Daniel B. Stone

ITASCA Denver, Inc.
An Itasca International Company

Principal Hydrogeologist

Expertise

Environmental Hydrologic Impact Assessments, Mining Hydrology, Dewatering, Groundwater Flow and Contaminant Transport Modeling, Glaciology

Education

Ph.D. (Geophysics), 1993
University of British Columbia, Vancouver, Canada

B.A. (Geology and Physics, *magna cum laude*), 1988
University of Colorado, Boulder, Colorado

Professional Affiliations

Member: American Geophysical Union, National Ground Water Association, Society for Mining Metallurgy and Exploration (SME), International Glaciological Society

Professional Experience

2007 – Present	*Itasca Denver, Inc., Lakewood, Colorado* *Principal Hydrogeologist*
1996 – 2007	*Geomega, Inc., Boulder, Colorado* *Senior and Principal Hydrogeologist*
1993 – 1996	*Institute of Arctic and Alpine Research, Boulder, Colorado* *Postdoctoral Research Associate*
1990 – 1993	*Snowline Research & Consulting Ltd., Vancouver, British Columbia* *Hydrologic Consultant*

Project Experience

Planned, performed, and directed hydrogeologic, geophysical, and glaciological studies for various mining companies, industrial and commercial clients, and governmental agencies in the United States, Canada, Mexico, Ecuador, Russia, Australia, and Antarctica. Experience includes the conceptualization, development, calibration, optimization, predictive usage and documentation of analytical and numerical models, with applications involving regional- and local-scale hydrologic forecasting, chemical fate and transport, density-dependent flow, dewatering-induced land subsidence, and groundwater/surface-water interactions. Project work also has involved numerous non-modeling hydrologic studies, including the following: mine planning (scoping through feasibility) and permitting; construction dewatering; aquifer testing; safe yield; water balance; monitoring program design/optimization; contaminant source discrimination; subsurface mapping using ground-penetrating radar, borehole logging, and seismic techniques; mine facilities closure; and baseline characterizations for NEPA and CERCLA analyses. Served as a testifying expert in water-rights litigation involving the Nevada State Engineer and the Nevada Supreme Court.

Areas of specific expertise are as follows: numerical modeling to predict groundwater inflows to mines and the potential impacts of mining on hydrologic systems; design and interpretation of hydrogeologic data collection programs; hydrogeologic site characterization and conceptualization relative to mining and groundwater contamination; evaluation of remedial measures for site clean ups; and applied glaciology.

Mining work has included technical studies for planning, feasibility, engineering-design, permitting, mitigation/remediation, and closure projects, as well as for due-diligence assessments and 3rd-party contractor reviews/EIS preparation for NEPA studies. Domestic mining hydrogeology projects have included Placer Dome's Pipeline/South Pipeline mine, Barrick's Cortez Hills mine and Goldrush project, Newmont's Gold Quarry, Leeville, Twin Creeks, and Lone Tree mines, the Turquoise Ridge Joint Venture mine, Bactec's Tonkin Springs mine, General Moly's Mount Hope project, EP Mineral's Celatom mine, the Natural Soda nahcolite mine, American Vanadium's Gibellini project, and Metallic Goldfield's Gemfield project. Foreign mining hydrogeology projects have included Vale's Voisey's Bay nickel mine in Labrador, Kinross's Fruta del Norte (gold) project in Ecuador, ARMZ's Elkon uranium mine in Russia, Xstrata's Ernest Henry and Mount Isa copper/gold mines in Australia, Stornoway's Renard (diamond) project in Quebec, Excellon's La Platosa silver-lead-zinc mine in Mexico, and Geddes Resources' Windy-Craggy (copper-cobalt-gold) project and Cominco's Snip gold mine in British Columbia.

Research Experience

Created theoretical and numerical models describing groundwater flow between boreholes and aquifers and incorporating the effects of turbulent flow conditions in a porous medium. Developed inexpensive borehole sensors for monitoring the turbidity and electrical conductivity of subsurface water. Formulated new methods for estimating groundwater recharge distribution in alluvial basins and for incorporating high-wall runoff into mine pit-lake model simulations.