Tailings pipelines
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, our people can assess, plan, cost, design and construct ingenious solutions that add value and support your return on investment.

With expertise in complex hydraulics and tailings disposal, we tailor our solutions to meet your unique requirements.
**Ingenious pipeline solutions**

For more than 30 years, our people have participated in the development of slurry pipelines around the world, helping clients to transport a diverse array of products in challenging terrain, extreme climates and remote locations.

We've designed and engineered long-distance pipelines to transport virtually every type of mineral—from concentrates such as copper, zinc, lead and iron to crushed ore, bauxite, nickel laterite, phosphate, limestone and coal.

Our people also offer expertise in SCADA systems and telecommunications. Our specialities include developing SCADA solutions for remote locations—stand-alone, self-sustaining systems that require a minimum of local staff and maintenance.

Our services include complete pipeline solutions from concept to commissioning, including:

- feasibility studies and conceptual design
- route reconnaissance and evaluation
- laboratory and loop testing programs
- complex hydraulic modelling
- basic and detailed engineering
- leak detection systems
- pipeline operations and simulation software
- pipeline SCADA and telecommunications
- procurement
- construction management
- start-up and commissioning
- pipeline operations optimisation and maintenance
- operator training and operations support.

Our expertise extends across:

- conventional and high-density tailings transport
- long-distance slurry pipelines (mineral concentrates, mineral ores, coal, industrial minerals)
- water and wastewater pipelines
- oil, gas and products pipelines
- ethanol and alternative fuels pipelines.

**Reliable and environmentally responsible tailings transport systems**

Challenging economic conditions and increasingly strict environmental regulations demand tailings pipeline systems that travel longer distances, carry tailings at higher concentrations, and have longer design lives.

With expertise in complex hydraulics and tailings management, we tailor our solutions to meet your unique requirements. Ausenco's tailings transport solutions include gravity flow, open-channel flow, energy dissipation, multiple pumps in series, and thickened paste disposal.

Our range of tailings transport and delivery systems includes:

- conventional tailings
- cyclone sand separation and distribution
- single-point discharge
- perimeter spigotting
- open-channel flow (launder system)
- drop-box systems
- paste and thickened tailings
- surface deposition
- underground hydraulic/paste backfill systems
- dry stacking
- residue disposal (bauxite and red muds)
- central ramp discharges
- side hill discharges
- ash management
- high concentration slurry disposal
- fly ash, bottom ash
- central ramp discharges
- side hill discharges
- water management and reclaim systems
- water balance
- reclaim barge
- decant tower
- seepage water pumping
- Deep Sea Tailings Placement (DSTP).
Our experience

**Project**
Cerro Verde

**Location**
Arequipa, Peru

**Client**
Sociedad Minera Cerro Verde S.A.A./Fluor Canada Ltd

**Year**
2004–2010

**Description**
Cerro Verde is an open-pit copper mine near Arequipa, Peru, 2,700 m above sea level.

Ausenco provided services, directly and through agents, for the tailings handling, reclaim water and seepage water collection systems, beginning with a feasibility study and continuing through engineering services and expansion studies.

The system design includes a 3.9 km, 48-inch diameter high-density polyethylene launder with a 34 Mt/y throughput to deliver tailings from the thickeners to a cyclone station near the dam.

The tailings handling system is designed to transport 37.4 Mt/y of whole tailings from the mine site to the impoundment dam.

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**Project**
Perseverance Mine

**Location**
Zinc Tailings

**Client**
Xstrata Zinc

**Year**
2007

**Description**
Ausenco was selected by Xstrata Zinc to perform a full range of services on the Perseverance Mine project, located in Quebec, Canada.

Our scope of work included a comprehensive hydraulic analysis and optimisation study for a slurry pipeline to transfer tailings from an existing concentrator to a new paste preparation plant.

Our study included optimisation of pipe and pump size, basic operating philosophy, freeze protection study, pipe stress analysis and support recommendation.

The tailings transfer pipeline system is designed for the transportation of a maximum of 65 t/h of zinc tailings, and includes a 7.2 km, 5-inch diameter pipeline with HDPE insulation and heat tracing.

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**Project**
Los Pelambres Mauro/Quillayes Dam

**Location**
Chile

**Client**
Minera Los Pelambres

**Year**
1996–planned 2013

**Description**
Ausenco’s relationship with this client began in 1996, when we provided a design audit, construction support and commissioning services for their original tailings pipeline to Quillayes Dam.

Our ongoing involvement has continued to include a project to redirect the tailings pipeline to Mauro Dam as well as a system expansion, various system updates, and a debottlenecking study.

The unlined, 49 km, 36/28-inch diameter copper tailings pipeline currently transports 62.3 Mt/y of whole tailings from the thickener at the concentrator to Mauro Dam.

To learn more about our tailings pipeline experience, contact us via email business-development@ausenco.com or visit our website www.ausenco.com