

Rose Creek near Fairbury, Nebraska 068840005

LOCATION

Latitude and Longitude

40.066756, -97.170909

Road Log

Located at right bank on downstream side of bridge on U.S. Highway 15 south of Fairbury 4.5 miles.

Nearby Features

Equipment Details

Recording Gage

Gage is a Sutron SatLink 3, installed on April 20, 2022. This unit stores values and transmits on a 15-minute cycle. The SL3 unit is connected to an OTT RLS radar which is mounted on the bridge rail on the downstream side of the bridge. The instruments are housed in a 30"W x 24"D x 72"H stainless steel gage house. A solar panel with a 12-volt wet cell battery is used to power the instruments.

External Gage

Outside gage is a type A wire-weight gage mounted on the downstream side of bridge. Elevation of check bar is 35.94 feet, gage datum levels 04/16/2019. GPS readings were used to obtain elevations during the establishment of this station on 05/18/2017.

Bench Mark and Reference Marks

Original reference marks 1, 2, 3 and Bench Mark 1 were installed when the station was established and they are located on the bridge over Rose Creek on Highway 15 about 4.5 miles south of Fairbury. WWCB now reads 35.95 after levels on 5/10/2022.

RM 1 is a NDOR brass cap located on bridge railing right downstream bridge abutment. Elevation 38.32 feet. Levels 5/10/2022.

RM 2 is a chiseled "X" on bridge deck by the wire weight. Elevation 34.01 feet. Levels 5/10/2022.

RM 3 is a chiseled arrow on west rail of bridge across from the wire weight. Elevation 37.01 feet. Levels 5/10/2022.

BM 1 is a rebar with an aluminum cap located approximately 10 feet south of gage house. Elevation 35.43. Levels 5/10/2022.

Zero gage datum at this bridge has been maintained at 1282.458 feet mean sea level since station was established 05/18/2017. 1320.778 NAVD 88 Levels were run on November 20, 2017 and April 16, 2019.

Hydrology

Drainage Area

276 square miles.

Channel and Control

Low water channel meanders down the designed creek course through the floodplain. The banks are rip rapped directly under the bridge; high channel is mostly earthen embankment and tree lined. The channel is angular coming into the bridge and channel is straight downstream for about one hundred meters. Bed of stream consists of shifting silt and sand with caving banks above and below gage during times of high flow which routinely sediment and cover the muffler. The low banks are covered with general grass and small trees. Channel control will exist at stages above ten feet until peak occurs. Back water occasionally affects the rating on rise depending on the possibility of high water downstream where the confluence with the Little Blue River.

Discharge Measurements

At low stages, wading measurements can be made in the vicinity of the gage. High water measurements are made from the downstream side of the bridge.

Floods

Extremes for Period of Record

Peak discharge 5,310 cubic feet per second June 20, 2018, gage height 24.89 ft.;

Minimum daily discharge 0.93 cubic feet per second December 31, 2017 (ice affected).

Point of Zero Flow

Not obtained in Water Years 2017 -2023.

Winter Flow

Stage-discharge relation may be affected by ice from November to March.

Regulation and Diversions

There is considerable pump withdrawal above the station for irrigation during summer months.

Accuracy

Records are considered good except those for winter period which are poor.

Cooperation

Little Blue Natural Resources district in Davenport, NE.

Establishment and History

Established May 18, 2017, at present site and datum. Department of Natural Resources in cooperation with Little Blue Natural Resources District funded this station. NeDNR instrumentation was used and publication of this station was started at this time.

On November 14, 2017 replaced battery.

On March 19, 2018 replaced Yagi antenna and cord.

On June 18, 2018 replaced muffler with deer hoof orifice.

On October 18th, 2018 the battery was replaced.

On October 30th, 2018 the Waterlog data logger was replaced with (SN# 15G104475).

On September 30th, 2019 the Waterlog bubbler was replaced with (SN# 15G101328).

On May 3rd, 2021 the Amazon bubbler was replaced with OTT RLS Radar.

On April 20 2022 a Sutron SatLink 3 was installed at this site

Revision

Original description by J. Vifquain, 11-17-2017

Revised by J. Hladik 11-08-2018

Revised by S. Figuric 11-28-2018

Revised by J. Vifquain 10-17-2019

Revised by J. Hladik 05-05-2021

Revised by S. Figuric 11-23-2021

Revised by L. Geyer 5-13-2022

Revised by J. Hladik 12/7/2023