SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
Wheatland

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PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

1252 Commerce Drive, Laramie, WY 82070

SOURCE WATER ASSESSMENT SUMMARY
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PWS Source Water Assessment Summary

Wheatland is a community public water system located in Platte County and serves approximately 3271 people through 1700 service connections year-round. The system is supplied by seven wells that draw from the Arikaree and White River formations. Facilities include two concrete settling basins, two steel storage tanks and the interconnecting transmission system. Disinfection is applied at the settling basins. The water sources were assigned a rating of medium with respect to the combined integrity and source sensitivity. Wheatland scored high for land use susceptibility, high for point source contaminant susceptibility, and high for transportation corridor contaminant susceptibility.

Delineation Methods

This water system is a community system that draws water from porous sedimentary deposits. Groundwater modeling methods were implemented to estimate the 2-year and 5-year time of travel capture zones for the groundwater flow system. The model used well information from the SEO database and aquifer parameters were assumed for those of similar type deposits.

U.S. 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

Wheatland draws water from the Arikaree and White River formations. Recharge occurs through precipitation and infiltration reaches the wells through porous media flow. Groundwater flow is generally from south to north. Additional information on these wells is included on the Well Information Sheets. As shown on the enclosed source water area delineation map, contaminant inventory zones 2 and 3 were delineated using WhAEM methods for all seven wells. Zones 2 and 3 represent 2-year and 5-year groundwater travel times, respectively. The capture zones extend south from the seven wellheads.

Integrity Summary

Wheatland uses seven wells, that vary in depth from 450 to 620 feet deep to supply water to the municipal water system. The seven wells were constructed prior to 1983 when less stringent construction standards were required by the State of Wyoming. Records show that the wells were properly sealed to protect against surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, all seven wells received a score of 4 based on their well completion dates, and unknown condition of their annular seals.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the wells received a sensitivity score of 6. The wells received a score of 1 for aquifer sensitivity because they draw water from a confined aquifer through porous media flow. The wells received a score of 5 for chemical sensitivity due to documented chemical detections in the groundwater.

Water System Susceptibility Rating

Susceptibility is defined as the potential for a public water supply to draw contaminated water at concentrations that would pose a threat or concern to human health. In general, Wheatland scores high for land use susceptibility because much of the land surrounding the water sources is urban and irrigated cropland. The overall point source contaminant susceptibility rating is high due to underground tanks, wastewater discharge sites, storage tanks and sol/haz waste sites that are located within zones 2 and 3 of the wells. Three wells were assigned a high transportation corridor susceptibility score because their source water zones are in proximity to railroads. 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 Wheatland

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
Wastewater Discharge	N/A	2	N/A
Underground Tank	N/A	17	16
Storage Tank	N/A	10	10
Sol/Haz Waste Site	N/A	N/A	1

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