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F A C S I M I L E

To: Mr. Steve Wall

From: Dan Easter

Company: U.S. EPA Region IX

Fax Number: (415) 744-1044

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Date: July 24, 2001

Subject: Qualifications -- Martin Miele - Geophysicist, Resume

Notes/Comments:

As per our discussion at the Sunrise Mountain Landfill yesterday, I am transmitting Martin Miele's resume for your review. Mr. Miele is EMCON's geophysicist that will calibrate ("ground truth") the CSAMT data collected by Zonge at the Sunrise Landfill.

Please call if you have any questions.

A handwritten signature in black ink, appearing to read 'Dan Easter', written in a cursive style.

Cc: Tom Gardner, Republic Services of Southern Nevada
Don Hullings, EMCON

Martin J Miele, R.G., R.GP

Professional Qualifications

Mr. Miele is a California Registered Geophysicist and a California Registered Geologist with 20 years of professional experience. He is a specialist in applying innovative geophysical investigations as a cost-effective means for resolving complicated hydrogeologic and geologic conditions and problems. He has conducted and managed geophysical investigations for environmental, water resources, landfill/solid waste, engineering, mining/resource development, and other investigations. Experience includes a wide variety of innovative techniques applied to a wide variety of investigation objectives.

Mr. Miele has extensive experience applying Controlled Source Audio Magnetotellurics (CSAMT), magnetotelluric soundings, seismic reflection and refraction, magnetics, frequency and time domain electromagnetics (EM/TDEM), ground penetrating radar (GPR), electrical resistivity, self-potential, and other methodologies. Clients include: Department of Defense sites, Department of Energy sites, large and small industrial clients, city and county agencies, government contract facilities, and private sector clients. He is skilled in implementing and coordinating technical programs for major government contracts as well as commercial projects. Mr. Miele has also been personally requested by clients to provide senior technical planning and resolve technical issues on their projects/programs, as well as provide presentations and senior technical representation at regulatory and public meetings.

Education

M.S., Geophysics, San Diego State University, 1985

B.S., Geology, San Francisco State University, 1982

B.A., Organizational Psychology, Wayne State University, Detroit, MI, 1975

Registrations/Certifications

Geophysicist, California, No. 941, 1990

Geologist, California, No. 6088, 1995

Specific CSAMT Experience

Designed, managed and conducted (fieldwork, data reduction, modeling and interpretation) a large scale CSAMT survey for two Mexican water agencies outside of the town of Monclova, Mexico.

Obtained approximately 14 miles of CSAMT data to locate water producing fractures at depths greater than 1,500 feet. Monclova is a rapidly, growing industrial community with extreme future water needs. The CSAMT survey was successful at doubling their present water supply by drilling only two municipal wells

Designed, managed and conducted (fieldwork, data reduction, modeling and interpretation) a CSAMT survey to locate water producing wells for the construction of a multi million dollar fish hatchery on Nez Perce Indian land adjacent to the Lewiston River, near Lewiston, Idaho. The CSAMT data was successful at locating a suspected fault that produced water at 530 gallons per minute in wells. Previous wells could only produce a maximum of 40 gpm.

Designed, managed and conducted (fieldwork, data reduction, modeling and interpretation) a CSAMT survey for a very large scale vineyard operation near Clear Lake California. The survey was used for reconnaissance of the local geology and hydrogeology to strategically locate water supply wells for the vineyard operation.

Designed, managed and conducted (fieldwork, data reduction, modeling and interpretation) a CSAMT survey to locate faults and fractures at the Anniston Army Depot near Anniston, Alabama. Previous seismic reflection surveys and electrical resistivity surveys, conducted by others, were unsuccessful. The CSAMT survey was very successful in locating water producing bedrock fractures.

Designed, managed and conducted (fieldwork, data reduction, modeling and interpretation) a CSAMT survey to locate faults and fractures at a development site near Squaw Valley, California. Several fracture zones were located using CSAMT and subsequent wells were successful producers.

Designed, managed and conducted (fieldwork, data reduction, modeling and interpretation) a CSAMT survey across a large valley near Bakersfield California. The purpose of the survey was to assess the water quality and geologic conditions for Valley Waste Inc. CSAMT was successful in defining a large scale groundwater quality "plume" characterized by high TDS concentrations.

Background

September 2000 – Present IT Corporation, Sacramento/Concord, CA

Design, manage and conduct integrated geophysical and geologic investigations for water resource/supply, landfill/solid waste, hazardous toxic and radiological waste (HTRW), unexploded ordnance (UXO), engineering and other projects. Unparalleled experience with unique applications to water resources, UXO, engineering, and other investigations.

January 2000 - September 2000 Science Applications International Corporation (SAIC),
Sacramento, CA

Design, manage and conduct integrated geophysical investigations for environmental (HTRW), solid waste, UXO, water resource, and engineering projects. Responsible for technical expansion and marketing geophysics in the western US.

March 1998 – January 2000

Layne GeoSciences, Inc., Woodland, CA

Manage, design and conduct geophysical and hydrogeologic investigations for water supply, engineering, and environmental (HTRW) projects. Work for consulting, technical and engineering division (Layne GeoSciences, LGI) of Layne Christensen. Responsible for technical guidance of clients and staff in western offices as well as business development of western states (LGI Headquarters in Kansas City).

1991 – 1998

ICF Kaiser Engineers, Oakland, CA

Manage, design and conduct geophysical, environmental, and geologic projects for solid waste/landfill, environmental (HTRW), engineering, UXO, water supply, mining/resource development, and other investigations. Responsible for technical development and active marketing. Managed large environmental (RIFS, etc.) engineering, and other significant projects.

1986 – 1991

NORCAL Geophysical Consultants, Inc., Petaluma, CA

Designed, conducted and managed geophysical investigations for hydrogeologic, UXO, environmental, solid waste, engineering, development, geotechnical, mining, and archaeological studies. Extensive experience with all geophysical methodologies including: seismic refraction/reflection, ground penetrating radar (GPR), electromagnetic induction (EM), controlled source audio magnetotellurics (CSAMT), magnetometry, electrical resistivity, time domain EM, ground vibration analysis, cross-hole and downhole seismic and other geophysical methodologies. Worked on projects varying in size and scope across the United States and abroad. Clients include major environmental/engineering firms as well as DOE facilities, DOD facilities, state/federal organizations, government contractors, and private sector clients.

1983 – 1986

Harding Lawson Associates, Novato, CA

Hydrogeologic experience includes: borehole logging and sampling, groundwater sampling, well siting and installation, aquifer tests, data reduction/interpretation, and remedial investigation report preparation. Geophysical experience includes: acquisition, reduction and interpretation of seismic, ground penetrating radar (GPR), electrical resistivity, electromagnetic, magnetic and other geophysical data applied to engineering and environmental studies.

Professional Affiliations

Environmental and Engineering Geophysical Society (founding member)
Association of Engineering Geologists
Groundwater Resource Associates
National Ground Water Association
Northern California Geologic Society

Publications

Miele, M.J., Morgan, T., Bauer, G, 2001, "Lateral and Vertical Delineation of Water Producing Fractures and Zone Specific Water Quality analysis using Hydrophysical Logging and CSAMT", Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), Denver, CO, March 2001.

Miele, M.J., Jansen, J., Arizpe, J.E.D., Mercado, M.A.M, 2000, "A Regional Groundwater Evaluation Using Magnetotelluric Soundings for Monclova, Mexico", Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), Washington DC, pg. 699-709, March 2000.

Miele, M.J., Laymon, D., Gilkeson, R., Michellotti, R., 1996, "Rectangular Schlumberger Resistivity Arrays for Delineating Clay-Lined Fractures in Shallow Tuff", Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), Keystone, Colorado, pg. 397-409, April 1996

Short Course Instructor: "The Use of Geophysical Methods for Hydrogeologic and Geotechnical Investigations", San Francisco Chapter of the Association of Engineering Geologists (AEG): June, 1992 and August 1996.

Short Course Instructor: "Ground Penetrating Radar Applications to Engineering and Environmental Investigations", for Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), San Diego, CA, April 1994.

Miele, M.J., Jiracek, G.R., Curtis, J., and Vozoff, K., 1987, "Static Distortion Correction in Magnetotellurics using Rayleigh-FFT Modeling and other Geophysical Data": International Union of Geodesy and Geophysics General Assembly, Vancouver, Canada, v 2, August 1987

Martinez, M., Romo, J.M., Fernandez, R., Herrera, C., Jiracek, G.R., Miele, M.J., Weslow, V., 1987, "A Magnetotelluric Profile across the Western Boundary of the Salton Trough in Northern Baja California, Mexico": Physics Earth Planet.

Miele, M.J., 1986, "A Magnetotelluric Profiling and Geophysical Investigation of the Laguna Salada Basin, Baja, California": Master's Thesis, San Diego State University, October 1986.

JASON L. KAHLERT, P.G.

Education

B.S., Geological Sciences,
San Diego State University, 1993

Licenses

State of Wyoming, Licensed Professional Geologist

State of Colorado, Petroleum Storage Tank Committee, Registered Professional
Environmental Scientist

Certificates and Training

Certified OSHA Hazardous Waste Operations (40 Hours, plus annual updates)

Certified OSHA Hazardous Waste Operations and Emergency Response
Manager/Supervisor

Certified OSHA Permit Required Confined Space Entry Supervisor

Certified Radiation Safety and Nuclear Moisture and Density Gauge Operation

Certified in Cardiopulmonary Resuscitation and First Aid

Commercial Drivers License with Hazardous Material, Air Brake, and Bulk Fluid
Endorsements

Professional Affiliations

Member, Geological Society of America

PROFESSIONAL EXPERIENCE:

Mr. Kahlert is a Project Geologist with over 8 years experience in hydrologic, geologic, geotechnical, and engineering projects, with emphasis in site investigations studies to evaluate the nature, magnitude, and extent of air, soil, sediment, surface water, and groundwater environmental impacts. This work includes: preparing work plans and health and safety plans; performing phase II site investigation field work including soil sampling and monitoring well construction and sampling, passive and active soil gas surveys, and geophysical investigations; compiling and interpreting field and analytical data; and preparing written reports.

Solid Waste

Solid Waste Landfill Site Development Investigation, Commerce City, Colorado: Staff Geologist conducting site investigations to determine the applicability of various design considerations and the availability of soils for use in construction. The investigation included the advancement of soil borings to identify shallow subsurface geology, the installation of groundwater monitoring wells, conducting falling head slug tests, and gathering geotechnical information to determine the most suitable and cost effective landfill design.

Construction of Landfill Liner, Broadacre Landfill, Pueblo, Colorado: Quality Control Monitor providing construction oversight during the installation of a High Density Polyethylene membrane over a compacted clay liner. Installation procedures verified included both double fusion and extrusion seaming methods which were evaluated by vacuum box and air pressure test procedures.

Final Cover Construction for the Larimer County Landfill in Larimer County, Colorado: Quality Control Monitor providing oversight during the construction of the infiltration, root and frost, and topsoil layers for closure of 15 acres of the Phase I area of the landfill. Responsible for understanding project specifications and ensuring compliance with project requirements, including coordination of various contractor services, grade control, soil type verification, density and moisture verification by nuclear methods, and review of survey data.

Phase II – Environmental Assessment, Proposed Transfer Station, Pueblo, Colorado: Assistant Project Manager to assess potential environmental impacts related to previous land uses and adjacent properties for a potential buyer.

Groundwater Monitoring, Broadacre Landfill, Pueblo, Colorado: Field Technician conducting regular groundwater sampling for the Broadacre Landfill in compliance with applicable state and local solid waste requirements.

Site Assessment and Remediation

UST Investigations, U.S. EPA Resource Conservation and Recovery Act Enforcement, Permitting, and Assistance (REPA) Zone III, South Dakota and Montana: Project Manager of underground storage tank (UST) and site investigation projects including field personnel, and subcontractors; proposal preparation; project scheduling, and preparation and control of project budgets. UST project experience includes tiered approach to Risk-Based Corrective Action (RBCA).

Remediation System Design and Installation, U.S. Navy, Comprehensive Long-term Environmental Action Navy (CLEAN II), California: Project Geologist designing the below-ground portion of an air and biosparge/soil vapor extraction/pump and treat system for commingling plumes of a chlorinated solvent and petroleum hydrocarbons. Management of construction oversight fieldwork for the \$3.1 million remediation system which included training members of the oversight staff in logging soil borings.

Hydrogen Release Compound (HRC) Demonstration Evaluation, U.S. EPA Superfund Innovative Technology Evaluation (SITE), Rocky Mountain Arsenal, Colorado: Project Geologist prepared health and safety plan, logged soil borings and installed groundwater monitoring wells, conducted tracer test, assisted in the redesign of the evaluation system, conducted oversight of HRC injection, collected groundwater samples for analysis.

UST Release Assessment and Remediation Projects, Total Petroleum/Ultramar Diamond Shamrock, Various Sites in Colorado. Staff Geologist for over 25 UST release sites for Total Petroleum/Ultramar Diamond Shamrock in Colorado. Conducted UST closure and initial site investigations including logging of soil borings, groundwater monitoring well construction, and sampling of soil, soil vapor, and groundwater. Prepared site investigation and closure reports for submittal to regulatory agency on behalf of the client.

Salt, Metals, Chlorinated Hydrocarbons, and UST Release Assessment and Remediation Projects, Colorado Department of Transportation, Various Sites in Colorado. Staff Geologist for 6 UST release sites for the Colorado Department of Transportation.

Conducted UST closure and initial site investigations including logging of soil borings, groundwater monitoring well construction, and soil and groundwater sampling. Prepared site investigation and closure reports for submittal to regulatory agency on behalf of the client.

AST Release Assessment, Kansas Department of Health and Environment in Protection, Kansas. Staff Geologist participating in an investigation of a fertilizer release from an above ground storage tank (AST) that was impacting the municipal water system which included logging of soil borings, groundwater monitoring well construction, and soil and groundwater sampling.

Site Assessment and Remediation Projects, Southern Pacific Lines, Various Sites in California. Staff Geologist for numerous subsurface investigations at various sites. Conducted UST closure and initial site investigations including soil, soil vapor, and groundwater sampling. Prepared site investigation and closure reports for submittal to regulatory agency on behalf of the client.

Geotechnical Investigation

Subway and Station Construction for the Metropolitan Transportation Authority's Metro Red Line Subway, Los Angeles, California. Engineering Geologist monitoring geologic conditions, geotechnical instrumentation, and other geotechnical activities in tunnels and open cut/cut-and-cover (station) excavations. The investigation included the advancement of soil borings to identify shallow subsurface geology during instrument installation and subsurface geology and debris layout during a tunnel collapse investigation. Geotechnical instrumentation generally consisted of movement detection instruments, internal bracing and tieback load instrumentation, and groundwater monitoring devices. Instrumentation was used to determine the causes of ground movements, their distribution,

and their effect on nearby structures, and the need to modify the construction procedures to minimize these movements. Stringent documentation of conditions and continuous mapping of tunnel headings and stations during and subsequent to construction were also used in differing site condition claims and legal proceedings.

Air Investigation

Field Technician operating air pumps, scintillation counters, charcoal canisters, electrovoltaic canisters, and other various equipment to detect radon gas and its decay products in residential and commercial buildings as part of pre-purchase investigations.

Geophysical Investigation

UST Locating, North Island Naval Air Station, San Diego, California. Field Technician operating ground penetrating radar and electromagnetic instruments to locate underground heating oil storage tanks for possible removal.

Health and Safety

Health and Safety Program. Regional Health and Safety Coordinator responsible for maintaining the medical monitoring program, preparing and/or approving project health and safety plans in accordance with current regulations, and conducting site inspections.

Emergency Response

Mitigation of Spills of Hazardous Materials Shipped in Intermodal Containers, Various Sites and Clients in California.

Emergency Response Team member responsible for initial assessment, management of subcontractors and field personnel, health and safety compliance, interface with appropriate regulatory agencies, and report preparation.