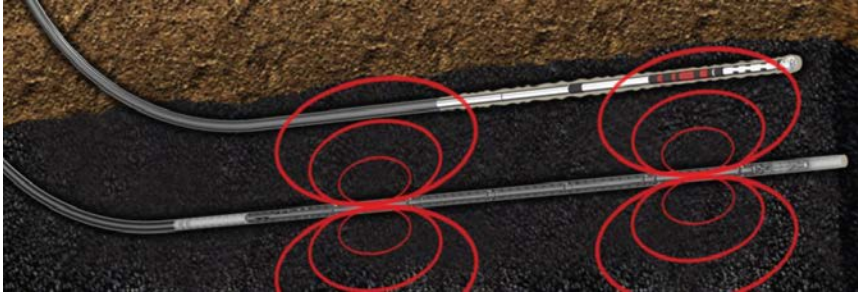


HyperLine™ Motor and TwinWells™ System Place SAGD Wells at Required 16- to 20-ft Distance in 4.7 Days



The Weatherford TwinWells active magnetic ranging system has unique, twin, high-powered solenoids that emit constant magnetic measurements for accurate well placement. The combination of the TwinWells system, HyperLine drilling motor, Inc-Sonde sensor, and EMPulse system has enabled operators in Canada to place 157 SAGD well pairs, 55 SAGD infill wells, and nine vertical ranging wells to date.

Objectives

- Drill a 2,789-ft (850-m) steam-assisted gravity drainage (SAGD) injector wellbore, and maintain the required 16- to 20-ft (5- to 6-m) vertical separation from a previously drilled lower producer wellbore.

Our Approach

- Weatherford deployed the TwinWells active magnetic ranging system, HyperLine™ 250 drilling motor, Inc-Sonde near-bit inclination sensor, and EMPulse™ electromagnetic measurement-while-drilling (MWD) system.
- The TwinWells system delivered precise magnetic measurements to accurately place the wells at the desired proximity to each other.
- The HyperLine 250 drilling motor provided increased torque capabilities to reduce stalling, deliver more consistent bit speeds, and improve steerability and rate of penetration (ROP).
- The Inc-Sonde sensor measured inclination close to the bit to reduce drilling tortuosity and maintain required spacing between ranging shots.
- Drilling was completed with the upper wellbore at the required 16- to 20-ft (5- to 6-m) vertical distance from the lower wellbore.

Value to Client

- Weatherford drilling technologies—including the TwinWells system, HyperLine motor, Inc-Sonde sensor, and EMPulse system—achieved a pacesetter drilling time of 4.7 days.
- The Inc-Sonde near-bit inclination sensor provided measurements that enhanced the drilling process and reduced the survey time across the lateral section.

LOCATION

Canada

WELL TYPE

SAGD, horizontal, oil

FORMATION

McMurray Sand

HOLE SIZE

8-3/4 in. (222 mm)

CASING SIZE AND TYPE

9 5/8-in. (244.5-mm) intermediate string

LINER SIZE AND TYPE

7-in. (177.8-mm) production string

TEMPERATURE

81°F (27°C)

PRESSURE

1,233 psi (8,500 kPa)

DEPTH AND ANGLE

- BHA in: 2,334 ft (711.5 m), 89.89°
- BHA out: 4,732 ft (1,442.3 m), 89.84°

PRODUCTS/SERVICES

- TwinWells active magnetic ranging system
- HyperLine 250 drilling motors
- Inc-Sonde near-bit inclination sensor
- EMPulse MWD system

The Inc-Sonde sensor measures inclination closer to the bit than other MWD tools and measures inclination on-the-fly while sliding and rotating.

