



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

STATEMENT OF BASIS

FOR

U. S. EPA's UNDERGROUND INJECTION CONTROL (UIC) PROGRAM  
DRAFT CLASS IID PERMIT NUMBER PAS2D561BSOM

FOR

Cottonwood Operating Corporation  
338 Harris Hill Road, Suite 102  
Williamsville, New York 14221

FOR

A project consisting of one Class IID injection well used for the disposal of produced fluids (brine) associated with oil or natural gas production activities located at:

West Shanksville Carl Brant Well No. 1 SWD Facility  
Stonycreek Township  
Somerset County, Pennsylvania

The West Shanksville Salt Water Disposal (SWD) Facility began injecting brine in 1981. In 1986 EPA issued a UIC Permit to Damson Oil Company to continue operation. In 1987 the UIC permit was transferred to Cottonwood Operating Corporation (Cottonwood). The UIC permit was renewed in 1995 and again in 2005. On March 11, 2015, Cottonwood expressed the intent to renew the permit. On March 25 and again on September 4, 2015 EPA requested additional information from Cottonwood. On July 17 and October 28, 2015, Cottonwood submitted updated UIC permit renewal application information. EPA has reviewed this updated information and has found it to be acceptable.

The draft permit specifies conditions for construction, operation, monitoring, reporting, and plugging and abandonment, which are specified so as to prevent the movement of fluids into an Underground Source of Drinking Water. General provisions for EPA UIC permit requirements are found at 40 CFR Parts 144 and 146. In addition, permit conditions specific to this project, are as follows:

**Area of Review:** This is an area surrounding the project or a well which the applicant must, first research, and then develop a program for corrective action to address any wells which penetrate the injection zone and which may provide conduits for fluid migration. Cottonwood has provided documentation on the well population within the Area of Review and has calculated a



zone of endangering influence (ZEI) based on geologic conditions at the site and anticipated operational parameters. EPA has conducted an independent ZEI calculation and concurs with the accuracy of the Cottonwood analysis. After extensive research of local, county and state well records no wells were identified which penetrate the injection zone within this Area of Review. However, if a well is located at a future date, corrective action will be performed on that well in the form of plugging and abandonment of the well.

**Underground Sources of Drinking Water:** USDWs are defined by the UIC regulations as aquifers or portions thereof which contain waters that have 10,000 parts per million or less of Total Dissolved Solids and which are being or *could* be used as a source of drinking water. The permittee has identified the lowermost USDW's depth to be approximately 500 feet below surface elevation. The construction of the injection well meets the regulatory criteria of 40 CFR §146.22 which requires surface casing to be placed to at least 50 feet below the lowermost USDW and cemented back to the surface. The Brant Well No. 1 has surface casing cemented from a depth of 1512 feet to the surface.

**Injection and Confining Zones:** Injection of fluids for disposal is limited by the permit to the Oriskany Sandstone Formation in the perforated intervals between 8825 feet to 9000 feet. This injection zone is separated from the lowermost USDW by an interval of approximately 8325 feet, while the confining zone, immediately adjacent to the injection zone, is comprised of the low permeability Needmore Shale.

**Injection fluid:** The permit limits this injection well to the disposal of produced fluids associated with oil or natural gas production wells owned in whole or in part by Cottonwood with an expected maximum volume of 27,900 barrels per month.

**Maximum Injection Pressure:** The maximum allowable surface injection pressure for the permitted operation will be 3250 psi. The maximum bottom-hole pressure shall not exceed 7880 psi based upon an injection fluid specific gravity of 1.2 (S.G. = 1.2). Pressure will be continuously monitored. This pressure limitation will meet the regulatory criteria of 40 CFR § 146.23(a) and has been calculated using the mid-point perforated interval (8912 feet) in the well, the specific gravity of the injection fluid, and the geologic properties derived from tests of the injection formation of the Brant Well No. 1.

**Monitoring and Reporting Requirements:** The permittee will be responsible for monitoring injection pressure, annular pressure, flow rate and cumulative volume on a continuous basis and reporting this data to EPA on an annual basis. The permittee is also required to conduct a mechanical integrity test (MIT) once every two years. This test will provide EPA with an evaluation of the integrity of the casing and tubing in the well as well as documentation as to the absence of fluid movement into or between USDWs, thus helping to assure that USDWs are protected.

**Plugging and Abandonment:** The facility has submitted a plugging and abandonment plan that will result in an environmentally protective well closure at the time of cessation of operations.

The permittee has also made a demonstration of financial responsibility that indicates adequate resources will be maintained for well closure and should preclude the possibility of abandonment without proper closure.

**Expiration Date:** A final permit, when issued, will be in effect for ten years from the date of permit issuance. This proposed draft permit contains essentially the same conditions as the final permit unless information is supplied to EPA which would warrant alternative conditions or actions on this permit application.

**Additional Information:** Questions, comments and requests for additional information may be directed to the contact person listed below. A public hearing has been tentatively scheduled for Tuesday, January 19, 2016, at 7:00 PM at the Somerset Borough Building/Community Room, 340 West Union Street Somerset, PA 15501. The Administrative Record for this action will remain open for public comment until Tuesday, January 19, 2016.

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