DESCRIPTION OF UNITS

The Fort Peck Indian Reservation includes an area of about 3,280 mi² in parts of Daniels, Golden Valley, McCone, and Toole counties, Montana. The reservation has a semiarid climate that receives an average of about 12.0 in. of precipitation annually on the east side and about 10.0 in. on the west side. Mean annual temperature ranges from about 46°F on the west side to about 53°F on the east side. The period of open water in streams, lakes, and ponds is about 2 months, from April to May. The period of snow cover is about 4 months, from December to March. The elevation of the reservation ranges from about 2,200 ft above sea level on the south side to about 4,200 ft on the north side. The topography is generally rolling to rough rangeland (badlands) used for grazing by livestock. The southern part of the reservation is more dissected, with prominent ridges and gullies, and open grasslands. The eastern part of the reservation consists dominantly of gray clay, buff silt, and buff sand that are capped by sandstone ledges. The northern part of the reservation consists dominantly of shale, siltstone, and sandstone that are interbedded with sandstone. This rock sequence is the Hell Creek Formation (Upper Cretaceous), which is a thick sequence of shale, siltstone, and sandstone that is well stratified. The reservoirs are located in northeast Montana.

Water samples were measured for physical properties, such as pH, conductivity, and temperature, and for chemical properties, such as major cations (Ca, Mg, Na, K), major anions (Cl, SO₄, CO₃), and trace elements (Fe, Mn, Al). Representative samples of water collected from wells and springs were analyzed for chemical properties and stable isotopes. In addition, nine representative samples of water collected from wells and springs were analyzed for additional properties. The results of these analyses, along with the results of the geologic reconnaissance, provide a basis for understanding the hydrogeology of the Fort Peck area. The units were compiled, additional wells and springs were inventoried, and the results were mapped.

CONVERSION FACTORS, ABBREVIATED WATER-QUALITY DATA

- 1 mi² = 2.59 square kilometers
- 1 ft = 0.3048 meters
- 1 ft³ = 0.0283 cubic meters
- 1 in. = 2.54 centimeters
- 1 oz = 28.35 grams
- 1 gal = 3.785 liters
- 1°F = 5/9 (°C - 32)
- 1°C = 5/9 (°F - 32)
- 1 mm = 0.40 millimeter
- 1 barley = 1.72 square meter
- 1 acre-foot = 1,233 cubic meters
- 1 ft/sec = 0.3048 meter/sec
- 1 mile/day = 1,760 feet/day
- 1 mile/hour = 1.609 kilometers/hour
- 1 inch/hour = 0.0254 meters/hour
- 1 inch/day = 0.00065 meters/day
- 1 inch/month = 0.00002 meters/month
- 1 mile/month = 0.00001 meters/month
- 1 mile/year = 0.00000 meters/year

RECONNAISSANCE OF GROUND-WATER RESOURCES OF THE FORT PECK INDIAN RESERVATION, NORTHEASTERN MONTANA

By Joanna N. Thanks

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