

Solution Mining Research Institute Fall 2013 Technical Conference
Avignon, France, 30 September – 1 October 2013

Napoleonville Salt Dome Cavern Collapse: Drilling a Re-entry into the Failed Oxy-Geismar No. 3

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Abstract

On August 3rd, 2012 a sinkhole formed just to the northwest of the plugged and abandoned Oxy Geismar No. 3 cavern. Within a week the Louisiana Department of Natural Resources issued an emergency directive ordering Texas Brine LLC to re-enter the suspected failed cavern. Once the order was issued an aggressive schedule was developed that included permitting a well location, building location, finding a rig, engineering the well, and finally drilling toward a target with many unknowns. These unknowns included does the cavern, as it was pre-plugging and abandoning, still exist, where did the cavern fail if it failed, what was the pressure in the cavern, and is the target (top of the cavern) still there. This paper looks at the project timeline, engineering decisions, and what was found when the cavern was re-entered.

Key words: Abandonment, Cavern Mapping, Cavern Plugging and Abandonment, Drilling, Lateral Drilling, Sinkhole, Sonar, Subsidence, Well Design, Drilling and Completion, Louisiana

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