

# MONITORING REPORT SUMMARY

2022

WHITE CEDAR SPRING  
DALLAS PLANTATION, MAINE



MANAGING FOR SUSTAINABILITY

# ABOUT WHITE CEDAR SPRING

White Cedar Spring is located in Dallas Plantation in Franklin County, Maine, within the watershed of the Redington Stream. The spring site drainage basin is approximately 11,200 acres in size and includes the northern slope of Saddleback Mountain. The White Cedar Spring aquifer is a body of permeable sand and gravel that exists beneath the Redington Stream valley. The aquifer and associated sediments - all of which are mapped as significant sand and gravel aquifers by the Maine Geological Survey - are up to 80 feet thick. The valley filled with sand and gravel sediments during the recession of the continental ice sheet that occurred between 11,000 and 13,200 years ago. As the ice sheet melted and receded to the north, active deposition of sediments occurred along the ice margin where meltwater flowed from the glacier. Today, the White Cedar Spring aquifer is comprised of these thick sand and gravel features.

The aquifer deposits that are formed along the east-west valley of Redington Stream exhibit springs, including White Cedar Spring. Rain and snow that fall in the watershed recharge the aquifer and groundwater resource throughout most of the year. This natural cycle of water occurs throughout Maine and includes precipitation, runoff, infiltration to groundwater and evaporation/transpiration, as illustrated in Figure 1.

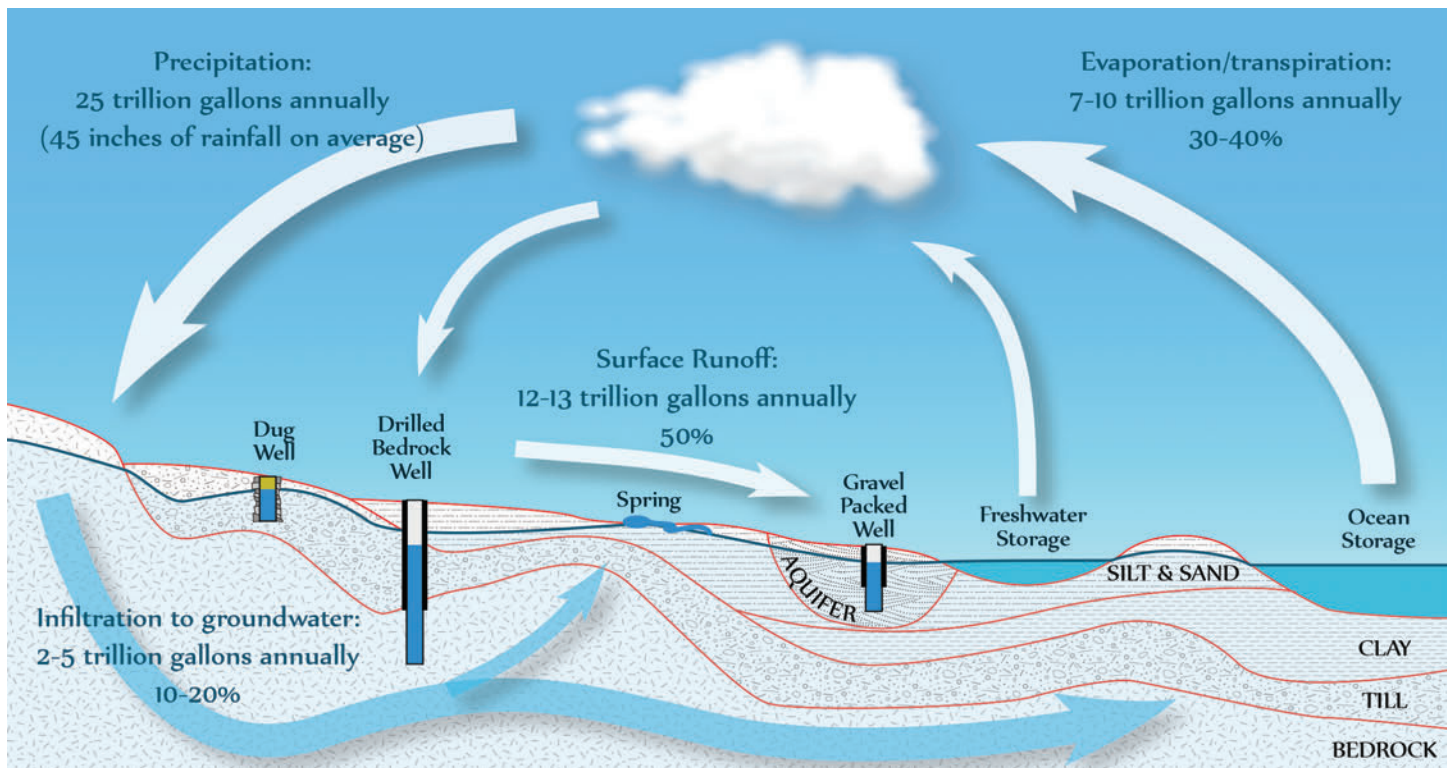


Figure 1: Maine's Water Cycle

## DEFINITION OF A SPRING

A spring is the location where groundwater (water that exists beneath the earth's surface) naturally emerges from the ground. Poland Spring withdraws water from two boreholes located at White Cedar Spring, intercepting a portion of the spring water that would otherwise naturally emerge from the ground. The spring water here eventually flows into Redington Stream, which then flows into the South Branch of the Dead River further downstream.

## WATER WITHDRAWALS AND SUSTAINABILITY

The Maine Land Use Planning Commission (LUPC) regulates spring water withdrawal at White Cedar Spring through the issuance of permits. In addition, Poland Spring has an agreement with the Rangeley Water District (RWD) that requires Poland Spring to operate its boreholes so that there are no unreasonable adverse effects on the quality and quantity of water available at the District's water supply wells. The RWD wells are located along the South Branch approximately two and a half miles to the west of the spring site. In addition to requiring extensive scientific investigations of the site, LUPC established a series of permit conditions in connection with issuing a water extraction permit. These performance standards protect the aquifer and other natural resources for long term sustainability.

### Poland Spring's water withdrawals from White Cedar Spring are regulated by:

- Maine Land Use Planning Commission (LUPC)
- Dept. of Health & Human Services (Maine Drinking Water Program)

Hydrologic analyses were used by regulators to establish an extraction volume from the White Cedar spring sources of 184 million gallons (MG) of water in any given 365-day period. While this may seem like a large number, it is important to note that this amount represents only 7.5 percent of the average annual precipitation falling in the watershed. Since water withdrawals began in July 2005 at White Cedar Spring, the average utilization has been approximately 1 percent of the average annual precipitation falling in the watershed.

## SITE MONITORING

### Water Supply

Independent scientists contracted by Poland Spring regularly and thoroughly monitor the groundwater system, springs, wetlands and surface water bodies located in and around the White Cedar Spring aquifer. Poland Spring continuously monitors extraction rates at the spring water boreholes and monitors stream flow at Redington Stream and the South Branch near the RWD supply wells. These considerable monitoring efforts ensure that Poland Spring's operations are sustainable and do not adversely affect the groundwater, surface water, or natural environments in the valley. These independent scientists submit monthly monitoring data to the RWD and annual reports to the Dallas Plantation Town Office, RWD and LUPC, where they are available to the public for review.

### Wetland Health

Poland Spring also assesses wetland health of nearby wetlands through wetland monitoring. The independent scientists who conduct these assessments submit the monitoring data in the monthly and annual monitoring reports. These reports show that there have been no adverse effects on wetlands.

## RECENT MONITORING RESULTS

The graphs below summarize important measures of the health of the natural groundwater and surface water systems. The graph in Figure 2 depicts water levels observed in the White Cedar Spring aquifer dating back approximately 17 years. The water levels in the aquifer naturally fluctuate by a few feet, depending on the season. Spring and fall rains typically lead to recharge of the aquifer, while growth and uptake of water by plants in the summer usually decreases aquifer water levels, as does the lack of recharge during winter months when the ground is frozen. In Figure 2, water level trends observed at the site are representative of normal seasonal variation that is expected during the year in response to changes in precipitation and temperature. During 2022, the White Cedar Spring area experienced precipitation levels approximately 8 inches above the long-term annual average. Groundwater levels were highest in April in response to spring snowmelt and also in December due to above normal precipitation. Lower levels occurred in January and September which is often observed in the winter and fall seasons. Over the many years of water level monitoring at White Cedar Spring, the data show that Poland Spring's activities have not resulted in adverse impacts on these natural cycles.

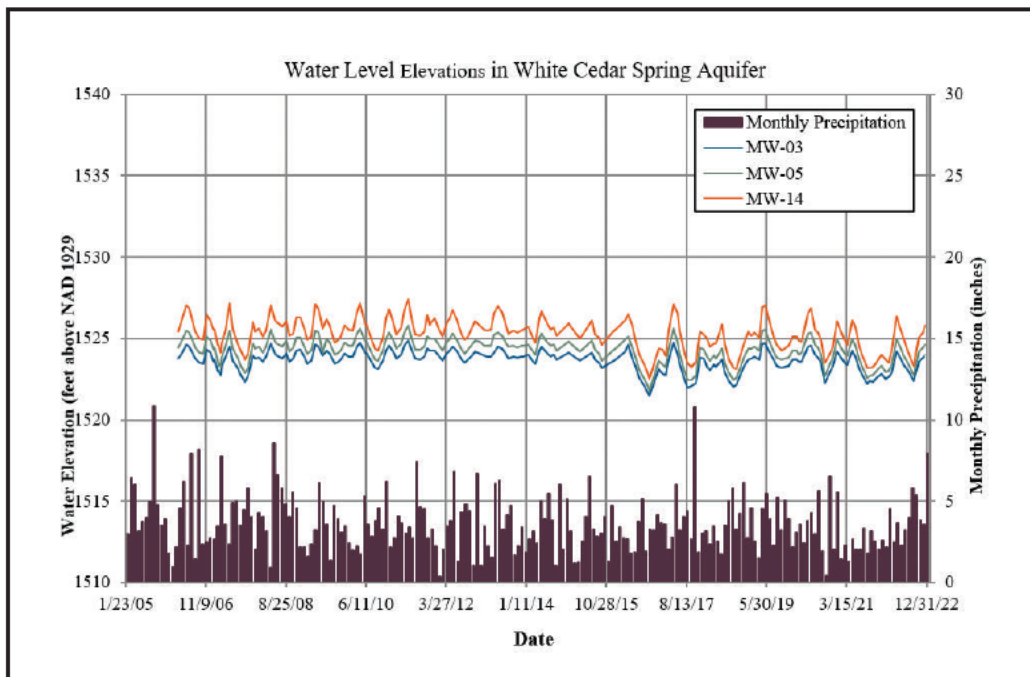
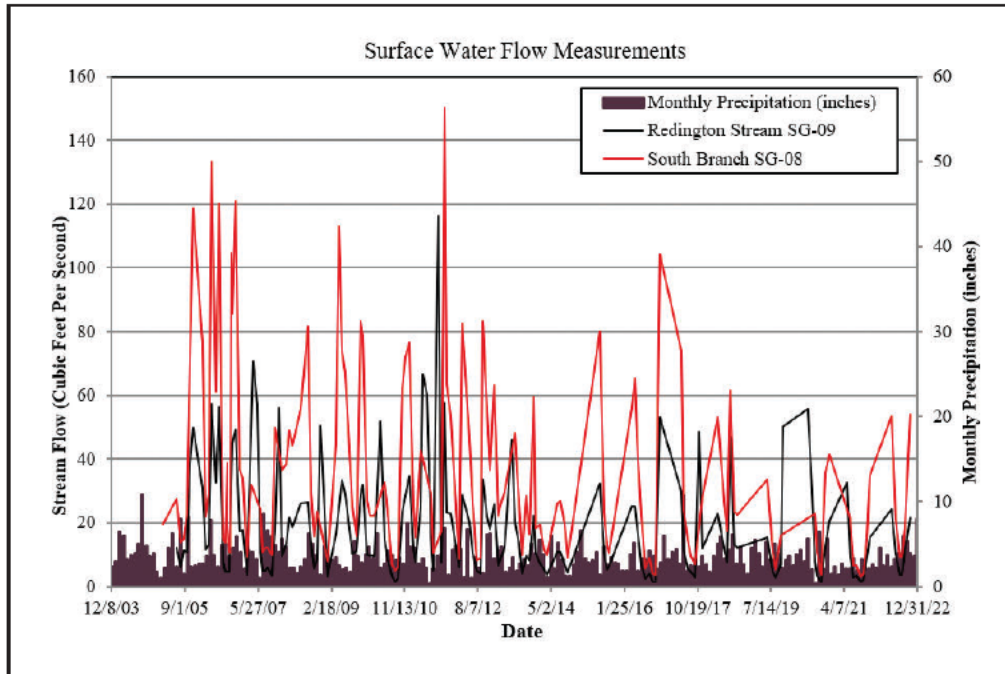


Figure 2: Groundwater Monitoring Data

Surface water bodies respond similarly to the natural hydrologic cycles, as shown in Figure 3. Melting snow and spring rains lead to increased surface water flows. Hotter, drier summer weather, combined with the uptake of moisture by plants, reduces available surface water flows. In 2022 and as in prior years, the highest flows were measured in the spring followed by a natural seasonal reduction during the summer. In the fall of 2022, there was an increase in flows due to above average precipitation and runoff combined with lower temperatures and evapotranspiration. Despite the fluctuating seasonal trends in water levels and stream flow, Poland Spring has complied with its permit conditions since spring water withdrawal for bottling began at White Cedar Spring in 2006.



**Figure 3: Surface Water Monitoring Data**

## FUTURE MONITORING

Poland Spring takes its environmental stewardship responsibilities seriously and is committed to sustainable management of natural resources. Monitoring the groundwater, surface water, habitat and precipitation will continue for as long as Poland Spring withdraws spring water from White Cedar Spring..

## SUMMARY

Water withdrawals by Poland Spring at White Cedar Spring in Dallas Plantation, Maine are overseen by its independent hydrogeologists, the Rangeley Water District and the LUPC. Poland Spring manages for sustainability through proactive monitoring and responsible use. Water withdrawal activity has not resulted in adverse impacts to groundwater, surface water, wetlands, or other natural resources.

**Monthly monitoring results are available to the public at the  
 Dallas Plantation Town Office  
 436 Dallas Hill Road  
 Rangeley, Maine**

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