

PRODUCED WATER TREATMENT

Water Reuse in Hydrocarbon Processing Facilities

Vista has a long history of engineering some of the most successful processing facilities in the western Canadian energy sector. Our experience includes designing specialized processes to maximize a facility's ability to reuse produced water.

Reusing produced water is essential to limiting environmental impacts, lowering operational costs and gaining regulatory approval, especially for commercial facilities.

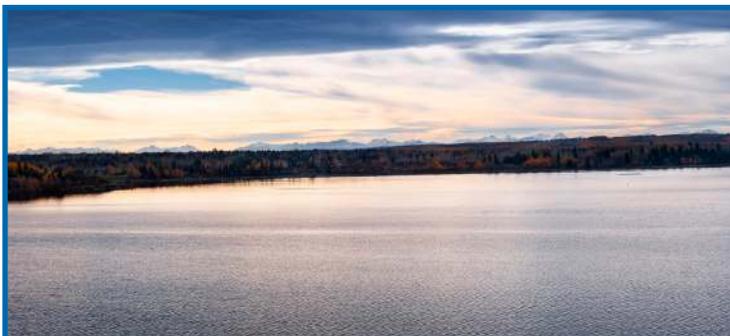
Vista helps clients analyze their water to select one or more proven technologies and implement a cost-effective, fit-for-purpose solution.

Highlighted Water Treatment Capabilities

TECHNIQUE	DESCRIPTION	USE
Ion Exchange (SAC/WAC)	Vessels containing resin remove hardness ions (calcium and magnesium) as well as other multivalent ions.	» Hardness removal » Multivalent ion removal
Lime Softening (Warm & Hot)	Created using a combination of chemicals, a lime sludge bed reduces and removes a variety of contaminants from inlet water.	» Silica removal » Bulk hardness removal » Alkalinity reduction
Filtration	Removes particulate matter in water streams and in the final stages of hydrocarbon removal.	» Hydrocarbon removal » Iron removal » Suspended solids removal
Gravity Separation	Used for bulk hydrocarbon removal, a carefully designed gravity separation system ensures maximum effectiveness of installed residence capacities.	» Hydrocarbon removal
Induced Gas / Static Flotation	Gas bubbles introduced into a water stream facilitate the flotation of hydrocarbon within the unit. Commonly used as a secondary oil removal process.	» Hydrocarbon removal
Evaporation	Uses thermal or mechanical energy to create a distilled water stream available for reuse.	» Total dissolved solids removal

See more capabilities on back...

Quantifiable Experience



The processing facilities engineered by Vista treat an average of approximately **38.7 MM m³ of produced water each year.**

That's more than twice the volume of Calgary's Glenmore Reservoir.



ENGINEERING OIL & GAS FACILITIES

Reducing Costs with Customized Solutions

In thermal processing facilities, common contaminants such as calcium and magnesium can combine with silica to form metallic silicates. These precipitate and stick to boiler tubes, forming a glass-like insulating barrier on the walls. The insulating barrier inhibits heat transfer, leading to high temperatures and ultimately resulting in failures requiring extensive downtime and repair costs. Industry standard methods of preventing silicate formation have high capital and operating costs, and use hazardous chemicals.

By analyzing the water chemistry and downstream quality requirements, **Vista has successfully implemented an alternate design with over 20 million dollars in capital costs savings, a reduction in operating costs, and no use of hazardous chemicals.**

Vista has over 30 years of experience successfully implementing customized solutions in new and existing facilities for our clients to meet their water needs at the lowest cost.

EXAMPLE OF INSULATING BARRIER ON TUBE WALLS



TUBE FAILURE DUE TO CONTAMINATED WATER



Highlighted Water Treatment Capabilities (continued)

TECHNIQUE	DESCRIPTION	USE
Centrifuges	Removes bulk suspended solids from a water stream, resulting in a sludge and clean centrate stream.	» Suspended solids removal
Membranes	Strips dissolved gas from a water stream, a critical step in meeting water quality requirements for downstream equipment.	» Dissolved gas removal
Inclined Plate Settler (Lamellar Decanter)	Removes large volumes of solids / particulate matter from a water stream.	» Particulate removal
Chemical Treatment	Carefully prepared and measured chemicals injected upstream facilitate other separation methods required for the success of downstream processes.	» Oxygen control » Precipitation (e.g. oxidation of iron for filtration) » Chemical preparation for use (e.g. flocculants)

For more information on Vista's water treatment capabilities, please contact:

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