

WYOMING WATER ASSESSMENT AND PROTECTION PROGRAM (SWAP)



SOURCE WATER ASSESSMENT PROGRAM EXECUTIVE SUMMARY

Source Water Assessment Prepared For:
First Fike Subdivision

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SOURCE WATER ASSESSMENT SUMMARY FOR First Fike Subdivision

PWS Source Water Assessment Summary

The First Fike Subdivision water system is classified as a community groundwater supply. This small-unincorporated subdivision is located adjacent to Riverton's northern city limit. The PWS serves a population of 150 in 55 single-family residences. Source water from the Wind River Formation is pumped to the subdivision on demand, and no treatment or storage is provided.

The First Fike Subdivision water system scores high for land use susceptibility because much of the land surrounding the water sources is urban or irrigated agriculture. The overall point source contaminant susceptibility rating is low due to the lack of contamination sources being present within the delineated zones.

Delineation Methods

The First Fike Subdivision is a community water system that obtains its source water from a porous sandstone formation. WhAEM methods were used to delineate the two and five year source water areas based on information obtained from the Wyoming SEO, the sanitary survey, and a Wyoming Water Development Commission report completed for the City of Riverton.

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 data 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

The Subdivision obtains groundwater for its community supply from one well that is completed to a depth of 340 feet. This well obtains water from sufficiently saturated sandstone beds of the Wind River Formation. Recharge to the Wind River Formation occurs through the direct infiltration of precipitation on outcrops. Groundwater flows through these sandstone beds to the well under confined artesian conditions through porous media. Additional information on this well is available on the enclosed Well Information Sheet.

As shown on the attached source water area map, contaminant inventory zones for the well encompass an area immediately adjacent to and west of the well. The shape and size of Zones 2 and 3 reflect hydrogeologic conditions with respect to well pumping rates, aquifer transmissivities, and groundwater flow directions.

Integrity Summary

The First Fike Subdivision uses groundwater from one well to supply water to its system. The well, First Fike #1, was constructed prior to 1983, when less stringent construction standards were required by the State of Wyoming. Available records indicate that the well was properly sealed to protect against surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, the well received an integrity score of 3, which is a direct reflection of the well completion date.

Water Source Sensitivity Summary

The First Fike Subdivision obtains its source water from one well that is completed in a confined aquifer. As shown on the Source Sensitivity Summary Table, the well received a sensitivity score of 6.

This well received an intermediate sensitivity score for two reasons. The first reason is that the well is completed in the confined Wind River Aquifer which is relatively insensitive to contamination. The second reason is that laboratory analysis of water samples from the subdivision within the last five years detected several contaminants that are listed on the EPA's primary and secondary drinking water standards. These included nitrate and fluoride 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 First Fike Subdivision water system scores high for land use susceptibility because much of the land surrounding the water sources is urban or irrigated agriculture. The overall point source contaminant susceptibility rating is low due to the lack of contamination sources within the delineated zones. 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. 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 First Fike Subdivision
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