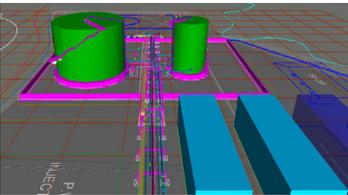




## WATERHANDLING PROJECT HIGHLIGHTS

Acero has successfully completed numerous water handling projects domestically and internationally including various water disposal/injection facilities and pipelines, and tank installations. A few of these projects are highlighted below.



### ACORDIONERO WATER INJECTION FACILITY ◀▶ GRAN TIERRA ENERGY INC. ◀▶ *San Martin, Colombia*

Acero was responsible for providing a conceptual design for the expansion of the Acordionero central processing facility (CPF) to include produced water treatment and injection equipment. The new water handling facility was designed for a throughput capacity of 39,000 BWPD, complete with necessary high pressure pipeline to inject through six injection wells each with two zones.

### CARSON CREEK TANK INSTALLATION

#### PENGROWTH ENERGY CORP. ◀▶ *Carson Creek, AB*

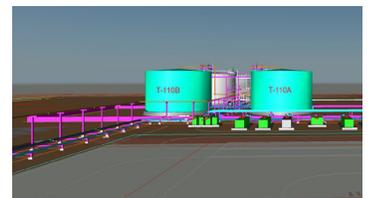
Acero was responsible for the detailed tank and foundation design of a 15,000 bbl produced water storage tank c/w skim system. Work included process review (CFD simulation), cathodic protection, mechanical, civil, grading in order to upgrade 10,000 bpd water injection storage facility and water plant piping system. Acero also assisted Pengrowth's integrity team with the pipeline integrity management, which included inline logging inspection.



### BADILA CPF WATER INJECTION PROJECT

#### GLENCORE ◀▶ *Chad, Africa*

Acero was responsible for Pre-FEED and FEED for a water treatment and injection facility over two phases (35,000 BWPD & 65,000 BWPD) by installing CPI, skimming tanks, booster pumps, filters and high pressure injection facility complete with a high pressure water injection network. Scope of work also included an 8 MW gas to power generation facility, required to service the facility's increased power demand.



### GAS PLANT WATER OFFLOAD TRUCK-IN ◀▶ REPSOL OIL & GAS CANADA ◀▶ *Edson, AB*

Acero was responsible for the engineering, procurement, and construction of a new water offloading facility capable of accepting 100 m<sup>3</sup>/d of produced water at the Edson Gas Plant. Project featured the installation of access roads, two (2) 4000 bbl storage tanks, containment, water transfer pumps and condensate transfer pumps, filters, meters and piping.



## **WATER DISPOSAL FACILITY** ◀▶ **BAYTEX ENERGY CORP.** ◀▶ *Peace River, AB*

Acero was responsible for the detailed engineering, design, procurement and construction management of the expansion of an existing oil battery to incorporate water handling and disposal capability at the site. The project featured new (fiberspar) pipelines to gather water from other batteries, and to deliver produced water to nearby disposal wells. Facility work included the design and installation of three 2000 bbl water tanks, and various water transfer/skim oil/disposal pumps.

## **3" & 4" FRP HIGH PRESSURE PRODUCED WATER INJECTION PIPELINE** ◀▶ **ACCEL ENERGY CANADA LTD/ PENGROWTH ENERGY CORP.** ◀▶ *Judy Creek, AB*

Responsible for the engineering, procurement and construction support of multiple 3" & 4" FRP high pressure (14,900 kPag) pipelines, and multiple 6" to 12" high pressure (15,200 kPag) steel, thermoplastic-lined water injection pipelines. Projects featured new underground anchors, new stainless steel riser, and design considerations for road, water and other underground service crossings.

## **WATER HUB PIPELINES**

### **SAGUARO RESOURCES LTD.** ◀▶ *Laprise Creek, BC*

Acero was responsible for the engineering (including pipeline sizing), licensing/registration, design, and construction support of five new bidirectional pipelines (approx. 250m) from Saguaro's central facility to a water storage hub facility.



## **WATER INJECTION FACILITY & PIPELINE** ◀▶ **PENGROWTH ENERGY CORP.** ◀▶ *Judy Creek, AB*

Acero was responsible for the detailed engineering, design, procurement, regulatory support and construction management of a water injection facility and pipeline in Judy Creek, Alberta. The project featured the installation of two salt water injection pipelines, facility piping, including pipeline tie-ins (as well as design considerations for future tie-ins), horizontal filter selection, pump design, line pipe design and selection.

## **BOOSTER PUMP INSTALLATION**

### **PENGROWTH ENERGY CORP.** ◀▶ *Judy Creek, AB*

Acero was responsible for the detailed engineering, design, procurement of main equipment and construction support of a pump station in central Alberta. The project featured two 750 HP pumps and housings to provide water injection capacity of 16,000 m<sup>3</sup>/d at 14,900 kPag.

## **PARKLAND WATER INJECTION**

### **CANLIN ENERGY CORP.** ◀▶ *Fort St. John, BC*

Acero was responsible for the detailed design and procurement for a water disposal facility at the Parkland Gas Plant, capable of handling 300 m<sup>3</sup>/d, with the ability to expand to 600 m<sup>3</sup>/d in the future. A new injection pump skid, condensate tank and pipeline will be installed as part of the project.



## **JENNER SKUD** ◀▶ **PENGROWTH ENERGY CORP.** ◀▶ *Southern AB*

Acero was responsible for the engineering review, design and procurement to increase the water handling capacity of an existing battery by adding an additional inclined free water knockout unit ("SKUD"), two 75 HP booster pumps with VFDs, and one 1,250 HP HPS horizontal centrifugal water injection pump (3,500 m<sup>3</sup>/d) with VFD.