

Case study: Marcellus shale, USA

Centralized dewatering unit reduced costs for marcellus operation

A client in the Marcellus shale needed to reduce the costs associated with drilling fluid and wastewater disposal. Since local environmental regulations prevented discharge or reinjection, the operator contacted Baker Hughes to develop a recycling process that would eliminate the high cost of waste-disposal fees.

The Baker Hughes Fluids Environmental Services team recommended a centralized dewatering process, which uses chemical and mechanical means to remove colloidal solids from the waste water. The installed centralized dewatering unit also allowed the client to recycle the treated water in other operations instead of paying high disposal fees.

The Baker Hughes solution saved the client approximately \$800,000 USD

per month in disposal and water-replacement costs.

Additionally, costs related to cuttings solidification were reduced by \$300,000 USD per month. The additional savings were realized following adjustments to process, equipment, and drying agent.

Over a two-year period, the dewatering unit processed an average of 3,000 bbl of water per day and removed an average of 200 bbl of solids per day. The dewatering unit has also processed 1.5 million bbl of water and removed 97,000 bbl of solids since the start of the project.

This centralized dewatering solution has allowed the client to recycle 100% of its wastewater stream while reducing the need for new fluids to complete frac jobs and other operations.

Challenges

- Operator needed to reduce costs of disposing drilling fluid, waste water, and associated waste
- Operator was experiencing high water consumption due to the multiple-stage frac jobs on the wells
- High costs related to hauling and waste disposal fees

Results

- Centralized dewatering process implemented a recycling method using chemical and mechanical means to remove colloidal solids from waste water
- Baker Hughes personnel monitored process 24 hrs a day
- Installed four dewatering units processing 3,000 bbl of waste water per day
- Removed 200 bbl of solids per day using only two of the units
- Modular system allowed for a wide range of fluid processing capacities environmental

