

Utah's Ground Water

Ground Water Importance:

Safe drinking water; water we can drink, cook with, and bathe in; that is what we expect to find when we turn on a water tap. Fortunately, that expectation is a fact for the vast majority of Utah residents. Over 60 percent of residents depend on ground water for public supply. Seventeen of the state's twenty-nine counties are almost entirely dependent on tapping ground water for their household water. In 1995 over 96 billion gallons were withdrawn from underground aquifers which account for approximately 20 percent of the water used. Of the total 390 public water supplies approximately 350 are ground water dependent. Utah has over 1600 wells and springs that serve as public drinking water sources (see ground water maps). Approximately 100,000 residences of the state are served by their own private well or spring. A significant future concern is that the population is projected to increase above U.S. rates and this will put an increased reliance back on ground water. Additionally, ground water appropriations are restricted in more than one-half of the State. Ground water also provides the majority of the base flow to streams in many areas of the state and is essential to watershed ecology.

Where is it?

According to the USGS, Utah has four principal types of aquifers: unconsolidated valley-fill and basin-fill deposits, sandstone, and carbonate rocks. The basin-fill aquifers provide supplemental water supplies to most major cities and to much of the irrigated land. More than 85% of the State's total withdrawal by wells is from the unconsolidated basin-fill aquifers. Less than one percent of the withdrawals are from the sandstone aquifers, but future growth projections predict steady development. These aquifers are also located along some the most populated corridors in the State. The remaining withdrawals are from the carbonate-rock aquifers and from miscellaneous aquifers that are not classified.

How Good is the Water?

According to the USGS, water from basin-fill and valley-fill aquifer generally has less than 1,000 mg/L dissolved solids, is fresh, and suitable for most uses, including public supply. Ground water containing less than 250 mg/L dissolved solids occurs in the recharge zones of the basin-fill and valley-fill aquifers adjacent to the Wasatch Range and other high mountain areas. Slightly saline ground water generally underlies the lowest parts of valleys, where ground water discharges to the Great Salt Lake and areas of western and northwestern Utah. Southern Utah water supply for irrigation and public water supply comes from the sandstone aquifers. Water quality is less than 1,000 mg/L dissolved solids in the recharge areas, but where sandstone is deeply buried the concentration may be larger than 35,000 mg/L. The larger concentrations are presumed to be caused by vertical movement of more saline water from older and younger formations into the sandstone aquifers. The carbonate-rock aquifer is not extensively used, and little is known about it.

