United States Department of the Interior

NATIONAL PARK SERVICE
Mississippi National River and Recreation Area
111 E. Kellogg Blvd., Ste 105
St. Paul, Minnesota 55101-1256

IN REPLY REFER TO:

Coldwater Spring Water Quality

Based on previous water quality tests and the nature of an open unprotected water source, the National Park Service (NPS) recommends not drinking water from Coldwater Spring. No future testing is planned and no signage will be posted.

Is the water at Coldwater Spring potable/drinkable?

Water from Coldwater Spring is not safe to drink. Coldwater Spring can be classified as a "Gravity Spring" which is "formed by water soaking into the ground until the water encounters a confining layer that will not let the water seep further down (Fig. 1)."

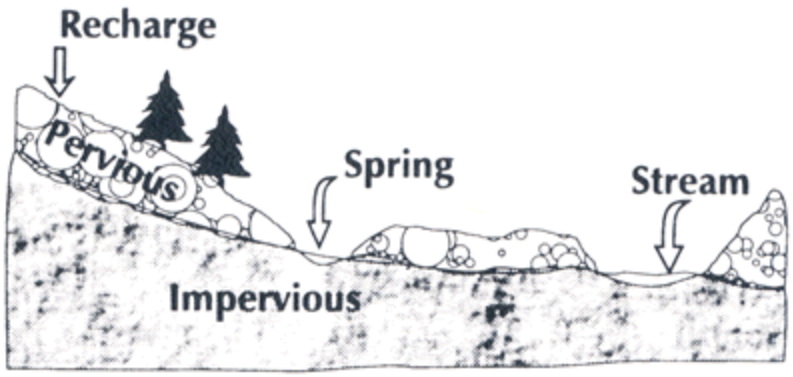

Figure 1
Source: MN Department of Health

The water quality of Coldwater Spring is impacted by many variables. As seen in figure 1, the spring is fed from an area known as the "recharge" area. Contaminated water runoff from the surrounding landscape and land uses enters this area and filters through the pervious rock. The pervious rock in this case is fractures in the limestone bedrock that do not act as an effective filter or remove all of the contaminants. Water runoff and seepage also enters the spring directly due to the deterioration of the structures. These sources can be entirely unfiltered and potentially carry harmful bacteria and chemicals. Since the spring is an open unprotected structure, all animal and human interactions also represent potential sources of contamination.

2005 Coldwater Spring Water Quality Assessment

In 2005, the Minnesota Department of Health conducted an on-site water quality assessment of the Coldwater Spring water supply. The assessment noted that "the spring and reservoir were open and unprotected subjecting the water to environmental contamination from the immediate surroundings, **compromising the integrity of the water**." Water samples were taken and the test results were "positive for bacteriological contamination of total coliform indicating organisms but absent of E. Coli… Therefore the water supply would be deemed as of ***unsatisfactory sanitary quality*** and ***unfit for human consumption***." Coliform bacteria indicate the possible presence of disease-causing organisms.

MN Dept of Health has Halted Testing of Springs

According to the Minnesota Department of Health, "periodic testing of springs for bacteria and nitrate has been proven to be generally ineffective in assuring a sanitary water supply because of rapid fluctuations in water quality and because many other possible contaminants may be present in spring water." The Minnesota Department of Health (MDH) routinely sampled springs for coliform bacteria and nitrate-nitrogen in the 1960's and 1970's but has since stopped due to results indicating that 85 to 90 percent of the sampled springs were contaminated with coliform bacteria or nitrate at one or more times.

For more information on water quality of springs:
http://www.health.state.mn.us/divs/eh/wells/waterquality/springs.html

For a copy of the 2005 Minnesota Department of Health Coldwater Spring Report:
http://www.nps.gov/miss/parkmgmt/upload/MDHColdwater.pdf