

**Fact Sheet and Statement of Basis**  
**Class V Area Permit Issuance**  
**UIC Permit Number UTU-27-IP-4EDB3CD**  
**February 2022**

**Oak City**  
**30 West Center**  
**PO Box 217**  
**Oak City, Utah 84649**

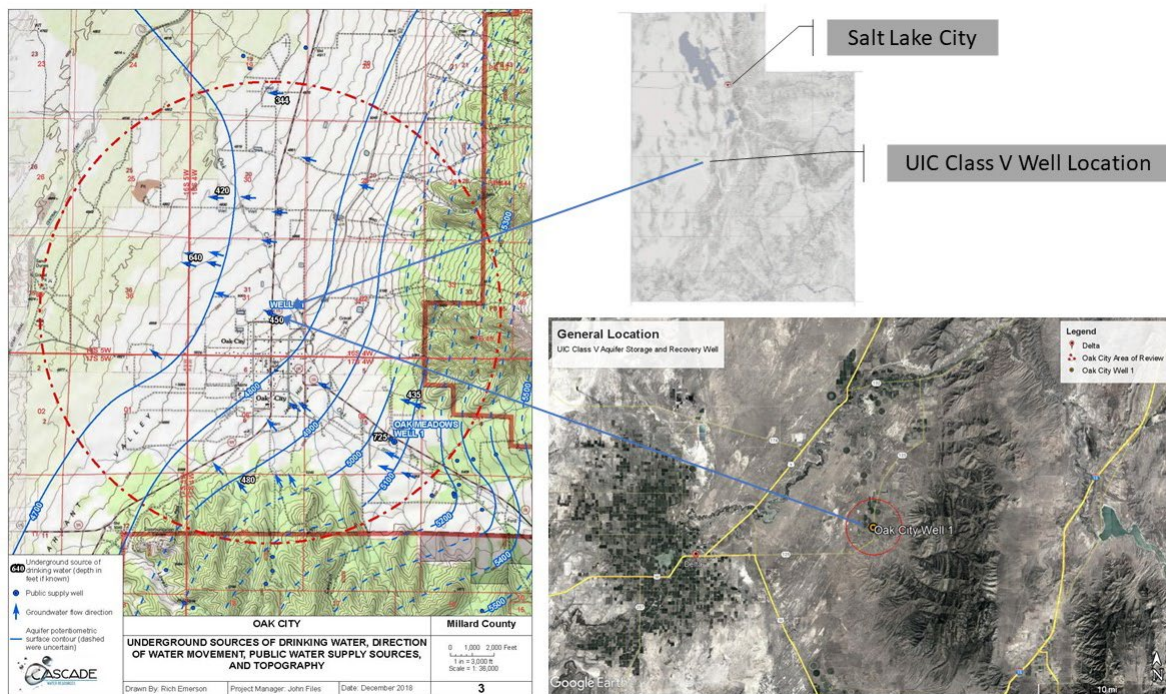


Figure 1. Oak City UIC Class V Aquifer Storage and Recovery Well.

<p><b><u>Location:</u></b>  <b>Millard County, Utah</b></p>	<p><b><u>Operator:</u></b>  <b>Oak City</b></p>
<p><b><u>Facility Contact:</u></b>  <b>Nathan C. Neilson</b>  <b>30 West Center</b>  <b>PO Box 217</b>  <b>Oak City, UT 84649</b>  <b>Oakcity85@gmail.com</b>  <b>Tel. (435) 406-7652</b></p>	<p><b><u>Regulatory Contact:</u></b>  <b>Drummond Earley</b>  <b>Utah Department of Environmental Quality</b>  <b>Division of Water Quality</b>  <b>UIC Program</b>  <b>195 North 1950 West</b>  <b>Salt Lake City, UT 84116</b>  <b><a href="mailto:dearley@utah.gov">dearley@utah.gov</a></b>  <b>Tel. 801.536.4088</b></p>

## **Purpose of the Statement of Basis and Fact Sheet**

The Utah Division of Water Quality (DWQ) has prepared this draft Fact Sheet and Statement of Basis (FSSOB) for the draft Underground Injection Control (UIC) Class V Well (Category UIC Well 5F) Permit (Draft Permit) for Oak City. Pursuant to the Utah UIC administrative rules in Utah Administrative Code R317-7 et. seq. and federal regulations in Title 40 of the Code of Federal Regulations (CFR) incorporated by R317-7-1 the purpose of this FSSOB is to briefly describe the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. To meet these objectives, this FSSOB contains:

- Background information on the permit process and names and telephone numbers of contacts for additional information (listed on the first page of this FSSOB above);
- A description of the draft permit review process and public participation;
- A brief discussion of the facility and process;
- Basis for draft permit conditions.

## **Permit Process**

### **Application and Review Period**

In December of 2021 Oak City submitted a UIC Class V Aquifer Storage and Recovery (ASR) permit application for its municipal Well No. 1. The DWQ completed its review of this application and has completed the provisionally approved Draft Permit.

### **Public Participation**

The Draft Permit was prepared by the DWQ for public notice and public comment. Public comments will be accepted by the DWQ for 30 days following the first day of public notice in the local newspaper that serves the affected community. A hearing may be held by the DWQ if public comments are substantial and the Draft Permit requires revision based on these comments.

## **Description of Permitted Facility**

Oak City proposes an ASR system as an integral part of their public water supply system. The purpose of the recharge and recovery system is to inject excess water from Cold Water Spring and Dry Creek Springs, located east of Oak City, for subsequent withdrawal during the high use summer months or in periods of drought. The spring water is chlorinated prior to injection into the Well No. 1 municipal water supply well.

### **Site Hydrogeology<sup>1</sup> and Water System<sup>2</sup>**

Oak City currently has two sets of springs and a well to supply water to the City. Oak City lies on a broad alluvial fan of Quaternary sediments eroded from and deposited at the western front of the Canyon Mountain range. The clastic formation is relatively thin, coarse and angular near the mountain front and becomes thicker and finer-grained westward into the basin where the sedimentary deposits are up to approximately 1000 feet thick. Groundwater below Oak City is approximately 280 feet deep below the ground surface and the zone saturated and highly-permeable unconsolidated basin-fill gravel and sand is several hundred feet deep with exact thickness depending upon the location.

Cold Water and Dry Creek Springs are located about three miles southeast of the City, at the western front of the Canyon Mountains and are sourced from orographic precipitation and recharge. Cold Water Springs were developed in 1979. Dry Creek Springs were developed in 1983 and in 2017 the contributing springs: First Springs, Mayparty, and the Lower Quaking Aspen Sites were redeveloped. Dry Creek Springs consists of five collection areas and is the larger of the two spring sources. Cold Water Springs consists of one collection area. Most of the year, Cold Water Springs flows around 200 gallons per minute, and Dry Creek Springs flows vary seasonally and stay above 60 gallons per minute. Oak City Well No. 1 currently produces 275-300 gpm on average with the current well pump and the inline booster pump in the well house.

Oak City intends to inject any excess spring water from the Dry Creek and Cold-Water Springs to the aquifer which Well #1 pumps water from. In total, there are approximately 21 million gallons of water that could be injected from the springs per year. This amount of water will be beneficial to the residents of Oak City when spring flows are owing to lack of precipitation, recharge and reduced spring flows. Because of the spring water injected is treated and of drinking water quality there should be no impacts to Underground Sources of Drinking Water. Chemically the water from the well and the springs are very similar with the exception of the well having more iron and manganese present which will be diluted by the injection of more dilute spring water. The pH of the spring and well water is circumneutral, the Langelier indices are approximately zero, and chloride concentrations are below 10 mg/l indicating little potential for scaling corrosion or metal mobilization.

<sup>1</sup>Plume, R. 1996. Hydrogeologic Framework of the Great Basin, USGS Professional Paper 1409-B.

<sup>2</sup>Jones and DeMille Engineering, December 13, 2021. Oak City Aquifer Storage and Recovery Technical Report. Project #: 2012-026.

### **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 300 mg/l. Concentrations of dissolved trace metals and organic contaminants are very low and below drinking water standards.

### **Basis for Requiring Permit**

Under UAC R317-7-5.1 and UAC R317-7-5.5 the Director of the DWQ (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 ASR project and well described above should require a UIC Class V permit.

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.

### **Permit Conditions**

Part I of the permit is the Authorization to Construct and Inject. Part II includes all general permit conditions required in all UIC permit with the focus on Class III permits. Part III contains all the specific permit conditions required of all Class V ASR wells.

### **Standard Operating Procedures Plan**

Oak City has submitted injection well Operating Plan (Permit Attachment E) that meets the requirements of Part III (E) of this permit. The Plan only includes injection of water via the Oak City Well No. 1.

### **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 Attachments F and G of the permit, respectively.

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