

Verdigre Creek near Verdigre, NE. 06465700

LOCATION

Latitude and Longitude

Lat. 42.66, Long 98.04333

Road Log

From the intersection of Nebraska State HWY's 14 and 84 on the east edge of Verdigre, NE; travel 4.5 mi north on Highway 14, then 0.2 mi west on the gravel county road to the gage bridge. The gage house is just off of the right downstream side (northeast side) of bridge.

Nearby Features

The town of Verdigre is 4.5 miles upstream from the gage and the confluence of Verdigre Creek and Niobrara River is 3.5 miles downstream.

Establishment and History

Miscellaneous measurements were made at this site from Nov. 1957 to July 1958. A reference point was established which was the top of the second handrail post from the right upstream corner of the bridge. A chain gage was installed Apr. 18, 1947 at the bridge located on the south side of Verdigre. On Oct. 26, 1949 a stilling well with a continuous recorder was installed. This remained in operation until April 23, 1956. This gage originally had the same station number, but was later changed to 06465685. Present gage established May 1, 2002 by R.A. Drudik and D.E.Hitch. A crest-stage indicator (CSI) was installed on the right downstream wing wall on July 21, 2004.

On Nov. 23, 2010, the Sutron 8200 Data Collection Platform (DCP) (date 8200 installed unknown) was replaced with a Sutron Satlink2 DCP.

On Aug. 9, 2012 the air temperature sensor (date original sensor installed unknown) was replaced with a new sensor, due to previous equipment failure.

On October 15, 2019 the USGS discontinued the operation of Verdigre Creek near Verdigre NE. and Nebraska Department of Natural Resources took over operation of Verdigre Creek near Verdigre NE.

On October 15, 2019 an YSI Products H-522+ data logger with GOES transmitter, an H-223 Goes satellite antenna, a GPS timer, an H-3553-15-D flow bubbler, powered by a 12-volt battery, and solar panel were installed.

Hydrology

Drainage Area

470 square miles, approximately.

Channel and Control

The channel through the gage reach is straight, wide, generally shallow, and shifts continually. The left bank is about 5 ft. high and abrupt, and the right bank is much higher, but gradually tapers. Banks are covered with trees and brush. Riprap and old cars line the right bank to provide some stabilization to the bank. The channel is the control, and the bed is composed of shifting sand. There is no permanent low-flow control.

Discharge Measurements

Low to moderate flow measurements are made by wading in the vicinity of the gage. High water measurements are made from the bridge. Currently, wading measurements are still considered safe up to a gage height of 5.50 ft. (watch for high velocities).

Extremes for Period of Record

On March 13, 2019 due to snow, ice melt, and rain there was a daily mean discharge of 23,800 cfs.

Point of Zero Flow

GZF of 2.37 ft. (+/- 0.10 ft.) recorded on August 17, 2022 measured 20 ft. downstream of Wire Weight.

Winter Flow

Complete or partial ice cover most of the winter.

Regulation and Diversions

None known.

Accuracy

Record is good to fair generally, except during periods of backwater due to ice.

Equipment Details

Recording Gage

Instruments include a YSI Products H-522+ data logger with GOES transmitter, an H-223 Goes satellite antenna, a GPS timer, an H-3553-15-D flow bubbler, powered by a 12-volt battery and solar panel in a 2x2.5x4 ft. steel "look-in" shelter at the right bank downstream of the bridge. The pressure line is encased in 1-1/4 inch metal pipe and plastic tube along the right bank near the gage house and ends at a sandpoint about 5 ft. downstream of the bridge. A 1-1/4 inch crest-stage indicator (CSI) is located on the right downstream wing wall.

External Gage

The reference gage is a wire-weight gage (WWG) mounted on the downstream guardrail near the right bank

Bench Mark and Reference Marks

Datum of gage is 1290 feet above mean sea level, from topographic map.

RM 1 - (origin) Brass tablet in the concrete gage house pad. Elevation 10.62 ft. (levels of 2/16/2023).

RM 2 - chiseled square on right downstream wing wall of bridge. Elevation 14.84 ft. (levels of 2/16/2023).

RM 3 - chiseled square on left upstream wing wall of bridge. Elevation 14.65 ft. (levels of 5/26/2021).

RM 4 - a t-post set in concrete 60' east of gage house and 30' upstream of centerline of county road in south fence line. Elevation 9.85 ft. (levels of 5/26/2021).

RP 1 - Chiseled line at station 153 or west of ww. Elevation 18.00 ft. (levels of 2/16/2023).

RP 2 - Is a steel upright on the downstream side of bridge rail at station 170. Elevation 17.90 ft. (Levels of 2/16/2023).

Top of CSI - 14.49 ft. (levels of 5/26/2021). CSI stick length 10.45 ft. CSI bottom 4.04 ft. (calculated, levels of 5/26/2021).

WWCB - 17.32 (levels of 2/16/2023).

Shelter floor - 10.61 ft. (levels of 10/19/2019).

Revision History

Revised by: J.M. Lambre 06/14/2019

Revised by: J.E. Sedlacek 01/03/2020

Revised by: J.E. Sedlacek 06/03/2021

Revised by: J.E. Sedlacek 11/08/2022

Revised by: J.E. Sedlacek 02/17/2023