



## Site Description

### Smith Creek Valley

(updated 2010)

#### Geologic setting:

#### Geothermal features:

**Petersons Mill** ([Map](#)): At least four hot springs are reported over widely separated areas in Smith Creek Valley. The northernmost of these (no. 159) is in NW¼ NW¼ Sec. 36, T20N, R40E at Peterson's Mill (Mount Airy 7.5-minute Quadrangle). Everett and Rush (1964) reported a 29°C well at this location. The hot spring at Peterson's Mill is just down-gradient from a northeast-trending concealed fault in the alluvium (Stewart and Carlson, 1976b).

**Smith Creek Hot Springs** ([Map 1](#), [Map 2](#), [Map 3](#)): Smith Creek Valley Springs, in Sec. 25, 26, T17N, R39E, consist of numerous hot springs that are near boiling (Mariner and others, 1974), although somewhat higher geothermometer temperatures (up to 175°C) were found using 2002 water samples and the Na-K-Ca geothermometer. The springs appear to be associated with recent faults that cut the younger alluvium (Everett and Rush, 1964).

Mariner and others (1974) measured a 86°C spring in Sec. 11, T17N, R39E. No spring is known from that section, and it is likely that springs at the major hot spring area (Sec. 25 and 26) were actually sampled. They reported a trace of travertine, and the estimated thermal reservoir temperature is between 143 and 157°C for various chemical geothermometers. A hot spring is also reported in Sec. 25, T17N, R40E by Waring (1965) – however, no spring is shown on the Iron Point 7.5-minute Quadrangle map, and the location may refer to Smith Creek Valley Springs.

Locations and temperatures of over 40 springs and seeps were measured in August 2002, with temperatures ranging from 44-95.5°C. Many springs appear to experience seasonal fluctuations: a significant change in temperature was noted between June and August 2002 for one high-flow spring, which dropped by ~10 cm and 30°C. Several springs may have been the result of cattle hooves breaking through thin soil surfaces, resulting in small seeps with water levels several centimeters below the surface. These holes appear to have deep feeder channels, with high temperature gradients.



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***Twin Springs:*** Warm springs are also reported about 9.5 km north of Smith Creek Valley Hot Springs in Sec. 27, T18N, R39E by Waring (1965). These springs are called Twin Springs on the Carroll Summit NE 7.5-minute Quadrangle. No other temperature information is available for these springs.

Leasing information: