

## R E S U M E

Mack G. Croft  
Geologist - Ground Water Hydrologist

10562 North 6250 West  
Highland, Utah 84003  
(801) 756-6057

5'10" 190 lbs.  
Health - Excellent  
Married

### Specialties

Well site hydrology and geology, Environmental site analysis, geologic mapping,  
Ground water protection, Report writing and review, Geophysical Log interpretation,  
Ground water modeling and investigations, Project planning and coordination

### Objective

To obtain a challenging part time job in geology or in groundwater with industry or  
in the consulting business, where my skills can be greater utilized and developed.

Cretaceous and Tertiary deposits were subdivided into the classical "Gulf Coast Type" deltaic units. Collected water samples for analysis including the gases methane, helium, CO<sub>2</sub>, etc. Hydrologic investigations included construction of water level, geochemical, and transmissivity maps. Reports were published. Installed water supply well at Theodore Roosevelt National Park.

Project leader for hydrologic and geochemical studies of a lignite mine at Gascoyne, Bowman County, North Dakota. The work consisted of test drilling, coring, installing piezometers, collecting water samples for geochemical study, construction of water level and transmissivity maps. A 3 layer digital, groundwater flow model (3X64X64) was made of the mine area. A report was written.

Wrote computer program for analysis of digitized geophysical well logs for directed studies, UND course. The program determines water conductance, porosity, permeability and lithology from Sp., resistivity and density curves (1984).

Project leader for geologic and groundwater studies of McKenzie County, North Dakota. The work consisted of supervising 40,000 feet of test drilling, well logging and installing piezometers in the late Cretaceous and Paleocene rocks of the Williston Basin. Water samples and water level data were collected, and aquifer tests made. The deposits contain large lignite reserves. Analysis of the logs and hydrologic data were finished and a data and interpretative reports were published.

1985-1997 Retired from the U.S. Geological Survey (1985) and joined the Utah Department of Environmental Quality in Salt Lake City, Utah. Initial duties consisted of developing a State Groundwater Strategy and reviewing plans for industrial construction permits. Present duties consist mainly of writing correspondence, reviewing applications and writing groundwater permits. I also coordinate ground water quality studies that have EPA 319 funding with the U.S. Geological Survey, the Utah Geological Survey and with consultants and county commissioners. These projects are for aquifer classification purposes.

## Education and Training

Graduated from High School, Las Vegas, Nevada, 1950

Attended College of Southern Utah, Cedar City, Utah 1950-52

BS Degree, Brigham Young University, 1954

Major in geology

Minor in mathematics

MS Degree, Brigham Young University, 1956

Major in Stratigraphy and Sedimentation

Minor in Economic Geology

Thesis - Geology of Northern Onaqui Mountains, Tooele Co., Utah

Course in Fortran Programming, Bismarck Junior College, ND, 1974

U.S. Geological Survey schools attended:

Basic groundwater short course, 1957

Borehole Geophysical Logging, 1967

Basic Fortran Programming, 1971

Digital Modeling of Groundwater flow, 1973

Advanced groundwater course, 1973

Chemistry for Solute Transport Models, 1976

Digital Modeling groundwater solutes, 1977

Report writing, 1979

Graduate extension courses from University of North Dakota, 1983-84

Regional Geology

Sedimentology

Directed Studies

Workshops

H+GCL groundwater flow and contaminant modeling, 1993

EPA, Water Quality, Pollution Prevention and Bio-remediation, 1985, 1989, 1991

## Experience

1955-56 Geologist - Student, field studies for MS Thesis including detailed mapping and stratigraphic studies of folded and thrust faulted Paleozoic rocks in the block faulted Onaqui Range southwest of Great Salt Lake.

1956-57 Military Service - U.S. Navy

1958-85 Geologist-Hydrologist, U.S. Geological Survey

Accepted employment with the Water Resources Division in Atlanta, GA. Made plane table geologic maps of metamorphic rocks in Dawson Co. Made groundwater studies and mapped folded and thrust faulted Paleozoic and metamorphic rocks in the Appalachian and Cumberland Plateau provinces of GA. The area included the Cartersville mining district. Made piezometric maps of coastal plains aquifers (1958-60). Reports were published.

Geologist in charge of Visalia, California, field office. The work consisted of making geologic maps of the valley, the bordering Sierra Nevada and the adjacent folded Coast Range. Water Level and Geochemical maps and sections were made of the Kaweah and Tule River fans. The data were obtained from drillers and geophysical logs of deep irrigation wells, cores, water samples, aquifer tests, and waterlevel measurements (1961-63). Reports were written.

At Sacramento, Calif., I made a detailed geologic and hydrologic investigation of the alluvial deposits in the Tulare Lake Basin, which comprises the southern half of the San Joaquin Valley. The study was made by using drillers and geophysical logs. The deposits were separated in the subsurface into several widespread lacustrine clays of Pleistocene age, and Pliocene and Pleistocene deltaic and alluvial fan material. Other duties included groundwater investigations, reconnaissance geologic mapping and installing test wells in Death Valley and Sequoia National Parks (1963-66). Reports were written.

Project leader for geologic and groundwater studies in Mercer, Oliver, Bowman, and Adams Counties, N. Dak. The work consisted of determining the sites and supervising the test drilling of 40,000 feet of fresh-water bearing Cretaceous and Paleocene formations and the overlying glacial drift. Cores and geophysical logs were made in piezometer test holes. Aquifer tests were made. Made digital computer groundwater flow model of Bowman County (1966-74). Reports were published, which included water level and transmissivity maps.

Project leader for geologic, geochemical, and groundwater study of the Fort Union coal region, including parts of North and South Dakota, Montana, and Wyoming. The geologic studies included compilation of surface geology, study of geophysical logs, and construction of geologic sections. The late

### Scientific Affiliations

Registered Geologist, State of California (2604)

Registered Geologist, State of Wyoming (PG1052)

Member, American Geophysical Union

Member, Geological Society of America

Past Member, North Dakota Geological Society

### Hobbies and Outside Interests

Horse Breeding - Competitive endurance riding

Big Game Hunting - Target Shooting

Placer Mining

Boy Scouts of America

Real Estate investments