

DEWATERING A SALT CAVERN USING A SUBMERSIBLE PUMP

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ABSTRACT

Enterprise Operating Products LLC (Enterprise) operates the Petal Gas Storage facility that consists of four natural gas storage caverns in salt in the Petal salt dome located in north-central Forrest County, Mississippi. In 2007 and 2008, Enterprise converted one of these underground storage caverns, Petal Cavern No. 10, from an LPG storage cavern to natural gas storage cavern.

Part of the conversion process involved the dewatering of the cavern to a desired depth of approximately 3,745 feet. An engineering study determined that conventional dewatering would leave the cavern only partially dewatered. To completely dewater the cavern, an electrical submersible centrifugal multistage pump was used.

The cavern dewatering began on August 23, 2007, and dewatering ended on January 23, 2008. The cavern was dewatered to the desired depth of 3,745 feet and a storage volume of 4,350,655 barrels.

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