



Nevada's Water Quality Standards and Low/High Flow Statistics (7Q10)

Introduction

Nevada regulations allow for the exceedance of water quality standards during extreme low or high flow conditions. This fact sheet discusses the flow thresholds used in implementing these regulations.

Water Quality Standards

Nevada's water quality standards, contained in the Nevada Administrative Code (NAC) 445A.119 – 445A.225, define the water quality goals for a waterbody by: 1) designating beneficial uses of the water; and 2) setting criteria necessary to protect the beneficial uses. Beneficial uses consist of such things as irrigation, recreation, aquatic life, fisheries, irrigation and drinking water.

Water quality standards are used in a number of ways including: 1) assessment of the health of our waters (as part of the 303(d)); 2) setting limitations for surface water discharge permits; and 3) setting goals for nonpoint source pollution control projects.

303(d) List

Section 303(d) of the Clean Water Act (CWA) requires that States develop a list of waterbodies needing additional work beyond existing controls to achieve or maintain water quality standards. This list, referred to as the Section 303(d) List, provides a comprehensive inventory of waterbodies impaired by all sources, including point sources, nonpoint sources, or a combination of both. The 303(d) List is the basis for targeting waterbodies for watershed-based solutions, and TMDLs are required for those waterbodies listed as impaired.

Accounting for Extreme Events

Drought and flood periods are a part of the natural process and the close relationship between flow and water quality must be borne in mind when utilizing water quality standards for assessing system health, setting pollution control limits, etc. NAC 445A.121(8) states, "The speci-

fied standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow". The NAC recognizes that standards may be exceeded during extreme flow events, but that such exceedances should not be considered a violation of the standards or a cause for concern.

For implementing NAC 445A.121(8), the low and high flow thresholds are typically defined using 7Q10 statistics. The 7Q10 statistic is the lowest or highest streamflow for 7 consecutive days that occurs on average once every 10 years. Table 1 presents these statistics for selected USGS (U.S. Geological Survey) Gaging Stations in Nevada. These values were generated by the USGS using the historic streamflow database. It is important to note that 7-day periods of zero flow were not included in the analyses.

There may be circumstances where a 7Q10 analysis is not appropriate such as when the flow is highly regulated by reservoir releases. In such cases, best professional judgment will be utilized to identify an alternative method for defining high and low flow.

For More Information

To find out more, contact

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Table 1. 7Q10 Flow Statistics for Selected USGS Gaging Stations in Nevada

USGS Station Number	USGS Station Name	Time Period	No. of Years	7Q10 Low (cfs)	7Q10 High (cfs)
Colorado Basin					
09415000	Virgin River at Littlefield, AZ	1931-2001	71	49	2,725
09416000	Muddy River near Moapa, NV	1914-2001	56	27	100
09419000	Muddy River near Glendale, NV	1951-2001	49	22	382
09419790	Las Vegas Wash below Lake Las Vegas below Henderson, NV	1993-2001	9	135	573
09421500	Colorado River below Hoover Dam, AZ-NV	1935-2001	67	2,570	28,895
09423000	Colorado River below Davis Dam, AZ-NV	1906-2001	53	2,136	33,501
Walker Basin					
10293000	East Walker River near Bridgeport, CA	1923-2001	76	2.2	859
10293500	East Walker River above Strosnider Ditch near Mason, NV	1949-2001	37	9.2	985
10296500	West Walker River near Coleville, CA	1904-2001	70	23	2,410
10297500	West Walker River at Hoyer Bridge near Wellington, NV	1911-2001	52	9.2	1,875
10300000	West Walker River near Hudson, NV	1916-2001	46	19	1,850
10301500	Walker River near Wabuska, NV	1903-2001	75	3.5	2,092
Carson Basin					
10308200	EF Carson River below Markleeville Creek near Markleeville, CA	1961-2001	40	25	3,435
10308800	Bryant Creek Near Gardnerville, NV	1962-2001	15	1.9	130
10309000	EF Carson River Near Gardnerville, NV	1891-2001	73	29	3,155
10310000	WF Carson River At Woodfords, CA	1902-2001	68	9.7	1,074
10311000	Carson River Near Carson City, NV	1940-2001	61	4	4,651
10311400	Carson River At Deer Run Road near Carson City, NV	1980-2001	15	2.8	5,611
10312000	Carson River Near Fort Churchill, NV	1912-2001	89	0.3	3,925
10312150	Carson River Below Lahontan Reservoir near Fallon, NV	1968-2001	34	0.9	2,028
Humboldt Basin					
10315500	Marys River Above Hot Springs Creek near Deeth, NV	1945-2001	55	0.4	721
10316500	Lamoille Creek Near Lamoille, NV	1916-2001	64	2.3	475
10318500	Humboldt River Near Elko, NV	1896-2001	62	0.6	2,809
10320000	South Fork Humboldt River Above Dixie Creek near Elko, NV	1950-2001	45	1.6	1,198
10321000	Humboldt River Near Carlin, NV	1945-2001	57	2.4	3,852
10322000	Maggie Creek At Carlin, NV	1914-2001	16	0.3	416
10322500	Humboldt River At Palisade, NV	1904-2001	92	9.3	3,792
10325000	Humboldt River At Battle Mountain, NV	1898-2001	48	0.2	3,461
10327500	Humboldt River At Comus, NV	1896-2001	84	0.1	3,027
10333000	Humboldt River Near Imlay, NV	1936-2001	60	3.4	2,400
10335000	Humboldt River Near Rye Patch, NV	1897-2001	82	0.1	1,809
10336000	Humboldt River Near Lovelock, NV	1913-2001	22	0.3	1,416
Tahoe Basin					
10336698	Third Creek Near Crystal Bay, NV	1971-2001	26	1.1	74
10336700	Incline Creek Near Crystal Bay, NV	1971-2001	15	0.6	52
10336715	Marlette Creek Near Carson City, NV	1975-2001	27	0.01	23
10336730	Glenbrook Creek At Glenbrook, NV	1973-2001	16	0.02	20
10336740	Logan House Creek Near Glenbrook, NV	1985-2001	17	0.02	6.1
10336760	Edgewood Creek At Stateline, NV	1994-2001	8	1.3	28
103367592	Eagle Rock Creek Near Stateline, NV	1991-2001	10	0.2	2.2
Truckee Basin					
10346000	Truckee River At Farad, CA	1910-1997	88	84	5,131
10348000	Truckee River At Reno, NV	1908-2001	73	32	5,712
10348200	Truckee River Near Sparks, NV	1978-2001	23	18.5	6,411
10349300	Steamboat Creek At Steamboat, NV	1963-2001	39	0.1	188
10349980	Steamboat Creek At Cleanwater Way near Reno, NV	1977-2001	13	4.3	325
10350000	Truckee River At Vista, NV	1900-2001	71	66	6,097
10351600	Truckee River Below Derby Dam near Wadsworth	1919-2001	81	1	5,793
10351650	Truckee River At Wadsworth	1966-2001	27	5.7	7,185
10351700	Truckee River Near Nixon, NV	1959-2001	43	11	7,268
Snake Basin					
13105000	Salmon Falls Creek Near San Jacinto, NV	1911-2001	84	9.7	1,199
13161500	Bruneau River At Rowland, NV	1914-2001	38	4.3	1,159
13174500	EF Owyhee Near Gold Creek, NV	1917-2001	71	0.1	542
13175100	EF Owyhee Near Mountain City, NV	1992-2001	6	1.5	930