



Fact Sheet and Statement of Basis

*Modification of Class III Solution Mining
Underground Injection Control (UIC)
Permit – UTU-27AP-9232389 Issued to
NGL Supply Terminal Solution Mining, LLC
dba Sawtooth NGL Caverns, LLC (Sawtooth)
October 2017*

I. Purpose of the Fact Sheet

Pursuant to section §124.8 of the Underground Injection Control (UIC) regulations in Title 40 of the Code of Federal Regulations (CFR) which is incorporated by reference in the Utah UIC Administrative Rules (R317-7), the purpose of this fact sheet is to briefly describe the principal facts and considerations that went into preparing the modifications of this permit by the Division of Water Quality (DWQ), the UIC permitting authority. To meet these objectives, this fact sheet contains a description of the permitted facility, a description of the injectate, information on the permitting process, a statement of basis for setting permit conditions and the reasons for specific permit modifications.

II. Brief Description of the Facility

Sawtooth operates a facility in which natural gas liquids (NGL); such as propane, butane, and isobutane; are stored in solution-mined, underground caverns which are created in a tectonically thickened salt body located approximately 9 miles north of Delta, Utah in Millard County. Upon reaching the permitted volume, each cavern will have an open volume of approximately 2.1 million barrels corresponding to an NGL storage capacity of 2 million barrels.

III. Description of Injectate

The storage caverns are created by solution mining with fresh water in a tectonically thickened salt. Product is brought to the surface by displacement with unsaturated to saturated brine stored in surface evaporation ponds.

Location:

Northeastern Millard County
(see map below)

Permittee Contact:

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*Location of Sawtooth NGL
Caverns in Millard County,
Utah*

IV. Information on the Permitting Process

The permit became effective on February 17, 2015 upon its transfer from Magnum NGLs Solution Mining, LLC to NGL Supply Terminal Solution Mining, LLC which is doing business in Utah as Sawtooth NGL Caverns, LLC. After the ownership transfer and after reviewing the conditions of the permit, Sawtooth requested several revisions to those conditions in 2016. The requested revisions pertained to cavern construction requirements which had been previously approved by the DWQ. In preparing the 2016 modification of the permit to incorporate those revisions, DWQ also imposed several additional requirements of its own including more stringent injection zone monitoring during the drilling of the pilot borehole for each cavern; operational control of the facility by adding set back requirements from the area permit boundary which is shared with an adjacent operator; and topographical corrections that were not addressed at the time of the original permit transfer. This 2017 modification of the permit removes the 2016 setback requirements which were transferred to the Utah School and Institutional Trust Lands Administration (SITLA) and imposes additional requirements and conditions for conducting geomechanical analyses of the caverns and cavern field.

V. Statement of Basis for Establishing Permit Conditions

The original basis for issuing the UIC Class III Solution Mining area permit was, and still is, to ensure compliance with the Utah UIC administrative rules for Class III injection well activities, R317-7, and with underground hydrocarbon storage industry standards for the construction of wells and caverns as detailed in the following documents, where applicable:

- Common Practices – Gas Cavern Site Characterization, Design, Construction, Maintenance, and Operation, SMRI Research Report RR2012-03
- Recommended Practice for the Design of Solution-Mined Underground Storage Facilities – API Recommended Practice 1114, API, July 2013
- Recommended Practice on the Operation of Solution-Mined Underground Storage Facilities – API Recommended Practice 1115 (R2012), API, October 2012
- Design and Operation of Solution-mined Salt Caverns Used for Natural Gas Storage – API Recommended Practice 1170, API, July 2015
- Canadian Standard Association, CWA Z341 Series 14 – Storage of hydrocarbons in underground formations, April 2014

Since Utah does not have specific statutes and regulations for the construction and operation of underground hydrocarbon storage caverns, we have combined the authorities under the UIC Program in DWQ and those available in the Division of Oil, Gas and Mining (DOG M) to cover the oversight of these facilities. DWQ and DOGM share regulatory oversight of the construction of the cavern well. DWQ assumes primary oversight during the solution mining of the caverns. At the end of a solution mining phase, DOGM assumes primary authority under a special board order during storage of product. This cycle continues until the cavern has reached its permitted volume under the UIC permit at which time each cavern well system will be released from the Class III UIC permit and regulatory oversight transferred to DOGM for maintenance and operation of the storage facility.

VI. Reasons for Specific Modifications of the Permit

Following are the specific modifications made to the permit relative to the November 2016 permit:

1. Part III (D) (10) – Removal of the setback requirements responsibility for which was transferred to the Utah School and Institutional Trust Lands Administration (SITLA),

2. Part III (D) (10) – Addition of a requirement to amend the Cavern Construction and Development Plan to include a plan for assessing and defining the edge of the salt and determining an adequate standoff if Sawtooth proposes to construct caverns near the flanks of the salt body,
3. Part III (K) – Rewording of the requirements and conditions for performing additional geomechanical analyses of the caverns and cavern field.

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