

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

June 30, 2004

PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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SOURCE WATER ASSESSMENT SUMMARY FOR YNP Pebble Creek CG

PWS Source Water Assessment Summary

Yellowstone National Park Pebble Creek Campground is a transient, non-community public water system located in Yellowstone National Park. The system serves 100 people per day in the campground service area through two connections from June 1st to September 30th each year. The system is supplied by two wells that draw water from undivided surficial deposits. Facilities include hand pumps, a chlorination system, pressure tanks, and the interconnecting transmission system. The water sources scored medium with respect to the combined integrity and aquifer sensitivity ratings. The campground scored high with respect to land use susceptibility and low for point source susceptibility.

Delineation Methods

This water system is a non-community system that draws water from porous alluvium. 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 sanitary survey 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 Pebble Creek Campground draws water from the alluvium along tributaries to the Lower Lamar River. Recharge to the alluvial aquifer comes from tributaries to the Lower Lamar River, and reaches the wells through porous media flow. Groundwater flow within the alluvium 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.

Integrity Summary

The Yellowstone National Park Pebble Creek Campground uses two shallow wells, each approximately 40 feet deep, to supply water to the distribution system. The wells were constructed between 1983 and 1993 when more stringent construction standards were required by the State of Wyoming. Records show that the wells were all properly sealed to protect from surface infiltration of potential contaminants but are not protected from flooding and have unrestricted access to the wellheads. As shown on the Integrity Summary Table, the wells received scores of 4.

Water Source Sensitivity Summary

The Yellowstone National Park Pebble Creek Campground uses two wells that draw water from undivided surficial deposits. As shown on the Source Sensitivity Summary Table, the wells received sensitivity scores of 10. The wells received scores of 5 for aquifer sensitivity due to the wells being completed shallow, in undivided surficial deposits. The wells received scores 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 Pebble Creek Campground scores 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 being 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 Pebble 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