

Mark Utting
Principal Hydrogeologist

Education and Other Qualifications

M.S. Geology (Hydrogeology), 1978, University of British Columbia, Canada
B.S. Geology (Geomorphology, Surficial Hydrology), 1974, University of Washington
Registered Professional Geologist, State of Idaho, No. 1016

Professional Experience

Prior to joining Hydro Logic, Inc., Mr. Utting has over 23 years experience in the field of hydrogeology. He has conducted projects throughout the Northwest US, the Middle East and Mexico. From 1987 to 2000 Mr. Utting was president, co-founder and principal hydrogeologist of Pacific Groundwater Group, a northwest consulting firm specializing in groundwater resource evaluation and management and in groundwater pollution assessment and control. Prior to that, he worked as a Senior Project Hydrogeologist for Hart Crowser Inc. from 1979-1987.

Mr. Utting provides well-rounded expertise in all aspects of hydrogeologic consulting, including groundwater development, aquifer management, contamination assessment, and soil and groundwater cleanup. Mr. Utting has led over 200 successful groundwater-related projects. Among the services he has provided to industrial, governmental and private clients are wellfield and aquifer development studies, regional groundwater evaluations, major industrial site assessments and pollution cleanups (including work in Superfund areas), negotiations with regulatory agencies on behalf of his clients, and expert testimony. Mr. Utting's expertise includes the assessment of the effects of groundwater pumping on river flows (surface water-groundwater interactions) and saltwater intrusion. Another field of expertise is unsaturated flow. As part of his graduate studies at the University of British Columbia, he developed field methods to evaluate hydraulic parameters in the unsaturated zone. Mr. Utting's previous employment includes work with Exxon's coal division, where he performed detailed geologic mapping, air photo interpretation, and resource evaluations.

Representative Project Experience

- Principal hydrogeologist for Hydro Logic, Inc. with respect to aquifer test analyses and hydrologic water budget for the M3 Eagle planned community in the North Eagle foothills
- Conducted a multi-year, multi-million dollar hydrogeologic characterization in support of developing water rights for the City of Auburn, Washington in the context of Endangered Species Act listing for native fish. The relationship between groundwater and two surface water basins was quantified. The project required installing dozens of test and monitoring wells; assessing strategies for wellhead protection; and quantifying the interaction between groundwater and surface water. Production wells with sustainable yields of 2,500 to 5,000 gallons per minute were then installed.
- Implemented various numerical and analytical models for dewatering projects, industrial and municipal projects, and groundwater development projects to evaluate aquifer response and/or contaminant transport under different pumping regimes.

- Designed and conducted a major groundwater resource evaluation for the southern coast of the Mexican state of Nayarit. The project assessed groundwater recharge, saltwater intrusion potential, groundwater capture areas and groundwater pollution potential for the region. The project was presented to top governmental officials including two governors, ministers and technical staff.
- Helped to select the optimal site and then permit Washington's regional landfill in Klickitat County, Washington, after characterizing the hydrogeology various sites; designing, installing, and testing dozens of wells up to 1500 feet deep; conducting geophysical assessments and evaluating multi aspects of the subsurface and surficial hydrology.
- Designed and tested numerous production wells ranging from 1 to 5,000 gpm for various municipalities, counties, state agencies and private water systems in Washington and Alaska, along with review of well designs and testing in Oman, China, Mexico and Thailand.
- Assessed the groundwater resources and development potential of five Washington counties as part of Coordinated Water System and Groundwater Management Plans.
- Assessed the groundwater flow directions, potential impacts of a waste pond on groundwater resources and made recommendations for well and aquifer testing in rural eastern Oregon.
- Evaluated mountain-front recharge and its impacts to coastal aquifers for a USAID project in Oman, Arabian Gulf. The project required extensive field reconnaissance and interaction with groundwater professionals within the country.
- Prepared hydrogeologic characterizations for several gravel mines in western Washington.
- Provided analysis, technical expertise and testimony to the Pollution Control Board of Washington in support of contested water rights for the City of Sequim granted by the Department of Ecology. The water rights were allowed to stand as granted.
- Conducted a Remedial Investigation/Feasibility Study under State "superfund" laws (MTCA) for the cleanup of an industrial site in eastern Washington. The site, which was contaminated with a mixture of heavy and light hydrocarbons, featured a nearby landfill, an automotive wrecking yard, and industrial manufacturing facilities. Groundwater at the site was hydraulically connected to three nearby ponds, complicating the characterization. The site was successfully cleaned up.
- Reviewed agricultural waste monitoring data to assess the impacts of various disposal practices in Western and Eastern Washington.
- Reviewed reports, data and testimony to support a citizen's group in the opposition of a regional landfill that was proposed for a hydrogeologically unsuitable location. After extensive analysis and numerous testimonies including court room, television and EPA Sole Source Aquifer hearings, final permits for the landfill were not issued and the landfill was not constructed.

References available upon request

Bullet Point List for Mark Utting's Testimony at the M3 Water Rights Hearing

I will testify to the following based on my professional analysis of the extensive data collected from the greater M3-Eagle-Star vicinity and beyond:

1. The Pierce Gulch Sand Aquifer is a thick, highly transmissive and extensive regional aquifer that is present beneath the M3 Eagle property and the Boise River Valley area that includes the cities of Eagle, Star and Meridian.
2. The Pierce Gulch Sand Aquifer extends both to the west and north from beneath the North Ada County area to the areas beneath the Payette River Valley where it is either present or merges with and is in hydraulic connection to, other highly transmissive aquifers.
3. Yields from a properly designed and constructed well completed in the Pierce Gulch Sand Aquifer beneath the M3 Eagle property and the greater Eagle-Star vicinity would be in excess of 1,500 gpm and in many cases, 3,000 gpm or more.
4. In general, water levels in the Pierce Gulch Sand Aquifer beneath the greater M3-Eagle-Star vicinity have not declined significantly over the past 30+ years, in spite of the increases in population and in the numbers of supply wells completed in the region.
5. Water within the Pierce Gulch Sand Aquifer beneath the M3 Eagle property originates from a combination of: a) seepage from the Boise River and New York Canal beneath parts of the cities of Boise and Meridian, b) local precipitation, c) applied irrigation water, and probably d) infiltration of surface water from various creeks such as Dry Creek, Willow Creek and other intermittent creeks in the greater M3-Eagle-Star vicinity.
6. The robust recharge to the Pierce Gulch Sand Aquifer would allow the development of 6,535 ac-ft/yr from the Pierce Gulch Sand Aquifer beneath the M3 property, in addition to the water currently being pumping from the greater M3-Eagle-Star vicinity.
7. After 50 years of pumping at the full requested annual average withdrawal of 6,535 ac-ft/yr from the Pierce Gulch Sand Aquifer beneath the M3 property, impacts to existing wells located ½ mile from the M3 property would be on the order of 10 to 15 feet of reduced water level.
8. A water level decline of 10 to 15 feet would not significantly affect the yield of a properly designed and constructed domestic well located ½ mile or more from the M3 property.
9. A portion of the groundwater in the Pierce Gulch Sand Aquifer flows from beneath the Boise River Valley to aquifers beneath the Payette River Valley while a portion remains within aquifers beneath the Boise River Valley.
10. Because the Pierce Gulch Sand Aquifer is continuous and highly transmissive beneath the greater M3-Eagle-Star vicinity, localized water level changes caused by pumping or the onset of major irrigation at valley locations causes small but detectible changes in water

levels in wells completed in portions of the upland area beneath the M3 property. Similarly, pumping or major irrigation in the upland area would cause small but probably detectable changes in water levels in wells completed in the Pierce Gulch Sand Aquifer beneath the Boise River Valley.