



1201 Oak Ridge Dr., Suite 250
Ft. Collins, CO 80525

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Larry Martin
Hydrogeologist
970-225-3515

Sol Duc Hot Springs, Olympic National Park

Hydrogeology

Description of individual wells

Three test holes were drilled at Sol Duc in 1979. Three more test holes were constructed in 1981. Approximate locations of the wells are shown on the attached topo map. The locations for wells drilled in 1979 are shown on the attached map from written descriptions in WRD files. These locations do not always match with the township-range locations on the well completion reports. Locations for wells drilled in 1981 are shown on the attached map. The written description and the township-range location match for the wells drilled in 1981. Wells or test holes drilled in 1980 are not shown on the map.

Wells drilled in 1979 were named #1, #2, and #3. Wells drilled in 1981 (by another contractor) were also named #1, #2, and #3. I have incorporated the year with the well number to provide a unique name for each well. Thus, Well #1 drilled in 1979 becomes Well 79-1, Well #2 drilled in 1981 becomes Well 81-2, etc.

Well 79-1 was located on the “east side of the road to the campgrounds, about 200 feet south of the bridge intersection”. The location on the well completion report is the SE¼, SW¼, Sec.29, T29N, R9W, which would place it near the ranger station. It was drilled to 25 feet, encountering shale from 10-25 feet. It was abandoned as a dry hole. The driller’s log for the well shows;

0-3 feet	Boulders and clay, brown
3-10 feet	Silt, gray
10-25 feet	Shale, gray, med-hard

Well 79-2 was located “east of river, south of trailer court”, “about 700 feet above (south) of the bridge”. The location on the well completion report is the SE¼, NW¼, Sec.32, T30, R9W, which would place it on the hillside southwest of the hot springs development. (Assuming that it should be T29N rather than T30N. T30N would place the well at La Poel, on the south shore of Lake Crescent.) The driller’s log for the well shows;

0-2 feet	Gray sand with clay
2-24 feet	Coarse sand and gravel
24-32 feet	Clay, sandy
32-59 feet	Coarse gravel, sand, and cobbles
59-64 feet	Gray shale

The well reportedly produced 40-50 gpm with a temperature of 112°F with much H₂S gas. The well was completed with Johnson well screen from 54-61 feet.

Well 79-3 was located on the “west side of the river, about 240 feet below the bridge”. The location on the well completion report is the NW¼, NW¼, Sec.32, T30N, R9W, which would place it in back (north) of the maintenance shop at the downstream end of the developed area. (Assuming that it should be T29N rather than T30N. T30N would place the well in Lake Crescent, offshore from La Poel.) The driller’s log for the well shows;

0-1 feet	Gray sand and clay
1-13 feet	Gray sandy clay & coarse gravel
13-24 feet	Gray clay
24-49 feet	Fine sand & gravel
49-63 feet	Coarse gravel
63-65 feet	Gray shale, med-hard

The well reportedly produced 12 gpm with a temperature of 121°F. The well was completed with Johnson well screen from 53-60 feet.

Well 81-1 was constructed about a half mile downstream of the hot springs area. The driller’s log for the well shows;

0-1 feet	Top soil & brown clay
1-20 feet	Cobbles and rock mixed with brown clay
20-24 feet	Blue clay & rock
24-41 feet	Bedrock

The well was abandoned as a dry hole.

Well 81-2 was constructed about a half mile upstream of the hot springs area. The driller’s log for the well shows;

0-2 feet	Brown clay
2-6 feet	Cobbles, gravel & brown clay
6-24 feet	Lt brown hardpan
24-59 feet	Brown, semi-compact gravel
59-62 feet	Lt brown hardpan
62-65 feet	Water-bearing gravel

The well was completed with Johnson well screen from 58-65 feet. The well produced 50 gpm. No water temperature was provided.

Well 81-3 was constructed about a half mile upstream of the hot springs area. The driller’s log for the well shows;

0-3½ feet	Reddish brown clay
3½-20 feet	Brown hardpan
20-46½ feet	Compact gravel and clay
46½-49 feet	Brown hardpan
49-52½ feet	Water-bearing gravel
52½-55 feet	Dk brown hardpan and silty clay

The well was completed with Johnson well screen from 49-55 feet. The well produced 15 gpm. No water temperature was provided.

1980 Wells

Well completion reports were found in WRD files for three wells constructed in 1980. There’s not much information regarding the locations and two of the wells were abandoned as dry holes, so their locations are not shown on the map. These wells do not show up in the WA-DOE database.

Well #4 was drilled at the “airport” to a depth of 29 feet on Sept. 10, 1980. The driller’s log for the well shows;

0-5 feet	Boulders and brown clay
5-15 feet	Gray silt
15-29 feet	Gravel, small & medium

The well was abandoned as a dry hole.

Well #5 was drilled at the “airport” to a depth of 48 feet on Sept. 10, 1980. The driller’s log for the well shows;

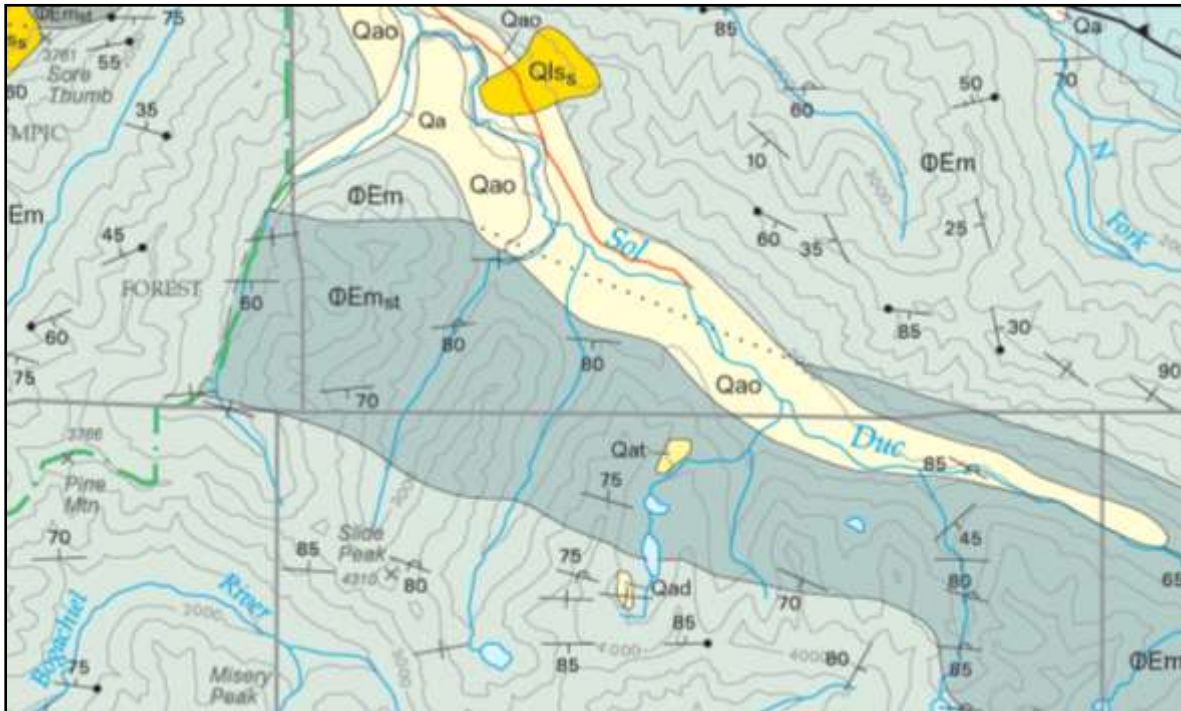
0-8 feet	Boulders and brown clay
8-26 feet	Gray, small & medium
26-48 feet	Gravel, small & gray silt

The well was completed with 6-inch steel casing to a depth of 40 feet. There is no record of perforations or well screen. The well reportedly yielded 20 gpm.

Well #6 was drilled at the “upper campground” to a depth of 120 feet on Oct. 10, 1980. The driller’s log for the well shows;

0-15 feet	Brown clay
15-30 feet	Small gravel & brown silt
30-70 feet	Small gravel
70-120 feet	Brown silt

The well was abandoned as a dry hole.

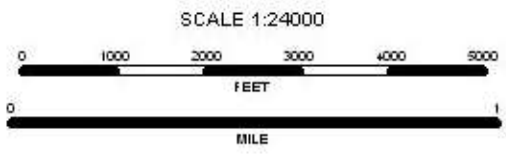
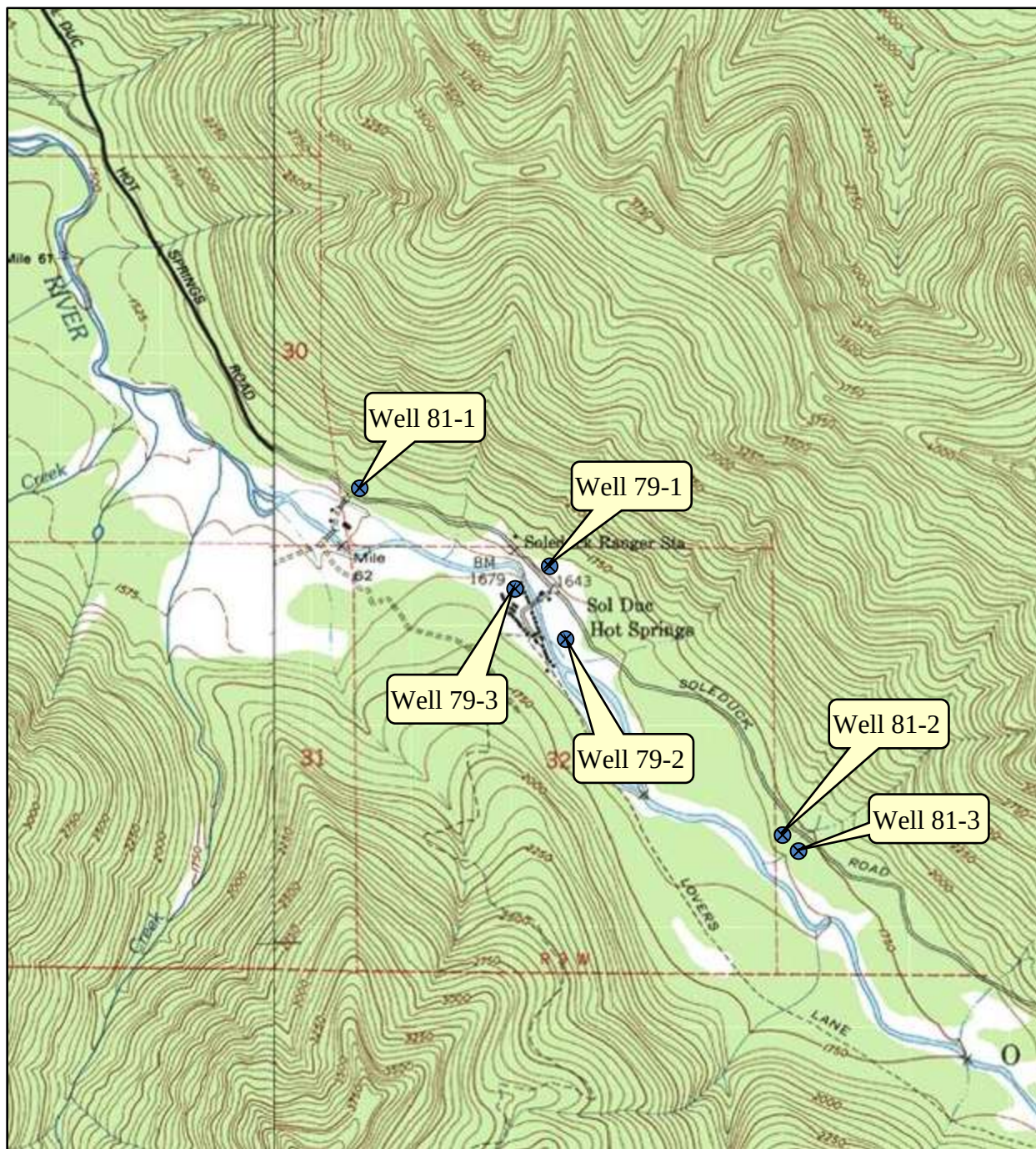


Park boundary shown as a dashed green line.

A portion of the Mt Olympus 1:100,000 geologic map
by Wendy J. Gerstel and William S. Lingley, Jr. (2003).

Description of geologic map units

- Qa – Alluvium: well-sorted gravel, sand, silt, and clay deposited by running water in and along streams.
- Qls_s – Landslide deposits, slump-earthflow: Weathered local bedrock and/or valley fill sediments. Ranges from preserved original stratigraphy to chaotically mixed.
- Qao – Alpine outwash: Cobbles and gravel in a sandy matrix; generally unconsolidated to weakly consolidated; stratified to weakly stratified where deposition was ice-proximal. Derived solely from Olympic Peninsula rock types, distinguishing the unit from continental glacial outwash.
- OEm - Marine sedimentary rocks: Semischist and phyllite with minor finely crystalline schist in the central Olympic Mountains.
- OEmst - Marine thick-bedded sandstone: Thick sequences of semischist and sandstone, generally bedded thicker than 1 m.



**Sol Duc Area,
Olympic National Park**