

## Hydrogeology Manager and Principal Hydrogeology Consultant

<b>Expertise</b>	<b>Mining and Environmental Hydrogeology, Water Resources</b>
<b>Education</b>	Diploma Mining Business Management, 2010 Universidad Adolfo Ibañez, Santiago, Chile
	Master in Engineering Sciences, Mention Resources and Water Environment, 2007 Universidad de Chile, Santiago, Chile
	Engineering Science Degree, 2004 Universidad de Chile, Santiago, Chile
<b>Professional Affiliations</b>	Latin American Association of Groundwater Hydrology for Development (ALHSUD)
<b>Professional Experience</b>	
2022 – Present	Itasca Chile SpA, Santiago, Chile Hydrogeology Manager
2020 –2022	Itasca Chile SpA, Santiago, Chile Senior Hydrogeologist
2019 – 2020	Gestión Ambiental S.A, Chile Water Resources Project Director
2018 – 2019	Teck Quebrada Blanca Mining Company, Iquique, Chile Senior Water Resources Engineer
2016 – 2018	Arcadis, Chile Senior Water Resources Engineer
2007 – 2016	Doña Inés de Collahuasi Mining Company, Iquique, Chile Water Resources and Water Supply Superintendent, Senior Water Resources Engineer, Hydrogeologist.
2006 – 2007	Knight Piésold SA, Chile Project Engineer

### Project Experience

*Mining Hydrogeology:* Has led the realization of conceptual and numerical hydrogeology models used for assuring water resources for mining operations, environmental impact assessments due to groundwater extraction and open pit dewatering. Additionally, has led monitoring initiatives of water levels and pore pressures, through open wells and grouted in piezometers, generating necessary data for operational decision making and as support in the elaboration of environmental impact assessments. Experience has been gained in Collahuasi and Teck

Quebrada Blanca mining companies and working as a consultant for several operations in Chile, Perú, Brazil, Australia and México.

*Water Planning and Management:* Experience in the development of Collahuasi's long-term water supply plans, as well as participated in the development of the dewatering strategy for the operating pit. He led water supply studies for Aguas Chañar, in the Copiapó river basin (Chile) and hydrological studies in the basins of the Blanco River (Codelco Andina) and Cachapoal River (El Teniente). He has developed field work of gauging and hydrological data collection in the basins of the Tinguiririca, Mataquito and Maule rivers (Chile). He has participated in environmental hydrogeology studies for mining companies such as Sierra Gorda, Centinela, Collahuasi, SQM, different divisions of CODELCO, among others, and has also supported the development of feasibility studies for different projects in exploration stage. It has also provided consulting services for the review of operational water balances, both for water supply and tailings management.

*Water Resources Modeling:* In the context of availability analysis and impact assessment studies, he has led the development of conceptual and numerical studies of both hydrological and hydrogeological components in different basins, especially in northern Chile, Brazil and Perú.

*Instrumentation for groundwater monitoring and hydrogeological characterization tests in sedimentary aquifers and fractured aquifers:* He has led the implementation of monitoring plans for surface and groundwater, to analyze the physical and chemical behavior of water. Experience in the implementation of monitoring plans for the follow-up of seepage from tailings deposits and leaching heaps. Field experience in the supervision of hydraulic tests during drilling and constant and variable flow tests to define hydrogeological parameters in karst and sedimentary aquifers.