



GTherm “EOR Proprietary System:

- Oil, gas and water flows through slotted liner and is pumped to surface by a submersible pump.
- Water is separated from oil.
- Water from the oil producing wells is heated and pumped back into reservoir.
- Gas is transferred to the Green Boiler and burned to create heat. The exhaust from burning the gas is scrubbed and the CO₂ is returned to a heat exchanger/mixer for injecting into the oil reservoir.
- Injected water and CO₂ along with expansion caused by the heat supports reservoir pressure.
- The oil production well is pulsed creating the first pressure wave in the reservoir. The pulsing is created by using a submersible pump and/or with a transducer. The starting low frequency is calculated using the specific geology of the site.
- Once a starting frequency is selected, the frequency should be increased and/or decreased by a Control System until the maximum oil and gas flow is achieved. More than one frequency can be used. The pressure pulses create pressure waves in the oil and gas reservoir.
- One or more of the injection wells is pulsed creating a pressure wave in the reservoir. The pulsing is created with the submersible pump and/or with a transducer. The frequency (frequencies if more than one is used) of the wave should match the frequency of the oil and gas production well. The timing of the creation of the pressure wave is timed by the Control System so that constructive wave interference is achieved. The constructive wave interference increases the amplitude and distance of the wave influence in the reservoir.
- The Control System constantly monitors the pressure wave system and adjusts the frequency (frequencies) and amplitudes of the pressure waves in order to maximize extraction.

Environmental Benefits:

- Eliminate greenhouse gases (GHGs) from flaring and venting with CO₂ sequestration. While fracturing is not required, the GTherm System can enhance the efficiency of fractured wells. The GTherm System allows the volumetric oil in place to flow to the producing wells. The innovative process is implemented modularly per Section (“Section” = 640 acres or one square mile) in ‘greenfield’ and/or depleted PUD fields.

Electricity Generation Option: Clean, Low Cost, Base Load:

- Each oil field Section can produce up to 15 MW of base load electricity while sequestering 100% of the generated CO₂.
- All emissions are sequestered generating tax credits.
- Cost of fuel (gas + crude oil) is kept extremely low by eliminating the cost of transportation, margins and refining.
- Electricity can be generated for all oil field operations.

Financial Benefits:

- Increased profits (higher extraction rates).
- Increased assets (normally stranded oil).
- Increased return on capital: well life produces multiples of the recovered barrels compared to the legacy approaches.
- Increased reservoir life: volumetrically processing the oil reservoir allows for extraction of more oil over a longer time period.
- US IRS Carbon Dioxide Sequestration Credit (IRS Form 8933.)
- Additional revenue potential from electricity sales.

GTherm Business Model Options:

- Acquire the WI of an oil field, implement the GTherm EOR system, extract the proven OIP, and sell the oil.
- Create a joint venture (JV) with an oil field owner, implement the GTherm EOR system, extract the proven OIP, and sell the oil.
- Create a JV with an oil company, implement the GTherm EOR system, increase reserves and production rates, and participate in the oil revenues.
- License the GTherm EOR system to an oil company, increase reserves and production rates, and participate in the oil revenues.

Additional Information:

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