

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
Dry Fork Coal Co**

June 30, 2004

PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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SOURCE WATER ASSESSMENT SUMMARY FOR Dry Fork Coal Co

PWS Source Water Assessment Summary

The Dry Fork Coal Company is non-transient, non-community groundwater supply system located in Campbell County. The system serves 11 people per day through 2 service connections. Facilities include one well that draws water from the Fort Union formation, one steel raw water tank, a water treatment/facility for reverse osmosis filtration and ultraviolet radiation disinfection, and the interconnecting transmission lines. The water source scored medium with respect to the combined integrity and sensitivity ratings. The Dry Fork Coal Company scored low for land use susceptibility and transportation corridor susceptibility, and medium for point source susceptibility.

Delineation Methods

This water system is a non-transient non-community supply that draws water from a porous sedimentary formation. 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 SEO database, and aquifer parameters used in the calculation were similar to those reported by the Water Resources Research Institute Study of groundwater in the Powder River Basin.

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 Dry Fork Coal Company draws water from the sedimentary units within the Fort Union Formation. Recharge to the aquifer occurs in the outcrops of the Fort Union Formation through porous media flow and flows under artesian conditions generally from east to west. Additional information on this well 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. Zone 2 had a calculated radius of 1,028 feet. Zone 3 had a calculated radius of 1,625 feet.

Integrity Summary

Dry Fork Coal Company uses one well, approximately 1,814 feet deep, to supply water. The well was constructed between 1983 and 1993 when moderately stringent construction standards were required by the State of Wyoming. Records show that the well was properly sealed to protect from surface infiltration of potential contaminants and flooding around the wellhead. There is however a lack in protection of the vicinity immediately around the wellhead from contaminant sources. Therefore, as shown on the Integrity Summary Table, the DFM 1 well received a score of 3.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the well received a sensitivity score of 6. The well received a score of 1 for aquifer sensitivity because it draws water from a confined aquifer through porous media flow. The well also 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 Dry Fork Coal Company scored low for land use susceptibility. The overall point source contaminant susceptibility rating is medium due to two wastewater discharge points located within Zone 3. The well was assigned a low transportation corridor susceptibility score because a railroad is nearby. 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 Dry Fork Coal Co
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

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