



Little Blue Natural Resources District

100 East 6th #100 • Davenport, NE 68335 • (402) 364-2145

lbnerd@littlebluenrd.org • <https://littlebluenrd.org>

Fall 2020

Fall 2020 water levels show a rise in both Geologic Area 1 and 2, but only by virtue of the eastern half having adequate, or more average rainfall. Most of Adams county, the western portion of the District, was in drought conditions for most of the year, and by all reporting still is.

In Geologic Area 1 the greatest decline was -5.05 feet in a well by Blue Hill, the greatest rise was +6.63 feet in a well by Davenport. There were a few more wells with gains than losses, to achieve that weighted average rise of +0.44 feet. When wells were being measured in the field, you could tell when that line was crossed from blue to yellow heading towards Hastings from Davenport. You had to drop the tape just a little further to catch the water level.

In Geologic Area 2 there was a decline of -1.61 feet in a well by Fairbury, but a significant rise of +6.63 feet in a well near Chester. Most wells were up, but not by that degree, across the area and the weighted average change was +0.81 feet.

Just to show what levels did this summer on either side of that blue to yellow line, there are 2 graphs of water levels from dedicated observation wells. One in Adams County, the other in Thayer. The red lines compare where the water level was on the same date in the fall of 2019 and 2020. The elevation of the water table fell about 4.0 feet in the Adams county well and rose 2.5 feet at the Thayer county site. The graphs are created based on the elevation of the water table and an informational point to note is that the water table slopes about 300 feet in elevation as it stretches from west to east across the District. Dropping from 1800 feet in elevation to the mid 1500's.

Since the district is requiring irrigation reporting and we track spring water levels and rainfall; there are 2 straight line graphs comparing these 3 sets of data. On these graphs the change in the spring water level is on the left-hand side of the graphs, the bottom of the graph on one has the annual rainfall, on the other it is the average annual irrigation usage. The graphs go back to 2000, but in that year reported irrigation usage was only provided on 65,700 acres. In 2019 meter reported irrigation had grown to 671,000 acres. The 11.6 and 13.5 inches of average irrigation were in the years that only 17.2 and 16.6 inches of rainfall were received. The 2.4 inches of irrigation usage was in the year that 43.45 inches of rain fell. The water table seems to stay static at around 30 inches of annual rainfall.

This information covers fall of 2020 water levels, but we would expect to see close to this same rise in both geologic areas in the spring of 2021. The final 2 graphs are the weighted average spring graphs which shows the District was close to controls in both Geologic Areas in 2018 but has shown a significant rise in the water table in 2019 and 2020 and will likely see another rise in 2