

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
YNP Slough Creek CG**

June 30, 2004

PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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PWS Source Water Assessment Summary

The Yellowstone National Park Slough Creek Campground is a non-community groundwater supply system located in Yellowstone National Park approximately 26-miles east of Mammoth Hot Springs on Highway 212. The system's water usage is approximately 200-gallons per day from June 1st to September 30th every year. The system is supplied by two wells, Well #1 and #2, which draw water from undivided surficial deposits. Facilities also include a storage vault with disinfection, hand pumps, and the interconnecting transmission system. The water sources scored medium with respect to the combined integrity and sensitivity ratings. The Yellowstone National Park Slough Creek Campground scored high for land use susceptibility and low for point source susceptibility.

Delineation Methods

This water system is a non-community supply that draws water from porous surficial deposits. Calculated fixed radius (CFR) methods were implemented to estimate the 2-year and 5-year time of travel radii for the groundwater flow system. The CFR was calculated using well information in the Jessen-Case database and aquifer parameters used in the calculation were assumed from those of similar type deposits.

Calculated fixed radius (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 (screened) interval of the well, porosity of the aquifer, and the selected time of travel (2 years and 5 years).

Groundwater Sources

The Yellowstone National Park Slough Creek Campground draws water from undivided surficial deposits along the Slough Creek valley. Recharge to the aquifer comes from Slough Creek, and reaches the wells through porous media flow. Groundwater flow within the surficial deposits is generally from north to south. Additional information on these wells is included on the attached Well Information Sheet. As shown on the enclosed source water area delineation map, contaminant inventory zones 2 and 3 were delineated using CFR methods for both wells. Both wells had a Zone 2 calculated radius of 579 feet and a Zone 3 calculated radius of 916 feet. Slough Creek was included as an additional aquifer recharge buffer zone due to its proximity to the well.

Integrity Summary

Yellowstone National Park Slough Creek Campground uses two shallow wells that is approximately 40 feet deep to supply water to the distribution system. The wells were constructed prior to 1983 when less stringent construction standards were required by the State of Wyoming. However, records show that the wells were all properly sealed to protect from surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, wells #1 and #2 received scores of 4 due to their well completion dates and the wellhead being unprotected.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the wells received a sensitivity score of 10. The wells received the score for two reasons. First, the wells received a score of 5 for aquifer sensitivity because they were shallow wells was completed in an unconfined sedimentary aquifer. Second, 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, the Yellowstone National Park Slough Creek Campground scored high for land use susceptibility for both wells because much of the land surrounding the water sources is forested. 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 for both wells is low due to the lack of contamination sources present within the delineated zones.

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 YNP Slough Creek CG
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