

Early Production Facility Enables Delivering First Oil from Remote Greenfield in 9 Months

After 3 years, fast-track facility produces 10 million barrels of oil from high-H₂S field in Kurdistan

CHALLENGE

Initiate production from greenfield in remote mountainous region with severe weather conditions to generate cash flow and minimize risk.

SOLUTION

Design, construct, and operate self-sufficient early production facility to handle high-H₂S oil with a truck-loading facility for transport to market.

RESULTS

- Delivered first oil in 9 months after contract award.
- Produced 10 million bbl in 3 years to finance field development.
- Maintained 96% operational uptime.
- Enabled operator to achieve 1 million hours of operations without any HSE incidents.
- Increased facility production capacity 40% after 2 years through staged expansion.



Remote mountainous greenfield requires early cash flow from crude sales to minimize risk and finance further development

An operator in a remote mountainous region of Kurdistan needed a 10,000-bbl/d production facility capable of efficient oil and gas separation with effective H₂S removal and a high-volume loading facility to expedite the delivery of processed crude to market via tanker trucks. The field produces 38-API oil with high-H₂S (8-mol%) content. Due to the location, the facility must be self-sufficient and endure harsh weather conditions from 14 to 113 degF [–10 to 45 degC]. The operator elected to minimize financial exposure and associated risks by generating cash flow through early, reliable on-spec sales of produced crude, which would finance and sustain field development.

Early production facility design provides agility, reliability, flexibility, and upgradability

Schlumberger was awarded the contract to design, build, and operate a customized facility under a 3-year lease agreement. To reach initial production quickly, the operator and Schlumberger worked together to engineer and approve an early production facility design best suited to the field's operational specifications. The standard Schlumberger system design—which meets all regulatory requirements and international standards—was easily tailored with components to meet specific needs.

Cooperation on facility design increased operational efficiency

Product-to-market focus paired with Schlumberger's ability to effectively engineer, manufacture, and procure equipment in the region resulted in a timeline from contract award to first production of less than 9 months. The operator delivered first oil in 2015 and has loaded an average of 60 tanker trucks per day with product crude for sale. During the contract period, the operator requested expansion of processing capacity to 14,000 bbl/d. For months, the upgrade was planned cooperatively to ensure maximum construction and facility efficiency. The expansion was completed on time, with only a minimum impact on production over 8.5 days. After the upgrade, the facility has remained in continuous operation since 2017. It has achieved 96% operational uptime, produced 10 million bbl, and reduced H₂S concentration in the oil to less than 10 ppm. Given the operating challenges, the facility was built, commissioned, and operated for 3 years without any incidents, owing to the collaborative efforts and a joint commitment to HSE. The facility was transferred to the operator per the initial contract following the end of the 3-year lease.



Installation and operation of the early production facility in mountainous Kurdistan enabled fast first-oil delivery.