

June 25, 2002

Information for the Lone Mountain Wells, Big Bend National Park
from Water Resources Division files in Fort Collins, CO

The larger diameter well (6-inch casing) was constructed in October 1967. It was one of 11 test wells constructed under a contract with Boyd & Son Drilling CO. from Las Cruces, NM. Well construction was subcontracted to L.P. Cromer of Yuma, AZ. The well was originally identified as test hole number 10 (TH-10) or number I-50. The Texas State well number is BK-73-47-201.

The well was drilled to a total depth of 600 feet and then plugged back to 445 feet deep. The well penetrated a series of shale and sandstone layers, probably part of the Aguja Formation. The drillers log is:

<u>Feet below ground surface</u>	<u>Rock type</u>
1-45	gravel
45-90	greenish soft shale
90-180	gray shale
180-190	greenish sandstone
190-250	gray shale
250-285	gray sandstone
285-380	gray shale
380-435	gray sandstone
435-600	gray to black, slatey shale

The well was completed by installing 6-inch id casing to a depth of 445 feet with perforations in the following intervals; 28-35, 40-86, 100-126, 138-160, 180-190, 195-210, 225-250, 260-270, 300-315, 335-346, 355-386, 400-405, 415-425, and 435-443 feet.

The well was tested in November 1967 by pumping for 24 hours at 38 gpm, resulting in 2 feet of drawdown. No other details regarding the testing are available.

In late-January to early-February 1970, the USGS constructed an observation well about 62 feet ENE from the first well. The observation well number is BK-73-47-202. The well is 459 feet deep. It was completed with 4-inch casing perforated from 90-110, 164-184, 230-242, 290-305, 330-350, 392-412, and 440-450 feet.

Well 201 was retested in May 1971. It was pumped at 92 gpm for 48 hours resulting in 7 feet of drawdown in the pumped well and 1.6 feet of drawdown in the observation well. A graph of data for that test is attached.

Water quality from the well is good, based on data from one sample in 1967.
Data from that sample are;

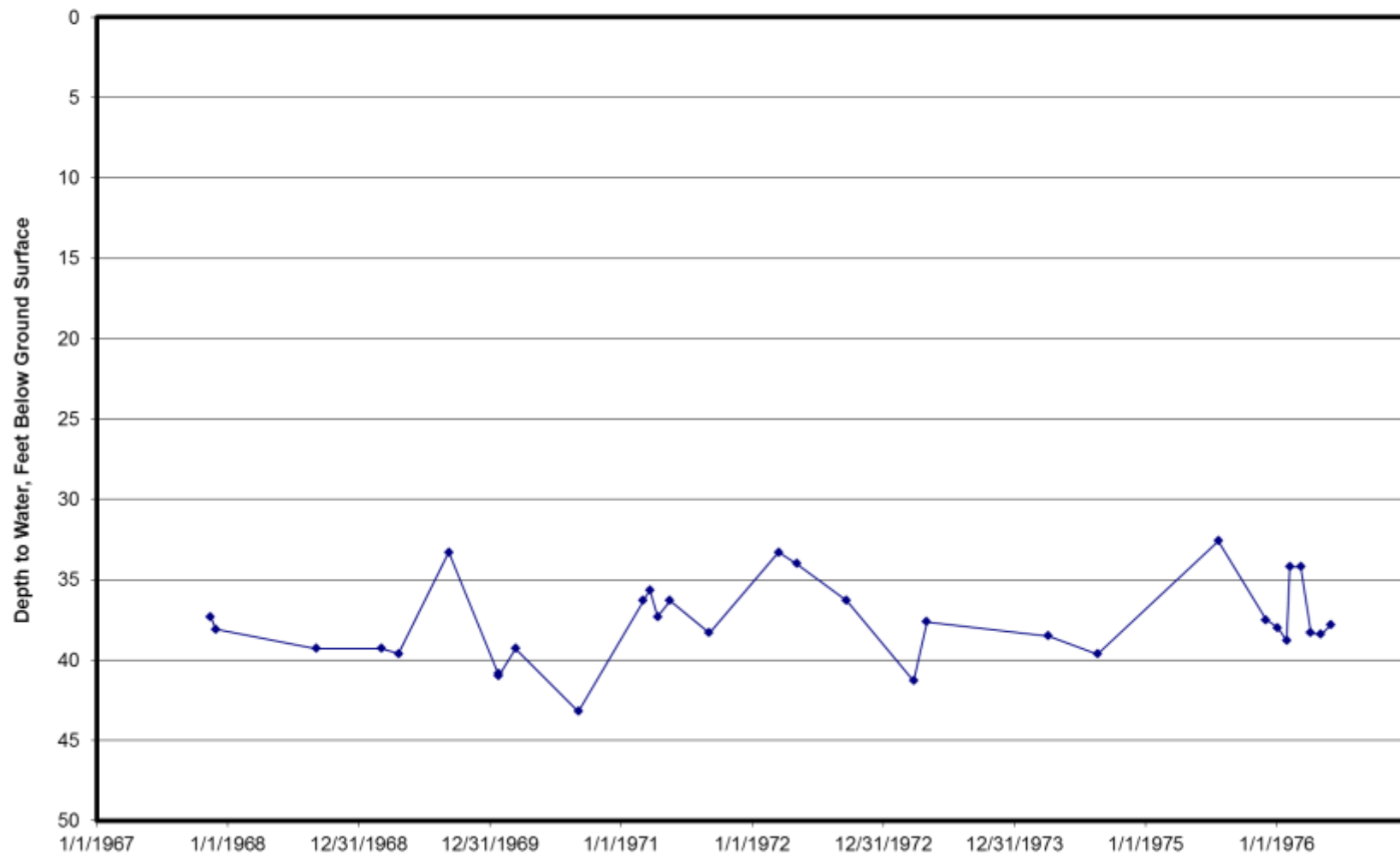
Conductivity	380
pH	7.4
Ca	52 mg/l
Mg	3.6 mg/l
Na	27 mg/l
K	0.5 mg/l
HCO ₃	189 mg/l
CO ₃	0 mg/l
SO ₄	28 mg/l
Cl	8.7 mg/l
F	1.9 mg/l
NO ₃	0.5 mg/l
Fe	0.09 mg/l
Mn	0.03 mg/l
Hardness	145 mg/l

Water level in Well 201 was measured several times between 1967-76, fluctuating from about 35-45 feet below ground surface. A hydrograph of water levels is attached.

From the available information, it appears that a new well, constructed to TNRCC standards for public supply wells, in the Lone Mountain area should be capable of producing 100 gpm (or more) of good quality water. The source of water is from fractured bedrock in the Aguja Formation. A new well should be constructed to about 450 feet deep in the general area of the two existing wells. There are existing roads to the site and the two existing wells could be used as observation/monitoring wells.

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Lone Mountain Well 201
Big Bend National Park



Lone Mountain Well 201
May 1971

