

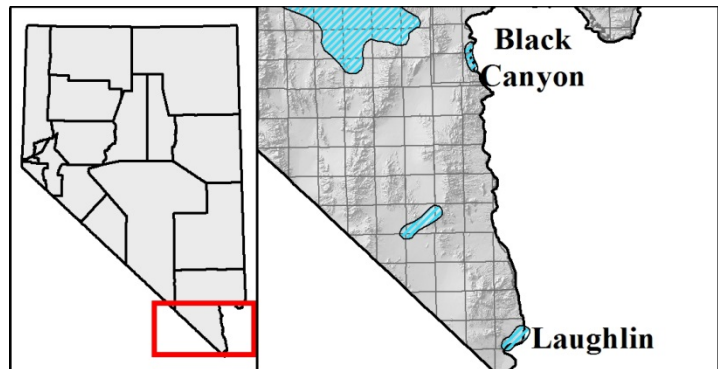
Site Description

Colorado River

(updated 2014)

Geologic setting:

The Colorado River forms the geographic boundary between Nevada and Arizona for 144 miles (Boulder Canyon Operations Office, 2001). The river gorge formed during the Miocene Basin and Range uplift, about 15 million years ago, and parts are thermally anomalous today (e.g., Black Canyon, Cottonwood Valley, Laughlin, and West Lake Mead).



Geothermal features:

Thermal features can be found along the Colorado River at Black Canyon, Cottonwood Valley, and Laughlin. Lake Mead-area anomalies, including west Lake Mead, Valley of Fire, and Virgin River Narrows, are discussed under the separate “Lake Mead” description.

Black Canyon: Black Canyon, a 1,000-2,000’ deep chasm south of the Hoover Dam, is so-named for the black basalt flows in the area. The Black Canyon USGS 7.5’ map indicates five hot springs within 6 miles of the Hoover Dam. These are popular swimming locations for Las Vegas area visitors, though they are not easily accessible. Reported temperatures range from 25.6-62.8°C (Garside and Schilling, 1979), the hottest of these being Goldstrike Hot Springs. Estimated reservoir temperatures range from 90-120°C (McKay, 1981).

Three springs are on the Nevada side of the river in Sec. 29, T22S, R65E and Secs. 5, 8, 21, T23S, R65E. In descending order, south of the Hoover Dam, is (1) an unnamed system 2.5 miles south [Arizona], (2) **Goldstrike Hot Springs / Nevada Hot Springs** in the informally-named Goldstrike Canyon [Nevada], (3) **Boy Scout Hot Springs** [Nevada], (4) **Arizona Hot Springs / Ring Bolt Hot Springs** near White Rock Canyon [Arizona], and (5) an unnamed system half-way between White Rock Canyon and Big Sand Bar [Nevada].

Data collected by the National Water Information Service records two thermal springs near the Hoover Dam gaging station (Sec. 29, 32, T22S, R56E). The springs are not indicated on USGS 7.5’ quadrangles, but David Kreamer, a hydrogeologist at the University of Nevada Las Vegas, confirms a 47°C hot spring at Sauna Cave, a man-made adit at T22S R65E 32 (Kreamer, pers comm., 2011). A 30°C spring is north of the boat launch site, a secured area off-limits to the public.

Cottonwood Valley: One 25.5°C well has been measured in Cottonwood Cove, a river-docking area east of Cottonwood Valley (T28S R65E 24). The reservoir temperature is estimated to be 57.7°C (Ca-K-Na-Mg) and 33.3°C (chalcedony) (Great Basin Groundwater Geochemical Database).

Laughlin: Six warm wells have been measured near Laughlin, along the Colorado River. Four have temperatures in the 20-23°C range. The two warmest – the Sundance Shores Well and Monitor Well 116

Site Description

– have measured temperatures up to 29-30°C, and geothermometers range from $47.2 \pm 5.0^\circ\text{C}$ (Ca-K-Na-Mg) to $45.0 \pm 3.8^\circ\text{C}$ (chalcedony) (Great Basin Groundwater Geochemical Database).

Leasing information:

N/A

Bibliography:

Boulder Canyon Operations Office, Lower Colorado Region, Bureau of Reclamation, 2001, River Mile Index for the Lower Colorado River, <<http://www.usbr.gov/lc/region/pao/rvrmiles.pdf>> Accessed January 3, 2014.

[Garside, L. J., and Schilling, J. H., 1979, Thermal Waters of Nevada: Nevada Bureau of Mines and Geology Bulletin 91, 163 p.](#)

Great Basin Groundwater Geochemical Database, Nevada Bureau of Mines and Geology:
<<http://www.nbmgs.unr.edu/Geothermal/GeochemDatabase.html>>.

[McKay, W.A., 1981, Hydrogeochemical Inventory and Analysis of Thermal Springs in the Black Canyon-Hoover Dam Area, Nevada and Arizona: Geothermal Resources Council Transactions, v. 5, p. 185-187.](#)

U.S. Geological Survey, 2012, National Water Information System: USGS Water Data for the Nation, <<http://waterdata.usgs.gov/nwis/>>.