

**SOURCE WATER ASSESSMENT  
EXECUTIVE SUMMARY  
FOR  
WYDOT Summit RA**

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**PROJECT: 424-001**

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**ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION**

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## **SOURCE WATER ASSESSMENT SUMMARY FOR WYDOT Summit RA**

### **PWS Source Water Assessment Summary**

The Wyoming Department of Transportation Summit Rest Area is a non-community public water system located in Albany County. The system serves 1,000 people through three service connections year-round. The system is supplied by two wells, with produced water piped to a 6,000 gallon storage tank, and then pumped to the Rest Area building where it is disinfected using hypochlorination equipment. The water sources scored medium for combined integrity and sensitivity. The rest area scored high with respect to land uses susceptibility and point source susceptibility. The system also received a high score for transportation corridor susceptibility.

### **Delineation Methods**

This water system is a non-community system that draws water from a fractured igneous formation. Hydrogeologic mapping methods were implemented to estimate the 2-year and 5-year time of travel for the groundwater flow system. The water system was mapped using well information from the State Engineers Office and aquifer parameters were assumed for those of similar type deposits.

Hydrogeologic mapping techniques use surface observations in combination with subsurface geologic and hydrogeologic data to identify aquifer boundaries and areas that may contribute water to the aquifer. These techniques were used when a PWS's source was derived from a spring, fractured bedrock, or from a limestone or dolomite aquifer. Conduit flow aquifers have extremely variable flow patterns and rates, making the calculation of time of travel difficult. In some instances, the entire aquifer may be delineated as the source water area if groundwater flow divides cannot be identified. Aquifer vulnerability mapping techniques were also used as part of the hydrogeologic mapping effort. Hydrogeologic mapping identifies vulnerable areas (faults, fractures, exposed bedrock, etc.) where groundwater within the aquifer may be more susceptible to the rapid infiltration of contaminants released at the ground surface.

### **Groundwater Sources**

The WYDOT Summit Rest Area draws water from two wells, drawing water from the Sherman Granite. Recharge for the wells originates as infiltrating precipitation and surface water from the surrounding drainage basin, and reaches the wells via fractured aquifer flow. Additional information on these wells is included on the attached Source Water Information Sheet. As shown on the enclosed source water area delineation map, contaminant inventory zones 2 and 3 are delineated by hydrogeologic mapping methods. Zone 2 boundaries include the surface divides on the north and west, a hydrologic divide on the south and an elevation that corresponds to well depth on the east. Zone 3 boundaries include a larger drainage and outcrop area. The northern and western boundaries include the I-80 access ramps and surface drainage. Downgradient (south and east) the zone terminates at an unnamed branch of Middle Crow Creek and at an elevation corresponding to well depth.

## **Integrity Summary**

Wyoming Department of Transportation Summit RA uses two wells that are 202 feet and 222 feet deep to supply water. The wells were constructed prior to 1983 when less stringent construction standards were required by the State of Wyoming. However, records show that both wells were properly sealed to protect against surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, Summit Rest Area #1 and #2 wells both received a score of 3 which directly reflects the well completion dates.

## **Water Source Sensitivity Summary**

As shown on the Source Sensitivity Summary Table, the wells received a sensitivity score of 10. The wells received a high score for two reasons. First, the wells are completed in an aquifer that is known to be vulnerable to contamination because of the high velocities associated with conduit flow. Second, the wells scored 5 for chemical sensitivity due to documented detections in groundwater.

## **Water System Susceptibility Rating**

Susceptibility is defined as the potential for a public water supply to draw water contaminated at concentrations that would pose a threat or concern to human health. In general, the WYDOT Summit Rest Area scores high for land use susceptibility because much of the land surrounding the water sources is forested and used for various purposes. Forested areas were included to evaluate the potential risks of increased runoff and water quality problems following forest fires. The overall point source contaminant susceptibility rating is high due to the presence of one underground storage tank within Zone 2 of the water sources. The water sources were assigned a high transportation corridor susceptibility score because their source water zones are in proximity to an interstate highway. Susceptibility ratings for each type of potential contaminant source are summarized on the attached susceptibility tables.

A review of your PWS's routine water analysis results revealed that one or more chemicals that are considered contaminants in drinking water were detected at some time within the last five years. Chemical detections have a large impact on your PWS's sensitivity score because it may indicate that there is a pathway for contaminants to reach the water supply. However, it is likely that these chemicals are present only in small amounts and are not a danger to your health. Some of these chemicals may also occur naturally in water.

For more information about which chemicals were detected, please contact the PWS for a copy of the most recent Consumer Confidence Report or water analysis results. Chemical detections at levels that are a concern to human health are reported on the EPA's website: [http://www.epa.gov/enviro/html/sdwis/sdwis\\_query.html](http://www.epa.gov/enviro/html/sdwis/sdwis_query.html). To see if your PWS has exceeded the federal primary or secondary drinking water standards, just click on the State of Wyoming and then type in the name of your PWS. Consumer Confidence Reports are prepared by the PWS on a yearly basis. The reports should include information about any chemicals found in the water, even those found at very low levels. Please contact Kim Parker at DEQ, 307-777-7781, or WARWS for assistance. You may also contact EPA to find out what contaminants were detected. You may have to fill out a Freedom of Information Act request to obtain the water test

results for your PWS. Please call EPA's Safe Drinking Water Hotline at 1-800-426-4791.

**POINT SUSCEPTIBILITY SUMMARY TABLE  
FOR WYDOT Summit RA  
Point Source Susceptibility Summary**

It may appear from the results of this point source susceptibility summary table that your system has too many PSOCs influencing the final ratings. In some cases, a specific PSOC falls within a specific contaminant inventory zone shared by multiple wells or intakes. When this is the case, that PSOC will be scored for each intake. For example, an underground storage tank may appear within a contaminant inventory zone shared by four different wells. This would cause that single storage tank to be entered into the table four times, or once for each well or intake.

Point Source Type	Low	Medium	High
Underground Tank	N/A	N/A	2

- \* Illustrates the number of PSOCs in a particular rating class for all water sources
- \* N/A - Not Applicable