



## Processing Facilities

### Husky Energy McMullen TCP Air Injection Thermal Oil Recovery (Thermal Conduction) Pilot Plant

The project goal was to ignite and burn the residual oil saturation in a depleted gas cap reservoir thereby conducting heat to the underlying bitumen for heavy oil production.

Surface facilities consisted of a Steam and Air Injection Well Facility and a Production Facility.

Injection Well Facility contains three wells for air and steam injection and six wells for down-hole pressure and temperature monitoring through SCADA.

Steam is generated using an OTSG Steam Generator complete with water treatment. Air is injected into the wells using three (3) trains of screw (booster) and Reciprocating (Injection) compressors with gas engine drives for a total site horse power of 5400 HP.

The production facility consists of four production wells complete with casing gas separators, emulsion aerial

coolers, production & sales tanks, H2S scavenger system, sour water disposal and incinerator.

#### **Our scope of work included:**

- Conceptual design (pre-FEED)
- FEED
- Detailed engineering
- Process investigation scenarios
- Material and energy balances
- Procurement and expediting
- Constructability reviews
- Field construction support
- HAZOP reviews
- DBM preparation
- Capital cost estimate (Appropriation Grade)
- 60% and 90% 3D Model reviews
- Shutdown Key reviews



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Engineering deliverables and construction drawings/documents in the different engineering/design disciplines, including Process, Mechanical, Piping, Instrumentation, Electrical, Control, Civil and Structural, design and 3D model, sourcing of equipment and bulk items, procurement and expediting (in cooperation with Husky Procurement Department) were completed by our team.