



Denver, Inc.

An Itasca International Company

Grady M. O'Brien

Principal Hydrogeologist

Expertise	Mine Hydrogeology, Hydrologic Impact Assessments, Dewatering, Groundwater Flow and Contaminant Transport Modeling
Education	Master of Engineering (Geological Engineering), 1997 Colorado School of Mines, Golden, USA Bachelor of Science (Geology), 1986 University of Wyoming, Laramie, USA
Registrations	Registered Professional Geologist: Wyoming, Arizona
Professional Affiliations	Member: National Groundwater Association, International Association of Hydrogeologists, American Society of Civil Engineers, Society of Mining, Metallurgy, and Exploration
Certifications	MSHA (Mining Safety and Health Administration) Part 48
Professional Experience	
2023 – Present	<i>Itasca Denver, Inc., Lakewood, Colorado Principal Hydrogeologist</i>
2012 – 2023	<i>NEIRBO Hydrogeology, Fort Collins, Colorado Principal Hydrogeologist, Founder</i>
2010 – 2012	<i>Engineering Analytics, Inc., Fort Collins, Colorado Senior Hydrogeologist</i>
2008 – 2010	<i>Tetra Tech, Inc., Fort Collins, Colorado Senior Hydrogeologist</i>
2006 – 2008	<i>GeoFlow, Inc., Fort Collins, Colorado Principal Hydrogeologist, Founder</i>
2003 – 2006	<i>Earth Knowledge, Inc., Tucson, Arizona Principal Hydrogeologist, Founder</i>
1989 – 2003	<i>U.S. Geological Survey, Lakewood, Colorado, and Tucson, Arizona Hydrologist</i>

Project Experience

Over 30 years of hydrogeology experience for mining, agriculture, industrial, commercial, and governmental clients. Advancing projects through permitting, environmental, and operational requirements.

Mining Hydrogeology Expertise: Systematic characterization of hydrologic systems for greenfield and developed mining projects. Design, implementation, and interpretation of monitoring and testing programs to define hydraulic properties that control groundwater flow and chemical transport in fractured, faulted, and heterogeneous aquifer systems by employing wells, piezometers, water chemistry, single- and multi-well pumping tests, packer injection tests, slug tests, air-lift tests, and geophysics. Development of an understanding of the interactions between groundwater, geology, streamflow, springs, wetlands, vegetation, water chemistry, and water rights to guide groundwater flow and chemical transport modeling. Use of the modeling tools and field data to support hydrologic impact assessments, mine dewatering, state permitting, NEPA permitting, EIS analysis review, and CERCLA site closure.

Groundwater Flow and Chemical Transport Modeling: Conceptualizing and developing hydrogeologic subsurface models based on regional and site geology to define hydraulically significant features that control groundwater inflow to mines and construction excavations, regional and site flow paths, contaminant migration, and groundwater–surface water interactions. Conceptualizing, building, and calibrating groundwater flow models that represent natural processes and engineered infrastructure. Using models to predict potential impacts on hydrologic systems, inflow to open pits and excavations, contaminant attenuation, hydrologic system recovery, and remediation measure optimization. Conducting sensitivity analyses to provide a range of outcomes based on probabilistic variations and specific conditions of concern. Documenting characterization, model development, calibration, predictions, and uncertainty.

Construction Dewatering: Characterizing and modeling project sites to predict groundwater inflow and water-level fluctuations. Designing wells and pumps for dewatering systems and mitigation measures to prevent site flooding under a variety of climate conditions.

Clients have included Newmont, Hudbay Minerals, Augusta Resources, U.S. Gold Corp, Grupo Mexico, ASARCO, ExxonMobil, Denison Mines, Energy Fuels, Uranium One, U.S. Dept of Energy, State of Colorado Water Conservation Board, agricultural commodity groups, construction companies, and geotechnical engineering firms. Projects have been located predominantly in the western U.S., with international experience in Mexico, Mongolia, and Laos.