

# WYOMING WATER ASSESSMENT AND PROTECTION PROGRAM (SWAP)



## SOURCE WATER ASSESSMENT PROGRAM EXECUTIVE SUMMARY

Source Water Assessment Prepared For:  
WYDOT Wagonhound RA

Assessment Completed By:  
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## **SOURCE WATER ASSESSMENT SUMMARY FOR WYDOT Wagonhound RA**

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

The Wyoming Transportation Department (WYDOT) Wagonhound Rest Area water facility is a non-community system that is located about 45 miles west of Laramie on I-80 at Exit 267. It provides water for about 2,000 people per day during the peak summer use period through two service connections. Source water for the facility is obtained from a single well completed in the Hanna Formation. Produced water is piped about 1¼ miles to the Rest Area building where it is disinfected prior to entering the underground storage facility. On demand, water is pumped from this facility to a pressurized holding tank in the building and then to the distribution system.

The Wagonhound Rest Area received a low score for land use susceptibility and a medium transportation corridor susceptibility. The overall land use source contaminant susceptibility rating was rated low due to the lack of contamination sources being present within the delineated zones. WYDOT should be aware that the well is susceptible to contamination that may originate along the transportation corridor.

### **Delineation Methods**

Because the WYDOT rest area is classified as a transient non-community groundwater system and obtains water from a porous sandstone aquifer, Lidstone delineated the source water area for this system using calculated fixed radius (CFR) methods. This method was used to estimate the two and five year time of travel radii for the groundwater system based on data obtained from the Wyoming SEO, the PWS sanitary survey, and the SWAP guidance document.

CFR is an appropriate method to use when groundwater flow to the well, spring, or tunnel can be characterized as porous. This process was implemented for small communities that derive water from deeper, confined aquifers, or for non-community water systems. A factor of safety (FS) of 1.5 was applied to all systems where portions of the data were suspect. At the ground surface, the radius can be used to delineate an area around the well to be used for wellhead protection. The radius is the distance from the well to a point where groundwater (and contaminant) can reach the well over a specified time period. Input data requirements are limited, consisting of the pumping rate, open area (screened interval) of the well, porosity of the aquifer, and the selected time of travel (2 years and 5 years).

### **Groundwater Sources**

The Wagonhound Rest Area obtains its source water from one well that is completed in the Hanna Formation to a depth of 195 feet. Recharge to the Hanna Formation occurs through the direct infiltration of precipitation. Groundwater reaches the well through porous media flow. Additional information on this well is included on the attached well information sheet.

As shown on the enclosed source water area map, the contaminant inventory zones for this well are centered around the wellhead. Zone 2 extends approximately 458 feet radially from the wellhead, while Zone 3 extends approximately 724 feet.

## **Integrity Summary**

The WYDOT Wagonhound Rest Area uses one well. The well was constructed after 1993, when stringent construction standards were required by the State of Wyoming. As shown on the Integrity Summary Table, the well received a low score of 1 due to the well completion date.

## **Water Source Sensitivity Summary**

The WYDOT Wagonhound Rest Area obtains source water for the facility from a single well completed in the unconfined Hanna Formation. As shown on the Source Sensitivity Summary Table, the well received a sensitivity score of 7. The well received this sensitivity score for two reasons. First, the well draws water from an unconfined aquifer that is known to be relatively less sensitive to contamination. The second reason is that laboratory analysis of water samples from the facility has detected the presence of a chemical contaminant, total coliform, in the water system detections in the groundwater. This contaminant was generally detected at concentrations below the EPA's maximum contaminant levels.

## **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. The rest area scored low for land use susceptibility due to the lack of contaminant sources within the delineated zones. An interstate highway runs through Zones 2 and 3. The well was assigned a medium susceptibility for Zone 2 and low susceptibility for Zone 3 for the transportation corridor contaminants. 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 Wagonhound 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
None Identified	N/A	N/A	N/A

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