

Statement of Basis
Class V Area Permit Renewal and Modification
UIC Permit Number UTU-03-AP-173E18B
May 2016

Brigham City Corporation
P.O. Box 1005
Brigham City, Utah 84302

Description of Permitted Facility

Brigham City Corporation operates an aquifer recharge and recovery system as an integral part of their public water supply system. The purpose of the recharge and recovery system is to inject an excess of 4 to 6 million gallons per day of high quality water from six (6) Mantua Valley springs during the winter months for subsequent withdrawal during the high use summer months. The springs from which excess water is taken are:

Olsen Spring
West Halling Spring
Peter Jensen Spring
East Halling Spring
Birch Spring
Rock Spring

The spring water is chlorinated and fluoridated prior to injection into the following three (3) production wells:

Cooley Well
Cemetery Well No. 2
Intermountain Well No. 2

Under the area permit, additional injection/recovery wells may be constructed within the area bounded by:

North Boundary: 1200 North Street
South Boundary: 1100 South Street
West Boundary: 800 West Street
East Boundary: 1200 East Street

Site Hydrogeology¹

Precambrian and Cambrian age rocks of the Wasatch Mountains lie east of sedimentary deposits of the Lake Bonneville Basin. The contact between the basement and sedimentary rocks is the Wasatch Fault, which is a normal fault in this segment.

Brigham City lies on a broad alluvial fan of sediments eroded from and deposited at the mountain front. The clastic formation is coarse and angular near the mountain front and becomes finer-grained westward into the basin.

¹ Source: Technical Publication No. 44 of the State of Utah Department of Natural Resources.

Groundwater at and south of Brigham City is found in Pliocene and Pleistocene age alluvial deposits, up to several hundred feet of saturated and highly-permeable unconsolidated basin-fill gravel and sand. Total dissolved solids concentration of the groundwater is low near the mountains but the water becomes more mineralized toward the west and with depth.

Background Water Quality

The water quality from the springs that is injected into the alluvial aquifer is generally a Class I water with an average TDS value of 230 mg/l. Concentrations of dissolved trace metals are very low. Arsenic concentrations are well below the ground water quality standard of 0.05 mg/l, and were not detected in a 2010 water samples.

Basis for Requiring Permit

Under UAC R317-7-5.1 and UAC R317-7-5.5 the Director of the Utah Water Quality Board (Director) is authorized to call for a permit for any Class V injection well that may endanger an underground source of drinking water (USDW). Inasmuch as the source waters have historically shown the presence of coliform bacteria, and the recharge area for the source waters may be subject to spills and to discharge of contaminants (e.g. pesticides, herbicides, fire retardants, etc.), it is the determination of the Director that the Aquifer Storage and Recovery (ASR) project described above should be permitted.

The Utah Underground Injection Control (UIC) Class V permit is based on the following restrictions to ensure compliance with state and federal UIC Program rules and regulations and Utah Ground Water Quality Protection Program rules and regulations.

Monitoring, Testing and Reporting

Injectate Characterization - Each source of injectate will be analyzed for a complete suite of parameters once during the permit cycle. Additionally, any new source for injection will be analyzed for a complete suite of parameters annually for the permit cycle. During each injection event, the source of the injectate will be analyzed for an abbreviated suite of parameters that include those constituents of concern and those constituents that have historically been detected. The monitoring parameter list and monitoring schedule are detailed in Attachment I of the permit.

Permit Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) if new water quality standards are finalized during the life of the permit, if new regulations are adopted by the Utah Water Quality Board, if the Director determines that the list of monitoring parameters or the monitoring schedule should be revised, or if the Director determines that the injection activity is having an adverse impact on public health.