# WYOMING WATER ASSESSMENT AND PROTECTION PROGRAM (SWAP)

## SOURCE WATER ASSESSMENT PROGRAM EXECUTIVE SUMMARY

Source Water Assessment Prepared For:
Medicine Bow NF Silver Lake CG

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CRYSTAL - SourceWaterAssessmentSUMMARY.rpt

**SOURCE WATER ASSESSMENT SUMMARY**
**FOR Medicine Bow NF Silver Lake CG**

## PWS Source Water Assessment Summary

The Silver Lake Campground well is a transient non-community system providing water to 25 people. Source water for the facility is obtained from a well that is completed in metasedimentary rocks. The pump is mounted on a 4'X4' concrete slab that allows waste water to be carried away from the well head. The pump handle is removed in the fall and the well is chlorinated in the spring before the campground opens.

In general, the Silver Lake Campground water source rated high for land use because most of the surrounding area is forested. The overall point source contaminant susceptibility rating is low due to the lack of contamination sources being present within the delineated zones.

## Delineation Methods

Silver Lake Campground is a transient non-community water system that obtains its water supply from fractured metasedimentary bedrock. Hydrogeologic mapping techniques were consequently used to identify the source water area for the well.

Hydrogeologic mapping techniques use surface observations in combination with subsurface geologic and hydrogeologic data to identify aquifer boundaries and areas that may contribute water to the aquifer. Mapping techniques were used when a PWS's source was derived from a spring, fractured bedrock, or from a limestone or dolomite aquifer. Conduit flow aquifers have extremely variable flow patterns and rates, making the calculation of time of travel difficult. In some instances, the entire aquifer may be delineated as the source water area if groundwater flow divides cannot be identified. Aquifer vulnerability mapping techniques were also used as part of the hydrogeologic mapping effort. Hydrogeologic mapping to identifies vulnerable areas (faults, fractures, exposed bedrock, etc.) where groundwater within the aquifer may be more susceptible to the rapid infiltration of contaminants released at the ground surface.

## Groundwater Sources

Silver Lake's Campground well is located northwest of Silver Lake. The well is approximately 95 feet deep and draws water from the Libby Creek Group quartzite via fractured aquifer flow. The well is recharged by precipitation and surface water infiltration, including water from Silver Lake. Additional information on this well is included on the enclosed Well Information Sheet.

As shown on the attached source water area map, contaminant inventory zones were developed to encompass those areas most likely to contribute water to the Silver Lake Campground well. Zones 2 and 3 were combined and encompass the entire surface water drainage feeding Silver Lake.

## Integrity Summary

The Medicine Bow National Forest Silver Lake Campground uses one well to supply water to its system. The well, Silver Lake Campground #2, was constructed before 1983, when more stringent construction standards were not required by the State of Wyoming. Records also 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 a low score of 4. This score reflects the wells completion date and no presence of an annular seal.

## Water Source Sensitivity Summary

The Silver Lake Campground obtains water from the Libby Creek Group which is known to have fracture flow characteristics. As shown on the Source Sensitivity Summary Table, the well received a sensitivity score of 10.

This well received the maximum sensitivity score for two reasons. The first reason is that groundwater is obtained from the Libby Creek Group which generally allows water to flow to wells at variable rates through interconnected fractures. The second reason is that laboratory analysis of water samples from the campground within the last five years detected a few contaminants that are listed on EPA's primary and secondary drinking water standards. These include total coliform and nitrate. 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. In general, Silver Lake Campground scores high for land use susceptibility because most of the surrounding area consists of forested area. The overall point source contaminant susceptibility rating is low due to the lack of contamination sources being present 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 Medicine Bow NF Silver Lake 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