

# Water management



## Water management



**Ausenco is a leading global provider of engineering and project management services to the resource and energy sectors. We combine ingenuity with insight to deliver effective end-to-end solutions for our clients.**

Our professionals offer expertise across every aspect of the resource and energy sectors — in areas including mineral processing; pipelines; transportation systems; ports and terminals; infrastructure; and conventional, renewable and alternative energies. We're also experts in optimising performance through tailored operations and maintenance solutions, and in providing environmental and sustainability strategies that deliver benefits for projects, communities and the environment.

We're skilled in every phase of the project lifecycle. From initial concept through to operation and closure, our people can assess, plan, cost, design and construct ingenious solutions that add value and support your return on investment.



Our people have performed surface water and groundwater studies in climatic and hydrological conditions ranging from arid and tropical to arctic.



**01**  
Hydrogeology investigation,  
Cerro Matoso, Colombia

**02**  
Tailings dam, Phu Kham Copper-Gold  
Project, Laos

### **Clear solutions for our clients**

At Ausenco, we offer expertise in water management, including services and solutions related to surface water, groundwater, and water balances.

We specialise in ensuring our clients' water resources are well managed, with positive flow-on effects in erosion and sediment control and wastewater treatment. Our people have performed surface water and groundwater studies in climatic and hydrological conditions ranging from arid and tropical to arctic.

### **Hydrology services**

Our extensive experience in all aspects of hydrology and hydrogeology is complemented by our ability to thoroughly understand local conditions.

Our expertise in this area includes surface water hydrology assessment, groundwater and mine dewatering, and site wide water balances.

### **Water and wastewater treatment services**

We provide water and wastewater treatment services from a project's earliest analytical and master planning phases right through to design, engineering, permitting and construction.

We have proven expertise in integrating plans for water management and reuse with overall land use and systems planning to achieve the most environmentally sustainable, cost-effective and energy efficient outcomes.

### **Resource services**

Managing surface water and groundwater is essential in all mining projects. Common needs include securing a water supply for mineral processing, dewatering mine workings and pit slopes, and diverting surface water around mine facilities to minimise environmental impacts.

Ausenco provides analysis and design services to characterise and quantify a project's impact on surface water and groundwater flows. Our design capabilities are enhanced by state-of-the-art numerical modelling techniques that allow us to predict run-off and groundwater flow. This provides accurate information to underpin project decisions and aid design and management of structures.

### **Surface water**

Surface water hydrology assessments focus on determining stream flow for current local and regional conditions, and potential future conditions. Assessments typically involve site visits to establish hydrographic characteristics (e.g. watershed's surface cover type, erosion factors); meteorological data analysis; historic and current stream flow measurements; and watershed hydraulic modelling.

Integrated water management analysis of projects includes reviewing local and regional development plans for watersheds. We then work with clients to help them make sound decisions regarding water management on their project.

### **Groundwater**

Meaningful predictions of mine inflows require an understanding of sources and volumes of groundwater recharge, the volume of rock affected by dewatering and associated storage, and the location and interconnectivity of permeable zones.

### **Water balances**

We conduct comprehensive site-wide water balances to assess a project's potential impact on water resources and develop a water management strategy.

This can include determining water supply, circulating flows, moisture contents, water storage requirements and treated-water discharge over the life of a project and its decommissioning period.

# Our experience



---

**Project**

El Galeno

---

**Location**

Cajamarca, Peru

---

**Client**

Lumina Copper

---

**Year**

2005–ongoing

---

**Description**

Ausenco delivered a range of services for this major project, which featured challenging terrain and environmental conditions.

Water management services included:

- design of a testing program for acid-rock drainage
- hydrogeology and hydrology characterisation
- water supply feasibility level design.



---

**Project**

Cerro Verde

---

**Location**

Arequipa, Peru

---

**Client**

Sociedad Minera Cerro Verde SAA/Fluor Canada, Ltd

---

**Year**

2004–2010

---

**Description**

Ausenco provided water management services, directly and through agents, for the following:

- tailings handling
- reclaim water
- seepage water collection systems.

Our involvement began with a feasibility study and continued to engineering services and expansion studies.