

Hat Creek at Montrose, Nebraska 00062500

LOCATION

Latitude and Longitude

42.92226 -103.7428

Road Log

NOTE: If weather has been raining, muddy roads nearly impassable will affect travel.

From Harrison NE, intersection of US Highway 20 and State Highway 29 travel 3.5 miles east on US highway 20 turn north on Pants Butte Road for approximately 15 miles to Montrose road, turn eastward for about 3.5 miles to Hat Creek.

Sioux County. Gage located 95 feet from center of Montrose Rd Bridge as it intersects Hat Creek, 0.74 miles and from Cody-Yellowhand Battlefield, 0.63 miles from Immaculate Conception Church, and 0.77 miles from Warbonnet Battlefield.

Nearby Features

Nebraska badlands and Oglala National Grassland.

Equipment Details

Recording Gage

The base recorder is a Sutron CBS Bubbler Flow Meter and a Satlink DCP unit housed in a cube type shelter and connected to the stream with an orifice. The DCP provides one hour transmissions with 15 minute data sent to the satellite and downlink stations.

Real-time data accessed through the internet: <https://nednr.nebraska.gov/RealTime>

External Gage

Instrument referenced to the Wire Weight Gage on the bridge with a check bar reading of 24.43 feet gage datum.

Bench Mark and Reference Marks

PRESENT GAGE DATUM: 3656 ft. WGS84

Staff Gage, RM # 4, and RP1 destroyed.

RM # 1 is located 6.7 feet southwest of old station post. Elevation 20.00 feet from levels of July 17, 2019.

RM # 2 is located 26 feet southwest of old station post. Elevation 20.90 feet from levels of July 17, 2019.

RM # 3 is located 16.5 feet east of RM#2. Elevation 19.40 feet from Levels of July 17, 2019.

RM#4 is located on the I-beam northwest edge of the bridge and is three straight cut marks on the steel beam. Elevation 25.71 feet from Levels of July 17, 2019 (new).

RM#5 is located on the I-beam southeast side of the bridge and is three straight cut marks on the steel beam. Elevation 25.69 feet from Levels of July 17, 2019(new).

RP#2 is located west of the wire weight and is three straight cut marks on the steel guardrail. Elevation 25.72 feet from Levels of July 17, 2019(new).

Wire Weight Gage is located on the South side of the bridge rail. Check Bar Elevation 24.43 feet from levels of July 17, 2019(new).

Hydrology

Drainage Area

Not determined.

Channel and Control

Meandering channel largely composed of very soft clay. Slow stream velocities allow for the widespread presence of aquatic plants that further stem streamflow and contribute to soft and unsettled streambed conditions.

Discharge Measurements

Wading measurements made in vicinity of gage. Good results can be expected if proper care is taken in sectioning. High flows measured by hand-line from Montrose Rd Bridge.

Floods

Peak discharge 572 cubic feet per second May 29, 2018, gage height 13.55 feet.

Extremes for Period of Record

Peak discharge 572 cubic feet per second May 29, 2018, gage height 13.55 feet; minimum daily discharge 0.08 cubic feet per second September 2 & 3, 2016.

Point of Zero Flow

Not established.

Winter Flow

Channel develops ice conditions during winter months; creek occasionally runs dry during irrigation season due to depletion from irrigation demand.

Regulation and Diversions

No regulation or diversions.

Accuracy

2019 Water year Records are poor.

Establishment and History

November 5, 2010: Shelter, staff, fence, gate, and approximately 30' of 1 ¼" pipe for river line was installed

November 30, 2011: ISCO Logging equipment installed and elevation RMs established along with staff gage.

March 20, 2015: Staff gage found destroyed, begin using RP for base gage elevations

November 9, 2016: Remove ISCO and install Sutron equipment

As of June 1, 2018, the gage and equipment removed due to bridge construction and reactivated upon completion of the bridge.

July 17, 2019 Station reinstalled on the east bank of the creek. A wire weight gage installed with a check bar reading of 24.43 feet on the bridge.

Revision History

Original Station Description prepared by: Trevor Massey 08/18/2017

Revised by: J A Marburger 02/11/2018

Revised by: J A Marburger 10/22/2019

Revised by: K.Schwager 11/06/2023