerical simulation for the **Germencik Geothermal Field, Aydin Province, Turkey**.

BM Energy

- Designed and performed short well testing at **Gumuskooy, Ortaklar, Turkey** in conjunction with reservoir and civil engineers, including geochemical sampling and analysis, on-site supervision of data collection and data interpretation. Provided data evaluation including reservoir characterization, well capacity, scaling potential.

Confidential Client

- Technical support related to noncondensable gas and steam quality as related to power plant operations and efficiency for litigation support and expert testimony for an international arbitration related to geothermal power generation in the **Philippines**.

Amoseas Indonesia, Inc. (subsidiary of Chevron Geothermal)

- Managed a comprehensive geochemical resource evaluation including resource exploration, resource assessment, water source evaluation, recharge, tracer test design and analysis, chemical characterization, non-condensable gas loading, scaling and corrosion potential in various vapor dominated systems including **The Geysers and Darajat, Indonesia**.

Domestic US Projects

CalEnergy

- Providing Resource evaluation and reservoir management support using fluid chemistry and production and injection data, including tracking of injection fluids and changes in reservoir chemistry in the **Salton Sea Geothermal Resource** for CalEnergy Operating Corporation.

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.



Open Mountain Energy

- Resource Assessment, preliminary development planning, well discharge, injection and interference testing and test analysis for staged geothermal power development at **Star Peak, NV**; the goal of Stage 1 approximately 15 to 20 MW by early 2019.

U.S. Navy Geothermal Program Offices

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

Western GeoPower Inc./Ram Power

- Resource evaluation of the decommissioned PG&E Unit 15 area at The Geysers, CA using geochemistry.
- Mass flow, enthalpy and noncondensable gas projections of steam supply for various development scenarios.
- Corrosion potential assessment of new and old wells for purposes of developing design criteria for EPC contractor.

Surprise Valley Electric Company

- Reservoir evaluation for a 3 MW project in Paisley, Oregon.

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**.

Torch Renewable Energy

- Currently performing a survey of geothermal potential related to Torch Energy's properties in **Southwestern New Mexico**.

Allied Nevada Gold LLC

- Performed 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

- Performed a data review and preliminary resource assessment of the Star Peak-Rye Patch-Humbolt House geothermal resource area **Humbolt County, Nevada**.

Valuation Resources

- Evaluated geothermal resource assets in support of financial valuation of geothermal development companies.

Vulcan Power

- Collected fluid samples from hot springs and multiple lease areas in Nevada, analyzed analytical results for resource potential for geothermal power generation.



Davenport Power

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

Multiple clients: Pacific Gas & Electric Company, Calistoga Geothermal, CalEnergy Co., Inc., Geothermal Energy Research Development Co. (GERD of Japan), Daiichi/Sumitomo Metals, Geothermal Resources International, Inc.

- Assessed, tested and developed mitigation of corrosion and scaling of surface geothermal fluid handling facilities including turbine corrosion, carbonate and silica scaling, and stress corrosion cracking related to impurities of natural geothermal fluids including volatile HCl. Projects included identifying the source of corrosion, scaling potential, designing and testing solutions such as steam scrubbing, separator modifications, scale inhibitor injection and scale mitigation programs.

SPF Engineering and White Peterson

- Performed preliminary resource assessment for direct use geothermal development at two locations in **Cascade Valley, Idaho** including potential well locations.

Southern California Edison (Global Power Solutions)

- Provided an assessment of current and potential geothermal energy supplies available to SCE in the **Western U.S.**

CalEnergy Co., Calistoga Geothermal

- Performed evaluation of noncondensable gas loading for gas ejection and gas emission control sizing. Provided preliminary evaluation of alternative hydrogen sulfide abatement methodologies in **Coso and The Geysers**.

UBS Global Asset Management

- Review resource capacity for due diligence of potential geothermal investments in the Western U.S.

Environmental Permitting and Regulatory Compliance for Geothermal Energy Developments

BLM (Bishop Field Office)/US Forest Service (Mammoth District) (subcontractor to ESA)

- Performing 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 Office)

- Provided 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 (2000 to 2009) in compliance with MOA between local Indian tribal leaders and the U.S. Navy.

MHA-RMT Environmental

- Analyzed hydrological, hydrogeological, geological and geochemical impacts of the water extraction and injection of 3000 gpm of water from Rose Valley into the **Coso Geothermal Field, INYO COUNTY, California** on geothermal surface manifestations, and cold groundwater and surface waters. Participated in public meetings and appeal meetings in Inyo County regarding impacts to Coso Hot Springs and Rose Valley.
- Provided geological, geochemical, air quality, and geo-hazard analysis of existing conditions and potential impacts and proposed mitigations for NEPA and CEQA documentation of multiple proposed geothermal developments in the Pacific Northwest including **Newberry, Oregon and Canby, California**.

Western GeoPower Co.

- Performed gas loading, H₂S and other pollutant emission calculations, mitigation and abatement methodologies and other technical support for the successful application for Conditional Use Permit for a 37 MW geothermal power plant in **The Geysers, CA**. Permit awarded in June 2009.
- Performed an assessment of historical steam chemistry from Unit 15 area for environmental air quality permitting and compliance of a redevelopment project in **The Geysers, CA**.
- Performed sampling, analysis and reporting for air quality permitting and air permit compliance.

CalEnergy Operating Co.

- Performed geochemical and hydrogeological data evaluation and reports addressing the potential impacts of discharge from the holding ponds in several power plant locations in the **Salton Sea, CA**.

Mono County Department of Energy

- Performed hydrological, geochemical and geological evaluation of existing conditions, potential impacts and possible mitigations of expanded geothermal development, **Long Valley, CA** for NEPA and CEQA documentation and compliance. Provided technical support at public meetings.

Siskiyou County Air Pollution Control District, Calpine Corp.

- Prepare Engineering Analysis, Authority to Construct Permits and Permits to Operate for exploration and development wells and a geothermal power plant including detailed monitoring plans for compliance with air quality, construction and other environmental issues at **Medicine Lake, CA**. Provided technical support for defense of permit approvals and CEQA implementation during public appeal hearing process.

Constellation Energy, FPL Energy, CalEnergy, CalEnergy Internation, Oxbow Energy Co., Department of Water Resources and Ormat

- Performed environmental site assessment (ESAs aka Phase I and Phase II Site Investigations), closure and remediation plans, and compliance audits of numerous geothermal power plants and wellfield operations for the purpose of assessing environmental liabilities and regulatory/permit compliance at numerous geothermal development facilities throughout **California and Nevada**.

U. S. Department of Energy

- Provided technical input, hydrogeological analysis and project management for preparation of Environmental Assessment (EA) documents for NEPA compliance for several federally-funded small power generation projects using new technologies including a **Dixie Valley** “bottoming



cycle” and **Steamboat Springs** alternative working fluid projects. Pacific, Gas & Electric, Geothermal Resources International

- Performed environmental sampling for air quality and groundwater quality regulatory and permit compliance.

Past Experience

Dames & Moore, San Francisco, California, November 1990 to April 1999.

- Provided environmental and hydrogeochemical consulting services to geothermal, industrial and governmental clients throughout the world.

Independent Consultant, San Francisco, California, June 1990 to November 1990

- Provided consulting services to various clients for geothermal resource assessment and project development, environmental compliance and for solving and implementing solutions to geochemical problems in geothermal operations and development. Work involved projects in the Imperial Valley, Coso Hot Springs and The Geysers including analysis of hazardous waste disposal, AB2558 compliance, and steam field closure.

Senior Geochemist, Geothermal Resources International, Inc., (GEO), San Mateo, California, January 1981 to June 1990

- Responsible for all geochemical projects and personnel. Managed projects and programs including: supervising up to 6 people; writing reports and proposals for internal, partnership, bank and government funding; planning and budgeting of projects and programs up to several hundred thousand dollars; and interacting with the scientific community.

Publications

- Kipngok, J., Magnusson, R., Melosh, G., Haizlip, J., Cumming, W., Hinz, N., Harvey, M., Alexander, K., Lopeyyok, T., Mwakirani, R., Wamalwa, A.M., Malimo, S. J., and Auko, L.O., 2017 “Geothermal Conceptual Model of Suswa Volcano, Kenya”, GRC Transactions, Vol. 41, 2017.
- J. R. Haizlip, 2016, “Application of geochemistry to resource assessment and geothermal development projects” pp. 77-106 in *Geothermal Power Generation Developments and Innovation*, edited by Ronald DiPippo, Elsevier-Woodhead Publishing, 787 p.
- J. R. Haizlip, Manon Stover, Fusun S.Tut-Halkidir, and Sabodh K. Garg, 2016, “The Origin and Impacts of High Concentrations of Carbon Dioxide in Geothermal Fluids of Western Turkey” *PROCEEDINGS, 41st Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, February 22-24, 2016SGP-TR-198*
- J. R. Haizlip, (in press), “Chapter 4: Application of Geochemistry to Resource Assessment and Geothermal Development Projects” in *Geothermal Power Plants, 4th Edition, Principles, Applications, Case Studies and Environmental Impacts*, ed. Ronald DiPippo, 4th edition, Elsevier, in press.
- Garg, Sabodh K., Jill Haizlip, Kevin K. Bloomfield, Ali Kindap, Fusun S.T. Haklidir, and Aygun Guney., 2015, “Reservoir Simulation and Kizildere Geothermal Field”, *Proceedings World Geothermal Congress 2015, Melbourne, Australia, 19-25 April 2015*.
- Haizlip J.R., Tut Haklidir, F., and Garg, S.K., 2013, “Comparison of Reservoir Conditions in High Noncondensable Gas Geothermal Systems”, *PROCEEDINGS, 38th Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, February 11-13, 2013 SGP-TR-198*.
- J. R. Haizlip, Agun Guney, Fusun S.Tut-Halkidir, and Sabodh K. Garg, 2012, “The Impact of High Noncondensable Gas On Well Performance Kizildere Geothermal Reservoir, Turkey” *PROCEEDINGS,*



Thirty-Seventh Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, January 30 - February 1, 2012SGP-TR-194.

- J. R. Haizlip and Fusun S. Tut-Halkidir, 2011, "High Noncondensable Gas Liquid Dominated Geothermal Reservoir Kizildere, Turkey" Geothermal Resources Council Transactions, Vol. 35.
- Brophy, P. and J. R. Haizlip, 2003, "Geothermal Exploration of La Soufriere Volcano, St Vincent, West Indies", Geothermal Resources Council, Transactions, Vol. 27.
- Haizlip, J.R., A.H. Truesdell, K. Bloomfield, and A.J. Driscoll, 1995, "Changes in Plant Inlet Gas Chemistry with Reservoir Condition, Location, and Time Over 15 Years of Production at The Geysers, CA, U.S.A.," Proceedings of the World Geothermal Congress, 1995, Volume 3, pp. 1939-1944.
- Osborn, W. L., P. Hirtz, and J. R. Haizlip, 1990, "Scale Inhibitor Testing at East Mesa," Geothermal Resources Council, Transactions, Vol. 14.
- Meeker, K. A., and J. R. Haizlip, 1990, "Factors controlling pH and Optimum Corrosion Mitigation in Chloride-Bearing Geothermal Steam at The Geysers," Geothermal Resources Council Transactions, Vol. 14.
- D'Amore, F., A. H. Truesdell, and J. R. Haizlip, 1990, "Production of HCl by Mineral Reactions in High Temperature Geothermal Systems," Proceedings, 15th Workshop on Geothermal Reservoir Engineering, Stanford, California, January 23-25, 1990.
- Haizlip, J. R. and A. H. Truesdell, 1992, "Noncondensable Gas and Chloride Are Correlated in Steam at The Geysers," Monographs on The Geysers Geothermal Field, Geothermal Resources Council, Special Report No. 17, pp. 139-144.
- McCartney, R. A., and J. R. Haizlip, 1989, "Anomalous Behavior of Hydrogen Steam from Vapor-Dominated Geothermal Systems," Proceedings, 14th Workshop on Geothermal Reservoir Engineering, Stanford, California, January 24-26, 1989.
- Truesdell, A. H., F. D'Amore, J. R. Haizlip, 1989, "The Rise and Fall of Chloride in Larderello Steam," Proceedings, 14th Workshop on Geothermal Reservoir Engineering, Stanford, California, January 24-26, 1989.
- McCartney, R. A., and J. R. Haizlip, 1989, "Boiling processes in vapor-dominated geothermal systems: Evidence from The Geysers Geothermal Field," Proceedings, 6th International Symposium on Water-Rock Interaction, Malvern U.K., August 3-9, 1989, pp. 469-473.
- Truesdell, A. H., J. R. Haizlip, H. Armannsson, and F. D'Amore, 1989, "Origin and Transport of Chloride in Superheated Geothermal Steam," Geothermics, Vol. 18, No. 1/2, pp. 295-304.
- Haizlip, J. R. and A. H. Truesdell, 1988, "Hydrogen Chloride in Superheated Steam and Chloride in Deep Brine at The Geysers Geothermal Field, California," Proceedings, 13th Workshop on Geothermal Reservoir Engineering, Stanford, California, January 19-21, 1988.
- Walters, M. A., J. N. Sternfeld, J. R. Haizlip, and A. F. Drenick, 1988, "A Vapor-Dominated Reservoir Exceeding 600°F at The Geysers, Sonoma County, California," Proceedings, 13th Workshop on Geothermal Reservoir Engineering, Stanford, California, January 19-21, 1988.
- Truesdell, A.H., J. R. Haizlip, W. T. Box, and F. D'Amore, 1987, "Fieldwide Chemical and Isotopic Gradients in Steam from The Geysers," Proceedings, 12th Workshop on Geothermal Reservoir Engineering, Stanford, California, January 20-22, 1987.



- Shigeno, H., M. L. Stallard, A. H. Truesdell, and J. R. Haizlip, 1987, “ $^{13}\text{C}/^{12}\text{C}$ and D/H Ratios of CO_2 , CH_4 and H_2 in The Geysers Geothermal Reservoir and their Implications,” abs. EOS, Vol. 68, No. 44.
- Truesdell, A. H., J. R. Haizlip, and W. T. Box, 1986, “A Geochemical Overview of The Geysers (California) Geothermal Reservoir,” Transactions, 4th Circum-Pacific Energy and Mineral Resources Conference, August 17-22, 1986, pp. 487-499.
- Haizlip, J. R., 1985, “Stable Isotopic Composition of Steam from Wells in the Northwest Geysers, Sonoma County, California,” Geothermal Resources Council Transactions, Vol. 9, pt. 1, pp. 311-316.

