

JOHN HENRY BEYER, PH.D.

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Earth Sciences Division

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EDUCATION

MBA	Executive MBA Program	Golden Gate University, San Francisco, 1987
Ph.D.	Engineering Geoscience	University of California, Berkeley, 1977
M.A.	Geophysics	Washington University, St. Louis, 1969
B.S.	Physics	Lafayette College, Easton, Pa., 1966

Other Relevant Education:

Environmental Law and Regulation	UC Berkeley Extension
Groundwater Hydrology	UC Berkeley Extension
Geologic Field Mapping	Indiana University Geologic Field Station

REGISTRATION

Registered Geophysicist in California, GP-859

REPRESENTATIVE EXPERIENCE

Lawrence Berkeley National Laboratory, Berkeley, California Dec. 2007–present

Program Manager, Earth Sciences Division, Geophysics Department

- ♦ Manage West Coast Regional Carbon Sequestration Partnership (WESTCARB) projects in California and Arizona. The U.S. Department of Energy/industry collaborative projects involve drilling wells and injecting CO₂ into deep saline aquifers, then using geophysical techniques to monitor the movement and stabilization of the CO₂ in the earth. Efforts involve coordinating project scientists, industry partners, and technical consultants; working with other geophysicists to develop technologies for monitoring geosequestered CO₂; acquiring permits from regulatory agencies; and participating in public outreach about carbon capture and storage to address global warming.

California Energy Commission, Sacramento, California Aug. 2000–Nov. 2007

Energy Specialist II

- ♦ Managed Public Interest Energy Research (PIER) contracts for the development of clean, efficient, electricity generation systems. Used technical and business expertise to evaluate proposals and manage projects, seeking market success and public benefits.
- ♦ Evaluated geothermal energy R&D proposals for the PIER Renewables and Geothermal Resources Development Account programs. Functioned as an internal consultant for the review of geothermal energy projects.
- ♦ Served on U.S. Department of Energy peer review panels in 2001, 2003, and 2005 to evaluate ongoing projects in the DOE Geothermal R&D Program and recommend changes in program emphasis. In 2006, served on a DOE panel scoring new proposals to the Geothermal Program.

*Sociedade Geotérmica dos Açores (SOGEO), the geothermal development branch of
Electricidade dos Açores, the Azores electric utility; Azores, Portugal* Aug.–Sep. 2006
Feb.–Sep. 2000

Geophysical Management Consultant (for GeothermEx Inc.)

- ♦ Planned and managed geophysical surveys on São Miguel and Faial Islands (2006), and Terceira Island (2000) in the Azores to characterize geothermal resources. Coordinated planning among

SOGEO, GeothermEx, and the geophysical contractor, which required skills in project management, negotiation, logistical coordination, and budgeting; and knowledge of geophysical field operations, data collection, data processing and interpretation.

- ♦ Wrote interpretation reports describing the geothermal reservoir models and recommended well locations. Test drilling on Terceira confirmed a new geothermal resource, now being developed.

ElectroMagnetic Instruments, Inc. (now Schlumberger), Richmond, California Feb. 1999–Feb. 2000

Proposal Manager and Technical Writer (Consultant)

- ♦ Wrote a successful research proposal to the California Energy Commission for the development of borehole electromagnetic (EM) methods to improve the management of steam production and reinjection at The Geysers geothermal field.
- ♦ Wrote two successful research proposals to DOE for the development of borehole EM methods for minerals exploration, and monitoring the progress of CO₂ floods during enhanced oil recovery.

Paulsson Geophysical Services Inc., La Habra, California

Sep. 1998–Aug. 2000

Field Operations Consultant and Marketing Manager

- ♦ Operated and demonstrated new borehole technologies that provide detailed images of reservoir rocks, with the promise of increasing oil production. Systems included a high-power seismic borehole vibrator and an 80-level receiver array for vertical seismic profiling and cross-well surveys.

Quantec Geofísica

June 1996–Oct. 1997

General Manager of South American Operations

- ♦ Led operations and strategic planning in Chile, Argentina, Peru and Bolivia for this Toronto-based provider of geophysical exploration services to mining companies.
- ♦ Worked with staff to improve the technical content of reports to clients.
- ♦ Reallocated resources to open a profitable full-time office in Mendoza, Argentina.

California Energy International, Jakarta, Indonesia

Feb.–Apr. 1995 and Feb.–Mar. 1996

Geophysical Management Consultant (for GeothermEx Inc.)

- ♦ Worked in Indonesia for this US-based company developing geothermal resources for electricity generation. Negotiated contracts with local and foreign suppliers for surveys in Java and Bali.
- ♦ Designed magnetotelluric (MT) and time domain electromagnetic (TDEM) surveys to find drilling targets; oversaw contractor's 90-man field operation; ensured data quality; modified surveys as data were collected to meet technical objectives, budget and schedule; and reviewed final report.

Montgomery-Watson Inc., Walnut Creek, California

Feb.–Nov. 1992

Supervising Environmental Scientist

- ♦ Served on internal review committees evaluating environmental data for projects at Alameda Naval Air Station and China Lake Naval Air Weapons Station.
- ♦ Advised managers on the cost-effective use of geophysical methods in environmental investigations.

Mark Rand Company Ltd., Tokyo, Japan

Nov.–Dec. 1985 and Dec. 1987–Jan. 1988

Geophysical Exploration Consultant

- ♦ Working in Tokyo, interpreted large sets of geophysical, geological and borehole data to develop geologic models for two major geothermal prospects. Wrote interpretation reports with recommended drilling locations for Japan's National Energy Development Organization and Dowa Koei Co.

Z-Axis Exploration Inc., Pleasant Hill, CA (a subsidiary of WCC that was spun off)**Woodward-Clyde Consultants (WCC), San Francisco & Pleasant Hill, CA**

May 1980–June 1985

General Manager (Z-Axis)

- ♦ Coordinated all aspects of operations, R&D, and marketing for this 50-employee geophysical services company providing magnetotelluric data acquisition, modeling and interpretation.

Vice President of Marketing and Data Interpretation (Z-Axis)

- ♦ Working independently and with R&D staff, made advances in MT data interpretation techniques used to locate wells at oil, gas and geothermal prospects.
- ♦ Gave numerous presentations at professional conferences and to corporate clients.

Senior Project Scientist (WCC)

- ♦ Worked with clients to design MT exploration surveys, managed projects and R&D, conducted research into data interpretation techniques, edited final reports, and presented results to clients.

Harding Lawson Associates, Novato, California

1977–1980

Senior Scientist

- ♦ Wrote a successful proposal to DOE for a geotechnical evaluation of a potential geothermal energy prospect in Idaho for Los Alamos National Laboratory.
- ♦ After the contract was awarded, performed project management; field survey design; budgeting and supervision; data collection, processing and analysis; and report writing.

New Mexico Energy Institute, New Mexico State University, Las Cruces

June 1979–Sep. 1979

Interim Director (Consultant)

- ♦ Evaluated geothermal and solar energy R&D projects and coordinated the scientific staff at three New Mexico universities regarding research reports to DOE. Prepared a successful proposal to DOE for continued energy research funding.

Lawrence Berkeley National Laboratory, Berkeley, California

1973–1977

Exploration Geophysicist (concurrent with doctoral studies at UC Berkeley)

- ♦ Wrote successful R&D proposals to DOE for the development of new geophysical techniques to explore for geothermal resources. Designed field experiments to test new instruments and survey methods; wrote computer modeling codes; modeled and interpreted data; evaluated the merits and shortcomings of the new techniques; and wrote final research reports to DOE.
 - ♦ Trained and managed LBNL field engineers and technicians in geophysical field operations and data analyses, and performed numerical modeling to interpret the data.
 - ♦ Directed resistivity, telluric, and gravity surveys of four Basin and Range geothermal prospects.
 - ♦ Developed a reconnaissance geophysical technique (telluric profiling), used successfully to explore for geothermal resources and salt water intrusion in fresh water aquifers.
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PRESENTATIONS

- Beyer, J. H., 2009, Arizona Utilities CO₂ Storage Pilot Project Update: Eighth Annual Carbon Capture & Sequestration Conference, Pittsburgh, PA, May 4-7, 2009.
- Beyer, J. H. and Hymes, E., 2009, Northern California CO₂ Storage Pilot Project Update: Eighth Annual Carbon Capture & Sequestration Conference, Pittsburgh, PA, May 4-7, 2009.
- Beyer, J. H., 2008, WESTCARB Geologic CO₂ Sequestration Field Tests: Carbon Capture and Sequestration Symposium 4: Emergent Approaches to CCS in California, Berkeley Institute for the Environment, University of California, Berkeley, Dec. 4, 2008.
- Beyer, J. H., 2008, Arizona Utilities CO₂ Storage Pilot: Public Meeting, Holbrook, AZ, Nov. 12, 2008.
- Beyer, J. H., 2008, Arizona Utilities CO₂ Storage Pilot: DOE/NETL Regional Carbon Sequestration Partnerships Initiative Review Meeting, Pittsburgh, PA, Oct. 7, 2008.
- Beyer, J. H., 2008, Northern California CO₂ Storage Pilot: DOE/NETL Regional Carbon Sequestration Partnerships Initiative Review Meeting, Pittsburgh, PA, Oct. 7, 2008.
- Beyer, J. H., 2008, WESTCARB Geologic CO₂ Sequestration Field Tests: 5th Annual California Climate Change Conference, Sacramento, Sep. 9, 2008.
- Beyer, J. H., 2008, WESTCARB Geologic CO₂ Sequestration Program: Research Experience in Carbon Sequestration (RECS) 2008 Program, Albuquerque, NM, July 23, 2008.

PUBLICATIONS

- Beyer, J. H., Horita, J., and Wilt, M., 2003, Progress report on the development of 3-D electromagnetic borehole imaging for geothermal and enhanced oil recovery applications: *Proceedings of the 109th Conference of the Society of Exploration Geophysicists of Japan*, Osaka, October 2003, pp. 53-56.
- Beyer, J. H., 1983, The magnetotelluric method and its application to petroleum exploration: 1983 *International Symposium Digest*, IEEE Antennas and Propagation Society, Univ. of Houston, Tx., pp. 519-523.
- Arney, B. H., Beyer, J. H., Simon, D. B., Tonani, F. B., and Weiss, R. B., 1980, Hot dry rock geothermal site evaluation, Western Snake River Plain, Idaho: *Geothermal Resources Council Trans.*, v. 4, pp. 197-200.
- Wilt, M., and Beyer, J. H., 1980, A comparison of dipole-dipole resistivity and electromagnetic induction sounding over the Panther Canyon thermal anomaly, Grass Valley, Nevada: *Geothermal Resources Council Trans.*, v. 4, pp. 101-104.
- Goss, R., Beyer, J. H., and Packer, D. R., 1980, El tensor magnetotellurico: *Energia*, no. 24-25, Oct.-Nov., Mexico City, pp. 51-52.
- Beyer, J. H., 1977, Telluric and d.c. resistivity techniques applied to the geophysical investigation of Basin and Range geothermal systems, Part I: The E-field ratio telluric method; Part II: A numerical model study of the dipole-dipole and Schlumberger resistivity methods; Part III: The analysis of data from Grass Valley, Nevada: Lawrence Berkeley Laboratory, Berkeley, Ca.
- Beyer, H., Dey, A., and Morrison, H. F., 1977, Numerical model studies of dipole-dipole and Schlumberger resistivity methods (abs.): *Geophysics*, v. 42, n. 7, pp. 1496-1497.
- Beyer, H., Dey, A., Liaw, A., McEvelly, T. V., Morrison, H. F., and Wollenberg, H., 1976, Preliminary open file report: geological and geophysical studies in Grass Valley, Nevada, LBL-5262: Lawrence Berkeley Laboratory, Berkeley, Ca.
- Beyer, H., and Morrison, H. F., 1976, Electrical exploration of geothermal systems in Basin and Range valleys of Nevada: *Proceedings of the Second U.N. Symposium on the Development and Use of Geothermal Resources*, May 1975, pp. 889-894.
- Beyer, H., Morrison, H. F., and Dey, A., 1975, Electrical exploration of geothermal systems in north central Nevada (abs.): *Geophysics*, v. 40, n. 1, p. 174.