

# WYOMING WATER ASSESSMENT AND PROTECTION PROGRAM (SWAP)



## SOURCE WATER ASSESSMENT PROGRAM EXECUTIVE SUMMARY

Source Water Assessment Prepared For:  
Sandy Crossing Enterprises

Assessment Completed By:  
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## **SOURCE WATER ASSESSMENT SUMMARY FOR Sandy Crossing Enterprises**

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

The Sandy Crossing Enterprises water system is classified community groundwater supply, and is located at Farson near the intersection of U.S. Highway 191 and Wyoming Highway 28 about 43 miles north of I-80 and Rock Springs. The system provides water to a resident population of 80 people through 72 service connections year round. The service area is residential with a 54 unit trailer park - 20 active units, a restaurant/bar, a store/offices, a Laundromat, a gas station, and a 20 unit RV park. Source water for this facility is obtained from three wells, two of which are completed in an alluvial aquifer, and one of which is completed in the Wasatch Formation. There is no water storage at this facility so water is pumped to distribution on demand.

The Sandy Crossing Enterprises water system scores low for land use susceptibility. The overall land use susceptibility rating is low due to the lack of contaminant sources within the delineated zones. Sandy Crossing Enterprises should also be aware that a state highway and several potential point source contaminants lie within the delineation zones.

### **Delineation Methods**

The Sandy Crossing Enterprises water system is a community water system that obtains its source water from porous sediments and a sandstone formation. WhAEM methods were used to delineate the two and five year source water areas based on information contained in the sanitary survey, the Wyoming SEO, and the Wyoming Water Research Institute reports.

EPA's Wellhead Analytic Element Model or WhAEM method was used for community water systems that derive their sources from alluvial or shallow bedrock aquifers. The WhAEM model uses well and limited hydrogeologic data to estimate time-of-travel capture zones in relatively simple hydrogeologic settings for either confined or unconfined aquifers. For the source water assessment, the WhAEM model was used to develop two year and five year groundwater capture zones. Due to this methodology, the delineated source water areas may be larger than the true capture zones for each well. However, use of this method typically results in source water protection areas that can be used to more reliably protect the water supply.

### **Groundwater Sources**

Sandy Crossing Enterprises obtains groundwater for its community supply from three wells that are completed to depths ranging from 60 to 1,030 feet. In addition to a backup well, the primary well obtains groundwater for this system from the alluvial aquifer between the Big Sandy and Little Sandy Rivers. A third well that flows under artesian conditions yields groundwater from the Wasatch Formation. Groundwater flows through these sediments and sandstone beds to the wells through porous media flow. Additional information of each of Sandy Crossing Enterprises three wells is available on the enclosed Well Information Sheet.

As shown on the attached source water area map, contaminant inventory zones for the wells encompass areas immediately adjacent to and upgradient from the wells. Zones 2 and 3 generally

extend northeastward from individual wellheads. Individual differences in the shape and size of the source water areas are due to differences in well pumping rates, aquifer transmissivities, and groundwater flow directions.

### **Integrity Summary**

The Sandy Crossing Enterprises water system is classified community groundwater supply. The Coppes Well #1 was constructed before 1983 when less stringent construction standards were not required by the State of Wyoming. Sandy Crossing #1 (SC-1) and SC-2 wells were completed between 1983 and 1993 when more stringent construction standards were required by the State of Wyoming. As shown on the Integrity Summary Table, the Coppes Well #1 scored 3, primarily due to its well completion date. Sandy Crossing #1 (SC-1) scored a 5, primarily due its completion date, lack of wellhead protection, reported absence of an annular seal, and risk of conveyance structural damage. SC-2 well scored a 4, primarily due to well completion date, wellhead accessibility, and risk of conveyance structure damage.

### **Water Source Sensitivity Summary**

The Sandy Crossing Enterprises water system obtains source water for this facility from three wells, two of which are completed in an alluvial aquifer, and one of which is completed in the Wasatch Formation. As shown on the Source Sensitivity Summary Table, the wells Sandy Crossing #1 (SC-1) and SC-2 received a score of 10. The Coppes Well #1 received a score of 6.

These wells received these varying sensitivity scores for two reasons. The first reason is that source water from Sandy Crossing #1 (SC-1) and SC-2 is obtained from a shallow well that is completed in alluvium. The Coppes Well #1 received a lower score because this well obtains water from a confined aquifer which is known to be relatively insensitive to contamination. The second reason is that laboratory analysis of water from the wells within the last five years detected a few contaminants that are listed on EPA's primary and secondary drinking water standards. These include beryllium, sulfate, fluoride, and nitrate among others. Despite detection, these contaminants were 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 Sandy Crossing Enterprises water system scores low for land use susceptibility. The overall land use susceptibility rating is low due to the lack of contamination sources within the delineated zones. The presence of underground storage tanks within Zone 3 resulted in a medium point source susceptibility for the wells. Because a state highway runs through Zones 2 and 3, the wells were assigned a high susceptibility 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 Sandy Crossing Enterprises  
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	6	N/A

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