

Laura L. Cathcart-Dodge, P.GP.

Vice President
Senior Geophysicist
Santa Ana Office Manager

EDUCATION

M.S., Geophysics, University of Arizona, Tucson, Arizona; 1990
B.S., Geology and Geophysics, University of Wisconsin, Madison, Wisconsin; 1988
Short Course in Borehole Geophysics for Environmental and Engineering Investigations, 1995

Completed 40-hour OSHA Health and Safety Training Course (29-CFR 1910.120) in November, 1990 and is current with required refreshers.

MEMBERSHIPS/AFFILIATIONS

Arizona Geophysical Society
Environmental & Engineering Geophysical Society
Association of Engineering Geologists
Society of Exploration Geophysicists
Examination Committee, Board of Registration for Geologists and Geophysicists, State of California

PUBLICATIONS

Cathcart, Laura L., 1990, "Crustal Thickness and Upper Mantle Velocity from the Regional Inversion of the Pnl waveform in the Western Syntaxis of the Himalayas," Master's Thesis, The University of Arizona, Tucson, Arizona.

Alalawi et al., 1989, "Geophysical Surveys in the Pima Mining District, Arizona;" *Laboratory for Advanced Subsurface Imaging, LASI-89-1*, The University of Arizona, Tucson, Arizona.

PROFESSIONAL BACKGROUND

Nov. 2003 to present:

Vice President, Spectrum Geophysics

As Vice President of Spectrum Geophysics, Ms. Cathcart-Dodge is responsible for technical and business development for the Corporation, and for management of the Santa Ana office. Ms. Cathcart-Dodge also manages a team of geophysicists who conduct a wide variety of geophysical projects.

Jan. 1999 to present:

Senior Geophysicist and Principal, Spectrum Geophysics, Irvine, California.

As Senior Geophysicist for Spectrum Geophysics, Ms. Cathcart-Dodge was responsible for the coordination of geophysical projects and field services, processing and interpretation of a wide

variety of geophysical data, project oversight, report review of 6 project managers, and client liaison. Ms. Cathcart also participated significantly in marketing and maintaining business relationships, as well as remote-site fieldwork.

May 1997 to Dec. 1998:

Geophysics Manager, Converse Consultants, Costa Mesa, California.

As Geophysics Manager for Converse Consultants, Ms. Cathcart-Dodge was responsible for all marketing, proposal preparation, field data acquisition, data interpretation and report generation associated with geophysical methods. Investigations included ground penetrating radar, seismic refraction, electrical resistivity, and extensive utility location at various sites in Southern California.

May 1995 to Nov. 1996:

Senior Project Geophysicist, IT Corporation, Irvine, California. As Senior Project Geophysicist for IT Corporation, Ms. Cathcart-Dodge was responsible for the management of all geophysics projects for IT for the western half of the United States. Also responsible for the design, coordination, processing, and interpretation of geophysical surveys in support of **RI/FS** investigations for **Navy CLEAN** and **DOE** sites as well as the development of new applications of geophysics to these investigations.

Oct. 1990 to May 1995:

Project Geophysicist, IT Corporation, Irvine, California. As Project Geophysicist for IT Corporation, Ms. Cathcart-Dodge conducted magnetics, electromagnetics, GPR and utility locating surveys to delineate undocumented disposal sites and UST locations for a **\$1.5M** geophysical investigation in support of an **RI/FS** at MCLB Barstow under the **Navy CLEAN** contract. Additionally, she conducted downhole EM induction and natural gamma logging surveys to correlate stratigraphy. Her responsibilities included data validation and processing along with preparation and coordination of technical reports.

REPRESENTATIVE PROJECTS

Vermilion Dam, Fresno County, California

Ms. Cathcart-Dodge designed, coordinated and managed a detailed seismic refraction investigation to determine rippability and identify shallow granitic boulders along a proposed trench line at the toe of Vermilion Dam in Fresno County, California. The Spectrum team was air-lifted to the site as the mountains were snow-covered and there was no vehicle access at this high-elevation site. A total of 640 line-feet of p-wave data were collected using 10-foot geophone spacing and a 24-channel Seistronix RAS-24 signal enhancement seismograph, 10-Hz vertical geophones, and a 20-lb. sledgehammer. The data were processed using both Viewseis and SeisOpt@2D™ software. A report of findings and a PowerPoint presentation were provided to the Client.

Yosemite National Park, California

Ms. Cathcart-Dodge designed, coordinated and field managed a geophysical investigation to delineate shallow boulders that could interfere with trenching activities for a proposed employee housing expansion within a 7-acre wooded area at Yosemite National Park. EM-31 and magnetics data were collected along lines spaced 5 feet apart within the entire 7 acres, and detailed utility locating was conducted in order to distinguish EM-31 and magnetics anomalies caused by utilities from those caused by shallow boulders. In addition, GPR profiles were collected over identified anomalies. A detailed report was provided that included color contour maps of the data and a geophysical interpretation map.

Commercial Site, Lake Perris, California

Ms. Cathcart-Dodge designed, coordinated and field managed a large-scale geophysical investigation adjacent to the Lake Perris Dam to delineate a stream channel in granitic bedrock buried 400 feet below ground surface at a property in Lake Perris, California. A challenge for this project was to pinpoint the center of the stream channel for optimal placement of a proposed municipal water well. Over 2 miles of pole-dipole DC resistivity data were collected using AGI's R8/IP SuperSting unit, six-meter cable and overlapping arrays of 56 electrodes. A detailed report with resistivity profiles and a top-of-bedrock topo map was provided to the Client.

Commercial Site, Long Beach, California

Ms. Cathcart-Dodge designed, coordinated and field managed a geophysical investigation to identify the trace of the Newport-Inglewood Fault Zone where it crossed a property in Long Beach, California. As the groundwater table was shallow and saline the electrical resistivity method was used. Two parallel transects were established where Schlumberger data were collected using AGI's Sting/Swift system, four-meter cable and overlapping arrays of 56 electrodes. The Main Fault and two apparent fault splays were identified. A detailed report with resistivity profiles and a geophysical interpretation map was provided to the Client.

Commercial Site, Huntington Beach, California

Ms. Cathcart-Dodge designed, coordinated and managed an extremely detailed shear wave reflection investigation to delineate existing large dense objects beneath a recently installed gravity sewer. A total of 355 line-feet of s-wave data were collected using a CMP configuration with shot and geophone intervals of 2.5 feet. Data were collected using a 48-channel StrataVisor NZII signal enhancement seismograph, 28-Hz horizontal geophones, and a 20-lb. sledgehammer. A report of findings was provided to the Client.

Commercial Site, Lakeside, California

Ms. Cathcart-Dodge designed, coordinated and provided project oversight for a high-resolution large-scale seismic refraction investigation to determine seismic rippability, identify fault locations and delineate the alluvium/ conglomerate/granitic bedrock interface to a depth of 150 feet for a quarry near Lakeside, California. A total of 5300 line-feet of p-wave data were collected using approximately 13 shots per spread with a 24-channel Seistronix RAS-24 signal enhancement seismograph, 10-Hz vertical geophones, and a 20-lb. sledgehammer. A detailed report of findings was provided to the Client.

Commercial Site, Lake Elsinore, California

Ms. Cathcart-Dodge coordinated and field-managed a large-scale seismic refraction investigation for rippability and delineation of the alluvium/bedrock interface for proposed development of a property in Lake Elsinore, California. A challenge for this project was topographic relief of 200 feet or more and no vehicle access along several transects. A total of 6800 line-feet of p-wave data were collected using a Seistronix RAS-24 signal enhancement seismograph, 8-Hz vertical geophones, and a 20-lb. sledgehammer. A detailed report with seismic profiles was provided to the Client.

Commercial Site, Texas:

Ms. Cathcart-Dodge coordinated and field managed a geophysical investigation to delineate subsurface caves and voids within a 2-acre wooded area in Texas. Ground penetrating radar (GPR) profiles along with dipole-dipole electrical resistivity data were acquired along each of seven 54-meter transects. GPR data were acquired and interpreted in the field, and resistivity data were interpreted with the RES2DINV

package and contoured with a commercially available software program. Provided a detailed report of identified anomalies and their probable association with subsurface caves or voids.

Commercial Site, Southern California:

Ms. Cathcart-Dodge managed a geophysical investigation to identify voids or fissures in poorly-constructed concrete sludge tanks at a water treatment facility. Nearly 3 miles of high frequency and high-resolution GPR data were acquired along the walls of the dry sludge tanks. Provided a detailed report with a geophysical interpretation map of GPR anomalies found in each of the four sludge tanks. Results of the survey were to be used in a lawsuit against the concrete contractor.

Commercial Site, Alpine, California:

Ms. Cathcart-Dodge managed a seismic refraction investigation for a proposed grocery store in Alpine, California. The purpose of the survey was to determine rippability and delineate the alluvium/bedrock interface to a depth of 40 feet in an area of undulating granitic bedrock. Provided a detailed report with seismic sections of each traverse of data acquired. Results were subsequently used to plan cut-and-fill operations in the construction of the grocery store.

Commercial Site, Western NV:

As field supervisor teamed with another firm, Ms. Cathcart-Dodge managed geophysical field data acquisition to map the hydraulic anisotropy of the site using DC electrical resistivity techniques. Five Schlumberger arrays were conducted during Phase I, and gridded data measurements of the electric field about a DC-current dipole were taken during Phase II of the investigation. Duties included data QA/QC.

NAWS China Lake, China Lake, CA:

Ms. Cathcart-Dodge managed a large-scale utility investigation at each of 17 separate locations at NAWS China Lake. Data acquisition consisted of GPR and utility line tracing. The purpose of the survey was to delineate utilities along the length of all clay piping associated with hazardous sumps and settling ponds. This work was in support of remediation efforts being conducted to remove the contaminated clay piping.

March Air Force Base, Riverside, CA:

Ms. Cathcart-Dodge supervised seismic refraction and EM induction data acquisition at a landfill encompassing 70 acres at March AFB. The purpose of the seismic refraction survey was to determine the depth of the fill, the depth to bedrock, and rippability properties of the surrounding material. The purpose of the EM survey was to delineate the landfill boundary. Provided a detailed report with seismic sections and color-enhanced contour maps of the landfill area investigated.