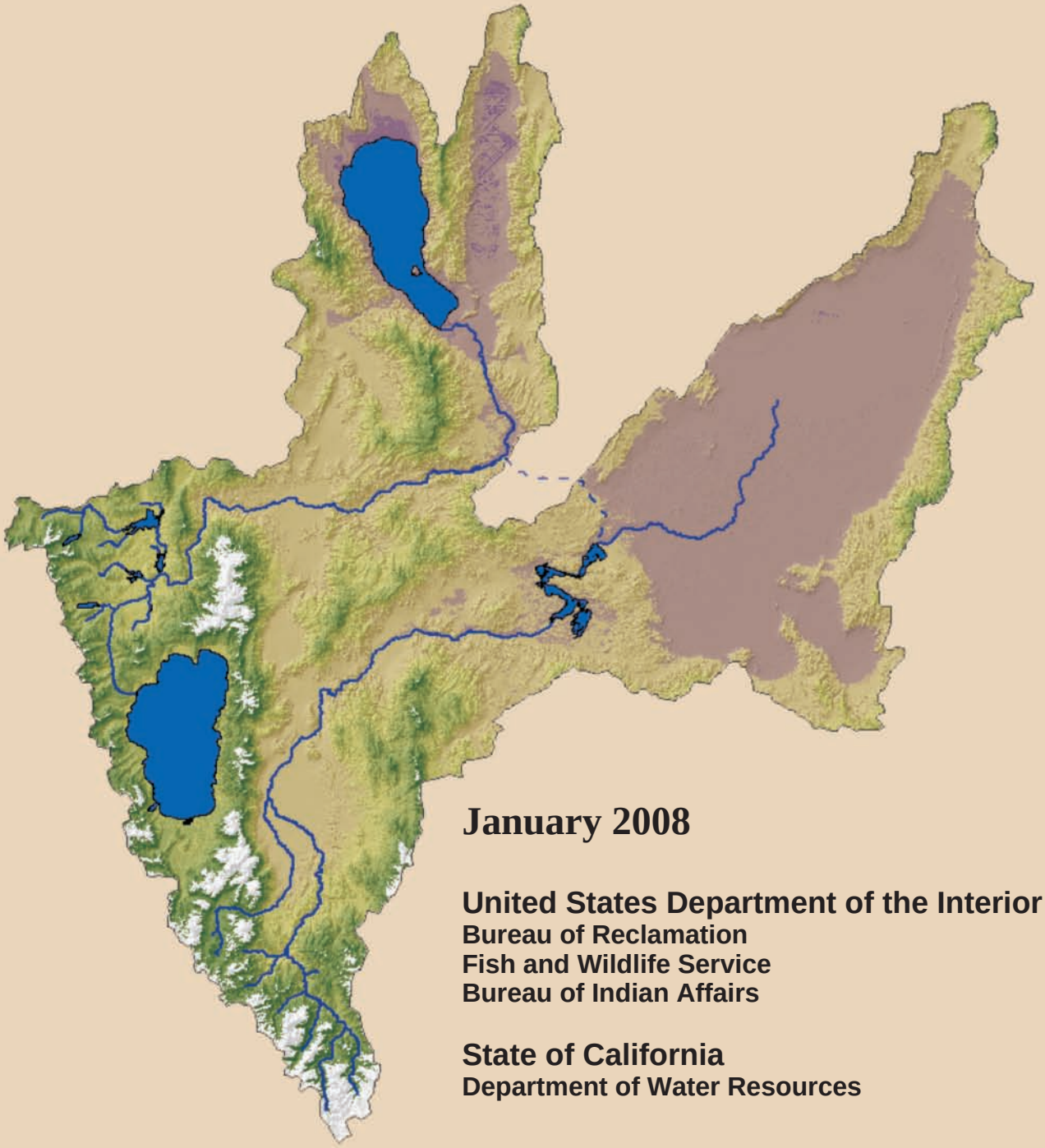
Final Environmental Impact Statement/Environmental Impact Report

Truckee River Operating Agreement

Water Quality Appendix



January 2008

United States Department of the Interior
Bureau of Reclamation
Fish and Wildlife Service
Bureau of Indian Affairs

State of California
Department of Water Resources

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WATER QUALITY APPENDIX

I. Overview

Recent results from the hourly riverine water quality model, the Dynamic Stream Simulation and Assessment Model with temperature (DSSAMt), reflect more recent operations. These most recent DSSAMt results reflect more years of data and more accurate boundary conditions, which were derived from the Truckee River Watershed Analysis Risk Management Framework (WARMF), the daily watershed loading model. WARMF model results incorporate future land use changes and, therefore, nonpoint source loadings to the DSSAMt riverine model. WARMF model results also incorporate more accurate point source loadings to the DSSAMt model. Recent DSSAMt model results are more reliable and tend to coincide with environmental observations due to model improvements as well as better inputs. The resulting improved model used for the water quality analyses contained in the TROA revised draft and final EIS/EIR is the result of many years of intensive review and calibration to a wide range of hydrologic and water quality data and conditions.

Previous and recent water quality modeling indicate the same conclusion: overall, water quality would be better under the Truckee River Operating Agreement Alternative (TROA). Extensive modeling of a massive amount of data under a large range of conditions by a team of experienced mathematical modelers provides confidence in this primary conclusion.

Water quality was analyzed in detail using historical data and DSSAMt results. Historical data is summarized by Bender (1995). Caupp, Brock, and Runke (1997) and Brock and Caupp (2004a – 2004h) provide documentation of the DSSAMt model and model results. All DSSAMt flow and water quality modeling for the revised draft and final EIS/EIR and documentation were covered under contract No. 1425-4-CS-20-02690 and subsequent contract modification Nos. 1 through 16. DSSAMt was calibrated to wet, median, and dry hydrologic conditions (Brock and Caupp, 1998a) and verified to a range of dry to wet hydrologic conditions (Brock and Caupp, 1998b). A sensitivity analysis was performed to identify major variables and model coefficients (Brock and Caupp, 1997). Current conditions, No Action Alternative (No Action), Local Water Supply Alternative (LWSA), and TROA were simulated. In support of the fishery analysis, a temperature analysis for extremely wet, median, and extremely dry water years was performed for various fish species and life stages of each species under current conditions and each alternative (Brock and Caupp, 2004a, 2004c, 2004e, and 2004g). A water quality analysis was performed for representative wet, median, and dry calendar years for current conditions and each alternative (Brock and Caupp, 2004b, 2004d, 2004f, and 2004h). These separate temperature analyses and water quality analyses for current conditions and each alternative are included on one compact disk (CD) entitled “Water Quality and Temperature Simulations for the TROA Revised Draft EIS/EIR” (CD Document No. RCR2004-13.0, July 2004). PowerPoint presentation plots of fish thermal

requirements for 1966, 1986, and 1992 for current conditions and each alternative are included on one CD entitled "Simulated Truckee River Temperatures with Recommended Conditions for Fish," Version 1.1, December 2004.

Flow is the most important variable affecting Truckee River water quality. Typically, wet hydrologic conditions provide the best water quality, and dry hydrologic conditions provide the worst. Selection of representative hydrologic years was critical to analyzing water quality.

Flow data were statistically analyzed for use as a water quality indicator and for use in selecting representative hydrologic years. Analyses were based on water years when possible. A water year begins October of the previous calendar year and extends through September. However, calendar year hydrology was required for the water quality assessment to accommodate State standards that are based on the calendar year.

II. Hydrology for Water Quality Assessment

Water quality was analyzed using both a single-variable analysis and a multiple-variable analysis. Probability of flow exceedence based on 100 water years of monthly flows from 1901 to 2001 was used for single variable analysis. This period included the recent drought period of late 1987 through 1994 and the recent record flood year of 1997. Probability of flow exceedence indicates the percent of time the annual flow was historically exceeded. Single-variable analysis provided information on the frequency of occurrence of flows. However, to adequately address hourly, daily, weekly, and, often, seasonal variations, representative flow years within this 100-year period were used for multiple-variable analysis of water quality. This dual approach takes into account the effects of flow as well as other major variables, such as initial conditions, meteorology, and nutrient and organic loadings.

Data availability and flows reflecting both natural local runoff and the effects of storage operations were considered in selecting wet, median, and dry years for multiple-variable water quality analysis. (Note that supporting documents may use the term "average" instead of "median." Average does not imply the statistical mean, but rather is a general term to denote central tendency of flows at or near median. Supporting documents may also use the term "violated" instead of exceeded. An exceedence does not imply a violation, which is an enforcement term, but rather denotes the parameter is outside the range of desired criteria.)

In selecting representative wet, median, and dry years, annual averages of natural local runoff just upstream of Farad, California, without the effects of storage operations were ranked for both calendar and water years 1901-92. Table 1 compares the probability of exceedences for annual average natural runoff in wet, median, and dry years for calendar and water year periods. For 1986 (wet), 1989 (median), and 1992 (dry), flow exceedence statistics based on calendar years are nearly identical to those based on water years, indicating that these years represent the intended flow conditions.

Table 1.—Probability of flow exceedences

Probability of flow exceedences for natural runoff upstream of Farad, California, based on calendar years 1901-92		
Condition	Calendar year	Probability of flow exceedence (%)
Wet	1986	11.8
Median	1989	50.5
Dry	1992	93.5
Probability of flow exceedences for natural runoff upstream of Farad, California, based on water years 1901-92		
Condition	Water year	Probability of flow exceedence (%)
Wet	1986	12.9
Median	1989	49.5
Dry	1992	94.6

Analysis of flows, including the effects of storage operations, indicated similar wet, median, and dry patterns. Table 2 shows flow ranking just downstream from Reno, Nevada, at Vista, Nevada, for the 21 water years from 1973-93. This 21-year period includes the flow conditions for the modeled representative wet, median, and dry years (1986, 1989, and 1992). A ranking of water year 7-day low flows at Farad, California; Vista, Nevada; and Nixon, Nevada (table 2) shows that 1992, the baseline representative dry year, was an extremely dry year that followed fairly dry conditions and represents near worst case low-flow conditions in the Truckee River downstream from Derby Diversion Dam.

Table 2.—7-day low flow and rank for three Truckee River stations

Water year ending September 30	Downstream from reservoirs and upstream of CA/NV State line at Farad, CA		Downstream from Reno, NV, at Vista, NV		Downstream from Derby Diversion Dam at Nixon, NV	
	7-day low flow		7-day low flow		7-day low flow	
	(cfs)	(rank)	(cfs)	(rank)	(cfs)	(rank)
1973	352	14	381	17	44	14
1974	385	19	412	18	123	18
1975	439	20	457	20	130	19
1976	383	18	427	19	145	20
1977	71	6	77	7	23	7
1978	47	2	62	5	20	6
1979	174	9	212	10	29	12
1980	300	12	290	14	33	13
1981	230	10	189	9	24	9
1982	284	11	292	15	52	16
1983	460	21	609	21	464	21
1984	363	15	333	16	64	17
1985	366	16	283	13	27	11
1986	327	13	278	12	44	15
1987	380	17	261	11	25	10
1988	81	7	82	8	20	5
1989	67	5	70	6	23	8
1990	101	8	56	4	11	3
1991	51	3	46	2	8.1	2
1992	57	4	47	3	6.2	1
1993	44	1	44	1	16	4

Note: 7-day low flow is the lowest mean discharge for 7 consecutive days for a water year.

III. Hydrology for Fishery Temperature Analysis

For the fishery temperature analysis, analyses were performed for extremely wet, median, and extremely dry 5-year water year periods to reflect the effects of storage operations on fisheries.

Meteorology and flow data for temperature modeling was available from October 1961 through December 1992; this period was used in selecting 5-year periods of water years from the 92-year record. Table 3 lists the ending water years used for the fishery temperature analysis.

Table 3.—Probability of flow exceedences for natural flow upstream of Farad, California, based on 5-year periods for water years 1901 through 1992

Condition	Ending year of 5-year period	Probability of flow exceedence for 5-year period (%)[1]
Extremely wet	1986	1
Median	1966	47
Extremely dry	1992	99

[1] Based on monthly medians of the five water years.

IV. Water Quality Model Inputs

A complete description of flow and water quality model inputs and outputs has been documented by Brock and Caupp of Rapid Creek Research, Inc. (Brock and Caupp, 1998a, 1997, 1998b, 2004a – 2004h and Caupp, Brock, and Runke, 1997). Table 4 provides a list of water quality supporting documents used in preparation of the water quality sections of the revised draft and final EIS/EIR.

Table 4.—Water quality supporting documents for EIS/EIR

RCR Report No.[1]	Document topic	Approximate number of pages
96-1.1 (5/97)	DSSAMt Program Documentation	110
94-2.0 (6/98)	Calibration to 1986, 1989, 1991, 1992, and 1993	1300
98-2.0 (6/98)	Verification to 1991, 1994, and 1995	1000
94-3.0 (6/97)	Sensitivity Analysis	262
04-5.0	Temperature: Current conditions	289
04-6.0	Water quality: Current conditions	642
04-7.0	Temperature: No Action	245
04-8.0	Water quality: No Action	642
04-9.0	Temperature: LWSA	245
04-10.0	Water quality: LWSA	639
04-11.0	Temperature: TROA	245
04-12.0	Water Quality: TROA	642

[1] Report number indicates year draft was assembled (1994, 1996, 1998, and 2004). Numbers in parenthesis indicates when the draft was last issued if no final available.

Data sources, river and irrigation flow summaries, meteorological data, water temperature boundary conditions, water chemistry boundary conditions, and water quality standards, based on beneficial uses as well as desired fishery criteria, are presented in the above documents as statistics, tables, and graphs.

Hydraulic geometry, flows, meteorology, and water quality constituents are the primary inputs to DSSAMt. For the calibration years, initial boundary conditions and time step boundary conditions were derived from measured data. For simulation of current conditions and alternatives, flow boundary conditions were provided from the monthly Truckee River operations model (operations model). It was assumed that relative percentages of the lumped diversions attributable to each of the active diversions would be the same under current conditions and the alternatives. Water quality boundary conditions were derived from measured data, statistical correlations, or the WARMF model (Chen and Weintraub, 2002). The WARMF model, a daily watershed loading model, accounts for future land use changes and is a better tool for predicting water quality boundary conditions for the hourly DSSAMt than estimates of future conditions. The 1999 historical land use coverage was used for current conditions. Estimated future land use coverage for the year 2020 was used for the alternatives. Both coverages used the same 11 land use categories. Actual hourly meteorology was used for all years simulated.

Water temperature inputs at the upstream model boundary for current conditions and the alternatives were generated from multiple linear regression equations. Historical air temperatures and flows were used to develop the coefficients for the multiple linear regression equations. Bivariate statistical analysis indicated that a majority of the variation in mean daily water temperature is due to variation in mean daily air temperature (Brock and Caupp, 1996; Brock and Caupp, 1998a, Section 6; and Brock and Caupp, 2004a, 2004c, 2004e, 2004g, Section 5). Flows also accounted for a portion of the variability and were accounted for in the estimation procedure for water temperature at the upstream boundary. Actual meteorology and simulated flows from the operations model were used as inputs to predict water temperature inputs for the model.

V. Water Quality Model Calibration

The following is a summary of the DSSAMt water quality model calibration based on the 2004 improved C46 overall model calibration and the fully peer reviewed and corrected C30 overall model calibration (Brock and Caupp, 1998a). As the modeling progressed and additional data was collected from 1992 through present, detailed draft calibration documentation was performed by the modelers and peer reviewed by the Bureau of Reclamation's Technical Service Center. The model, model input data sets, and calibration are continually improved; however, recent fine-tuning to individual years of data minimally affects the overall calibration to many years of data. The C46b calibration (February 2004) was used for the temperature calibration to water years, and the C46c2 calibration (March 2004) was used for the water quality calibration to calendar years. The DSSAMt water quality model calibration was frozen in March 2004 for use in

the analysis of water quality for the revised draft EIS/EIR. Peer reviewed partial documentation for the C46b temperature calibration and the C46c2 water quality calibration and verification for the improved model used in the revised draft and final EIS/EIR were spot-checked against the fully peer reviewed C30 calibration. The contractor indicated that the C46c2 water quality calibration closeness-of-fit statistics are comparable to the C30 calibration (Brock, 2004). A partial document (RCR2004-2.0) with plots showing the C46h calibration (April 2004) was sent to Carollo Engineers for review (Garvey, 2006). The slightly modified C46h (April 19, 2004) calibration is considered a good version of coefficients and compares well with plots produced with the frozen C46c2 calibration. Closeness-of-fit statistics for another fine-tuned C46g version of the calibration (April 19, 2004) compared well with the C30 calibration. In conclusion, DSSAMt has been adequately calibrated and peer reviewed. Subsequent calibration attempts indicate minimal improvements to the overall C46 temperature and water quality model calibration frozen in March 2004.

Four calendar years were used for the water quality model calibration: 1986 (wet); 1989 (median); 1992 (dry); and 1993 (median). The two near-median years, 1989 and 1993, differ greatly; in 1993, large amounts of water were released from Derby Diversion Dam to Pyramid Lake to enhance cui-ui spawning. Modeled nutrient and total dissolved solids loadings to Pyramid Lake also were greater in 1993, as shown in table 5.

Table 5.—Comparison of calibration simulated annual loadings to Pyramid Lake

Condition	Calendar year	Loadings (kg/yr x 1,000)		
		Phosphorus	Nitrogen	TDS
Dry	1992	1	11	13,724
Median	1989	2	24	18,316
Median (cui-ui)	1993	8	94	33,297
Wet	1986	28	236	101,228

Calendar year 1993 had the most complete measured data sets. This year also exhibited large flow fluctuations and extreme 7-day low flows and, therefore, covers a range of conditions. Modeled data were compared to measured data with closeness-of-fit statistics and data plots.

Residual error and average error were the primary closeness-of-fit statistics used for comparison. Residual error indicates the average difference between simulated and observed values. Average error is calculated as the absolute value of the residual error summed over a specified period and divided by the number of days. Average error is always higher than residual error because average error uses the absolute value of both positive and negative differences between modeled and observed values. Residual error is a better indication of calibration adequacy or closeness of fit because positive and negative values can negate each other.

For temperature during the April to September period, residual error of less than 1 degree centigrade (°C) is excellent and less than 2 °C is good. For the C46c2 frozen calibration (Brock, 2004), calculated temperature residual error was less than or equal to 2 °C, and typically less than 1 °C, for all calibration years. For dissolved oxygen, less than 1 milligram per liter (mg/L) is excellent and less than 2 mg/L is good. Calculated minimum dissolved oxygen residual error was as high as 2.9 mg/L. For 1993, the year with the most complete and accurate data, minimum dissolved oxygen residual error was less than or equal to 0.8 mg/L. The statistics indicate a good dissolved oxygen calibration in most years; however, it is marginally adequate during extremely low flow conditions. However, only limited observed dissolved oxygen field data were available for comparison for the representative years 1986, 1989, and 1992. For the C30 calibration, Brock and Caupp provide a detailed analysis and summarize average error and residual error by river reach for the 1986, 1989, 1992, and 1993 calibration years (Brock and Caupp, 1998a). Tables with closeness-of-fit statistics as well as plots of modeled versus observed data were statistically summarized for both the April-to-September and January-to-December periods.

Statistical error reflects inadequacies in data measurement accuracy as well as deficiencies in the modeling calibration. Temperature measurement precision is limited to about 0.2 °C and dissolved oxygen measurement precision to about 0.2 mg/L.

The model calibration was adequate for comparing alternatives to No Action, the baseline condition. The temperature calibration is excellent to good in almost all years and locations. The dissolved oxygen calibration was fair, with minimum dissolved oxygen concentrations matching observed data more closely than concentrations of maximum dissolved oxygen. Conservative substances, such as total dissolved solids, adequately matched observed data. Total nitrogen and total phosphorus concentrations followed expected trends.

Generally, the water quality calibration is better at upstream stations than at downstream stations because uncertainties in input data sets and “round off” error accumulate in a downstream direction.

Low summer dissolved oxygen “sags” occur downstream from Reno primarily because of low flows and excessive nutrients, which result in an oxygen demand associated with accumulations of organic material.

VI. Water Quality Model Verification

The DSSAMt water quality model 46C calibration for the revised draft and final EIS/EIR matched or was better than the C30 calibration used for the 1998 draft EIS/EIR, primarily because more years of calibration data were available. Ten years (1966, 1986, 1988, 1989, 1991, 1992, 1993, 1994, 1995, and 1996) of hydraulic and temperature and/or water quality data have been modeled, when including calibration water quality years,

verification water quality years, and fish temperature years, thereby greatly improving the reliability, robustness, and credibility of DSSAMt over a wide range of hydrologic and dynamic water quality conditions.

After the C30 calibration was peer reviewed and corrected (Brock and Caupp, 1998a), the water quality model was verified (Brock and Caupp, 1998b) with the independent data sets for calendar years 1991, a dry year; 1994, an extremely dry year; and 1995, which was on the moderately wet side. The model temperature verification was good to excellent. The maximum absolute value of calculated temperature residual error was less than or equal to 1.2 °C, and typically less than 0.5 °C, for all three verification calendar years for all modeled reaches where observed data existed (Brock and Caupp, 1998b). The model dissolved oxygen calibration appeared marginal but was difficult to verify because of minimal measured dissolved oxygen data. For the April-to-September period, the maximum absolute value of the calculated minimum dissolved oxygen residual error was as high as -1.4 mg/L, and typically less than 1 mg/L (Brock and Caupp, 1998b, table 9-1). Brock and Caupp (1998b) provide a detailed analysis of C30 model verification inputs and results.

VII. Overview of Water Quality Simulations

Tables and plots summarizing water quality inputs and outputs for river reaches downstream from Reno were prepared for current conditions (Brock and Caupp, 2004b) and for the alternatives (Brock and Caupp, 2004d, 2004f, and 2004h). Included is information on river and irrigation flows, weather, water temperature boundary conditions, water chemistry boundary conditions, annual plots of daily water temperature and dissolved oxygen, monthly water chemistry versus distance, statistical summaries of simulated water quality, water quality standards, seasonal constituent versus distance, and simulated constituent loads. Simulated constituents such as river temperature, dissolved oxygen, and nutrients provided information on the suitability for aquatic life.

In general, temperature, high pH (an indicator of algae), DO, chloride, TDS, and total nitrogen exceedences occur downstream from Reno in mostly dry hydrologic conditions under current conditions and the alternatives. In dry conditions under current conditions and the alternatives, dissolved oxygen concentrations are too low for adequate growth and maintenance of aquatic life. However, large non-scouring nutrient-rich flows followed by sudden drops in flow also results in more algal biomass and, consequently, lower DO. Lower flow results in larger minimum-to-maximum DO swings.

Truckee River watershed water quality was summarized in the Truckee River Water Quality Settlement Agreement, Federal Water Rights Acquisition Program, Final Environmental Impact Statement (Bureau of Indian Affairs, 2002.)

Summary tables of the water quality books are shown as DSSAMt tables 1–12.

Table DSSAMt 1. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **Current Condition**

Year: **1986 CY**
Run: 1986 (wet) - RT86C1: Current Cond.
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	0	0	29	66
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	0	0	0	0	5
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	0	0	5
Chloride	no. of days > STD#	93	0	0	0	0	0
Total Phosphorus	annual average	0.012	0.028	0.039	0.036	0.036	0.036
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.177	0.260	0.315	0.287	0.290	0.298
	no. of days > STD	1	1	1	1	2	4
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	2
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	1	2
Total Dissolved Solids	annual average#	70	92	108	100	113	121
	no. of days > STD#	1	0	0	0	0	0
Temperature	no. of days > STD fish flow not adequate	153	30	32	22	27	37
	no. of days > STD fish flow adequate ^	na	na	na	36	37	37
	no. of days > DESIRED fish flow not adequate	164	54	58	65	66	71
	no. of days > DESIRED fish flow adequate	164	54	58	101	103	104

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	= determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

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Table DSSAMt 2. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **Current Condition**

Year: **1989 CY**
Run: 1989 (media) – RT89C1: Current Cond.
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	34	65	125	127
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	0	0	9	10	25
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	6	10	28
Chloride	no. of days > STD#	123	0	0	0	8	11
Total Phosphorus	annual average	0.015	0.036	0.052	0.050	0.047	0.046
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.234	0.355	0.425	0.408	0.407	0.409
	no. of days > STD	1	1	1	2	3	1
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	0
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	0
Total Dissolved Solids	annual average#	95	121	139	143	204	233
	no. of days > STD#	60	0	0	0	9	11
Temperature	no. of days > STD fish flow not adequate	155	10	28	25	53	62
	no. of days > STD fish flow adequate ^	na	na	na	77	80	82
	no. of days > DESIRED fish flow not adequate	162	48	66	89	99	107
	no. of days > DESIRED fish flow adequate	162	48	66	149	156	160

Notes:
= number of days of the year when the standard was exceeded within any hour of the day
=determined for period November through June =total of 273 days if flows are adequate for spawning
=not applicable
= not a State Standard, included for **information** purposes only
= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
= desired **condition** if flows are adequate to protect juvenile Lahontan cutthroat trout
= Nevada State standard for Truckee River to protect beneficial uses

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Table DSSAMt 3. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **Current Condition**

Year: **1992 CY**
Run: 1992 (dry) - RT92C1: Current Cond
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	16	160	94	244	3
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	107	109	149	296	172
Dissolved Oxygen	no. of days < 5 mg/L*	0	107	109	104	253	156
Chloride	no. of days > STD#	366	95	97	363	364	365
Total Phosphorus	annual average	0.023	0.101	0.157	0.147	0.085	0.072
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.302	0.640	0.818	0.715	0.569	0.527
	no. of days > STD	34	125	122	64	14	17
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	0
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	0
Total Dissolved Solids	annual average#	141	184	211	229	534	667
	no. of days > STD#	307	2	0	64	366	366
Temperature	no. of days > STD fish flow not adequate	199	96	85	64	88	82
	no. of days > STD fish flow adequate ^	na	na	na	91	106	101
	no. of days > DESIRED fish flow not adequate	211	128	123	135	154	147
	no. of days > DESIRED fish flow adequate	211	128	123	171	189	183

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	=determined for period November through June =total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	=desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 4. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **No Action**

Year: **1986 CY**
Run: 1986 (wet) - RT86N1: No Action
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	0	15	31	97
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	0	0	0	0	4
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	0	0	4
Chloride	no. of days > STD#	63	0	0	0	0	0
Total Phosphorus	annual average	0.013	0.030	0.042	0.039	0.039	0.039
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.181	0.275	0.336	0.321	0.325	0.331
	no. of days > STD	1	1	1	1	3	4
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	1
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	1	1
Total Dissolved Solids	annual average#	69	92	108	106	119	126
	no. of days > STD#	2	0	0	0	0	0
Temperature	no. of days > STD fish flow not adequate	146	25	32	20	27	37
	no. of days > STD fish flow adequate ^	na	na	na	36	37	39
	no. of days > DESIRED fish flow not adequate	156	53	58	64	66	72
	no. of days > DESIRED fish flow adequate	156	53	58	100	103	106

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	= determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a Slate Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River Io protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 5. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **No Action**

Year: **1989 CY**
Run: 1989 (median) - RT89N1: No Action
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	29	91	147	138
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	0	0	4	10	26
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	0	9	29
Chloride	no. of days > STD#	91	0	0	1	0	10
Total Phosphorus	annual average	0.016	0.040	0.056	0.051	0.048	0.047
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.244	0.381	0.463	0.441	0.435	0.435
	no. of days > STD	1	1	1	2	3	1
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	0
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	0
Total Dissolved Solids	annual average#	96	123	143	146	196	227
	no. of days > STD#	60	0	0	0	0	8
Temperature	no. of days > STD fish flow not adequate	160	24	32	22	54	62
	no. of days > STD fish flow adequate ^	na	na	na	77	80	82
	no. of days > DESIRED fish flow not adequate	168	60	70	89	100	107
	no. of days > DESIRED fish flow adequate	168	60	70	149	157	160

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	= determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	=desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 6. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **No Action**

Year: **1992 CY**
Run: 1992 (dry) - RT92N1: No Action
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	128	63	181	0
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	51	42	95	180	147
Dissolved Oxygen	no. of days < 5 mg/L*	0	51	40	59	147	127
Chloride	no. of days > STD#	366	124	124	267	271	340
Total Phosphorus	annual average	0.029	0.086	0.125	0.118	0.089	0.082
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.332	0.630	0.777	0.693	0.598	0.594
	no. of days > STD	123	63	72	43	29	31
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	5	7
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	0
Total Dissolved Solids	annual average#	142	195	228	235	433	594
	no. of days > STD#	337	124	121	62	300	355
Temperature	no. of days > STD fish flow not adequate	201	149	120	61	85	84
	no. of days > STD fish flow adequate ^	na	na	na	93	103	104
	no. of days > DESIRED fish flow not adequate	213	181	157	134	150	150
	no. of days > DESIRED fish flow adequate	213	181	157	172	186	186

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	=determined for period November through June =total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 7. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **LWSA**

Year: **1986 CY**
Run: 1986 (wet) - RT86L1: LWSA
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	0	15	28	97
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	0	0	0	0	4
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	0	0	4
Chloride	no. of days > STD#	63	0	0	0	0	0
Total Phosphorus	annual average	0.013	0.030	0.042	0.039	0.039	0.039
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.179	0.273	0.335	0.319	0.324	0.329
	no. of days > STD	1	1	1	1	3	3
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	1
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	1	1
Total Dissolved Solids	annual average#	69	92	108	106	119	126
	no. of days > STD#	2	0	0	0	0	0
Temperature	no. of days > STD fish flow not adequate	146	25	32	20	27	37
	no. of days > STD fish flow adequate ^	na	na	na	36	37	39
	no. of days > DESIRED fish flow not adequate	156	53	58	64	66	72
	no. of days > DESIRED fish flow adequate	156	53	58	100	103	106

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
^	= determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 8. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **LWSA**

Year: **1989 CY**
Run: 1989 (median) - RT89L1: LWSA
Date of Run: 29-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	26	86	147	136
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	0	0	4	10	26
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	0	9	30
Chloride	no. of days > STD#	91	0	0	1	0	10
Total Phosphorus	annual average	0.013	0.013	0.014	0.043	0.055	0.050
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.218	0.222	0.227	0.394	0.459	0.440
	no. of days > STD	1	1	1	2	3	1
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	0
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	0
Total Dissolved Solids	annual average#	98	98	97	126	143	153
	no. of days > STD#	60	0	0	0	0	8
Temperature	no. of days > STD fish flow not adequate	154	13	27	21	51	62
	no. of days > STD fish flow adequate ^	na	na	na	77	80	82
	no. of days > DESIRED fish flow not adequate	160	51	61	86	98	107
	no. of days > DESIRED fish flow adequate	160	51	61	146	155	160

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	= determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 9. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **LWSA**

Year: **1992 CY (dry)**
Run: 1992 (dry) - RT92L1: LWSA
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Nurnan-Pyramid
pH	no. of days > STD	0	0	103	54	182	0
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	46	39	97	177	149
Dissolved Oxygen	no. of days < 5 mg/L*	0	46	39	57	140	125
Chloride	no. of days > STD#	366	184	185	293	272	341
Total Phosphorus	annual average	0.029	0.085	0.123	0.115	0.088	0.081
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.333	0.660	0.830	0.733	0.615	0.604
	no. of days > STD	123	93	93	65	30	32
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	5	7
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	0
Total Dissolved Solids	annual average#	142	204	245	251	441	598
	no. of days > STD#	337	185	186	94	310	366
Temperature	no. of days > STD fish flow not adequate	201	149	119	61	85	84
	no. of days > STD fish flow adequate ^	na	na	na	93	103	104
	no. of days > DESIRED fish flow not adequate	213	181	156	134	150	150
	no. of days > DESIRED fish flow adequate	213	181	156	172	185	186

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	= determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 10. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **TROA**

Year: **1986 CY**
Run: 1986 (wet) - RT86T1: TROA
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	0	13	17	102
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	0	0	0	0	0
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	0	0	0
Chloride	no. of days > STD#	93	31	31	30	0	0
Total Phosphorus	annual average	0.014	0.032	0.046	0.043	0.043	0.042
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.192	0.296	0.363	0.355	0.356	0.356
	no. of days > STD	1	1	1	1	3	4
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	0
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	1
Total Dissolved Solids	annual average#	70	95	113	114	126	134
	no. of days > STD#	1	0	0	0	0	0
Temperature	no. of days > STD fish flow not adequate	131	21	29	13	22	30
	no. of days > STD fish flow adequate ^	na	na	na	35	36	38
	no. of days > DESIRED fish flow not adequate	137	47	55	60	65	66
	no. of days > DESIRED fish flow adequate	137	47	55	95	101	104

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	= determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 11. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **TROA**

Year: **1989 CY**
Run: 1989 (median) - RT89T1: TROA
Date of Run: 26-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	19	81	140	141
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	0	0	4	10	15
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	0	9	19
Chloride	no. of days > STD#	91	0	0	1	0	10
Total Phosphorus	annual average	0.016	0.039	0.055	0.049	0.047	0.046
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.241	0.374	0.453	0.432	0.429	0.429
	no. of days > STD	1	1	1	2	3	1
Nitrate Nitrogen	no. of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	0
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	0
Total Dissolved Solids	annual average#	96	121	140	143	193	223
	no. of days > STD#	60	0	0	0	0	8
Temperature	no. of days > STD fish flow not adequate	154	14	28	21	53	62
	no. of days > STD fish flow adequate ^	na	na	na	77	79	82
	no. of days > DESIRED fish flow not adequate	157	51	63	89	99	107
	no. of days > DESIRED fish flow adequate	157	51	63	149	155	160

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard. included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutthroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 12. Annual summary of simulated Truckee River quality compared to State of Nevada standards

Alternative: **TROA**

Year: **1992 CY**
Run: 1992 (dry) - RT92T1: TROA
Date of Run: 24-Feb-2004

Constituent	Statistic	Reach					
		Glend-McCar	McCar-Lockw	Lockw-Derby	Derby-Wadsw	Wadsw-Numan	Numan-Pyramid
pH	no. of days > STD	0	0	99	49	143	24
pH	no. of days < STD	0	0	0	0	0	0
Dissolved Oxygen	no. of days < STD (5 or 6 mg/L)	0	1	3	65	126	148
Dissolved Oxygen	no. of days < 5 mg/L*	0	0	0	34	75	114
Chloride	no. of days > STD#	366	93	93	157	163	265
Total Phosphorus	annual average	0.027	0.078	0.114	0.108	0.087	0.083
Ortho Phosphorus	no. of days > STD	0					
Total Nitrogen	annual average	0.313	0.592	0.736	0.662	0.583	0.573
	no. of days > STD	123	63	64	40	9	9
Nitrate Nitrogen	no, of days > STD	0	0	0	0	0	0
Nitrite Nitrogen	no. of days > STD	0	1	1	0	0	0
Ammonia Nitrogen (unionized)	no. of days > STD	0	0	0	0	0	0
Total Dissolved Solids	annual average#	136	183	213	220	371	462
	no. of days > STD#	337	93	93	56	194	275
Temperature	no. of days > STD fish flow not adequate	189	81	87	49	75	78
	no. of days > STD fish flow adequate ^	na	na	na	90	98	100
	no. of days > DESIRED fish flow not adequate	191	139	133	125	145	146
	no. of days > DESIRED fish flow adequate	191	139	133	164	180	182

Notes:

no. of days	= number of days of the year when the standard was exceeded within any hour of the day
	= determined for period November through June = total of 273 days if flows are adequate for spawning
na	= not applicable
	= not a State Standard, included for information purposes only
#	= RMHQ (Recommended to Maintain High Water Quality) used in place of beneficial use standard
DESIRED	= desired condition if flows are adequate to protect juvenile Lahontan cutlhroat trout
STD	= Nevada State standard for Truckee River to protect beneficial uses

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VIII. Current Condition Temperature and Water Quality Simulations

The modeled temperature (Brock and Caupp, 2004a) and water quality (Brock and Caupp, 2004b) under current conditions reflect simulated flows from the operations model and should not be compared to historical flows. Current conditions reflect current reservoir operations and current demands on the system

The current conditions simulation indicated that warm temperatures for fish and water quality problems exist minimally in wet, and mostly in median and dry hydrologic conditions. The most severe conditions occur in dry hydrologic conditions. Current system operations do not adequately accommodate water quality.

Temperature and DO were chosen as water quality indicators. Total phosphorus, ortho-phosphorus, total nitrogen, nitrate nitrogen, nitrite nitrogen, ammonia nitrogen, organic nitrogen, pH, total dissolved solids, and chloride also were modeled as supporting information for the water quality analysis.

Modeling and data indicated that water quality tends to be worse during the warm summer and early fall months. However, dissolved oxygen downstream from Derby Diversion Dam is low at the end of April 1989 under current conditions as a result of low flows and warm air temperatures, indicating that water quality is highly variable, which makes qualification of water quality conditions by season difficult.

Annual summaries of major model water quality parameters under current conditions are shown in DSSAMt tables 1, 2, and 3 for each modeled reach downstream from Reno for wet (1986), median (1989), and dry (1992) calendar years.

On the basis of summaries of modeled output for both the 1998 draft EIS/EIR and the revised draft and final EIS/EIR, under current conditions in dry years, annual summaries indicated that standards for TDS and chloride concentrations to Pyramid Lake, a terminal saline desert lake, are exceeded most of the year. Total nitrogen standards in the reach from Lockwood to Derby Diversion Dam are exceeded about one-third of the year.

IX. No Action Alternative Temperature and Water Quality Simulations

No Action represents projected future conditions in the year 2033 without a Truckee River operating agreement or changes in system operations. The major difference under No Action is that population is expected to increase in the study area, which would increase municipal and industrial water demand. No Action serves as a baseline for comparison to the TROA Alternative.

Simulation of future conditions without TROA indicated warm temperatures for fish and water quality problems will exist minimally in wet and mostly in median and dry hydrologic conditions (Brock and Caupp, 2004c and 2004d). Temperature, pH, DO, chloride, TDS, and total nitrogen violations occur downstream from Reno. Some water quality indicators are slightly worse under No Action than under current conditions because of greater future water demands, mostly resulting from population growth. The most severe conditions occur in dry hydrologic conditions. Without changes, current system operations will not adequately accommodate water quality in the future.

Annual summaries of major model water quality parameters under No Action are presented in DSSAMt tables 4, 5, and 6 for each modeled reach downstream from Reno for wet (1986), median (1989), and dry (1992) calendar years.

Under No Action in dry years, annual summaries indicated that Truckee River TDS and chloride concentration standards downstream from Reno to Pyramid Lake are exceeded most of the year. Total nitrogen standards in the reach from Lockwood to Derby Diversion Dam is exceeded about one fifth of the year.

X. Local Water Supply Alternative Temperature and Water Quality Simulations

The Local Water Supply Alternative represents projected future conditions in the year 2033 without a Truckee River operating agreement with, however, some likely changes in system operations. Therefore, LWSA and No Action do not vary greatly. The primary differences between LWSA and No Action are the source of water used for municipal and industrial purposes, extent of water conservation, implementation of a groundwater recharge program in Truckee Meadows, and assumptions regarding governmental decisions concerning approval of new water supply proposals.

Simulation of future conditions under LWSA indicated warm temperatures for fish and water quality problems will exist primarily in wet, average, and dry conditions (Brock and Caupp, 2004e and 2004f). Temperature, pH, DO, chloride, TDS, and total nitrogen exceedences occur downstream from Reno. Some water quality indicators are slightly worse under LWSA than under current conditions because of greater future water demands, mostly resulting from population growth. The most severe conditions occur in dry conditions.

Annual summaries of major model water quality parameters under the LWSA are presented in DSSAMt tables 7, 8, and 9 for each modeled reach downstream from Reno for wet (1986), median (1989), and dry (1992) calendar years.

Under LWSA in dry years, annual summaries indicated that TDS and chloride concentration standards downstream from Reno are exceeded more often than under

No Action. Total nitrogen standards in the reach from Lockwood to Derby Diversion Dam are exceeded about one quarter of the year and, again, are exceeded more often than under No Action.

XI. TROA Alternative Temperature and Water Quality Simulations

The TROA Alternative represents a blended Truckee River operating agreement to accommodate the concerns of several negotiating parties. This alternative concentrates on implementing the requirements of the Preliminary Settlement Act (PSA). It provides drought relief for the Reno/Sparks area and enhances spawning flows for threatened and endangered fishes of Pyramid Lake. Under this alternative, current mandatory minimum instream flows would be met.

TROA provides a compromise of several resources and accommodates the needs of many users. Therefore, river temperatures and water quality would not be expected to be optimum for the nonhuman environment under TROA. However, from a water quality perspective, modeling (Brock and Caupp, 2004g and 2004h) indicated that water quality is better under TROA than under No Action in most instances. The TROA Alternative appears to be the optimum alternative for the human environment.

Annual summaries of major model water quality parameters under TROA are presented in DSSAMt tables 10, 11, and 12 for each modeled reach downstream from Reno for wet (1986), median (1989), and dry (1992) calendar years.

Under TROA in dry years, annual summaries indicated that TDS and chloride concentration standards are exceeded less often than under No Action. Total nitrogen standards in the reach from Lockwood to Derby Diversion Dam are exceeded less than one-sixth of the year and less often than under No Action.

XII. Simulated Versus Preferred Water Temperatures for Fish

Tables and plots summarizing fish temperature preferences for appropriate life stages of Truckee River fishes were prepared for the current condition simulation (Brock and Caupp, 2004a) and for the alternatives (Brock and Caupp, 2004c, 2004e, and 2004f). Included are temperature preference windows on plots of daily temperature for facilitating interpretation of the wealth of fish life stage information. Simulated daily instantaneous maximum temperatures indicated acute temperature effects on fish, whereas 7-day moving averages of maximum, mean, and minimum temperatures indicated chronic temperature effects. Life stages were separated into adult migration, spawning, incubation, larvae or rearing, juvenile maintenance, and adult maintenance. Fish species included rainbow trout, cui-ui, Lahontan cutthroat trout, mountain whitefish,

and brown trout. Summary tables of the information for extremely wet, median, and extremely dry ending years of a 5-year period for the current conditions and the alternatives (12 tables of five fishes and associated life stages from Section 6 of the fish temperature books (Brock and Caupp, 2004a, 2004c, 2004e, and 2004g) are included in DSSAMt tables 13 through 24.

Simulated river temperatures were compared to preferred ranges. For each species and life stage of fish, the number of days that the simulated temperatures were within the recommended range was counted. The temperature was counted as having met the preferred criteria if the temperature was less than or equal to the maximum preferred temperature and greater than or equal to the minimum preferred temperature. These criteria are exceeded if the temperature curves pass through the bottom or top of the thermal box. The number of days that recommended temperatures were met during each fish life stage was given for the daily instantaneous maximum and maximum, mean, and minimum 7-day moving averages at six locations: East McCarron, Lockwood, Clark, Painted Rock, Dead Ox, and Marble Bluff Dam. These locations correspond to locations listed in the Nevada water temperature standards or critical locations determined by fishery biologists.

In general, under current conditions and the alternatives in average and dry years, recommended temperatures for cold water and cool water fish are exceeded Recommended temperatures for warm water species, such as cui-ui, also are exceeded, but much less frequently. In wet years in which cui-ui spawning runs occur, temperature requirements are often met during the high spring spawning flows. However, once flows are greatly reduced during summer and fall, preferred temperatures for cold water fish such as trout are exceeded frequently. Differences among current conditions and the alternatives were minimal in comparison to differences among wet, median, and dry years.

Summary tables of the water quality books are shown as DSSAMt tables 13 – 24.

Table DSSAMt 13. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1986wy (extremely wet) - Current Condition

Rainbow Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	46	39	41	41	33	35	38	44	37	31	36	46	39	31	36	43	40	29	30	38	41	25	28	36	40
Spawning	32	25	27	24	13	21	24	29	19	17	22	30	20	17	22	27	21	15	16	23	28	11	14	22	27
Incubation	62	32	36	40	39	24	27	44	37	20	22	40	37	20	22	36	38	15	16	23	38	11	14	22	37
Rearing	183	178	183	176	173	181	183	183	183	177	183	183	178	178	183	183	177	162	167	183	176	146	158	183	175
Juvenile Maint.	365	355	360	342	335	363	365	365	365	359	365	365	349	360	365	361	347	344	349	358	345	328	340	358	342
Adult Maint.	365	355	360	342	335	363	365	365	365	359	365	365	349	360	365	361	347	344	349	358	345	328	340	358	342

Cui-ui

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	150	78	83	46	35	83	85	54	38	74	79	58	44	70	78	59	45	63	63	58	47	58	59	51	45
Spawning	91	64	69	46	35	68	70	52	38	60	65	56	44	57	65	57	45	52	52	56	47	48	49	49	45
Incubation	91	71	71	46	35	76	76	52	38	77	77	56	44	77	77	57	45	74	76	62	47	74	75	65	47
Larvae	62	55	56	47	36	56	57	51	39	57	58	52	45	57	58	52	46	54	57	55	48	53	54	55	48

Lahontan Cutthroat Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	136	100	102	114	102	98	102	107	111	96	101	98	106	95	100	96	101	94	98	94	95	92	99	93	92
Spawning	91	59	60	59	44	56	57	60	48	53	57	51	50	55	58	50	50	53	56	48	41	52	57	49	41
Incubation	91	59	60	59	44	56	57	60	48	53	57	51	50	55	58	50	50	53	56	48	41	52	57	49	41
Juvenile Maint.	107	88	95	96	92	94	98	103	96	81	91	105	96	82	92	107	97	74	83	107	98	57	60	107	96
Adult Maint.	365	338	338	331	309	349	349	339	334	340	343	336	333	338	339	335	333	326	330	335	332	323	332	335	331

Mountain Whitefish

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	62	37	39	48	51	31	38	42	48	37	36	42	47	41	36	41	47	32	32	42	46	20	16	41	47
Spawning	47	24	23	36	33	28	26	30	39	32	28	27	37	27	24	27	35	27	21	29	35	26	22	28	34
Incubation	78	37	36	47	42	55	53	45	52	54	50	40	49	45	42	40	47	47	41	42	47	53	49	41	46
Incubation	74	74	74	74	70	71	74	74	74	72	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
Rearing	154	135	136	154	154	135	136	154	154	130	131	151	154	130	131	151	154	126	125	149	154	122	123	148	154
Juvenile Maint.	365	309	307	342	335	316	314	360	365	307	302	342	349	308	302	335	347	301	295	330	345	295	293	327	342
Adult Maint.	365	309	307	342	335	316	314	360	365	307	302	342	349	308	302	335	347	301	295	330	345	295	293	327	342

Brown Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	62	37	39	48	51	31	38	42	48	37	36	42	47	41	36	41	47	32	32	42	46	20	16	41	47
Spawning	32	15	14	30	29	13	11	20	31	17	13	19	31	17	14	20	30	16	10	24	31	11	7	22	31
Incubation	78	37	36	47	42	55	53	45	52	54	50	40	49	45	42	40	47	47	41	42	47	53	49	41	46
Incubation	74	74	74	74	70	71	74	74	74	72	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
Rearing	154	151	154	154	154	153	154	154	154	150	154	154	154	151	154	154	154	147	154	154	154	139	149	154	154
Juvenile Maint.	365	355	360	342	335	363	365	365	365	359	365	365	349	360	365	361	347	344	349	358	345	328	340	358	342
Adult Maint.	365	355	360	342	335	363	365	365	365	359	365	365	349	360	365	361	347	344	349	358	345	328	340	358	342

	East McCarran 96.7 km	Lockwood 106.5 km	Clark 124.9 km	Painted Rock 131.6 km	Dead Ox 171.7 km	Marble Bluff 187.0 km
Number of Annual Degree Days (deg C)	**3,375**	**3,677**	**3,757**	**3,772**	**3,838**	**3,884**

· Table DSSAMt 15. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1966wy (median) - Current Condition

Rainbow Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	46	40	44	46	46	36	43	46	46	30	34	46	46	29	32	45	46	20	22	35	46	6	0	31	46
Spawning	32	26	30	32	11	22	29	32	21	17	20	32	32	17	18	31	32	11	11	21	32	3	0	17	32
Incubation	62	34	32	55	41	24	29	50	47	18	20	32	52	17	18	31	47	11	11	21	32	3	0	17	32
Rearing	183	182	183	183	183	183	183	183	183	182	183	183	183	181	183	183	183	162	163	183	183	141	143	183	183
Juvenile Maint.	365	364	365	365	354	365	365	365	365	364	365	365	365	363	365	365	365	344	345	365	365	323	325	365	361
Adult Maint.	365	364	365	365	354	365	365	365	365	364	365	365	365	363	365	365	365	344	345	365	365	323	325	365	361

Cui-ui

		East McCarran 96.7 km				East McCarran 96.7 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	150	89	90	88	52	87	91	91	75	79	85	83	86	77	84	80	88	70	75	79	83	55	58	73	83
Spawning	91	76	77	86	52	72	76	88	75	68	74	80	85	67	74	77	87	57	61	75	81	41	41	69	81
Incubation	91	86	89	88	52	86	88	91	75	84	88	91	87	82	88	90	89	74	75	89	91	69	74	84	91
Larvae	62	57	59	62	51	57	58	62	62	55	58	62	62	53	58	60	62	44	45	59	62	39	44	54	62

Lahontan Cutthroat Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	136	65	72	94	95	59	65	99	96	53	53	83	92	49	51	80	88	32	36	51	79	33	31	42	75
Spawning	91	48	57	77	74	41	44	75	85	36	31	64	76	35	30	63	75	15	17	48	65	10	5	32	63
Incubation	91	48	57	77	74	41	44	75	85	36	31	64	76	35	30	63	75	15	17	48	65	10	5	32	63
Juvenile Maint.	107	102	107	107	100	103	107	107	107	96	100	107	107	93	99	107	107	72	72	107	107	53	54	107	107
Adult Maint.	365	364	364	343	320	365	365	361	346	362	362	354	343	360	360	354	341	343	346	351	336	325	325	352	328

Mountain Whitefish

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	62	26	18	43	62	23	18	33	50	20	17	26	36	20	17	23	34	18	16	17	26	11	9	17	26
Spawning	47	32	28	47	47	29	26	45	47	33	28	44	46	33	29	42	45	33	25	36	44	29	24	35	44
Incubation	78	63	59	74	67	60	57	76	73	64	59	72	69	64	60	69	68	61	53	60	65	60	55	57	63
Incubation	74	71	74	64	52	68	71	74	69	71	74	74	68	72	74	74	68	71	74	74	68	71	74	74	66
Rearing	154	138	142	154	152	138	142	154	154	134	138	154	154	134	137	150	154	110	116	140	154	106	106	138	154
Juvenile Maint.	365	332	333	365	354	332	333	365	365	325	326	350	365	324	324	343	365	289	297	328	364	275	278	325	361
Adult Maint.	365	332	333	365	354	332	333	365	365	325	326	350	365	324	324	343	365	289	297	328	364	275	278	325	361

Brown Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg			Inst.	7-day moving avg		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	62	26	18	43	62	23	18	33	50	20	17	26	36	20	17	23	34	18	16	17	26	11	9	17	26
Spawning	32	17	13	32	32	14	11	30	32	18	13	29	31	18	14	27	30	18	10	21	29	14	9	20	29
Incubation	78	63	59	74	67	60	57	76	73	64	59	72	69	64	60	69	68	61	53	60	65	60	55	57	63
Incubation	74	71	74	64	52	68	71	74	69	71	74	74	68	72	74	74	68	71	74	74	68	71	74	74	66
Rearing	154	153	154	154	152	154	154	154	154	154	154	154	154	154	154	154	154	148	148	154	154	133	137	154	154
Juvenile Maint.	365	364	365	365	354	365	365	365	365	364	365	365	365	363	365	365	365	344	345	365	365	323	325	365	361
Adult Maint.	365	364	365	365	354	365	365	365	365	364	365	365	365	363	365	365	365	344	345	365	365	323	325	365	361
Number of Annual Degree Days (deg C)		**3,485**				**3,812**				**3,989**				**4,031**				**4,244**				**4,323**			

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Table DSSAMt 15. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1992wy (extremely dry) - Current Condition

Rainbow Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	wood 106 Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	46	3	0	14	34	1	0	5	26	1	0	3	17	0	0	3	17	1	0	3	13	0	0	3	25
Spawning	32	2	0	8	20	0	0	0	12	0	0	0	10	0	0	0	10	1	0	0	6	0	0	0	13
Incubation	62	2	0	13	44	0	0	0	15	0	0	0	18	0	0	0	16	1	0	0	12	0	0	0	27
Rearing	183	144	145	183	183	123	128	183	183	132	137	183	183	138	140	183	183	154	155	183	183	129	133	183	183
Juvenile Maint.	365	326	327	365	348	305	310	365	365	314	319	365	365	320	322	365	365	335	337	365	362	306	315	365	365
Adult Maint.	365	326	327	365	348	305	310	365	365	314	319	365	365	320	322	365	365	335	337	365	362	306	315	365	365

Cui-ui

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	150	62	61	67	67	66	68	77	67	64	66	63	68	63	65	57	66	63	65	55	66	53	60	68	74
Spawning	91	30	29	64	67	27	29	48	64	29	31	42	65	28	30	39	64	29	31	39	61	19	24	42	69
Incubation	91	58	61	87	71	54	55	70	86	52	55	73	91	47	49	72	91	49	49	68	91	38	36	72	91
Larvae	62	29	31	58	62	24	25	40	57	22	25	44	62	18	19	43	62	20	19	39	62	9	6	43	62

Lahontan Cutthroat Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	136	54	67	67	87	52	59	72	77	56	60	70	67	49	52	66	68	50	54	65	67	37	35	68	71
Spawning	91	17	24	31	65	17	24	28	36	19	23	28	34	14	11	28	35	14	14	29	34	8	7	28	42
Incubation	91	17	24	31	65	17	24	28	36	19	23	28	34	14	11	28	35	14	14	29	34	8	7	28	42
Juvenile Maint.	107	64	63	107	107	32	36	90	107	56	59	97	107	57	60	96	107	67	68	105	107	52	54	107	107
Adult Maint.	365	328	337	324	309	311	317	365	365	323	323	365	357	329	328	351	329	341	343	342	315	311	318	361	337

Mountain Whitefish

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	11	8	11	43	3	0	4	6	9	6	8	9	9	6	8	10	10	7	8	10	9	6	8	11
Spawning	47	31	27	35	39	18	15	16	24	27	23	28	32	28	24	30	36	30	28	35	36	25	21	31	36
Incubation	78	62	58	58	45	49	46	47	55	58	54	59	63	59	55	61	61	61	59	64	58	56	52	62	64
Incubation	74	59	64	63	52	55	60	73	74	60	62	74	74	58	58	73	64	61	63	64	55	54	55	71	64
Rearing	154	101	101	151	154	92	94	115	151	98	96	124	152	94	93	124	151	95	97	127	152	80	78	132	154
Juvenile Maint.	365	288	286	359	348	229	226	299	348	251	242	312	355	253	248	312	351	275	279	316	351	231	221	321	365
Adult Maint.	365	288	286	359	348	229	226	299	348	251	242	312	355	253	248	312	351	275	279	316	351	231	221	321	365

Brown Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	11	8	11	43	3	0	4	6	9	6	8	9	9	6	8	10	10	7	8	10	9	6	8	11
Spawning	32	16	12	20	24	3	0	1	9	12	8	13	17	13	9	15	21	15	13	20	21	10	7	16	21
Incubation	78	62	58	58	45	49	46	47	55	58	54	59	63	59	55	61	61	61	59	64	58	56	52	62	64
Incubation	74	59	64	63	52	55	60	73	74	60	62	74	74	58	58	73	64	61	63	64	55	54	55	71	64
Rearing	154	128	134	154	154	117	122	154	154	121	130	154	154	125	133	154	154	137	143	154	154	114	126	154	154
Juvenile Maint.	365	326	327	365	348	305	310	365	365	314	319	365	365	320	322	365	365	335	337	365	362	306	315	365	365
Adult Maint.	365	326	327	365	348	305	310	365	365	314	319	365	365	320	322	365	365	335	337	365	362	306	315	365	365

	East McCarran 96.7 km	Lockwood 106.5 km	Clark 124.9 km	Painted Rock 131.6 km	Dead Ox 171.7 km	Marble Bluff 187.0 km
Number of Annual Degree Days (deg C)	4,127	5,197	4,812	4,722	4,616	4,715

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Table DSSAMt 16. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1986wy (extremely wet) - No Action

Rainbow Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	46	39	41	41	33	32	38	46	38	31	36	45	40	31	35	43	40	28	30	38	41	25	28	36	39
Spawning	32	25	27	24	13	18	24	29	19	17	22	29	20	17	21	27	23	14	16	24	28	11	14	22	27
Incubation	62	32	36	40	39	21	27	44	37	19	22	39	37	20	21	36	40	14	16	24	38	11	14	22	37
Rearing	183	178	183	176	173	181	183	183	183	174	177	183	183	175	180	183	183	162	167	183	182	146	158	183	178
Juvenile Maint.	365	356	361	342	335	363	365	365	365	356	359	365	365	357	362	365	365	344	349	365	359	328	340	365	351
Adult Maint.	365	356	361	342	335	363	365	365	365	356	359	365	365	357	362	365	365	344	349	365	359	328	340	365	351

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Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	150	78	83	46	35	86	88	56	41	73	78	62	45	72	77	62	45	64	64	58	49	61	62	52	46
Spawning	91	64	69	46	35	70	72	54	41	59	64	60	45	58	63	60	45	53	53	56	49	50	51	48	46
Incubation	91	71	71	46	35	78	78	54	41	78	78	60	45	78	78	61	45	75	77	64	49	76	77	65	48
Larvae	62	55	56	47	36	57	58	52	42	57	58	54	46	57	58	54	46	55	58	55	49	54	55	55	48

Lahontan Cutthroat Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	136	100	102	114	102	98	102	109	113	96	102	98	107	96	101	96	103	94	100	94	96	91	99	94	94
Spawning	91	59	60	59	44	56	57	61	48	53	57	51	51	54	57	51	50	55	57	49	44	51	57	52	43
Incubation	91	59	60	59	44	56	57	61	48	53	57	51	51	54	57	51	50	55	57	49	44	51	57	52	43
Juvenile Maint.	107	89	95	96	92	92	98	104	96	78	90	107	97	81	91	107	97	75	83	107	98	57	60	107	96
Adult Maint.	365	339	339	332	315	365	365	362	343	358	362	345	336	354	356	342	336	336	339	338	334	330	340	337	333

Mountain Whitefish

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	38	39	48	51	30	36	41	48	33	36	41	47	40	36	41	46	29	32	41	46	21	18	43	47
Spawning	47	24	22	36	33	25	22	33	47	26	23	33	39	29	27	30	37	29	24	30	36	25	22	31	36
Incubation	78	37	35	47	42	56	53	64	78	57	54	59	55	58	56	53	50	56	51	49	49	55	52	50	48
Incubation	74	74	74	74	72	68	74	74	74	71	74	74	74	72	74	74	74	74	74	74	74	74	74	74	74
Rearing	154	135	136	154	154	135	136	154	154	130	129	151	154	130	130	151	154	126	125	149	154	122	123	148	154
Juvenile Maint.	365	310	308	342	335	315	314	355	365	306	300	340	365	307	301	339	365	301	295	336	359	295	293	334	351
Adult Maint.	365	310	308	342	335	315	314	355	365	306	300	340	365	307	301	339	365	301	295	336	359	295	293	334	351

Brown Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	38	39	48	51	30	36	41	48	33	36	41	47	40	36	41	46	29	32	41	46	21	18	43	47
Spawning	32	15	13	30	29	10	7	18	32	11	8	18	31	14	12	18	30	14	9	22	31	10	7	22	32
Incubation	78	37	35	47	42	56	53	64	78	57	54	59	55	58	56	53	50	56	51	49	49	55	52	50	48
Incubation	74	74	74	74	72	68	74	74	74	71	74	74	74	72	74	74	74	74	74	74	74	74	74	74	74
Rearing	154	151	154	154	154	153	154	154	154	149	154	154	154	149	154	154	154	147	154	154	154	139	149	154	154
Juvenile Maint.	365	356	361	342	335	363	365	365	365	356	359	365	365	357	362	365	365	344	349	365	359	328	340	365	351
Adult Maint.	365	356	361	342	335	363	365	365	365	356	359	365	365	357	362	365	365	344	349	365	359	328	340	365	351
Number of Annual Degree Days (deg C)		**3,383**				**3,805**				**3,864**				**3,873**				**3,913**				**3,942**			

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Table DSSAMt 17. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1966wy (median) - No Action

Rainbow Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	46	36	41	46	46	30	35	46	46	21	28	45	46	21	28	40	46	7	1	31	43	2	0	27	42
Spawning	32	22	27	32	16	18	21	32	28	12	14	31	32	12	14	26	32	4	1	17	29	1	0	13	28
Incubation	62	24	27	55	46	19	21	44	54	12	14	31	47	12	14	26	37	4	1	17	29	1	0	13	28
Rearing	183	182	183	183	183	183	183	183	183	181	183	183	183	180	183	183	183	161	162	183	183	139	141	183	183
Juvenile Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Adult Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365

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Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	150	87	90	87	57	89	95	95	86	77	82	84	90	76	79	82	89	59	70	71	79	43	41	68	82
Spawning	91	73	76	85	57	70	75	87	85	62	66	77	88	61	64	76	87	46	55	67	77	29	23	63	80
Incubation	91	86	88	88	57	85	88	91	85	82	87	90	90	82	86	90	91	71	75	87	91	62	65	82	91
Larvae	62	57	58	62	55	56	58	62	62	53	57	60	62	52	56	60	62	41	45	57	62	32	35	52	62

Lahontan Cutthroat Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	136	58	63	94	96	59	60	97	102	44	50	73	90	42	48	65	84	37	35	42	70	35	34	41	67
Spawning	91	40	46	76	74	32	31	70	82	24	23	58	75	22	23	54	69	11	12	29	61	6	0	23	60
Incubation	91	40	46	76	74	32	31	70	82	24	23	58	75	22	23	54	69	11	12	29	61	6	0	23	60
Juvenile Maint.	107	102	107	107	101	103	107	107	107	94	100	107	107	94	97	107	107	71	71	107	107	47	50	107	107
Adult Maint.	365	356	356	327	301	365	365	364	352	365	365	355	342	364	364	352	339	346	349	347	332	324	328	344	324

Mountain Whitefish

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	22	17	42	62	20	17	19	45	18	16	18	31	18	16	17	30	15	15	16	20	9	7	16	22
Spawning	47	29	31	46	47	24	18	45	46	31	27	39	45	31	28	38	45	31	24	34	44	28	22	33	44
Incubation	78	60	62	75	68	55	49	76	77	62	58	70	73	62	59	69	73	62	55	62	67	59	53	59	65
Incubation	74	64	68	53	28	65	70	74	74	71	73	74	67	71	74	73	66	71	74	71	63	71	73	70	58
Rearing	154	137	141	154	153	135	139	154	154	132	135	149	154	132	135	145	154	110	107	140	154	102	104	137	154
Juvenile Maint.	365	331	332	360	341	330	330	365	365	323	323	346	365	322	323	338	365	290	288	328	365	271	276	325	365
Adult Maint.	365	331	332	360	341	330	330	365	365	323	323	346	365	322	323	338	365	290	288	328	365	271	276	325	365

Brown Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	22	17	42	62	20	17	19	45	18	16	18	31	18	16	17	30	15	15	16	20	9	7	16	22
Spawning	32	14	16	31	32	9	5	30	31	16	12	24	30	16	13	23	30	16	9	19	29	13	7	18	29
Incubation	78	60	62	75	68	55	49	76	77	62	58	70	73	62	59	69	73	62	55	62	67	59	53	59	65
Incubation	74	64	68	53	28	65	70	74	74	71	73	74	67	71	74	73	66	71	74	71	63	71	73	70	58
Rearing	154	153	154	154	153	154	154	154	154	153	154	154	154	153	154	154	154	147	147	154	154	131	135	154	154
Juvenile Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Adult Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Number of Annual Degree Days (deg C)		**3,466**				**3,963**				**4,136**				**4,173**				**4,344**				**4,413**			

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Table DSSAMt 18. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1992wy (extremely dry) - No Action

Rainbow Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	46	3	0	12	33	1	0	1	19	0	0	2	11	0	0	2	11	1	0	3	12	0	0	3	25
Spawning	32	2	0	6	19	0	0	0	11	0	0	0	4	0	0	0	4	1	0	0	5	0	0	0	13
Incubation	62	2	0	11	42	0	0	0	11	0	0	0	9	0	0	0	9	1	0	0	11	0	0	0	28
Rearing	183	143	148	183	183	126	129	183	183	133	136	183	183	142	141	183	183	153	154	183	183	129	131	183	183
Juvenile Maint.	365	325	330	365	350	308	311	365	365	315	318	365	365	324	323	365	365	334	336	365	365	306	313	365	365
Adult Maint.	365	325	330	365	350	308	311	365	365	315	318	365	365	324	323	365	365	334	336	365	365	306	313	365	365

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Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	150	61	60	66	69	82	84	83	95	65	66	71	78	63	65	67	66	63	65	59	67	53	60	68	73
Spawning	91	29	28	63	69	26	28	39	62	29	30	37	61	28	30	37	58	29	31	40	61	19	24	41	68
Incubation	91	57	61	87	74	49	50	69	81	48	51	71	91	50	52	69	88	50	51	69	91	38	36	71	91
Larvae	62	28	31	58	62	19	20	39	52	18	21	42	62	21	22	40	59	21	21	40	62	9	6	42	62

Lahontan Cutthroat Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	136	52	60	66	85	44	42	70	73	48	53	71	74	46	51	72	67	50	53	65	67	37	35	68	72
Spawning	91	14	24	31	65	9	12	26	32	15	15	28	31	14	14	28	32	14	13	29	34	8	7	28	41
Incubation	91	14	24	31	65	9	12	26	32	15	15	28	31	14	14	28	32	14	13	29	34	8	7	28	41
Juvenile Maint.	107	65	65	107	107	32	32	90	107	55	59	96	107	59	61	95	107	66	68	107	107	53	54	107	107
Adult Maint.	365	331	335	325	309	313	318	365	365	323	323	365	365	333	331	365	365	342	345	345	326	311	318	364	338

Mountain Whitefish

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	11	8	11	42	1	0	3	5	9	6	7	9	9	6	7	9	10	7	8	10	9	6	8	11
Spawning	47	30	27	34	39	3	0	2	13	25	19	25	29	26	22	27	30	30	28	35	35	25	21	31	36
Incubation	78	61	58	58	45	15	12	33	44	56	50	56	60	57	53	58	61	61	59	66	60	56	52	62	64
incubation	74	59	63	63	52	26	24	48	65	55	55	65	74	56	56	70	74	60	63	66	57	54	55	71	66
Rearing	154	102	102	150	154	90	91	115	152	94	95	123	152	96	98	123	149	94	98	127	152	80	78	132	154
Juvenile Maint.	365	288	286	354	350	226	223	290	348	244	239	311	354	256	254	311	348	273	280	316	354	231	221	323	365
Adult Maint.	365	288	286	354	350	226	223	290	348	244	239	311	354	256	254	311	348	273	280	316	354	231	221	323	365

Brown Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	11	8	11	42	1	0	3	5	9	6	7	9	9	6	7	9	10	7	8	10	9	6	8	11
Spawning	32	15	12	19	24	0	0	0	0	10	6	10	14	11	8	12	15	15	13	20	20	10	7	16	21
Incubation	78	61	58	58	45	15	12	33	44	56	50	56	60	57	53	58	61	61	59	66	60	56	52	62	64
Incubation	74	59	63	63	52	26	24	48	65	55	55	65	74	56	56	70	74	60	63	66	57	54	55	71	66
Rearing	154	128	140	154	154	119	123	154	154	122	129	154	154	129	134	154	154	137	143	154	154	114	124	154	154
Juvenile Maint.	365	325	330	365	350	308	311	365	365	315	318	365	365	324	323	365	365	334	336	365	365	306	313	365	365
Adult Maint.	365	325	330	365	350	308	311	365	365	315	318	365	365	324	323	365	365	334	336	365	365	306	313	365	365
Number of Annual Degree Days (deg C)		**4,151**				**5,670**				**5,070**				**4,926**				**4,643**				**4,712**			

RCR j:\TROA_03\Fish\Fishsum\FishTempSum4_wb3 rev. 18-Feb-2004

RCR: D:\TROA_03\WQ\Stand\LWSA\1986\RT86LIST.qpw 30-Oct-04

Table DSSAMt 19. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1986wy (extremely wet) - LWSA

Rainbow Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	46	39	41	41	33	32	38	46	38	31	36	45	40	31	35	43	40	28	30	38	41	25	28	36	39
Spawning	32	25	27	24	13	18	24	29	19	17	22	29	20	17	21	27	23	14	16	24	28	11	14	22	27
Incubation	62	32	36	40	39	21	27	44	37	19	22	39	37	20	21	36	40	14	16	24	38	11	14	22	37
Rearing	183	178	183	176	173	181	183	183	183	174	177	183	183	175	180	183	183	162	167	183	182	146	158	183	178
Juvenile Maint.	365	356	361	342	335	363	365	365	365	356	359	365	365	357	362	365	365	344	349	365	359	328	340	365	350
Adult Maint.	365	356	361	342	335	363	365	365	365	356	359	365	365	357	362	365	365	344	349	365	359	328	340	365	350

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		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	150	78	83	46	35	86	88	56	41	73	78	62	45	72	77	62	45	64	64	58	49	61	62	52	46
Spawning	91	64	69	46	35	70	72	54	41	59	64	60	45	58	63	60	45	53	53	56	49	50	51	48	46
Incubation	91	71	71	46	35	78	78	54	41	78	78	60	45	78	78	61	45	75	77	64	49	76	77	65	48
Larvae	62	55	56	47	36	57	58	52	42	57	58	54	46	57	58	54	46	55	58	55	49	54	55	55	48

Lahontan Cutthroat Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	136	100	102	114	102	98	102	109	113	96	102	98	107	96	101	96	103	94	100	94	96	92	100	94	94
Spawning	91	59	60	59	44	56	57	61	48	53	57	51	51	54	57	51	50	55	57	49	44	51	57	52	43
Incubation	91	59	60	59	44	56	57	61	48	53	57	51	51	54	57	51	50	55	57	49	44	51	57	52	43
Juvenile Maint.	107	89	95	96	92	92	98	104	96	78	90	107	97	81	91	107	97	75	83	107	98	57	60	107	96
Adult Maint.	365	339	339	332	315	365	365	364	343	358	362	346	336	354	356	343	336	336	339	338	334	330	340	337	333

Mountain Whitefish

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	62	38	39	48	51	30	36	41	48	33	36	41	47	40	36	41	46	29	32	41	46	17	14	41	47
Spawning	47	24	22	36	33	25	22	33	47	26	23	33	39	29	27	30	37	29	24	30	36	25	22	29	36
Incubation	78	37	35	47	42	56	53	64	78	57	54	59	55	58	56	53	51	56	51	49	49	55	52	48	48
Incubation	74	74	74	74	72	68	74	74	74	71	74	74	74	72	74	74	74	74	74	74	74	74	74	74	74
Rearing	154	135	136	154	154	135	136	154	154	130	129	151	154	130	130	151	154	126	125	149	154	122	123	148	154
Juvenile Maint.	365	310	308	342	335	315	314	355	365	306	300	340	365	307	301	339	365	301	295	336	359	295	293	334	350
Adult Maint.	365	310	308	342	335	315	314	355	365	306	300	340	365	307	301	339	365	301	295	336	359	295	293	334	350

Brown Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	62	38	39	48	51	30	36	41	48	33	36	41	47	40	36	41	46	29	32	41	46	17	14	41	47
Spawning	32	15	13	30	29	10	7	18	32	11	8	18	31	14	12	18	30	14	9	22	31	10	7	21	32
Incubation	78	37	35	47	42	56	53	64	78	57	54	59	55	58	56	53	51	56	51	49	49	55	52	48	48
Incubation	74	74	74	74	72	68	74	74	74	71	74	74	74	72	74	74	74	74	74	74	74	74	74	74	74
Rearing	154	151	154	154	154	153	154	154	154	149	154	154	154	149	154	154	154	147	154	154	154	139	149	154	154
Juvenile Maint.	365	356	361	342	335	363	365	365	365	356	359	365	365	357	362	365	365	344	349	365	359	328	340	365	350
Adult Maint.	365	356	361	342	335	363	365	365	365	356	359	365	365	357	362	365	365	344	349	365	359	328	340	365	350
Number of Annual Degree Days (deg C)		**3,383**				**3,806**				**3,865**				**3,874**				**3,913**				**3,948**			

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Table DSSAMt 20. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1966wy (median) - LWSA

Rainbow Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	46	36	41	46	46	30	35	46	46	21	28	45	46	21	28	40	46	7	1	31	43	2	0	27	42
Spawning	32	22	27	32	16	18	21	32	28	12	14	31	32	12	14	26	32	4	1	17	29	1	0	13	28
Incubation	62	24	27	55	46	19	21	44	54	12	14	31	47	12	14	26	37	4	1	17	29	1	0	13	28
Rearing	183	182	183	183	183	183	183	183	183	181	183	183	183	180	183	183	183	161	162	183	183	139	141	183	183
Juvenile Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Adult Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365

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Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	150	87	90	87	57	89	95	95	86	77	82	84	90	76	79	82	89	59	70	71	79	42	41	68	82
Spawning	91	73	76	85	57	70	75	87	85	62	66	77	88	61	64	76	87	46	55	67	77	28	23	63	80
Incubation	91	86	88	88	57	85	88	91	85	82	87	90	90	82	86	90	91	71	75	87	91	62	65	82	91
Larvae	62	57	58	62	55	56	58	62	62	53	57	60	62	52	56	60	62	41	45	57	62	32	35	52	62

Lahontan Cutthroat Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	136	57	63	94	96	57	59	97	103	44	50	73	90	42	48	64	84	37	32	41	70	35	34	40	67
Spawning	91	40	44	76	75	29	30	70	82	23	23	58	75	22	23	54	69	10	12	29	61	6	0	23	60
Incubation	91	40	44	76	75	29	30	70	82	23	23	58	75	22	23	54	69	10	12	29	61	6	0	23	60
Juvenile Maint.	107	102	107	107	101	103	107	107	107	94	99	107	107	94	97	107	107	70	71	107	107	47	50	107	107
Adult Maint.	365	356	356	327	302	365	365	364	352	365	365	355	342	364	364	352	339	346	349	347	332	325	329	346	324

Mountain Whitefish

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	22	17	42	62	20	17	19	45	18	16	18	31	18	16	17	30	15	15	16	19	9	7	16	22
Spawning	47	29	31	46	47	24	17	45	46	31	27	39	45	31	28	38	45	30	24	34	44	28	22	33	44
Incubation	78	60	62	75	68	55	48	76	77	62	58	70	73	62	59	69	73	61	55	62	67	59	53	59	65
Incubation	74	64	68	53	28	65	70	74	74	71	73	74	67	71	74	74	66	71	74	71	63	71	73	71	58
Rearing	154	137	141	154	153	135	139	154	154	132	135	149	154	132	135	145	154	110	107	140	154	102	104	137	154
Juvenile Maint.	365	331	332	360	341	330	330	365	365	323	323	346	365	322	323	338	365	290	288	328	365	271	276	325	365
Adult Maint.	365	331	332	360	341	330	330	365	365	323	323	346	365	322	323	338	365	290	288	328	365	271	276	325	365

Brown Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	22	17	42	62	20	17	19	45	18	16	18	31	18	16	17	30	15	15	16	19	9	7	16	22
Spawning	32	14	16	31	32	9	5	30	31	16	12	24	30	16	13	23	30	15	9	19	29	13	7	18	29
Incubation	78	60	62	75	68	55	48	76	77	62	58	70	73	62	59	69	73	61	55	62	67	59	53	59	65
Incubation	74	64	68	53	28	65	70	74	74	71	73	74	67	71	74	74	66	71	74	71	63	71	73	71	58
Rearing	154	153	154	154	153	154	154	154	154	153	154	154	154	153	154	154	154	147	147	154	154	131	135	154	154
Juvenile Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Adult Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Number of Annual Degree Days (deg C)		**3,469**				**3,969**				**4,140**				**4,177**				**4,347**				**4,416**			

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Table DSSAMt 21. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1992wy (extremely dry) - LWSA

Rainbow Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	46	3	0	12	33	1	0	1	19	0	0	2	11	0	0	2	11	1	0	3	12	0	0	3	25
Spawning	32	2	0	6	19	0	0	0	11	0	0	0	4	0	0	0	4	1	0	0	5	0	0	0	13
Incubation	62	2	0	11	42	0	0	0	11	0	0	0	9	0	0	0	9	1	0	0	11	0	0	0	28
Rearing	183	143	149	183	183	127	129	183	183	133	137	183	183	142	141	183	183	153	154	183	183	129	132	183	183
Juvenile Maint.	365	325	331	365	352	309	311	365	365	315	319	365	365	324	323	365	365	334	336	365	365	306	314	365	365
Adult Maint.	365	325	331	365	352	309	311	365	365	315	319	365	365	324	323	365	365	334	336	365	365	306	314	365	365

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Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	150	61	60	66	68	83	85	83	95	65	66	71	78	63	65	67	66	63	65	59	67	53	60	68	73
Spawning	91	29	28	63	68	26	28	39	62	29	30	37	61	28	30	37	58	29	31	40	61	19	24	41	68
Incubation	91	57	61	87	74	49	50	69	81	48	51	71	91	50	52	69	88	50	51	69	91	38	36	71	91
Larvae	62	28	31	58	62	19	20	39	52	18	21	42	62	21	22	40	59	21	21	40	62	9	6	42	62

Lahontan Cutthroat Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	136	52	59	66	85	43	42	70	73	47	53	71	74	46	51	72	67	50	53	65	67	37	35	68	72
Spawning	91	14	24	31	65	9	11	26	32	15	15	28	31	14	14	28	32	14	13	29	34	8	7	28	41
Incubation	91	14	24	31	65	9	11	26	32	15	15	28	31	14	14	28	32	14	13	29	34	8	7	28	41
Juvenile Maint.	107	65	66	107	107	32	34	92	107	55	59	96	107	59	61	95	107	66	68	107	107	53	54	107	107
Adult Maint.	365	331	335	325	309	314	319	365	365	323	324	365	365	333	331	365	365	342	345	345	326	311	318	364	338

Mountain Whitefish

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	11	8	11	42	1	0	3	5	9	6	7	9	9	6	7	9	10	7	8	10	9	6	8	11
Spawning	47	30	27	35	39	2	0	1	13	25	19	25	29	26	22	27	30	30	28	35	35	25	21	31	36
Incubation	78	61	58	59	44	12	10	30	44	56	50	56	60	57	53	58	61	61	59	66	60	56	52	62	64
Incubation	74	59	63	63	52	25	24	47	65	55	55	65	74	56	56	69	74	60	63	66	57	54	55	71	66
Rearing	154	102	102	150	154	90	92	115	152	94	95	123	152	96	98	123	149	94	98	127	152	80	78	132	154
Juvenile Maint.	365	288	286	353	352	226	224	291	349	244	239	311	354	256	254	311	347	273	280	316	354	231	221	323	365
Adult Maint.	365	288	286	353	352	226	224	291	349	244	239	311	354	256	254	311	347	273	280	316	354	231	221	323	365

Brown Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	11	8	11	42	1	0	3	5	9	6	7	9	9	6	7	9	10	7	8	10	9	6	8	11
Spawning	32	15	12	20	24	0	0	0	0	10	6	10	14	11	8	12	15	15	13	20	20	10	7	16	21
Incubation	78	61	58	59	44	12	10	30	44	56	50	56	60	57	53	58	61	61	59	66	60	56	52	62	64
Incubation	74	59	63	63	52	25	24	47	65	55	55	65	74	56	56	69	74	60	63	66	57	54	55	71	66
Rearing	154	128	141	154	154	120	123	154	154	122	130	154	154	129	134	154	154	137	143	154	154	114	125	154	154
Juvenile Maint.	365	325	331	365	352	309	311	365	365	315	319	365	365	324	323	365	365	334	336	365	365	306	314	365	365
Adult Maint.	365	325	331	365	352	309	311	365	365	315	319	365	365	324	323	365	365	334	336	365	365	306	314	365	365
Number of Annual Degree Days (deg C)		**4,155**				**5,675**				**5,076**				**4,930**				**4,643**				**4,712**			

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Table DSSAMt 22. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1986wy (extremely wet) - TROA

Rainbow Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	46	36	41	46	46	30	35	46	46	21	28	45	46	21	28	40	46	7	1	31	43	2	0	27	42
Spawning	32	22	27	32	16	18	21	32	28	12	14	31	32	12	14	26	32	4	1	17	29	1	0	13	28
Incubation	62	24	27	55	46	19	21	44	54	12	14	31	47	12	14	26	37	4	1	17	29	1	0	13	28
Rearing	183	182	183	183	183	183	183	183	183	181	183	183	183	180	183	183	183	161	162	183	183	139	141	183	183
Juvenile Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Adult Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365

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Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	150	87	90	87	57	89	95	95	86	77	82	84	90	76	79	82	89	59	70	71	79	43	41	68	82
Spawning	91	73	76	85	57	70	75	87	85	62	66	77	88	61	64	76	87	46	55	67	77	29	23	63	80
Incubation	91	86	88	88	57	85	88	91	85	82	87	90	90	82	86	90	91	71	75	87	91	62	65	82	91
Larvae	62	57	58	62	55	56	58	62	62	53	57	60	62	52	56	60	62	41	45	57	62	32	35	52	62

Lahontan Cutthroat Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	136	58	63	94	96	59	60	97	102	44	50	73	90	42	48	65	84	37	35	42	70	35	34	41	67
Spawning	91	40	46	76	74	32	31	70	82	24	23	58	75	22	23	54	69	11	12	29	61	6	0	23	60
Incubation	91	40	46	76	74	32	31	70	82	24	23	58	75	22	23	54	69	11	12	29	61	6	0	23	60
Juvenile Maint.	107	102	107	107	101	103	107	107	107	94	100	107	107	94	97	107	107	71	71	107	107	47	50	107	107
Adult Maint.	365	356	356	327	301	365	365	364	352	365	365	355	342	364	364	352	339	346	349	347	332	324	328	344	324

Mountain Whitefish

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	22	17	42	62	20	17	19	45	18	16	18	31	18	16	17	30	15	15	16	20	9	7	16	22
Spawning	47	29	31	46	47	24	18	45	46	31	27	39	45	31	28	38	45	31	24	34	44	28	22	33	44
Incubation	78	60	62	75	68	55	49	76	77	62	58	70	73	62	59	69	73	62	55	62	67	59	53	59	65
Incubation	74	64	68	53	28	65	70	74	74	71	73	74	67	71	74	73	66	71	74	71	63	71	73	70	58
Rearing	154	137	141	154	153	135	139	154	154	132	135	149	154	132	135	145	154	110	107	140	154	102	104	137	154
Juvenile Maint.	365	331	332	360	341	330	330	365	365	323	323	346	365	322	323	338	365	290	288	328	365	271	276	325	365
Adult Maint.	365	331	332	360	341	330	330	365	365	323	323	346	365	322	323	338	365	290	288	328	365	271	276	325	365

Brown Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	22	17	42	62	20	17	19	45	18	16	18	31	18	16	17	30	15	15	16	20	9	7	16	22
Spawning	32	14	16	31	32	9	5	30	31	16	12	24	30	16	13	23	30	16	9	19	29	13	7	18	29
Incubation	78	60	62	75	68	55	49	76	77	62	58	70	73	62	59	69	73	62	55	62	67	59	53	59	65
Incubation	74	64	68	53	28	65	70	74	74	71	73	74	67	71	74	73	66	71	74	71	63	71	73	70	58
Rearing	154	153	154	154	153	154	154	154	154	153	154	154	154	153	154	154	154	147	147	154	154	131	135	154	154
Juvenile Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Adult Maint.	365	364	365	360	341	365	365	365	365	363	365	365	365	362	365	365	365	343	344	365	365	321	323	365	365
Number of Annual Degree Days (deg C)		**3,466**				**3,963**				**4,136**				**4,173**				**4,344**				**4,413**			

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Table DSSAMt 23. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1966wy (median) - TROA

Rainbow Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	46	25	28	44	46	16	20	42	46	9	0	31	44	8	0	29	44	0	0	13	34	0	0	3	34
Spawning	32	13	14	30	21	8	10	28	32	5	0	17	30	5	0	15	30	0	0	7	20	0	0	1	20
Incubation	62	13	14	32	48	8	10	28	45	5	0	17	30	5	0	15	30	0	0	7	20	0	0	1	20
Rearing	183	182	183	183	182	183	183	183	183	179	183	183	183	177	183	183	183	157	161	183	183	125	128	183	183
Juvenile Maint.	365	364	365	360	341	365	365	365	365	361	365	365	365	359	365	365	365	339	343	365	365	307	310	365	365
Adult Maint.	365	364	365	360	341	365	365	365	365	361	365	365	365	359	365	365	365	339	343	365	365	307	310	365	365

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		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	150	79	85	78	63	82	86	87	81	66	74	81	80	65	72	77	78	40	42	64	76	35	38	61	73
Spawning	91	64	70	76	63	61	64	74	79	49	56	72	77	49	55	68	75	27	26	59	73	22	21	56	70
Incubation	91	77	79	88	63	76	78	91	85	73	74	84	91	73	74	82	91	62	64	80	89	53	58	78	91
Larvae	62	48	49	62	59	47	48	62	62	43	44	54	62	43	44	52	62	32	34	50	60	23	28	48	62

Lahontan Cutthroat Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	136	48	49	84	85	51	54	82	98	43	49	55	80	41	47	52	70	34	34	40	53	36	36	39	54
Spawning	91	26	24	70	67	19	19	58	73	16	19	35	60	16	19	28	58	10	11	22	45	5	0	22	45
Incubation	91	26	24	70	67	19	19	58	73	16	19	35	60	16	19	28	58	10	11	22	45	5	0	22	45
Juvenile Maint.	107	100	107	107	101	100	107	107	107	85	90	107	107	81	88	107	107	67	66	107	107	43	39	107	107
Adult Maint.	365	356	356	325	292	365	365	365	357	362	365	360	346	362	365	356	345	345	351	350	331	319	320	347	320

Mountain Whitefish

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	62	28	23	39	62	25	19	28	45	23	18	26	34	23	18	26	32	20	17	20	26	16	16	18	26
Spawning	47	33	31	45	42	26	26	46	47	33	29	45	47	33	31	45	46	32	27	44	45	29	22	39	45
Incubation	78	64	62	75	61	57	57	77	78	64	60	76	78	64	62	76	77	63	58	73	69	60	53	66	65
Incubation	74	63	66	54	30	64	69	71	74	70	72	74	68	71	72	74	67	71	74	72	64	71	73	71	59
Rearing	154	130	133	154	154	128	131	154	154	114	117	146	154	113	116	141	154	104	102	132	154	94	93	130	154
Juvenile Maint.	365	324	324	360	341	322	321	365	365	303	304	338	365	302	303	332	365	283	282	320	362	263	264	317	365
Adult Maint.	365	324	324	360	341	322	321	365	365	303	304	338	365	302	303	332	365	283	282	320	362	263	264	317	365

Brown Trout

		East McCarran 96.7 km				Lockwood 106.5 km				Clark 124.9 km				Painted Rock 131.6 km				Dead Ox 171.7 km				Marble Bluff 187.0 km			
	Total	Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------			Inst.	--------7-day moving avg--------		
Life Stage	# Days	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN	MAX	MAX	MEAN	MIN
Adult Migration	62	28	23	39	62	25	19	28	45	23	18	26	34	23	18	26	32	20	17	20	26	16	16	18	26
Spawning	32	18	16	32	32	11	11	31	32	18	14	30	32	18	16	30	31	17	12	29	30	14	7	24	30
Incubation	78	64	62	75	61	57	57	77	78	64	60	76	78	64	62	76	77	63	58	73	69	60	53	66	65
Incubation	74	63	66	54	30	64	69	71	74	70	72	74	68	71	72	74	67	71	74	72	64	71	73	71	59
Rearing	154	153	154	154	154	154	154	154	154	153	154	154	154	152	154	154	154	143	146	154	154	118	123	154	154
Juvenile Maint.	365	364	365	360	341	365	365	365	365	361	365	365	365	359	365	365	365	339	343	365	365	307	310	365	365
Adult Maint.	365	364	365	360	341	365	365	365	365	361	365	365	365	359	365	365	365	339	343	365	365	307	310	365	365
Number of Annual Degree Days (deg C)		**3,549**				**4,088**				**4,246**				**4,281**				**4,405**				**4,455**			

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Table DSSAMt 24. No. of days recommended temperatures are met for Truckee R. Fishes

Truckee R. 1992wy (extremely dry) - TROA

Rainbow Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	46	3	0	12	33	1	0	1	19	0	0	2	11	0	0	2	11	1	0	3	13	0	0	3	24
Spawning	32	2	0	6	19	0	0	0	11	0	0	0	4	0	0	0	4	1	0	0	6	0	0	0	12
Incubation	62	2	0	11	40	0	0	0	14	0	0	0	9	0	0	0	8	1	0	0	12	0	0	0	24
Rearing	183	156	163	183	183	147	154	183	183	141	141	183	183	147	153	183	183	153	156	183	183	130	133	183	183
Juvenile Maint.	365	338	345	365	351	329	336	365	365	323	323	365	365	329	335	365	365	334	338	365	365	307	315	365	365
Adult Maint.	365	338	345	365	351	329	336	365	365	323	323	365	365	329	335	365	365	334	338	365	365	307	315	365	365

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Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	150	61	60	66	66	85	87	87	98	65	66	71	78	63	65	68	69	63	65	59	67	53	60	69	74
Spawning	91	29	28	63	66	26	28	40	64	29	30	37	61	28	30	37	59	29	31	40	61	19	24	42	69
Incubation	91	59	62	86	74	51	54	71	87	49	51	71	91	51	52	69	87	50	51	69	91	39	36	71	91
Larvae	62	30	32	57	62	22	24	42	58	20	21	42	62	22	22	40	58	21	21	40	62	9	6	42	62

Lahontan Cutthroat Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	136	52	59	68	85	43	42	70	73	47	53	71	74	46	51	72	68	50	54	65	68	37	35	67	71
Spawning	91	16	24	32	65	10	10	27	32	15	16	28	31	14	14	28	32	14	13	29	34	8	7	28	40
Incubation	91	16	24	32	65	10	10	27	32	15	16	28	31	14	14	28	32	14	13	29	34	8	7	28	40
Juvenile Maint.	107	72	76	107	107	68	68	107	107	60	61	98	107	64	65	97	107	66	68	106	107	53	55	105	107
Adult Maint.	365	340	346	325	309	341	349	365	365	329	336	365	365	338	343	365	365	345	347	345	324	314	318	364	339

Mountain Whitefish

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	10	8	10	16	7	4	6	7	9	6	7	9	10	6	7	9	10	7	8	9	9	6	8	10
Spawning	47	30	26	36	38	2	0	1	8	26	20	26	29	28	23	27	31	30	27	34	35	27	22	31	36
Incubation	78	61	57	60	43	13	9	32	39	57	51	57	60	59	54	58	62	61	58	65	60	58	53	62	64
Incubation	74	59	63	63	52	23	24	47	64	55	55	65	74	56	56	68	74	60	63	66	57	54	55	71	66
Rearing	154	104	105	151	154	98	99	128	154	95	97	124	152	97	97	124	149	96	97	128	152	81	79	130	154
Juvenile Maint.	365	289	290	349	351	253	245	317	360	251	248	312	351	263	264	312	347	277	276	317	354	232	224	319	363
Adult Maint.	365	289	290	349	351	253	245	317	360	251	248	312	351	263	264	312	347	277	276	317	354	232	224	319	363

Brown Trout

Life Stage	Total # Days	East McCarran 96.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Lockwood 106.5 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Clark 124.9 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Painted Rock 131.6 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Dead Ox 171.7 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN	Marble Bluff 187.0 km Inst. MAX	7-day moving avg MAX	7-day moving avg MEAN	7-day moving avg MIN
Adult Migration	62	10	8	10	16	7	4	6	7	9	6	7	9	10	6	7	9	10	7	8	9	9	6	8	10
Spawning	32	15	11	21	23	0	0	1	6	11	7	11	14	13	9	12	16	15	12	19	20	12	8	16	21
Incubation	78	61	57	60	43	13	9	32	39	57	51	57	60	59	54	58	62	61	58	65	60	58	53	62	64
Incubation	74	59	63	63	52	23	24	47	64	55	55	65	74	56	56	68	74	60	63	66	57	54	55	71	66
Rearing	154	138	150	154	154	132	143	154	154	128	134	154	154	134	143	154	154	137	144	154	154	115	126	154	154
Juvenile Maint.	365	338	345	365	351	329	336	365	365	323	323	365	365	329	335	365	365	334	338	365	365	307	315	365	365
Adult Maint.	365	338	345	365	351	329	336	365	365	323	323	365	365	329	335	365	365	334	338	365	365	307	315	365	365
Number of Annual Degree Days (deg C)		**4,208**				**5,485**				**5,060**				**4,925**				**4,653**				**4,748**			

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References

Bender, M.D., 1995. "Summary of Information for Estimating Water Quality Conditions Downstream of Lake Tahoe for the TROA DEIS/DEIR," Technical Service Center, Bureau of Reclamation, Special Report, Denver, Colorado.

Brock, J.T, 2004. Two facsimiles to Merlynn Bender, Bureau of Reclamation. March 19.

Brock, J.T. and C.L. Caupp, 1996. "Application of DSSAMt Water Quality Model – Truckee River, Nevada for Truckee River Operating Agreement (TROA) DEIS/DEIR: Simulated River Temperatures for Current Condition." Technical Report No. RCR96-3.0, Appendix A Section 11, "Development of an **Empirical Model for Estimation of Truckee River Temperature** at Glendale Avenue (Reno-Sparks, Nevada) Based on Flow and Air Temperature. Submitted to Bureau of Reclamation, Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 1997. "Calibration of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) DEIS/DEIR: Model Performance and **Sensitivity** of Simulation Results for 1986, 1989, 1991, 1992, and 1993." Technical Report No. RCR94-3.0. Submitted to Bureau of Reclamation, Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho, June.

Brock, J.T. and C.L. Caupp, 1998a. "**Calibration** of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) DEIS/DEIR: Simulation Results and Data Summary for 1986, 1989, 1992, and 1993." Technical Report No. RCR94-2.0. Submitted to Bureau of Reclamation, Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho. Prepared in July 1995 and reissued with corrections, June.

Brock, J.T. and C.L. Caupp, 1998b. "**Verification** of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) DEIS/DEIR: Simulation Results and Data Summary for 1991, 1994, and 1995." Technical Report No. RCR98-2.0. Submitted to Bureau of Reclamation, Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho, June.

Brock, J.T. and C.L. Caupp, 2004a. "Application of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: Simulated River **Temperatures for Current Condition**." Technical Report No. RCR04-5.0. Submitted to U.S. Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 2004b. "Application of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: Simulated **Water Quality for Current Condition**." Technical Report No. RCR04-6.0. Submitted to U.S. Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 2004c. "Application of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: Simulated River **Temperatures for No Action**." Technical Report No. RCR04-7.0. Submitted to U.S. Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 2004d. "Application of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: Simulated **Water Quality for No Action**." Technical Report No. RCR04-8.0. Submitted to Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 2004e. "Application of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: Simulated River **Temperatures for LWSA**." Technical Report No. RCR04-9.0. Submitted to Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 2004f. "Application of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: Simulated **Water Quality for LWSA**." Technical Report No. RCR04-10.0. Submitted to Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 2004g. "Application of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: Simulated River **Temperatures for TROA**." Technical Report No. RCR04-7.11.0. Submitted to Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 2004h. "Application of DSSAMt Water Quality Model - Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: Simulated **Water Quality for TROA**." Technical Report No. RCR04-12.0. Submitted to Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Brock, J.T. and C.L. Caupp, 2004i. Compact Disk (CD) of "Simulated Truckee River Temperatures with Recommended Conditions for Fish," **Presentation Plots of Fish Thermal Requirements** for 1966, 1986, and 1992, Version 1.1, Application of DSSAMt Water Quality Model -Truckee River, Nevada for Truckee River

Operating Agreement (TROA) RDEIS/RDEIR: Submitted to Bureau of Reclamation. Carson City, Nevada as consideration for contract No. 1425-4-CS-20-02690. Rapid Creek Research, Inc., Boise, Idaho, December.

Bureau of Indian Affairs, 2002. "Truckee River Water Quality Settlement Agreement: Federal Water Rights Acquisition Program, Final Environmental Impact Statement," California and Nevada, Western Regional Office of the Bureau of Indian Affairs, Phoenix, Arizona.

Bureau of Reclamation, 1986. "Draft Environmental Impact Statement for the Newlands Project Proposed Operating Criteria and Procedures." Prepared by URS Corporation for the Mid-Pacific Regional Office, Sacramento, California.

Bureau of Reclamation, 1987. "Final Environmental Impact Statement for the Newlands Project Proposed Operating Criteria and Procedures." Prepared by URS Corporation for the Mid-Pacific Regional Office, Sacramento, California.

Caupp, C.L., J.T. Brock, and H.M. Runke, 1997. "Application of the Dynamic Stream Simulation and Assessment Model (DSSAMt) to the Truckee River, Nevada for Truckee River Operating Agreement (TROA) RDEIS/RDEIR: **Model Formulation** and Overview," Technical Report No. RCR96-1.1. Submitted to Bureau of Reclamation. Carson City, Nevada. Rapid Creek Research, Inc., Boise, Idaho.

Chen, C.W. and L.H.Z. Weintraub, 2002. "Adaptation of WARMF to the Truckee River Basin of California and Nevada." Prepared by Systech Engineering Inc. for City of Reno, NV, City of Sparks, NV, and Washoe County, NV. Updated March 2002.

Elisa Garvey. 2006. Personal telephone communication with Merlynn Bender, Bureau of Reclamation, May 11, 2006.

Hallock, R.J. and L.L. Hallock, Editors, U.S. Fish and Wildlife Service, 1993. "Detailed Study of Irrigation Drainage in and near Wildlife Management Areas, West-Central Nevada, 1987-90, Part B. Effect on Biota in Stillwater and Fernley Wildlife Management Areas and Other Nearby Wetlands," U.S. Geological Survey, Water-Resources Investigations Report 92-4042B, Carson City, Nevada.

Hoffman, R.J., R.J. Hallock, T.G. Rowe, M.S. Lico, H.L. Burge, and S.P. Thompson, 1990. "Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated With Irrigation Drainage in and near Stillwater Wildlife Management Area, Churchill County, Nevada, 1986-87," U.S. Geological Survey, Water-Resources Investigations Report 89-4105, Carson City, Nevada.

Lahontan Regional Water Quality Control Board, 1995. "Water Quality Plan for the Lahontan Region," Sacramento, California.

Lebo, M.E., J.E. Reuter, C.L. Rhodes, and C.R. Goldman, 1993a. "Pyramid Lake, Nevada Water Quality Study 1989-1993, Volume 1. Limnological Data," Division of Environmental Studies, University of California, Davis, California.

Lebo, M.E., J.E. Reuter, C.L. Rhodes, and C.R. Goldman, 1993b. "Pyramid Lake, Nevada Water Quality Study 1989-1993, Volume 2. Limnological Description," Division of Environmental Studies, University of California, Davis, California.

Lebo, M.E., J.E. Reuter, and C.R. Goldman, 1993c. "Pyramid Lake, Nevada Water Quality Study 1989-1993, Volume 3. Nutrient Budgets," Division of Environmental Studies, University of California, Davis, California.

Lebo, M.E., J.E. Reuter, C.L. Rhodes, and C.R. Goldman, 1994. "Pyramid Lake, Nevada Water Quality Study 1989-1993, Volume 4. Modeling Studies," Division of Environmental Studies, University of California, Davis, California.

Lico, M.S., 1992. "Detailed Study of Irrigation Drainage in and near Wildlife Management Areas, West-Central Nevada, 1987-90, Part A. Water Quality, Sediment Composition, and Hydrogeochemical Processes in Stillwater and Fernley Wildlife Management Areas," U.S. Geological Survey, Water Resources Investigations Report 92-4024A, Carson City, Nevada.

Marshack, J.B., 1993. "A Compilation of Water Quality Goals," California Regional Water Quality Control Board, Central Valley Region, California Environmental Protection Agency.

Marshack, J.B., 2003. "A Compilation of Water Quality Goals," California Regional Water Quality Control Board, Central Valley Region, California Environmental Protection Agency.

Rowe, T.G., M.S. Lico, R.J. Hallock, A.S. Maest, R.J. Hoffman, 1991. "Physical, Chemical, and Biological Data for Detailed Study of Irrigation Drainage in and near Stillwater, Fernley, and Humboldt Wildlife Management Areas and Carson Lake, West-Central Nevada, 1987-89," U.S. Geological Survey, Open-File Report 91-185, Carson City, Nevada.

Seiler, R.L., G.A. Ekechukwu, and R.J. Hallock, 1993. "Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in and near Humboldt Wildlife Management Area, Churchill and Pershing Counties, Nevada, 1990-91," U.S. Geological Survey, Water Resources Investigations Report 93-4072, Carson City, Nevada.

Attachment to Water Quality Appendix

Beneficial Uses of Surface Waters

Beneficial uses of surface waters of the Lahontan Region identified in the Water Quality Control Plan for the Lahontan Region (north and south basins) are listed at: <http://www.waterboards.ca.gov/lahontan/BasinPlan/TABLE2-1.pdf> and are attached.

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
642.00	**COWHEAD LAKE HYDROLOGIC UNIT**																								
	COWHEAD LAKE WETLANDS		X	X			X				X	X			X	X		X					X	X	
	COWHEAD LAKE	SEASONAL LAKE/EMERGENT MEADOW	X	X			X				X	X	X		X	X		X					X		INTERNALLY DRAINED LAKE
	COWHEAD SLOUGH	FRESHWATER SLOUGH/EMERGENT MDW	X	X			X	X			X	X			X	X		X		X		X	X	X	COWHEAD LAKE
	NORTH TWIN LAKE	SEASONAL LAKE/PLAYA	X	X			X				X	X	X		X	X	X	X							INTERNALLY DRAINED LAKES
	SOUTH TWIN LAKE	SEASONAL LAKE/PLAYA	X	X			X				X	X	X		X	X	X	X							INTERNALLY DRAINED LAKES
	TWELVE MILE CREEK	PERENNIAL STREAM	X	X			X				X	X				X		X				X			
	SPRINGS/SEEPS/EMERGENT WETLANDS	SPRINGS/SEEPS/EMERGENT MEADOWS	X	X			X	X			X	X				X		X		X		X	X	X	(OREGON & NEVADA)
	MINOR SURFACE WATERS		X	X			X	X			X	X				X				X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X		X		X	X	X	COWHEAD LAKE/GW
641.00	**SURPRISE VALLEY HYDROLOGIC UNIT**																								
641.10	**BARE CREEK HYDROLOGIC AREA**																								
	BARE CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			LOWER ALKALI LAKE
	LOWER ALKALI LAKE	SALINE LAKE									X	X	X				X	X		X		X			INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X	X		X	X	X			X	X	X		X	X		X				X			LOWER ALKALI LAKE
	SPRINGS/SEEPS/EMERGENT WETLANDS	COLD & HOT SPRINGS/EMERGENT MDW	X	X			X	X			X	X				X		X		X		X	X	X	LOWER ALKALI LAKE
	EAGLE CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			LOWER ALKALI LAKE
	EMERSON CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			LOWER ALKALI LAKE
	SILVER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			BARE CREEK
	SNAKE LAKE	SEASONAL LAKE/EMERGENT MEADOW	X	X			X	X			X	X				X		X				X	X	X	BARE CREEK
	SPRINGS/SEEPS/EMERGENT WETLANDS	SPRINGS/SEEPS/EMERGENT MEADOWS	X	X			X	X			X	X				X		X				X	X	X	SNAKE LAKE
	SWORINGER RESERVOIR	RESERVOIR	X	X			X	X			X	X	X			X		X				X			SILVER CREEK
	SPRINGS/SEEPS/EMERGENT WETLANDS	SPRINGS/SEEPS/EMERGENT MEADOWS	X	X			X				X	X				X		X				X	X	X	SILVER CREEK
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	LOWER ALKALI LAKE / HA GW
641.20	**CEDARVILLE HYDROLOGIC AREA**																								
	BOGGS RESERVOIR	RESERVOIR	X	X			X	X			X	X				X		X	X	X		X	X	X	SAND CREEK
	CEDAR CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			MIDDLE ALKALI LAKE
	OWL CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			MIDDLE ALKALI LAKE
	OWL CREEK WETLANDS	WETLANDS	X	X			X	X			X	X				X		X				X	X	X	
	RAIDER CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			MIDDLE ALKALI LAKE
	SAND CREEK	SEASONAL STREAM	X	X			X	X			X	X				X		X	X	X		X			MIDDLE ALKALI LAKE
	MIDDLE ALKALI LAKE	SALINE LAKE									X	X	X				X	X	X	X		X			INTERNALLY DRAINED LAKE
	MIDDLE ALKALI LAKE EMERGENT SHORELINE WETLANDS	ALKALI FLAT/EMERGENT SHORELINE	X	X							X	X					X	X	X	X		X	X	X	MIDDLE ALKALI LAKE
641.20	**CEDARVILLE HYDROLOGIC AREA (continued)**																								
	MIDDLE ALKALI L. SPRINGS/EMERGENT WETLANDS	SPRINGS/EMERGENT MEADOWS	X	X			X	X			X	X			X	X		X	X	X		X	X	X	MIDDLE ALKALI LAKE
	SURPRISE VALLEY MINERAL WELLS/HOT SPRINGS	COLD & HOT SPRINGS/EMERGENT MDW	X	X			X	X		X	X	X			X	X		X	X	X		X	X		MIDDLE ALKALI LAKE
	LEONARDS HOT SPRINGS	HOT SPRINGS/EMERGENT MEADOWS	X	X			X	X		X	X	X			X			X	X	X		X	X		MIDDLE ALKALI LAKE
	MINOR SURFACE WATERS		X	X			X	X			X	X	X		X	X		X	X	X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X	X	X		X	X	X	MIDDLE ALKALI LAKE / HA GW
641.30	**FORT BIDWELL HYDROLOGIC AREA**																								
	BIG MUD LAKE	SEASONAL LAKE/PLAYA	X	X			X				X	X			X	X	X	X							INTERNALLY DRAINED LAKE
	DISMAL CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			DEEP CREEK (OREGON)
	DISMAL SWAMP WETLANDS	FLOODPLAIN, EMERGENT MEADOW	X	X			X				X	X				X		X				X	X	X	DEEP CREEK (OREGON)
	SPRINGS/SEEPS/EMERGENT WETLANDS	SPRINGS/EMERGENT MEADOWS	X	X			X				X	X				X		X				X	X	X	DEEP CREEK (OREGON)
	CRANE LAKE	SEASONAL LAKE/EMERGENT MEADOW	X	X			X				X	X				X		X					X	X	UPPER ALKALI LAKE
	BIDWELL CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			UPPER ALKALI LAKE
	MILL CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			UPPER ALKALI LAKE
	ALKALI LAKE WETLANDS	WETLANDS	X	X			X				X	X				X	X	X		X			X	X	
	UPPER ALKALI LAKE	SALINE LAKE									X	X	X				X	X		X		X			INTERNALLY DRAINED LAKE
	SPRINGS/SEEPS/EMERGENT WETLANDS	COLD & HOT SPRINGS/EMERGENT MDWS	X	X			X	X			X	X				X		X		X		X	X	X	UPPER ALKALI LAKE
	MUD LAKE	SEASONAL LAKE/EMERGENT MEADOW	X	X			X	X			X	X				X		X					X	X	INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	UPPER ALKALI LAKE / HA GW
640.00	**DUCK FLAT HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X	X			X	X			X	X			X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X				X		X					X	X	DUCK FLAT GW
639.00	**SMOKE CREEK HYDROLOGIC UNIT**																								
	SMOKE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			SMOKE CREEK RESERVOIR
	SMOKE CREEK RESERVOIR	RESERVOIR	X	X		X	X				X	X	X			X		X							SMOKE CREEK GROUNDWATER
	RUSH CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X	X		X							SMOKE CREEK GROUNDWATER
	MINOR SURFACE WATERS		X	X			X	X			X	X	X		X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X		X		X	X	X	SMOKE CREEK GROUNDWATER
638.00	**MADELINE PLAINS HYDROLOGIC UNIT**																								
	GRASSHOPPER VALLEY WETLANDS	WET MEADOW/EMERGENT/SPRINGS	X	X			X				X	X				X		X					X	X	GRASSHOPPER VALLEY GW
	BOOT LAKE	EPHEMERAL POND	X	X			X				X	X	X			X		X							RED ROCK CREEK
638.00	**MADELINE PLAINS HU (continued)**																								
	RED ROCK LAKE	SEASONAL LAKE/EMERGENT MEADOW	X	X			X				X	X				X		X					X	X	RED ROCK CREEK
	SPRINGS/SEEPS/EMERGENT WETLANDS		X	X			X				X	X				X		X					X	X	RED ROCK CREEK
	RED ROCK CREEK WETLANDS	WETLANDS	X	X			X	X			X	X				X		X					X	X	
	DODGE RESERVOIR	RESERVOIR	X	X			X				X	X	X			X		X							RED ROCK CREEK
	DUNN RESERVOIR	RESERVOIR	X	X			X				X	X	X			X		X							RED ROCK CREEK
	RED ROCK CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							MADELINE PLAINS GW
	SAID RESERVOIR	RESERVOIR	X	X			X				X	X	X		X	X		X							MADELINE PLAINS GW
	COLD SPRING CREEK	EPHEMERAL STREAM	X	X			X				X	X	X			X		X							MADELINE PLAINS GW
	SPRINGS/SEEPS/EMERGENT WETLANDS	SPRINGS/SEEPS/EMERGENT	X	X			X	X			X	X				X		X					X	X	MADELINE PLAINS GW
	COLD SPRINGS MTN 5 WETLANDS	WET MEADOW	X	X			X				X	X	X			X		X					X	X	
	COLD SPRINGS MTN 5 MEADOW RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MOON LAKE
	MADELINE 7 WETLANDS	SEASONAL SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	COLD SPRINGS MTN 3 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	BOX SPRINGS
	COLD SPRINGS MTN 6 OVAL RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	BOX SPRINGS
	COLD SPRINGS MTN 4 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK (COLD SPRS CRK)
	COLD SPRINGS MTN 2 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 1 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 2 PINTO RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	BOX SPRINGS
	COLD SPRINGS MTN 6 RES.	SEASONAL SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 6A RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 4 DUNN RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	BIG MEADOWS RESERVOIR
	COLD SPRINGS MTN 5 SPRING	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	BIG MEADOWS RESERVOIR
	COLD SPRINGS MTN 7 LOAMY RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	BIG MEADOWS RESERVOIR
	COLD SPRINGS MTN 4A WETLANDS	SPRING/EMERGENT MEADOW	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 8 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 3 BRAIDED WETLANDS	RIPARIAN/EMERGENT MEADOW	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 2 NAME TAG RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 025 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 048 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	COLD SPRINGS MTN 028 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 047 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 046 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 045 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 008 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	COLD SPRINGS CREEK
	COLD SPRINGS MTN 009 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	COLD SPRINGS MTN 029 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
638.00	**MADELINE PLAINS HU (continued)**																								
	COLD SPRINGS MTN 007 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	RAVENDALE 1 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	RAVENDALE SPAULDING RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	COLD SPRINGS CREEK
	RAVENDALE MARR RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	COLD SPRINGS CREEK
	DODGE RESERVOIR COLD SPR DAM	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	COLD SPRINGS CREEK
	RAVENDALE SHORTHORN RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	COLD SPRINGS CREEK
	RAVENDALE LONG SPR. 1 RES.	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	RAVENDALE LONG SPR. 2 RES.	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	RAVENDALE TURKEY RES	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	COLD SPRINGS MTN DRY COW 2 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	BIG MEADOWS RES
	COLD SPRINGS MTN DRY COW 3 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	BIG MEADOWS RES
	COLD SPRINGS MTN DRY COW 1 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	BIG MEADOWS RES
	MADELINE 006 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	VAN LOAN CREEK
	MENDIBOURE RESERVOIR RES.	RESERVOIR/EMERGENT	X	X			X		X		X	X	X			X		X					X	X	VAN LOAN CREEK
	MADELINE 065 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MENDIBOURE RESERVOIR
	JUNIPER RIDGE POULSEN SPR.	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MENDIBOURE RESERVOIR
	JUNIPER RIDGE 070 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	JUNIPER RIDGE 071 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 069 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 069 ETCHECOPAR SPR.	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 063 RES.	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MENDIBOURE RESERVOIR
	JUNIPER RIDGE 074 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 072 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 073 RES.	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 075 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 078 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 076 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 079 RES.	SPRING/RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 080 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 077 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 061 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MENDIBOURE RESERVOIR
	JUNIPER RIDGE 081 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 082 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 049 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	VAN LOAN RESERVOIR
	MC DONALD PEAK 053 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	VAN LOAN RESERVOIR
	MC DONALD PEAK 052 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	VAN LOAN RESERVOIR
638.00	**MADELINE PLAINS HU (continued)**																								
	MC DONALD PEAK 047 13-MILE RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	VAN LOAN CREEK
	MC DONALD PEAK 044 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	3-MILE CREEK
	MC DONALD PEAK 045 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	3-MILE CREEK
	MC DONALD PEAK 046 RES.	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 048 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	3-MILE CREEK
	MC DONALD PEAK 041 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	3-MILE CREEK
	MC DONALD PEAK 051 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 102 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 096 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 099 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 101 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 103 RES.	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	DRY CREEK SPRINGS	SPRING/EMERGENT	X	X			X				X	X			X	X		X		X		X	X	X	DRY CREEK
	MC DONALD PEAK S06 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK S07 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	BIG SPRINGS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	VAN LOAN CREEK
	JUNIPER RIDGE S04 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE S03 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE S09 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE S10 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE S11 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	COLD SPRINGS MTN LOWER DRY COW SPR.	SPRING/EMERGENT/RIPARIAN	X	X			X				X	X				X		X					X	X	DRY CREEK
	MC DONALD PEAK DEER SPRING	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	VAN LOAN CREEK
	JUNIPER RIDGE JUOC SPRING	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	JUNIPER RIDGE S12 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE S13 WETLANDS	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	JUNIPER RIDGE NORT SPRING	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	DRY CREEK
	JUNIPER RIDGE EROSION SPR.	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	DODGE RESERVOIR MADELINE SPRING	SPRING/EMERGENT	X	X			X				X	X				X		X					X	X	COLD SPRINGS CREEK
	WHITINGER MTN C47 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY VALLEY GW
	WHITINGER MTN C46 WETLANDS	EMERGENT MEADOW	X	X			X				X	X				X		X					X	X	DRY VALLEY GW
	WHITINGER MTN C48 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	DRY VALLEY GW
	SAID VALLEY A001 RES	RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	SAID VALLEY RESERVOIR
	MC DONALD PEAK 095 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 098 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 086 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
638.00	**MADELINE PLAINS HU (continued)**																								
	JUNIPER RIDGE 089 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 088 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 090 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 094 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 093 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MC DONALD PEAK 091 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 084 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 085 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	JUNIPER RIDGE 087 RES	SEASONAL RESERVOIR/EMERGENT	X	X			X				X	X				X		X					X	X	MADELINE PLAINS GW
	MINOR SURFACE WATERS		X	X			X	X			X	X	X		X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X				X	X	X	MADELINE PLAINS GW
637.00	**SUSANVILLE HYDROLOGIC UNIT**																								
637.10	**HERLONG HYDROLOGIC AREA**																								
	PURDY CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			LONG VALLEY CREEK
	EVANS CANYON CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			LONG VALLEY CREEK
	BALLS CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			LONG VALLEY CREEK
	WILLOW CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			LONG VALLEY CREEK
	LONG VALLEY CREEK WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X				X	X	X	
	LONG VALLEY CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X		X	X		X				X			HONEY LAKE

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	LONG VALLEY CREEK SPRINGS/RIPARIAN/EMERGENT	WETLANDS	X	X			X	X			X	X	X		X	X		X				X	X	X	LONG VALLEY CREEK
	SKEDADDLE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							HERLONG GROUNDWATER
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X		X		X	X	X	
637.20	**SUSAN RIVER HYDROLOGIC AREA**																								
	SILVER LAKE	LAKE	X					X			X	X	X			X		X				X			SUSAN RIVER
	MCCOY FLAT RESERVOIR	EPHEMERAL RESERVOIR	X	X			X				X	X	X			X		X							SUSAN RIVER
	CARIBOU LAKE	LAKE	X				X	X			X	X	X			X		X				X			SUSAN RIVER
	ISLAND AT HONEY LAKE WETLANDS	WETLANDS	X	X			X				X	X			X	X	X	X					X	X	
	SUSAN RIVER DELTA WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X					X	X	
	NORVELL FLAT WETLANDS	WET MEADOWS, FLOODPLAINS	X	X			X				X	X				X		X	X	X			X	X	SUSAN RIVER
	HOG FLAT RESERVOIR	EPHEMERAL RESERVOIR	X	X			X				X	X	X			X		X				X	X	X	SUSAN RIVER
	EMERGENT/TRIBUTARY WET MEADOWS/WETLANDS	WET MEADOW	X	X			X				X	X	X			X		X					X	X	HOG FLAT RESERVOIR
	WILLARD CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X			X	X			SUSAN RIVER
637.20	**SUSAN RIVER HA (continued)**																								
	CHENEY CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			SUSAN RIVER
	CADY SPRINGS	SPRING	X	X			X	X			X	X	X			X		X				X			SUSAN RIVER
	PIUTE CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X			X	X			SUSAN RIVER
	BARRY CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			SUSAN RIVER
	GOLD RUN CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			SUSAN RIVER
	LASSEN CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			SUSAN RIVER
	SUSAN RIVER	PERENNIAL RIVER	X	X		X	X	X	X		X	X	X		X	X		X			X	X			HONEY LAKE
	LAKE LEAVITT	RESERVOIR	X	X			X	X			X	X	X		X	X		X				X			SUSAN RIVER
	HARTSON LAKE WETLANDS	WETLANDS	X	X			X				X	X			X	X		X					X	X	
	HARTSON LAKE	RESERVOIR	X	X			X	X			X	X	X		X	X		X							HONEY LAKE
	HONEY LAKE WETLANDS	WETLANDS	X	X							X	X			X	X	X	X		X		X	X	X	
	HONEY LAKE	SALINE LAKE		X			X	X			X	X	X		X	X	X	X						X	INTERNALLY DRAINED LAKE
	WENDEL HOT SPRINGS	HOT SPRINGS	X	X			X	X		X	X	X						X					X		HONEY LAKE
	WILLOW CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X		X	X		X				X			SUSAN RIVER
	MINOR SURFACE WATERS		X	X			X	X			X	X	X		X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X		X	X	X			X	X	X		X	X		X		X		X	X	X	
637.30	**EAGLE DRAINAGE HYDROLOGIC AREA**																								
637.31	**ANTELOPE MOUNTAIN HYDROLOGIC SUBAREA**																								
	SPRINGS	SPRINGS	X	X			X	X			X	X				X		X							
	SHEEP CAMP MEADOWS WETLANDS	WET MEADOW	X	X			X				X	X				X		X	X				X	X	SUSAN RIVER
	MINOR SURFACE WATERS	EPHEMERAL STREAM	X	X			X	X			X	X	X			X		X							SNOWSTORM CREEK
	PITTVILLE ROAD SPRING	SPRING AND WET MEADOW	X	X			X				X	X				X		X	X				X	X	SUSAN RIVER
	LONG LAKE	WET MEADOW, SEASONAL LAKE	X	X			X				X	X				X		X						X	GROUNDWATER
	PINE CREEK DOWNSTREAM OF HWY. 201	PERENNIAL STREAM	X	X			X	X			X	X				X		X	X	X		X	X	X	EAGLE LAKE
	PINE CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X	X	X	X	X			EAGLE LAKE
	PAPOOSE MEADOWS WETLANDS	WET MEADOW	X	X			X	X			X	X	X			X		X	X	X		X	X	X	EAGLE LAKE
	PAPOOSE CREEK	EPHEMERAL STREAM	X	X			X	X			X	X	X			X		X		X		X			EAGLE LAKE
	MERRILL CREEK	EPHEMERAL STREAM	X	X			X	X			X	X	X			X		X		X		X			EAGLE LAKE
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X	X	X	X	X	X	X	
637.32	**EAGLE LAKE HYDROLOGIC SUBAREA**																								
	EAGLE LAKE	LAKE	X	X			X		X		X	X	X			X		X	X	X	X	X			INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X	X			X	X			X	X				X		X							
637.32	**EAGLE LAKE HSA (continued)**																								
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X				X		X					X	X	
637.40	**SNOWSTORM MOUNTAIN HYDROLOGIC AREA**																								
	DEEP CREEK	EPHEMERAL STREAM	X	X			X				X	X	X			X		X							SNOWSTORM CREEK
	SECRET CREEK	EPHEMERAL STREAM	X	X			X				X	X	X			X		X				X			SNOWSTORM CREEK
	SNOWSTORM CREEK	EPHEMERAL STREAM	X	X			X	X			X	X	X			X		X							PETES CREEK
	SNOWSTORM CREEK WETLANDS	WETLANDS	X	X	X		X	X			X	X				X		X					X	X	
	PETE'S CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X		X	X		X				X			WILLOW CREEK
	WILLOW CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X		X	X		X				X			SUSAN RIVER
	HORSE LAKE WETLANDS	WETLANDS	X	X			X				X	X				X		X					X	X	
	ISOLATED WETLAND BOUNDED BY RR TRACKS ON WEST	VERNAL POOL	X	X			X				X	X				X		X					X	X	CLOSED DEPRESSION
	HORSE LAKE	EPHEMERAL LAKE	X	X			X				X	X	X			X		X				X			PETES CREEK
	PINE CREEK WETLAND AND MEADOWS	WETLANDS	X	X			X	X			X	X				X		X		X	X	X	X	X	
	PINE CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X		X	X		X	X			X			HORSE LAKE
	ROUND VALLEY RESERVOIR	RESERVOIR	X	X			X				X	X	X		X	X		X							WILLOW CREEK
	LITTLE MUD FLAT LAKE	EPHEMERAL LAKE	X	X			X				X	X				X	X	X		X			X		INTERNALLY DRAINED LAKE
	MUD FLAT LAKE	DRY/ SEASONAL LAKE	X	X			X				X	X				X		X		X			X	X	INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X	X	X	X	X	X	X	
636.00	**LITTLE TRUCKEE RIVER HYDROLOGIC UNIT**																								
	LITTLE TRUCKEE RIVER	PERENNIAL RIVER	X	X			X	X		X	X	X	X			X		X		X	X	X			TRUCKEE RIVER
	WEBBER LAKE	LAKE	X	X			X		X		X	X	X			X		X		X		X			LITTLE TRUCKEE RIVER
	COLD STREAM CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X	X	X			LITTLE TRUCKEE RIVER
	INDEPENDENCE LAKE	LAKE	X	X			X		X		X	X	X			X		X		X		X			INDEPENDENCE CREEK
	INDEPENDENCE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			LITTLE TRUCKEE RIVER
	STAMPEDE RESERVOIR	RESERVOIR	X	X			X		X		X	X	X			X		X		X		X			LITTLE TRUCKEE RIVER
	SAGEHEN CREEK WETLANDS	WETLANDS	X	X			X				X	X	X			X		X	X	X		X	X	X	
	SAGEHEN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X	X	X		X			STAMPEDE RESERVOIR
	DAVIES CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			STAMPEDE RESERVOIR
	BOCA RESERVOIR	RESERVOIR	X	X			X		X		X	X	X			X		X		X		X			LITTLE TRUCKEE RIVER
	SARDINE MEADOWS WETLANDS	WET MEADOW	X	X			X				X	X	X			X		X				X	X	X	STAMPEDE RESEVOIR
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X	X	X	X	X	X	X	
635.00	**TRUCKEE RIVER HYDROLOGIC UNIT**																								
635.10	**DOG VALLEY HYDROLOGIC AREA**																								
	DOG VALLEY WETLANDS	WET MDW, FLOODPLAIN, MINOR STREAMS	X	X			X				X	X	X			X		X		X	X	X	X	X	TRUCKEE RIVER
	DOG VALLEY CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			TRUCKEE RIVER
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X	X	X	X	X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X	X	X	X	X	X	X	
635.20	**TRUCKEE RIVER HYDROLOGIC AREA**																								
	TRUCKEE RIVER	PERENNIAL RIVER	X	X		X	X	X		X	X	X	X			X		X		X	X	X			PYRAMID LAKE, NEV.
	BEAR CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X			X		X		X	X	X			TRUCKEE RIVER
	SQUAW CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X	X	X			TRUCKEE RIVER
	SQUAW VALLEY MEADOW WETLANDS	WETLANDS	X	X			X				X	X				X		X				X	X	X	
	POLE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X	X	X			TRUCKEE RIVER
	COLD STREAM CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			DONNER CREEK
	DONNER LAKE	LAKE	X	X				X	X		X	X	X			X		X		X		X			DONNER CREEK

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	DONNER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X	X	X			TRUCKEE RIVER
	PROSSER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X	X	X			TRUCKEE RIVER
	PROSSER RESERVOIR	RESERVOIR	X	X			X		X		X	X	X			X		X		X		X			PROSSER CREEK
	MARTIS CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X	X	X			TRUCKEE RIVER
	MARTIS CREEK RESERVOIR	RESERVOIR	X	X			X		X		X	X	X			X		X		X		X			MARTIS CREEK
	TROUT CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			TRUCKEE RIVER
	ALDER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X	X	X			TRUCKEE RIVER
	JUNIPER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			TRUCKEE RIVER
	GRAY CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			TRUCKEE RIVER
	BRONCO CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			TRUCKEE RIVER
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X	X	X	X	X	X	X	
634.00	**LAKE TAHOE HYDROLOGIC UNIT**																								
634.10	**SOUTH TAHOE HYDROLOGIC AREA**																								
	TAHOE MEADOWS WETLANDS	WETLANDS	X				X				X	X				X		X					X	X	
	HEAVENLY VALLEY CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X	X	X			TROUT CREEK
	COLD CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X			X	X			TROUT CREEK
	TROUT CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X			X	X			UPPER TRUCKEE RIVER
	SAXON CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X			X	X			TROUT CREEK
	GRASS LAKE WETLANDS	WETLANDS	X	X			X				X	X	X			X		X	X			X	X	X	
634.10	**SOUTH TAHOE HA (continued)**																								
	GRASS LAKE	LAKE	X	X			X				X	X	X			X		X	X			X			GRASS LAKE CREEK
	GRASS LAKE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			UPPER TRUCKEE RIVER
	MEISS MEADOWS/WETLANDS	WETLANDS	X	X			X				X	X				X		X		X		X	X	X	
	MEISS LAKE	LAKE	X	X			X				X	X	X			X		X		X		X			UPPER TRUCKEE RIVER
	UPPER TRUCKEE RIVER	PERENNIAL STREAM	X	X			X		X		X	X	X			X		X			X	X			LAKE TAHOE
	ECHO LAKES	LAKES	X				X		X		X	X	X			X		X				X			ECHO CREEK/U. TRUCKEE RIVER
	UPPER ANGORA LAKE	LAKE	X	X			X		X		X	X	X			X		X				X			LOWER ANGORA LAKE
	LOWER ANGORA LAKE	LAKE	X	X			X		X		X	X	X			X		X				X			ANGORA CREEK
	GLEN ALPINE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			FALLEN LEAF LAKE
	FALLEN LEAF LAKE	LAKE	X						X		X	X	X			X		X				X			TAYLOR CREEK
	TAYLOR CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X			X	X			LAKE TAHOE
	TAYLOR CREEK MEADOW MARSH	WETLANDS	X	X			X				X	X				X		X		X	X	X	X	X	
	TALLAC CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			LAKE TAHOE
	CASCADE LAKE	LAKE	X						X		X	X	X			X		X		X		X			CASCADE CREEK
	CASCADE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			LAKE TAHOE
	MEEKS CREEK MEADOW/WETLANDS	WETLANDS	X	X			X				X	X				X		X					X	X	
	POPE MARSH/WETLANDS	WETLANDS	X				X				X	X				X		X					X	X	
	OSGOOD SWAMP	WETLANDS	X				X				X	X				X		X	X				X	X	
	EAGLE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			LAKE TAHOE
	MINOR SURFACE WATERS		X	X			X				X	X	X			X		X				X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X	X	X	X	X	X	X	
634.20	**NORTH TAHOE HYDROLOGIC AREA**																								
	LONELY GULCH CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			LAKE TAHOE
	MEEKS CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X			X	X			LAKE TAHOE
	GENERAL CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X			X	X			LAKE TAHOE
	McKINNEY CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			LAKE TAHOE
	MADDEN CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X				X			LAKE TAHOE
	BLACKWOOD CREEK	PERENNIAL STREAM	X								X	X	X			X		X			X	X			LAKE TAHOE
	WARD CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X			X	X			LAKE TAHOE
	BURTON CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X				X			LAKE TAHOE
	DOLLAR CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			LAKE TAHOE
	WATSON CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X				X			LAKE TAHOE
	SNOW CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			LAKE TAHOE
	CARNELIAN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			LAKE TAHOE
	GRIFF CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X				X			LAKE TAHOE
634.20	**NORTH TAHOE HA (continued)**																								
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X				X			LAKE TAHOE
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X			X	X	X	X	
634.30	**TAHOE LAKE BODY HYDROLOGIC AREA**																								
	LAKE TAHOE	LAKE	X	X			X		X		X	X	X			X		X	X		X	X			TRUCKEE RIVER
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X	X		X	X			
	MINOR WETLANDS	EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X	X		X	X	X	X	
633.00	**WEST FORK CARSON RIVER HYDROLOGIC UNIT**																								
633.10	**WOODFORDS HYDROLOGIC AREA**																								
	W. FORK CARSON MEADOW WETLANDS NEAR WOODFORDS	WETLANDS	X	X			X				X	X				X		X					X	X	
	FREDERICKSBURG CANYON CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			WEST FORK CARSON RIVER
	WEST FORK CARSON RIVER	PERENNIAL RIVER	X	X		X	X	X	X	X	X	X	X			X		X		X		X			CARSON SINK
	DIAMOND, DUTCH AND WADE VALLEYS WETLANDS	WETLANDS/WET MEADOWS	X	X			X				X	X				X		X		X			X	X	INDIAN CREEK/WF CARSON R.
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X				X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	
633.20	**UPPER WEST FORK CARSON RIVER HYDROLOGIC AREA**																								
	FAITH VALLEY WETLANDS	WET MEADOW, FLOODPLAIN	X	X			X				X	X				X		X					X	X	WEST FORK CARSON RIVER
	UPPER WEST FORK CARSON RIVER	PERENNIAL RIVER	X	X		X	X				X	X	X			X		X				X			CARSON SINK
	RED LAKE	LAKE	X	X			X		X		X	X	X			X		X							RED LAKE CREEK
	WETLANDS ON ADJACENT SLOPES TO VALLEY	WETLANDS/WET MEADOWS	X	X			X				X	X				X		X					X	X	HOPE VALLEY
	RED LAKE CREEK VALLEY WETLANDS	WET MEADOW, FLOOD PLAIN	X	X			X				X	X				X		X				X	X	X	WEST FORK CARSON RIVER
	HOPE VALLEY WETLANDS	EMERGENT MEADOW/FLOODPLAIN	X	X			X				X	X				X		X					X	X	WEST FORK CARSON RIVER
	VALLEY SLOPES WETLANDS	SPRINGS/SEEPS/EMERGENT	X	X			X				X	X						X					X	X	HOPE VALLEY
	RED LAKE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			UPPER WF CARSON RIVER.
	WILLOW CREEK	PERENNIAL RIVER	X	X			X				X	X	X			X		X				X			UPPER WF CARSON RIVER.
	MINOR SURFACE WATERS		X	X			X				X	X	X			X		X				X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X				X	X	X	
632.00	**EAST FORK CARSON RIVER HYDROLOGIC UNIT**																								
632.10	**MARKLEEVILLE HYDROLOGIC AREA**																								
	WETLANDS, N. SAGEHEN FLAT TO HEENAN LAKE	WET MEADOW, TRIB FLOODPLAIN	X	X			X				X	X	X			X		X	X	X		X	X	X	EAST FORK CARSON RIVER
	HEENAN RESERVOIR	RESERVOIR	X	X			X				X	X	X	X		X		X		X		X			MONITOR CREEK
632.10	**MARKLEEVILLE HA (continued)**																								
	WETLANDS/BIG SPRINGS TO HWY. 89	WET MEADOW, SPRINGS	X	X	X		X				X	X	X			X		X		X		X	X	X	EAST FORK CARSON RIVER
	WETLANDS, PONDS W. OF MONITOR PASS @ HWY 89	VERNAL POND	X	X			X				X	X	X		X	X		X					X	X	EAST FORK CARSON RIVER
	EAST FORK CARSON RIVER	PERENNIAL RIVER	X	X			X	X	X		X	X	X			X		X		X		X			CARSON SINK
	KINNEY RESERVOIR	RESERVOIR	X	X			X		X		X	X	X			X		X				X			SILVER CREEK
	KINNEY LAKES	LAKES	X	X			X				X	X	X			X		X			X	X			SILVER CREEK
	SILVER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			EAST FORK CARSON RIVER

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	WOLF CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			EAST FORK CARSON RIVER
	WOLF CREEK MEADOWS WETLANDS	WETLANDS/WET MEADOW,FLOODPLAIN	X	X			X				X	X			X	X		X	X	X		X	X	X	EAST FORK CARSON RIVER
	SILVER KING CREEK	EPHEMERAL STREAM	X	X			X				X	X	X			X		X		X		X			EAST FORK CARSON RIVER
	CHARITY VALLEY WETLANDS	WET MEADOW, FLOODPLAIN	X	X			X				X	X	X			X		X		X		X	X	X	EAST FORK CARSON RIVER
	MONITOR CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X			X		X		X		X			EAST FORK CARSON RIVER
	PLEASANT VALLEY CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			MARKLEEVILLE CREEK
	PLEASANT VALLEY WETLANDS	WETLANDS	X	X			X				X	X				X		X					X	X	
	MILBERRY CREEK	EPHEMERAL STREAM	X	X			X				X	X	X			X		X							MARKLEEVILLE CREEK
	MARKLEEVILLE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X			X	X			EAST FORK CARSON RIVER
	LEVIATHAN CREEK (ABOVE LEVIATHAN MINE)	PERENNIAL STREAM	X	X			X				X	X	X			X		X							BRYANT CREEK
	LEVIATHAN CREEK (BELOW LEVIATHAN MINE)	PERENNIAL STREAM	X	X			X				X	X				X		X							BRYANT CREEK
	ASPEN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							EAST FORK CARSON RIVER
	BRYANT CREEK (BELOW LEVIATHAN CREEK)	PERENNIAL STREAM	X	X			X				X	X				X		X							EAST FORK CARSON RIVER
	MINOR SURFACE WATERS		X	X		X	X	X			X	X	X			X		X				X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	
632.20	**INDIAN CREEK HYDROLOGIC AREA**																								
	STEVENS LAKE	LAKE	X	X			X				X	X	X			X		X				X			INDIAN CREEK
	INDIAN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			EAST FORK CARSON RIVER
	INDIAN CREEK RESERVOIR	RESERVOIR	X	X			X	X	X		X	X	X			X		X							EAST FORK CARSON RIVER
	WETLANDS, MEADOWS NW OF SUMMIT LAKE	WETLANDS/WET MEADOW	X	X			X				X	X	X			X		X		X		X	X	X	EAST FORK CARSON RIVER
	DIAMOND, DUTCH AND WADE VALLEYS WETLANDS	WETLANDS/WET MEADOW	X	X			X				X	X						X		X			X	X	INDIAN CREEK/WF CARSON R.
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	
631.00	**WEST WALKER RIVER HYDROLOGIC UNIT**																								
631.10	**ANTELOPE VALLEY HYDROLOGIC AREA**																								
	W. FORK WALKER R. WTLNDS (ABOVE TOPAZ LK MEADOW)		X	X			X				X	X				X		X				X	X	X	
	RODRIGUEZ CREEK	EPHEMERAL STREAM	X	X			X				X	X	X			X		X							WEST WALKER RIVER
631.10	**ANTELOPE VALLEY HA (continued)**																								
	MILL CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X		X		X			WEST WALKER RIVER
	WEST WALKER RIVER (BELOW WALKER)	PERENNIAL RIVER	X	X	X		X		X		X	X	X			X		X				X			WEST WALKER RIVER
	LOST CANNON CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X		X		X			MILL CREEK
	TOPAZ LAKE	RESERVOIR	X	X			X		X		X	X	X			X		X				X			TOPAZ LAKE
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	
631.20	**SLINKARD CREEK HYDROLOGIC AREA**																								
	SLINKARD CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			WEST WALKER RIVER
	MINOR SURFACE WATERS		X	X			X				X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X				X	X	X			X		X		X		X	X	X	
631.30	**DESERT CREEK HYDROLOGIC AREA**																								
	DESERT CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			
	LOBDELL LAKE	RESERVOIR	X	X			X				X	X	X			X		X	X	X		X			
	MINOR SURFACE WATERS		X	X			X				X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X				X	X	X			X		X		X		X	X	X	
631.40	**UPPER WEST WALKER RIVER HYDROLOGIC AREA**																								
	WEST WALKER RIVER (ABOVE WALKER)	PERENNIAL RIVER	X	X			X	X	X		X	X	X			X		X			X	X			WALKER LAKE
	SILVER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			WEST WALKER RIVER
	HOT CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X	X		X							LITTLE WALKER RIVER
	FALES HOT SPRINGS	SPRINGS	X	X			X				X	X	X		X			X							HOT CREEK
	LITTLE WALKER RIVER	PERENNIAL RIVER	X	X			X	X	X		X	X	X			X		X			X	X			WEST WALKER RIVER
	GRIZZLY MEADOW WETLANDS	WETLANDS	X				X				X	X				X		X					X	X	
	PICKEL MEADOWS WETLANDS	WETLANDS	X	X			X				X	X				X		X					X	X	
	LEAVITT MEADOWS WETLANDS	WETLANDS	X	X			X				X	X				X		X					X	X	
	MINOR SURFACE WATERS		X	X			X	X			X	X	X		X	X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X		X		X	X	X	
630.00	**EAST WALKER RIVER HYDROLOGIC UNIT**																								
630.10	**MASONIC HYDROLOGIC AREA**																								
	EAST WALKER RIVER (BELOW BRIDGEPORT RESERVOIR)	PERENNIAL RIVER	X	X		X	X	X	X		X	X	X			X		X		X		X			WALKER LAKE
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	
630.20	**BODIE HYDROLOGIC AREA**																								
	ROUGH CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							EAST WALKER RIVER
	BODIE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X		X			EAST WALKER RIVER
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	
630.30	**BRIDGEPORT HYDROLOGIC AREA**																								
	EAST WALKER RIVER (ABOVE BRIDGEPORT RESERVOIR)	PERENNIAL RIVER	X	X			X	X	X		X	X	X			X		X		X		X			BRIDGEPORT RESERVOIR
	BRIDGEPORT RESERVOIR	RESERVOIR	X	X			X		X		X	X	X			X		X				X			EAST WALKER RIVER
	BRIDGEPORT VALLEY WETLANDS	WETLANDS	X	X			X				X	X				X		X					X	X	E WALKER R/BRIDGEPORT GW
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	
630.40	**EAST WALKER TRIBUTARIES HYDROLOGIC AREA**																								
	CLEARWATER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							VIRGINIA CREEK
	VIRGINIA CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			EAST WALKER RIVER
	GREEN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			EAST WALKER RIVER
	LONG VALLEY CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			SWAUGER CREEK
	SWAUGER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			BRIDGEPORT RESERVOIR
	ROBINSON CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			EAST WALKER RIVER
	TWIN LAKES	LAKES	X	X			X		X		X	X	X			X		X				X		X	ROBINSON CREEK
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X				X	X	X	
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X				X	X	X	
601.00	**MONO HYDROLOGIC UNIT**																								
	RUSH CREEK (ABOVE GRANT LAKE)	PERENNIAL STREAM	X					X		X	X	X	X			X		X				X			GRANT LAKE
	RUSH CREEK (BELOW GRANT LAKE)	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			MONO LAKE
	GRANT LAKE	LAKE	X								X	X	X			X		X				X			OWENS R/VIA AQUEDUCT/MONO LK
	SILVER LAKE	LAKE	X								X	X	X			X		X				X			RUSH CREEK
	GULL LAKE	LAKE	X						X		X	X	X			X		X				X			REVERSED CREEK
	JUNE LAKE	LAKE	X						X		X	X	X			X		X				X			REVERSED CREEK
	FERN LAKE	LAKE	X	X					X		X	X	X			X		X				X			REVERSED CREEK
	REVERSED CREEK	PERENNIAL STREAM	X								X	X	X			X		X				X			RUSH CREEK
	AGNEW LAKE	LAKE	X							X	X	X	X			X		X				X			RUSH CREEK
	GEM LAKE	LAKE	X							X	X	X	X			X		X				X			RUSH CREEK

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																				RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	ALGER LAKES	LAKES	X								X	X	X			X		X				X			SILVER LAKE
601.00	**MONO HU (continued)**																								
	MILL CREEK	PERENNIAL STREAM	X	X			X	X		X	X	X	X			X		X				X			MONO LAKE
	LUNDY LAKE	LAKE	X						X	X	X	X	X			X		X				X			TRIBUTARY TO MILL CREEK
	BLUE LAKE	LAKE	X								X	X	X			X		X				X			TRIBUTARY TO MILL CREEK
	CRYSTAL LAKE	LAKE	X								X	X	X			X		X				X			TRIBUTARY TO MILL CREEK
	ONEIDA LAKE	LAKE	X								X	X	X			X		X				X			TRIBUTARY TO MILL CREEK
	LEE VINING CREEK (ABOVE DIVERSION)	PERENNIAL STREAM	X	X			X	X		X	X	X	X			X		X				X			GRANT LAKE/VIA AQUEDUCT
	LEE VINING CREEK (BELOW DIVERSION)	EPHEMERAL STREAM	X				X	X		X	X	X	X			X		X				X			MONO LAKE
	SADDLEBAG LAKE	LAKE	X							X	X	X	X			X		X				X			TRIBUTARY TO LEE VINING CREEK
	TIOGA LAKE	LAKE	X						X	X	X	X	X			X		X				X			TRIBUTARY TO LEE VINING CREEK
	ELLERY LAKE	LAKE	X						X	X	X	X	X			X		X				X			TRIBUTARY TO LEE VINING CREEK
	KIDNEY LAKE	LAKE	X							X	X	X	X			X		X				X			TRIBUTARY TO LEE VINING CREEK
	GIBBS LAKE	EPHEMERAL LAKE	X							X	X	X	X			X		X				X			TRIBUTARY TO LEE VINING CREEK
	WALKER CREEK (INCLUDE WALKER LAKE)	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			TRIBUTARY TO OWENS
	PARKER CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			TRIBUTARY TO OWENS RIVER
	MONO LAKE WETLANDS/MARSHES	WETLANDS									X	X					X	X	X			X	X	X	/VIA AQUEDUCT
	MONO LAKE	SALINE LAKE	X	X		X			X		X	X	X	X			X	X	X	X		X			INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X	X							X	X	X			X		X							
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X				X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X				X	X	X	
602.00	**ADOBE HYDROLOGIC UNIT**																								
	ADOBE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							ADOBE VALLEY GROUNDWATER
	NORTH CANYON CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							TRIBUTARY TO ADOBE CREEK
	ADOBE RESERVOIR	INTERMITTENT LAKE	X	X							X	X	X			X		X							INTERNALLY DRAINED LAKE
	RIVER SPRING LAKE	INTERMITTENT LAKE	X	X			X				X	X	X			X		X							INTERNALLY DRAINED LAKE
	BLACK LAKE	INTERMITTENT LAKE	X	X			X				X	X	X			X		X							INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X							
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X					X	X	
602.10	**DEXTER CREEK HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X					X	X	
602.20	**HUNTOON CREEK HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X					X	X	
603.00	**OWENS HYDROLOGIC UNIT**																								
603.10	**LONG HYDROLOGIC AREA**																								
	LAKE CROWLEY	RESERVOIR	X	X					X	X	X	X	X			X		X				X			OWENS RIVER
	WILFRED CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X			X	X			OWENS RIVER
	OWENS RIVER	PERENNIAL RIVER	X	X			X	X	X		X	X	X			X		X			X	X			CROWLEY LAKE
	DEADMAN CREEK	PERENNIAL STREAM	X	X		X	X	X			X	X	X			X		X				X			OWENS RIVER
	GLASS CREEK	PERENNIAL STREAM	X					X			X	X	X		X	X		X				X			DEADMAN CREEK
	DRY CREEK	PERENNIAL IN UPPER REACHES	X					X			X	X	X			X		X				X			OWENS RIVER
	MAMMOTH CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X		X	X	X			OWENS RIVER
	TWIN LAKES	LAKE	X						X		X	X	X			X		X				X			MAMMOTH CREEK
	LAKE MAMIE	LAKE	X						X		X	X	X			X		X				X			MAMMOTH CREEK
	LAKE MARY	LAKE	X	X					X		X	X	X			X		X				X			MAMMOTH CREEK
	COLD WATER CREEK	PERENNIAL STREAM	X								X	X	X			X		X				X			LAKE MARY
	ARROWHEAD LAKE	LAKE	X						X		X	X	X			X		X				X			MAMMOTH CREEK
	SHELTON LAKE	LAKE	X						X		X	X	X			X		X				X			MAMMOTH CREEK
	WOODS LAKE	LAKE	X						X		X	X	X			X		X				X			MAMMOTH CREEK
	RED LAKE	LAKE	X						X		X	X	X			X		X				X			MAMMOTH CREEK
	LAKE GEORGE	LAKE	X						X		X	X	X			X		X				X			MAMMOTH CREEK
	HOT CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X	X		X		X		X	X	X			OWENS RIVER
	HORSESHOE LAKE	LAKE	X								X	X	X			X		X				X			MAMMOTH CREEK
	MCCLOUD LAKE	LAKE	X								X	X	X			X		X				X			MAMMOTH CREEK
	SHERWIN CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X				X			MAMMOTH CREEK
	SHERWIN LAKES	LAKE	X								X	X	X			X		X				X			SHERWIN CREEK
	LOST LAKE	LAKE	X								X	X	X			X		X				X			SHERWIN CREEK
	VALENTINE LAKE	LAKE	X								X	X	X			X		X				X			SHERWIN CREEK
	LAUREL CREEK	PERENNIAL STREAM	X								X	X	X			X		X				X			MAMMOTH CREEK
	CONVICT CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			CROWLEY LAKE
	CONVICT LAKE	LAKE	X						X		X	X	X			X		X				X			CONVICT CREEK
	MCGEE CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X				X			CROWLEY LAKE
	HILTON CREEK	PERENNIAL STREAM	X	X		X	X	X			X	X	X			X		X				X			CROWLEY LAKE
	HILTON LAKES	LAKES	X						X		X	X	X			X		X				X			HILTON CREEK
603.10	**LONG HYDROLOGIC AREA (continued)**																								
	MINOR SURFACE WATERS		X	X			X	X			X	X	X			X		X				X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X				X	X	X	
603.20	**UPPER OWENS HYDROLOGIC AREA**																								
	OWENS RIVER WETLANDS	WETLANDS	X	X			X				X	X			X	X		X			X		X	X	
	OWENS RIVER (BELOW CROWLEY LAKE)	PERENNIAL STREAM	X					X		X	X	X	X			X		X		X		X			LA DWP POWER PLANT & PLEASANT VALLEY RESERVOIR
	OWENS RIVER (BELOW FIRST P.H.)	EPHEMERAL STREAM	X					X		X	X	X	X			X		X		X		X			LA DWP POWER PLANT & PLEASANT VALLEY RESERVOIR
	OWENS RIVER (BELOW PLEASANT VALLEY RESERVOIR)	PERENNIAL RIVER	X	X			X	X	X		X	X	X			X		X		X		X			TINEMAHA RESERVOIR
	ROCK CREEK	PERENNIAL STREAM	X	X		X	X	X		X	X	X	X			X		X				X			
	ROCK CREEK WETLANDS @ BOUNDARY ROAD	RIPARIAN/FLOODPLAIN/EMERGENT	X	X			X	X			X	X	X			X		X				X	X	X	ROCK CREEK
	ROCK CREEK LAKE	LAKE	X								X	X	X			X		X				X			ROCK CREEK
	EASTERN BROOK LAKES	LAKES	X								X	X	X			X		X				X			ROCK CREEK
	PINE CREEK	PERENNIAL STREAM	X	X		X	X	X		X	X	X	X			X		X				X			PLEASANT VALLEY RESERVOIR
	BIRCHIM LAKE	LAKE	X								X	X	X			X		X		X					PINE CREEK
	PINE LAKE	LAKE	X								X	X	X			X		X				X			PINE CREEK
	HONEYMOON LAKE	LAKE	X								X	X	X			X		X							PINE CREEK
	GABLE LAKES	LAKE	X						X		X	X	X			X		X							GABLE CREEK
	PLEASANT VALLEY RESERVOIR	RESERVOIR	X								X	X	X			X		X							OWENS RIVER
	HORTON CREEK	PERENNIAL CREEK	X	X			X	X			X	X	X			X		X				X			OWENS RIVER
	HORTON CREEK WETLANDS 4 (@ HWY 395)	WET MEADOW/EMERGENT	X	X			X	X			X	X	X			X		X				X	X	X	HORTON CREEK
	HORTON CREEK WETLANDS 5	WETLANDS	X	X			X	X			X	X	X			X		X				X	X	X	HORTON CREEK
	BROCKMAN RD. WETLAND BTWN 395 AND HORTON CREEK	WET MEADOW	X	X			X				X	X	X			X		X					X	X	OWENS RIVER
	SAWMILL CR MARSH @ HWY 395	RIPARIAN/EMERGENT/MARSH	X	X			X	X			X	X	X			X		X				X	X	X	HORTON CREEK
	PINE CREEK WETLANDS @ N. ROUND VALLEY ROAD	RIPARIAN/EMERGENT	X	X			X	X			X	X	X			X		X				X	X	X	PINE CREEK
	PINE CR DISTRIBUTARY CHANNEL	RIPARIAN	X	X			X	X			X	X	X			X		X				X	X	X	PINE CREEK/ROCK CREEK
	WELLS MEADOW SPRING CREEK WETLANDS	WETLANDS	X	X			X	X			X	X	X			X		X				X	X	X	ROCK CREEK
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X		X		X	X	X	

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	OWENS RIVER WATERSHED																								
	SAWMILL POND	POND	X	X		X	X				X	X	X		X	X		X							HORTON CREEK
	MCGEE CREEK	PERENNIAL CREEK	X	X			X	X		X	X	X	X			X		X	X			X			BISHOP CREEK & HORTON CREEK
	OWENS RIVER CANAL	EPHEMERAL CANAL	X	X			X				X	X	X			X		X							OWENS RIVER
	FISH SLOUGH WETLANDS	WETLANDS	X	X			X				X	X			X	X		X	X	X		X	X	X	
	FISH SLOUGH(INYO-MONO CO LINE)	SLOUGH	X	X			X	X			X	X			X	X		X	X	X	X	X	X		OWENS RIVER
603.20	**UPPER OWENS HA (continued)**																								
	OWENS RIVER WATERSHED (continued)																								
	FISH SLOUGH (AT FS DIVERSION)	SLOUGH	X	X			X				X	X			X	X		X	X	X			X		OWENS RIVER
	WETLAND NEAR PLEASANT VALLEY CAMPGROUND	RELICTUAL WETLAND	X	X			X				X	X			X	X		X	X				X	X	OWENS RIVER
	FISH SLOUGH	SLOUGH	X	X			X				X	X	X		X	X		X	X	X		X			OWENS RIVER
	MCNALLY CANALS	EPHEMERAL CANAL	X	X			X				X	X	X			X		X							OWENS RIVER
	WETLAND BETWEEN MCNALLY CANALS	WETLANDS	X	X			X				X	X	X		X			X					X	X	OWENS RIVER
	WETLAND BETWEEN MCNALLY CANALS	WETLANDS	X	X		X	X				X	X	X		X			X					X	X	OWENS RIVER
	UPPER MCNALLY CANAL WETLANDS	WETLANDS	X	X		X	X	X			X	X	X		X			X					X	X	OWENS RIVER
	BISHOP CREEK CANAL	PERENNIAL CANAL	X	X			X				X	X	X			X		X							OWENS RIVER
	RAWSON CANAL	EPHEMERAL CANAL	X	X			X				X	X	X			X		X							OWENS RIVER
	COLLINS CANAL	PERENNIAL CANAL	X				X				X	X	X			X		X							OWENS RIVER
	BUCKLEY PONDS	PONDS	X	X			X				X	X	X		X	X		X							OWENS RIVER
	BISHOP CREEK (ABOVE INTAKES)	PERENNIAL STREAM	X	X						X	X	X	X			X		X				X			INTAKE 2 RESERVOIR
	INTAKE 2 RESERVOIR	RESERVOIR	X							X	X	X	X			X		X							SOUTHERN CALIFORNIA EDISON
	BISHOP CREEK (BELOW INTAKE 2)	EPHEMERAL STREAM	X							X	X	X	X			X		X				X			POWER PLANT
	BISHOP CREEK (BELOW LAST P.H.)	PERENNIAL STREAM	X	X		X	X				X	X	X			X		X				X			OWENS RIVER
	HALLSIDE RESERVOIR	RESERVOIR	X								X	X	X			X		X							BISHOP CREEK
	NORTH LAKE	RESERVOIR	X						X		X	X	X			X		X							BISHOP CREEK
	LAKE SABRINA	RESERVOIR	X						X	X	X	X	X			X		X							BISHOP CREEK
	SOUTH LAKE	RESERVOIR	X						X	X	X	X	X		X	X		X							BISHOP CREEK
	GREEN LAKE CREEK	PERENNIAL STREAM	X								X	X	X			X		X							BISHOP CREEK
	COYOTE CREEK	PERENNIAL STREAM	X	X							X	X	X			X		X							BISHOP CREEK
	KEOUGH HOT SPRINGS	SPRINGS	X	X			X				X	X	X		X	X		X							OWENS RIVER
	BIG PINE CANAL	EPHEMERAL CANAL	X	X			X				X	X	X			X		X							OWENS RIVER
	BIG PINE CANAL	WETLANDS, MAINTAINED IRRIG CANAL	X	X			X	X			X	X			X			X					X	X	OWENS RIVER
	BAKER CREEK	PERENNIAL CREEK	X	X		X	X				X	X	X			X		X				X			BIG PINE CANAL
	BIRCH CREEK	PERENNIAL CREEK	X	X			X	X		X	X	X	X			X	X	X				X			TINEMAHA CREEK
	RED MOUNTAIN CREEK	PERENNIAL CREEK	X	X			X	X			X	X	X			X		X				X			TINEMAHA CREEK
	FISH SPRINGS	SPRINGS	X	X		X	X				X	X	X	X	X	X		X	X	X		X			TINEMAHA CREEK
	TINEMAHA CREEK	PERENNIAL CREEK	X	X			X				X	X	X			X		X				X			TINEMAHA RESERVOIR
	TINEMAHA RESERVOIR	RESERVOIR	X	X			X				X	X	X			X		X		X					OWENS RIVER
	MORRIS CREEK	PERENNIAL IN UPPER REACH	X	X			X				X	X	X			X		X							BENTON VALLEY GROUNDWATER
	CHALFANT VALLEY WATERSHED																								
	BARTLETT RANCH SPRINGS	SPRINGS	X	X			X				X	X	X			X		X							BENTON VALLEY GROUNDWATER
	MONTGOMERY CREEK	PERENNIAL IN UPPER REACH	X	X			X				X	X	X			X		X							BENTON VALLEY GROUNDWATER
603.20	**UPPER OWENS HA (continued)**																								
	CHALFANT VALLEY WATERSHED (continued)																								
	MARBLE CREEK	PERENNIAL IN UPPER REACH	X	X			X				X	X	X			X		X							HAMIL VALLEY GROUNDWATER
	ROCK CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							HAMIL VALLEY GROUNDWATER
	FALLS CANYON CREEK	INTERMITTENT STREAM	X	X			X				X	X	X			X		X							HAMIL VALLEY GROUNDWATER
	PELLISIER CREEK	INTERMITTENT STREAM	X	X			X				X	X	X			X		X							HAMIL VALLEY GROUNDWATER
	MIDDLE CANYON CREEK	INTERMITTENT STREAM	X	X			X				X	X	X			X		X							HAMIL VALLEY GROUNDWATER
	BIRCH CREEK	INTERMITTENT STREAM	X	X			X				X	X	X			X		X							HAMIL VALLEY GROUNDWATER
	WILLOW CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			HAMIL VALLEY GROUNDWATER
	COTTONWOOD CANYON CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			HAMIL VALLEY GROUNDWATER
	LONE TREE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			HAMIL VALLEY GROUNDWATER
	MINOR STREAMS		X	X			X				X	X				X		X							
	YELLOWJACKET CANYON CREEK	INTERMITTENT STREAM	X	X			X				X	X	X			X		X							HAMIL VALLEY GROUNDWATER
	BENTON HOT SPRINGS	SPRINGS	X	X			X				X	X	X		X	X		X							HAMIL VALLEY GROUNDWATER
	MILNER CREEK	INTERMITTENT STREAM	X	X			X			X	X	X	X			X		X							CHALFANT VALLEY GW
	SILVER CANYON CREEK	PERENNIAL IN UPPER REACH	X	X			X				X	X	X			X		X							CHALFANT VALLEY GW
	WARM SPRINGS	SPRINGS	X	X			X				X	X	X		X	X		X	X	X			X		
	WETLANDS/HOUSE S. OF REDDING CYN.	WETLANDS	X	X			X				X	X			X			X					X	X	OWENS VALLEY GW
	WARM SPRINGS	SPRING	X	X			X	X			X	X			X			X	X	X			X		OWENS RIVER
	WETLANDS/1st CYN S. OF SILVER CREEK	WETLANDS/SPRINGS	X	X			X				X	X				X		X					X	X	OWENS VALLEY GW
	WETLANDS/MEADOW LEFT OF PINE CREEK RD.	WET MEADOW	X	X			X				X	X						X					X	X	PLEASANT VALLEY RESERVOIR
	PINE CREEK AT ROVANA	WETLANDS, RIPARIAN	X	X			X				X	X				X		X					X	X	OWENS R./ PLEASANT VAL. RES.
	WETLANDS/FORKS CAMPGROUND	WETLANDS	X	X			X				X	X				X		X					X	X	BISHOP CREEK
	DUTCH JOHNS MEADOWS WETLANDS	WET MEADOW	X	X			X				X	X				X		X					X	X	BISHOP CREEK
	WETLANDS/POWER STATION 3 (ELEV. 6500')	RIPARIAN	X	X		X	X				X	X				X		X					X	X	
	WETLANDS/LOWER BIRCH CREEK(HWY 168, ELEV 5700')	WETLANDS	X	X			X				X	X						X					X	X	
	WETLANDS/LOWER McGEE CREEK(ELEV 5700')	RIPARIAN, WETLANDS	X	X		X	X				X	X			X			X					X	X	BISHOP CREEK
	SHARPS MEADOW(UPPER McGEE CREEK) WETLANDS	WETLANDS/ SPRINGS	X	X			X				X	X			X	X		X					X	X	MCGEE CREEK/ BISHOP CREEK
	WELLS UPPER MEADOW WETLANDS	WET MEADOW/ WETLANDS	X	X			X				X	X						X					X	X	
	BUTTERMILK CANYON(ELEV 7800') CREEK	WETLANDS	X	X			X				X	X				X		X					X	X	
	UPPER BIRCH CREEK		X	X			X				X	X				X		X					X	X	PLEASANT VALLEY RES
	MIDDLE FORK BISHOP CREEK(ELEV.9000') WETLANDS	WET MEADOW, RIPARIAN	X				X				X	X				X		X					X	X	BISHOP CREEK
	SOUTH FORK BISHOP CREEK WETLANDS	WET MEADOW, RIPARIAN	X	X			X				X	X				X		X					X	X	BISHOP CREEK
	WARREN DRY LAKE WETLANDS	WETLANDS	X	X			X				X	X			X			X					X	X	OWENS RIVER
	WETLANDS/HALF Km. NW OF WARREN LAKE	WETLANDS, WET MEADOW	X	X			X				X	X						X					X	X	OWENS VALLEY GW
	WETLANDS/HALF Km. WEST OF WARREN LAKE	WETLANDS, WET MEADOW	X	X			X				X	X						X					X	X	OWENS VALLEY GW
	WETLANDS/WELL NORTH OF KLONDIKE LAKE	WETLANDS, WET MEADOW	X	X			X	X			X	X						X	X				X	X	OWENS RIVER
603.20	**UPPER OWENS HA (continued)**																								
	CHALFANT VALLEY WATERSHED (continued)																								
	WETLANDS/CHANNEL N OF KLONDIKE LAKE	WETLANDS, RIPARIAN	X	X			X				X	X			X			X	X				X	X	OWENS RIVER, KLONDIKE LAKE
	WETLANDS/OWENS RIVER CHANNEL N. OF KLONDIKE LK	WETLANDS, RIPARIAN	X	X			X				X	X			X			X	X				X	X	OWENS LAKE
	WETLANDS/EAST SIDE OF OWENS VALLEY, 0.5 Km N OF HWY 16	WETLANDS	X	X			X	X			X	X						X					X	X	OWENS RIVER
	WETLANDS/E. SIDE OF OWENS VALLEY	WETLANDS	X	X			X	X			X	X						X					X	X	OWENS RIVER
	BAKER CREEK, ABOVE BIG PINE	WETLANDS	X	X			X				X	X	X			X		X	X				X	X	OWENS RIVER
	UHLMEYER SPRINGS	SPRING	X	X			X				X	X						X							OWENS VALLEY GROUNDWATER
	MINOR SURFACE WATERS		X	X		X	X				X	X	X			X		X		X			X		
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
603.30	**LOWER OWENS HYDROLOGIC AREA**																								
	OWENS RIVER WETLANDS	WETLANDS	X	X			X				X	X			X	X		X			X		X	X	
	OWENS LAKE WETLANDS	WETLANDS	X	X			X				X	X			X	X		X					X	X	
	OWENS RIVER (BELOW TINEMAHA RESERVOIR)	CONTROLLED RIVER	X	X			X				X	X	X			X		X		X		X			HAIWEE RES./VIA L.A. AQUEDUCT
	OWENS RIVER (BELOW INTAKE DAM)	EPHEMERAL STREAM	X	X			X	X			X	X	X		X	X		X	X	X		X			OWENS LAKE
	WETLANDS/ALKALI FLAT EAST OF OWENS RIVER, DOLOMITE	WETLANDS	X	X			X	X			X	X						X					X	X	LA AQUEDUCT
	WETLANDS/DOLOMITE	WETLANDS	X	X			X	X			X	X						X					X	X	LA AQUEDUCT
	LOWER OWENS RIVER CHANNEL WETLANDS	WETLANDS	X	X			X				X	X			X			X	X	X			X	X	LA AQUEDUCT
	TABOOSE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	GOODALE CREEK	PERENNIAL STREAM	X	X			X				X	X	X	X		X		X				X			L.A. AQUEDUCT
	DIVISION CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X	X		X		X				X			L.A. AQUEDUCT
	SAWMILL CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	THIBAUT CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																						RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	OAK CREEK CAMPGROUND WETLANDS	WETLANDS	X	X		X	X				X	X				X		X					X	X	OAK CREEK
	OAK CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X	X	X	X		X		X		X			L.A. AQUEDUCT
	NORTH FORK OAK CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			OAK CREEK
	SOUTH FORK OAK CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			OAK CREEK
	INDEPENDENCE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	PINYON CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			TRIB. TO INDEPENDENCE
	SYMMES CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	SPRING N OF SHEPHERD CREEK	SPRINGS	X	X			X				X	X	X					X	X	X					L.A. AQUEDUCT
	SHEPHERD CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	BAIRS CREEK	PERENNIAL STREAM	X				X				X	X	X			X		X				X			L.A. AQUEDUCT
	GEORGE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	HOGBACK CREEK	PERENNIAL STREAM	X	X			X	X			X	X	X			X		X	X	X		X	X		L.A. AQUEDUCT
	WETLANDS/EAST OF MOVIE FLAT		X			X	X				X	X						X					X	X	OWENS VALLEY GW
603.30	**LOWER OWENS HA (continued)**																								
	WETLANDS/HWY 395	WETLANDS	X	X			X				X	X						X	X				X	X	L.A. AQUEDUCT
	WTLNDS/FAULT SCARP W OF MT WHIT CEMTRY LONE PINE	WETLANDS	X	X			X				X	X						X				X	X		OWENS RIVER
	LOWER LONE PINE CREEK WETLANDS	WETLANDS	X	X			X		X		X	X				X		X					X	X	OWENS RIVER
	SPRING SOUTH OF LONE PINE CREEK	SPRING	X	X			X				X	X			X			X					X		LONE PINE CREEK
	SEEP WEST OF HORSESHOE MEADOW ROAD	WETLANDS	X	X			X				X	X						X					X	X	LONE PINE CREEK
	WETLANDS/PHEASANT CLUB EAST OF TUTTLE CREEK RD	SPRINGS	X	X		X	X				X	X						X	X				X	X	N FORK LUBKEN CREEK
	INDIAN SPRING	SPRINGS	X	X		X	X				X	X			X			X					X		LUBKEN CREEK
	POND ON INDIAN SPRINGS ROAD	SPRINGS	X	X			X				X	X			X			X					X		DIAZ LAKE
	TUTTLE CREEK	RIPARIAN	X	X			X				X	X				X		X					X		OWENS RIVER
	SEEP NORTH OF MOVIE FLAT	SPRING	X	X			X				X	X						X							
	WETLANDS/LONE PINE NARROW GORGE ROAD	WETLANDS	X	X			X				X	X						X	X	X			X	X	LA AQUEDUCT
	LONE PINE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	TUTTLE CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	DIAZ CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	DIAZ LAKE	LAKE	X	X			X		X		X	X	X		X	X		X				X			OWENS VALLEY GROUNDWATER
	NORTH FORK LUBKIN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			OWENS VALLEY GROUNDWATER
	SOUTH FORK LUBKIN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			OWENS VALLEY GROUNDWATER
	CARROLL CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			OWENS VALLEY GROUNDWATER
	COTTONWOOD CREEK	PERENNIAL STREAM	X	X			X			X	X	X	X			X		X				X			L.A. AQUEDUCT
	COTTONWOOD LAKES (NO. 1,2,3,4,5,6)	LAKES	X				X				X	X	X			X		X				X			COTTONWOOD CREEK
	ASH CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X	X			X			HAIWEE RESERVOIR
	CARTAGO CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			HAIWEE RESERVOIR
	OLANCHA CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			HAIWEE RESERVOIR
	HAIWEE RESERVOIR WETLANDS	WETLANDS	X	X			X				X	X				X		X					X	X	
	HAIWEE RESERVOIR	RESERVOIR	X	X		X	X				X	X	X			X		X		X		X			L.A. AQUEDUCT
	SUMMIT CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	HOGBACK CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X			X		X				X			HAIWEE RESERVOIR
	WETLANDS EAST OF STEVENS CANAL	WETLANDS	X	X			X	X			X	X						X	X	X			X	X	L.A. AQUEDUCT
	WETLANDS/FORT INDEPENDENCE RD. AT HWY 395	WET MEADOW	X	X			X	X			X	X				X		X	X	X			X	X	L.A. AQUEDUCT
	FORT INDEPENDENCE INDIAN RESERVATION	WETLANDS	X	X			X				X	X						X	X	X			X	X	OAK CREEK/ LA AQUEDUCT
	WTLNDS/SPR E OF SHABBEL LN, N OF INDEPENDENCE	SPRING	X	X			X				X	X						X	X	X			X		LA AQUEDUCT
	SPRINGS S. OF KEELER	SPRINGS	X	X	X	X	X				X	X						X							OWENS LAKE
	CERRO GORDO SPRING	SPRINGS	X	X	X	X	X				X	X						X							OWENS LAKE
	DIRTY SOCKS HOT SPRING	SPRINGS	X	X			X				X	X						X							OWENS LAKE
	SPRING NE OF OLANCHA	SPRINGS	X	X			X				X	X						X							OWENS LAKE
	KEELER SPRINGS	SPRINGS	X	X		X	X	X			X	X			X	X	X	X			X				OWENS LAKE
603.30	**LOWER OWENS HA (continued)**																								
	OWENS LAKE	INTERMITTENT LAKE	X								X	X	X		X	X	X	X							INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X	X		X	X				X	X	X		X	X		X		X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
603.40	**CENTENNIAL HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X	X			X	X	X		X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
604.00	**FISH LAKE HYDROLOGIC UNIT**																								
	CABIN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X					FISH LAKE VALLEY GW
	CHIATOVICH CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							FISH LAKE VALLEY GW
	INDIAN CREEK	STREAM	X	X			X				X	X	X			X		X							FISH LAKE VALLEY GW
	LEIDY CREEK	PERENNIAL STREAM	X	X			X			X	X	X	X			X		X		X					FISH LAKE VALLEY GW
	PERRY AIKEN CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							FISH LAKE VALLEY GW
	MCAFEE CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X			X		X							FISH LAKE VALLEY GW
	TOLER CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							FISH LAKE VALLEY GW
	IRON CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							FISH LAKE VALLEY GW
	WILDHORSE CREEK	INTERMITTENT STREAM	X	X			X				X	X	X			X		X							FISH LAKE VALLEY GW
	FURNACE CREEK	INTERMITTENT STREAM	X	X			X				X	X	X			X		X							FISH LAKE VALLEY GW
	INDIAN GARDEN CREEK	INTERMITTENT STREAM	X	X			X				X	X	X			X		X							FISH LAKE VALLEY GW
	COTTONWOOD CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X		X					FISH LAKE VALLEY GW
	MINOR SURFACE WATERS		X	X			X				X	X	X			X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X			X		X					X	X	
605.00	**DEEP SPRINGS HYDROLOGIC UNIT**																								
	WYMAN CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X			X							DEEP SPRINGS VAL. GW
	CROOKED CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X			X							TRIBUTARY TO WYMAN CREEK
	DEEP SPRINGS LAKE WETLANDS AND MARSH		X								X	X			X		X	X	X	X			X	X	
	DEEP SPRINGS LAKE	INTERMITTENT LAKE	X				X				X	X	X		X		X	X	X	X					DEEP SPRINGS VAL. GW
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
606.00	**EUREKA HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X					X	X	
606.10	**MARBLE BATH HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X					X	X	
606.20	**MARBLE CANYON HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X					X	X	
607.00	**SALINE HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X		X	X	X						
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X	X		X	X		X					X	X	
607.10	**SALT LAKE HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X			X	X		X					X	X	

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
607.20	**CAMEO HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X			X	X		X					X	X	
608.00	**RACE TRACK HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X		X	X	X	X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X	X		X	X		X					X	X	
608.10	**TEAKETTLE JUNCTION HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X			X	X		X					X	X	
608.20	**HIDDEN VALLEY HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X			X	X		X					X	X	
608.30	**ULIDA HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X			X	X		X					X	X	
608.40	**SAND FLAT HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X			X	X		X					X	X	
609.00	**AMARGOSA HYDROLOGIC UNIT**																								
	TECOPA WETLANDS	WETLANDS	X								X	X			X			X	X	X	X		X	X	
	COTTONBALL MARSH	WETLANDS	X								X	X			X			X	X	X			X	X	
	AMARGOSA RIVER WETLANDS	WETLANDS	X	X			X				X	X			X			X	X	X		X	X	X	
	AMARGOSA RIVER	INTERMITTENT STREAM	X	X			X				X	X			X		X	X	X	X		X			AMARGOSA SUBAREA GW
	SALT CREEK	PERENNIAL STREAM	X				X				X	X			X		X	X	X	X		X			DEATH VALLEY GROUNDWATER
	SARATOGA SPRINGS	SPRINGS	X	X			X				X	X			X	X		X	X	X					DEATH VALLEY GW
	SCOTTY'S RANCH SPRINGS	SPRINGS	X	X			X				X	X			X	X		X	X	X					DEATH VALLEY GW
	SCOTTY'S CASTLE SPRINGS	SPRINGS	X	X			X				X	X			X		X	X	X	X					DEATH VALLEY GW
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X		X	X				
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X	X	X			X	X	
609.10	**DEATH VALLEY HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X			X	X		X		X			X	X	
609.11	**STOVEPIPE WELLS HYDROLOGIC SUBAREA**																								
	SHEEP SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER
	AMARGOSA SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		DEATH VALLEY GW
	SCOTTYS SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA R./DEATH VALLEY GW
	TIMPAPAH SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA R./DEATH VALLEY GW
	OWL HOLE SPRINGS	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER
	SARATOGA SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER
	MANLY PEAK SPRINGS	SPRINGS	X	X			X	X			X	X			X	X		X		X			X		BUTTE VL GW/ANVIL SPG. CYN. WS
	LITTLE, SQUAW, & WILLOW SPRINGS	SPRINGS	X	X			X	X			X	X			X	X		X		X			X		ANVIL SPG. CYN WS/ DEATH VL. GW
	CAVE, COTTONWOOD AND ARRASTRE SPRINGS	SPRINGS	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER, DEATH VAL. GW
	MESQUITE, LOST SPRINGS	SPRINGS	X	X			X	X			X	X			X	X		X		X			X		ANVIL SPG. CYN, AMARGOSA R.
	GRUBSTAKE SPRINGS	SPRINGS	X	X			X	X			X	X			X	X		X		X			X		WARM SPG. CYN, AMARGOSA R.
	WARM SPRINGS	SPRINGS	X	X			X	X			X	X			X			X		X			X		WARM SPG.CYN, AMARGOSA R.
	RHODES SPRINGS	SPRINGS	X	X			X	X			X	X			X	X		X		X			X		RHODES WASH, DEATH VAL GW
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.12	**HARRISBURGH HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.13	**WINGATE WASH HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.20	**SILURIAN HILLS HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.21	**AVAWATZ HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.22	**RED PASS HYDROLOGIC SUBAREA**																								
	RED PASS LAKE	ALKALI LAKE	X				X				X	X			X		X	X		X				X	INTERNL DRN LK/RED PASS LK GW
	NO NAME LAKE	ALKALI LAKE	X				X				X	X			X		X	X		X				X	INTERNL DRN LK/RED PASS LK GW
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.23	**VALJEAN HYDROLOGIC SUBAREA**																								
	SILURIAN LAKE	ALKALI LAKE	X				X				X	X			X		X	X		X					SILURIAN LK/SILURIAN VAL GW
	KINGSTON SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		SILURIAN LK/SILURIAN VAL GW
	COYOTE HOLES SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		KINGSTON W./SALT C./SILURIAN L.
	RABBIT HOLES SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		SILURIAN LAKE/SILURIAN VAL GW
	MINOR SURFACE WATERS		X	X			X	X			X	X			X	X		X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.24	**SHADOW HYDROLOGIC SUBAREA**																								
	COW COVE SPRINGS	FLOODPLAIN/SEEPS/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		SHADOW VALLEY GW
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.30	**RYAN HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.31	**FURNACE CREEK HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.32	**GREENWATER HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																				RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
609.40	**AMARGOSA DESERT HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.41	**CALICO HYDROLOGIC SUBAREA**																								
	SALSBERRY SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER
	MONTGOMERY SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X					X	X	
609.42	**SHOSHONE HYDROLOGIC SUBAREA**																								
	WILLOW SPRING	SPRING/RIPARIAN/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER
	TECOPA HOT SPRINGS	SPRINGS	X	X			X				X	X			X			X	X	X					DEATH VALLEY GW
	TECOPA MARSHES	MARSHES/EMERGENT	X	X			X				X	X			X	X		X	X	X			X	X	DEATH VALLEY GW
	GRIMSHAM LAKE	LAKE/EMERGENT MARSHES	X	X			X				X	X			X	X		X	X	X			X	X	DEATH VALLEY GW
	SHOSHONE SPRING	SPRING/EMERGENT MARSHES/RIPARIAN	X	X			X	X			X	X			X	X		X		X			X	X	AMARGOSA RIVER
	CHAPPO SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER
	AMARGOSA RIVER/TECOPA RIPARIAN WETLANDS	RIPARIAN/EMERGENT/FLOODPLAIN	X	X			X	X			X	X			X	X		X		X			X	X	AMARGOSA RIVER
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X					X	X	
	RESTING SPRING/SPANISH TRAIL RIPARIAN WETLANDS	SPRING/RIPARIAN/EMERGENT	X	X			X	X			X	X			X	X		X		X			X	X	AMARGOSA RIVER
	SHEEPHEAD SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		AMARGOSA RIVER
	MINOR SURFACE WATERS		X	X			X	X			X	X			X	X		X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.43	**CHICAGO HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X		X			X	X	
609.44	**CALIFORNIA VALLEY HYDROLOGIC SUBAREA**																								
	BECK SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		CALIFORNIA VALLEY GW
	CRYSTAL SPRING	SPRING/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		CALIFORNIA VALLEY GW
	MINOR SURFACE WATERS		X	X			X	X			X	X			X			X		X					
	MINOR SPRINGS/SEEPS/WETLANDS	SPRING/SEEPS/EMERGENT	X	X			X	X			X	X			X			X		X			X	X	CALIFORNIA VALLEY GW
610.00	**PAHRUMP HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X		X					
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X		X			X	X	
611.00	**MESQUITE HYDROLOGIC UNIT**																								
	MESQUITE LAKE	ALKALI LAKE	X	X			X				X	X	X		X		X	X					X		INTERNL DRN LAKE/MESQUITE --
	HORSE THIEF SPRINGS	SPRINGS/EMERGENT	X	X			X				X	X	X		X	X		X					X		MESQUITE VALLEY GW
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
612.00	**IVANPAH HYDROLOGIC UNIT**																								
	IVANPAH LAKE	ALKALI LAKE	X	X			X				X	X			X	X	X	X					X	X	INTERNL DRN LK/IVANPAH VAL GW
	IVANPAH SPRINGS	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
	WILLOW SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
	MINERAL SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
	WHEATON SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		WHEATON WASH
	CLIFF CANYON SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
	SLAUGHTERHOUSE SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
	SACATON SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
	CHINA SPRINGS	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		WHEATON WASH
	HARDROCK QUEEN SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		WHEATON WASH
	GROANER SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		WHEATON WASH
	JUNIPER SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		IVANPAH LAKE
	WILLOW SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		IVANPAH LAKE
	DOVE SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X		X			X		IVANPAH LAKE
	COTTONWOOD SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
	LIVE OAK SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
612.00	**IVANPAH HU (continued)**																								
	CABIN SPRING	SPRINGS/EMERGENT	X	X			X	X			X	X			X	X		X					X		IVANPAH LAKE
	MINOR SURFACE WATERS		X	X			X				X	X	X		X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X			X	X		X					X	X	
613.00	**OWLSHEAD HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
613.10	**LOST LAKE HYDROLOGIC AREA**																								
	LOST LAKE	ALKALI LAKE	X				X				X	X					X	X							INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
613.20	**OWL LAKE HYDROLOGIC AREA**																								
	OWL LAKE	ALKALI LAKE	X				X				X	X					X	X							INTERNALLY DRAINED LAKE
	QUAIL SPRING	SPRING	X	X			X	X			X	X			X	X		X							OWL LAKE
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
614.00	**LEACH HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
615.00	**GRANITE HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X				X	X			X	X	X		X	X		X					X	X	
615.10	**MCLEAN HYDROLOGIC AREA**																								
	MCLEAN LAKE	ALKALI LAKE	X				X				X	X	X		X		X	X							INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
615.20	**NELSON HYDROLOGIC AREA**																								
	NELSON LAKE	ALKALI LAKE	X				X				X	X	X		X		X	X							INTERNALLY DRAINED LAKE
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
616.00	**BICYCLE HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																				RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
617.00	**GOLDSTONE HYDROLOGIC UNIT**																								
	GOLDSTONE LAKE	ALKALI LAKE	X				X				X	X			X		X	X							INTERNALLY DRAINED LAKE
	PIONEER LAKE	ALKALI LAKE	X				X				X	X			X		X	X							INTERNALLY DRAINED LAKE
	GOLDSTONE LAKE	LAKE	X								X	X			X			X							
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
618.00	**COYOTE HYDROLOGIC UNIT**																								
	PARADISE SPRINGS	SPRINGS/HOT SPRINGS	X	X			X	X			X	X			X			X					X		COYOTE LAKE GW
	JACK SPRING	SPRINGS	X	X			X	X			X	X			X	X		X							COYOTE LAKE GW
	COYOTE LAKE		X				X	X			X	X	X		X			X							COYOTE LAKE
	JACK RABBIT SPRINGS		X	X			X				X	X	X		X			X							COYOTE LAKE
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
619.00	**SUPERIOR HYDROLOGIC UNIT**																								
	SUPERIOR LAKE	LAKE	X								X	X			X			X							SUPERIOR LAKE
	INDIAN SPRINGS	SPRINGS	X	X							X	X			X			X							SUPERIOR LAKE
	UNNAMED LAKES	LAKE	X								X	X			X			X							SUPERIOR LAKE
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.00	**BALLARAT HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X		X	X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.10	**WINGATE PASS HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X		X	X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.20	**WILDROSE HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X		X	X	X	X		X			
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.21	**WHITE SAGE HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.22	**WILD ROSE PEAK HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.30	**LEE FLAT HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.40	**SANTA ROSA FLAT HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.41	**MALPAIS MESA HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.42	**RAINBOW HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.43	**SILVER DOLLAR HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.50	**DARWIN HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X		X	X				X	X	X		X	X		X	X						
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X		X	X	X			X	X	X		X	X		X					X	X	
620.60	**PANAMINT VALLEY HYDROLOGIC AREA**																								
	REDLANDS SPRING, DOWN THE FALL	SPRING, CREEK	X				X				X	X			X	X		X							PANAMINT VALLEY GW
	SOURDOUGH SPRINGS	SPRINGS	X				X				X	X			X	X		X							PANAMINT VALLEY GW
	GOLER CAN SPRINGS (UNNAMED)	SPRINGS	X				X				X	X			X	X		X							PANAMINT VALLEY GW
	MINOR SURFACE WATERS		X			X	X				X	X	X		X	X		X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X		X	X	X			X	X	X		X	X		X					X	X	
620.70	**BROWN HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS	SPRINGS/SEEPS/EMERGENT/MARSHES	X	X			X	X			X	X	X		X	X		X					X	X	
620.80	**ROBBERS HYDROLOGIC AREA**																								
	LEAD PIPE SPRINGS	SPRINGS					X				X	X			X			X							PILOT KNOB VAL, PANAMINT VAL.
	MINOR SURFACE WATERS		X				X				X	X	X		X			X							
	MINOR WETLANDS						X	X			X	X			X			X					X	X	
621.00	**TRONA HYDROLOGIC UNIT**																								
	SEARLES DRY LAKE BED	SALINE LAKE		X		X					X	X					X	X							TERMINAL DRAINED LAKE
	MINOR SURFACE WATERS		X				X				X	X			X			X	X						
	MINOR WETLANDS		X			X	X	X			X	X			X			X					X	X	
621.10	**SEARLES VALLEY HYDROLOGIC AREA**																								
	PEACH SPRINGS	SPRINGS	X				X				X	X			X			X							SEARLES VALLEY GROUNDWATER
	UNAMED SPRINGS IN THE NE CORNER OF TRONA W. QUAD	SPRINGS	X				X				X	X			X			X							SEARLES VALLEY GW
	SPRINGS ON THE HOMEWOOD CAN QUAD	SPRINGS	X				X				X	X			X			X							SEARLES VALLEY GW
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X				X	X			X	X			X			X					X	X	
621.20	**SALT WELLS HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X								X	X			X			X							
	MINOR WETLANDS		X				X	X			X	X			X			X					X	X	
621.30	**PILOT KNOB HYDROLOGIC AREA**																								
	SEEP SPRINGS	SPRINGS	X				X				X	X			X			X							
	GRANITE WELLS SPRINGS	SPRINGS	X				X				X	X			X			X							GRANITE WELLS

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																				RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X				X	X			X	X			X			X					X	X	
622.00	**COSO HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS		X	X			X	X			X	X			X			X					X	X	
622.10	**WILD HORSE HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X				X	X			X			X					X	X	
622.20	**AIRPORT HYDROLOGIC AREA**																								
	AIRPORT LAKE	ALKALI LAKE	X				X				X	X			X		X	X							INTERNALLY DRAINED LAKE
	MOUNTAIN SPRINGS & UPSTREAM	SPRINGS	X				X				X	X			X			X							MT SPR CYN WSH/INDIAN WELL GW
622.20	**AIRPORT HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X				X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X				X	X			X	X			X			X					X	X	
623.00	**UPPER CACTUS HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	WETLANDS	X	X			X				X	X			X			X					X	X	
624.00	**INDIAN WELLS HYDROLOGIC UNIT**																								
	INDIAN WELLS "BRIAN WELLS"		X	X			X	X			X	X			X			X							INDIAN WELLS VALLEY GW
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
624.10	**ROSE HYDROLOGIC AREA**																								
	LITTLE LAKE	LAKE	X	X			X				X	X			X			X							LITTLE LAKE
	LITTLE LAKE CANYON CREEK		X	X			X				X	X			X			X							LITTLE LAKE
	INTERMITTENT TRIBUTARY		X	X			X				X	X			X			X					X		LITTLE LAKE
	MINOR SURFACE WATERS		X	X			X				X	X	X		X	X		X					X		
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
624.20	**CHINA LAKE HYDROLOGIC AREA**																								
	NINE MILE CANYON CREEK	INTERMITTENT STREAM	X	X			X				X	X	X		X	X		X							INDIAN WELLS SUBUNIT GW
	LARK SEEP LAGOON	LAKE	X	X			X				X	X			X			X	X	X		X	X		INDIAN WELLS SUBUNIT GW
	G-1 SEEP	SPRINGS	X	X			X				X	X			X	X		X		X		X			LARK SEEP
624.20	**CHINA LAKE HA (continued)**																								
	SPRING IN FREEMAN CANYON	SPRINGS	X	X			X				X	X			X	X		X							FREEMAN CREEK
	BIG SPRINGS	SPRINGS	X	X			X				X	X			X	X		X							FREEMAN CREEK
	DRY LAKE SPRINGS	SPRINGS	X	X			X				X	X			X	X		X							INDIAN WELLS VALLEY GW
	DRY LAKE'	PLAYA LAKE	X	X			X				X	X			X	X		X							LAKE BED
	MOSCOW SPRINGS (3)	SPRINGS	X	X			X				X	X			X	X		X							SWEETWTR WSH,INDIAN WLS GW
	BIG SPRINGS	SPRINGS	X	X			X				X	X			X	X		X							INDIAN WELLS VALLEY GW
	INDIAN WELLS CANYON SPRINGS	SPRINGS	X	X			X				X	X			X	X		X							INDIAN WELLS VALLEY GW
	GRAPEVINE CYN SPRINGS	SPRINGS	X	X			X				X	X			X	X		X							INDIAN WELLS VALLEY GW
	SHORT CYN SPRINGS	SPRINGS	X	X			X				X	X			X	X		X							INDIAN WELLS VALLEY GW
	CHINA LAKE		X	X			X				X	X			X			X							CHINA LAKE
	SHEEP SPRINGS	SPRINGS	X	X			X				X	X			X	X		X							INDIAN WELLS VALLEY GW
	MINOR SURFACE WATERS		X	X			X				X	X	X		X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X					X	X	
625.00	**FREMONT HYDROLOGIC UNIT**																								
	TUCKER ROAD WETLANDS	WETLANDS, PERENNIAL	X	X			X				X	X			X			X					X	X	TEACHAPI V B GW
	WETLANDS ABOVE NEW DAM	EPHEMERAL STREAM	X				X				X	X			X			X					X	X	TEACHAPI V B GW
	E MOST SPRING IN "TUCKER ROAD" TRANSECT	SPRING	X	X			X				X	X			X			X							TEACHAPI V B GW
	OAK CREEK PASS SPRINGS	SPRINGS	X	X		X	X				X	X			X			X							TEACHAPI V B GW
	WTLNDS/OAK CR. PASS, 0.5 MI DWNSTREAM FROM SPRGS	WETLANDS	X			X	X				X	X			X			X					X	X	TEACHAPI V B GW
	OAK CREEK CANYON WETLANDS	WETLANDS	X	X			X				X	X			X			X					X	X	OAK CREEK
	GREEN SPRING	SPRINGS	X	X			X				X	X			X			X							KELSO VALLEY GROUNDWATER
	QUAIL SPRING	SPRINGS	X	X			X				X	X			X			X					X		COTTONWOOD CR./KELSO VAL GW
	UPPER COTTONWOOD CREEK		X	X			X				X	X			X			X					X		COTTONWOOD CREEK
	UPPER SAND CREEK		X	X			X				X	X			X			X							CACHE CREEK
	LOWER SAND CREEK		X	X			X				X	X			X			X							
	UPPER CACHE CREEK		X	X			X				X	X			X			X							CACHE CREEK
	CACHE CREEK		X	X			X				X	X			X			X							FREMONT VALLEY
	CACHE CREEK 2		X				X				X	X			X			X							CACHE CREEK/ FREMONT VALLEY
	PROCTOR DRY LAKE, S OF HWY 58		X	X			X				X	X			X			X							PROCTOR LAKE
	SPRINGS SOUTH OF PROCTOR LAKE	SPRINGS	X	X			X				X	X			X			X							PROCTOR LAKE
	WETLANDS/CAMERON CANYON RD OFFRAMP(W BOUND)		X				X				X	X			X			X					X	X	CACHE CREEK
	LOWER CACHE CREEK		X				X				X	X			X			X							CACHE CREEK
	SEEP SOUTH OF CAMERON CANYON		X	X			X				X	X			X			X							CACHE CREEK
	SEEP ON SLOPE S. OF CAMERON CYN RD.		X	X			X				X	X			X			X							CACHE CREEK
	SPRING W OF CAMERON CANYON RD	SPRING	X	X			X				X	X			X			X							CACHE CREEK
625.00	**FREMONT HU (continued)**																								
	TEHACHAPI WILLOW SPRINGS RD WETLANDS		X				X				X	X			X			X					X	X	
	KOEHN DRY LAKE		X	X	X	X	X				X	X			X		X	X							GROUNDWATER
	MESQUITE SPRINGS	SPRINGS	X	X			X				X	X			X			X							FREMONT VALLEY GW
	RED ROCK CANYON CREEK		X				X				X	X			X			X							FREMONT VALLEY/ KOEHN LAKE
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
625.10	**DOVE SPRINGS HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X		X		X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
625.20	**KELSON LANDIS HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X		X		X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
625.30	**EAST TEHACHAPI HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X		X		X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
625.40	**KOEHN HYDROLOGIC AREA**																								
	DUCK PONDS		X				X		X		X	X			X			X							KOEHN LAKE
	KOEHN LAKE		X				X		X		X	X			X			X							KOEHN LAKE
	MESA SPRINGS, POISON SPRINGS	SPRINGS	X	X			X		X		X	X			X			X							KOEHN LAKE
	MINOR SURFACE WATERS		X	X			X		X		X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
626.00	**ANTELOPE HYDROLOGIC UNIT**																								
	ROGER'S LAKE WETLANDS	WETLANDS	X								X	X			X		X	X					X	X	
	OAK CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X		X			X							ANTELOPE VALLEY GW
	LITTLE ROCK CREEK	INTERMITTENT STREAM	X				X				X	X	X			X		X							ANTELOPE VALLEY GW
	BIG ROCK CREEK	PERENNIAL STREAM	X	X		X	X				X	X	X			X		X				X			ANTELOPE VALLEY GW
	MESCAL CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X				X			L.A. AQUEDUCT
	FAIRMONT RESERVOIR	RESERVOIR	X	X		X	X				X	X	X		X			X							L.A. AQUEDUCT
	HAROLD RESERVOIR	RESERVOIR	X	X		X	X				X	X	X		X			X							ANTELOPE VALLEY GW
	LITTLE ROCK RESERVOIR	RESERVOIR	X	X		X	X				X	X	X			X		X							ANTELOPE VALLEY GW
	LAKE PALMDALE	RESERVOIR	X	X			X				X	X	X			X		X							L.A. AQUEDUCT
626.00	**ANTELOPE HU (continued)**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
626.10	**CHAFEE HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
626.20	**GLOSTER HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
626.30	**WILLOW SPRINGS HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
626.40	**NEENACH HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
626.50	**LANCASTER HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
626.60	**NORTH MUROC HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
626.70	**BUTTES HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
626.80	**ROCK CREEK HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X			X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X					X	X	
627.00	**CUDDEBACK HYDROLOGIC UNIT**																								
	MINOR SURFACE WATERS		X	X			X				X	X	X		X			X							
	MINOR WETLANDS	WETLANDS	X				X	X			X	X			X			X							
628.00	**MOJAVE HYDROLOGIC UNIT**																								
	LOWER NARROWS OF MAJOVE R. WETLANDS	WETLANDS	X	X			X				X	X			X	X		X		X	X		X	X	
	MOJAVE RIVER		X	X			X				X	X	X		X	X		X							UPPER MOJAVE GW BASIN
	WEST FORK MOJAVE RIVER	INTERMITTENT STREAM	X	X			X				X	X	X		X	X		X							MOJAVE RIVER GW BASIN
	EAST FORK OF WEST FORK OF MOJAVE RIVER	PERENNIAL STREAM	X	X							X	X	X			X		X				X			WEST FORK MOJAVE RIVER
	LAKE GREGORY	LAKE	X	X			X		X		X	X	X			X		X				X			BURNT HILL CANYON
	SEELEY CANYON CREEK	PERENNIAL STREAM	X	X							X	X	X			X		X							EAST FORK/WEST FORK
	ZYZYX SPRING	SPRINGS	X	X			X				X	X	X		X	X		X	X	X					MOJAVE HYDROLOGIC UNIT GW
	SUGARLOAF SPRING	SPRINGS	X				X				X	X			X			X							MAJAVE RIVER BASIN GW
	TURNER SPRINGS	SPRINGS	X	X			X				X	X			X			X					X	X	MOJAVE RIVER
	MINOR SURFACE WATERS		X	X			X				X	X	X		X	X		X		X					
	MINOR WETLANDS	WETLANDS	X				X	X			X	X			X	X		X		X			X	X	
628.10	**EL MIRAGE HYDROLOGIC AREA**																								
	HEATH CANYON CREEK (TRIBUTARY TO SHEEP CREEK)		X	X			X				X	X	X		X	X		X							DEEP CREEK
	MINOR SURFACE WATERS		X	X			X	X			X	X			X			X		X					
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X			X		X			X	X	
628.20	**UPPER MOJAVE HYDROLOGIC AREA**																								
	HOUSTON CREEK	PERENNIAL STREAM	X	X							X	X	X			X		X							EAST FORK/WEST FORK
	DART CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X	X		X							HOUSTON CREEK
	DEEP CREEK	PERENNIAL STREAM	X	X			X				X	X	X			X		X							EAST FORK/WEST FORK
	SAWPIT CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X	X		X							WEST FORK MOJAVE
	WILLOW CREEK	INTERMITTENT STREAM	X	X							X	X	X			X		X							DEEP CREEK
	TROY CREEK	INTERMITTENT STREAM	X	X			X				X	X	X		X	X		X							DEEP CREEK
	TROY POND	INTERMITTENT POND	X	X			X				X	X	X		X	X		X							DEEP CREEK
	HOLCOMB CREEK	INTERMITTENT STREAM	X	X							X	X	X			X		X							DEEP CREEK
	LITTLE BEAR CREEK	INTERMITTENT STREAM	X	X							X	X	X			X		X							DEEP CREEK
	LAKE ARROWHEAD	LAKE	X	X			X		X		X	X	X			X		X							DEEP CREEK
	ARROWBEAR LAKE	LAKE	X	X	X		X		X		X	X	X		X	X		X							DEEP CREEK
	HOOKS CREEK	PERENNIAL STREAM	X	X							X	X	X			X		X							DEEP CREEK
	TWIN PEAKS CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X	X		X							
	SHALE CREEK	PERENNIAL STREAM	X	X							X	X	X			X		X				X			DEEP CREEK
628.20	**UPPER MOJAVE HA (continued)**																								
	SHEEP CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X	X		X							DEEP CREEK
	CRAB CREEK	PERENNIAL STREAM	X	X							X	X	X			X		X				X			DEEP CREEK
	GREEN VALLEY LAKE	LAKE	X	X			X				X	X	X			X		X							GREEN VALLEY LAKE CREEK
	GREEN VALLEY LAKE STREAM	PERENNIAL STREAM	X	X			X				X	X	X		X	X		X							DEEP CREEK
	SILVERWOOD RESERVOIR	RESERVOIR	X	X			X				X	X	X			X		X							UPPER MOJAVE SUBUNIT GW
	GRASS VALLEY LAKE	LAKE	X	X			X				X	X	X			X		X							GRASS VALLEY LAKE
	GRASS VALLEY LAKE CREEK	PERENNIAL STREAM	X	X			X				X	X	X		X	X		X							WEST FORK MOJAVE RIVER
	UPPER MOJAVE RIVER, LOWER SLOUGH	WETLANDS	X	X			X				X	X			X			X					X	X	MOJAVE RIVER
	MINOR SURFACE WATERS		X	X			X			X	X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.30	**MIDDLE MOJAVE HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X			X	X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.40	**LOCKHART HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X			X	X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	

TABLE 2-1. BENEFICIAL USES OF SURFACE WATERS OF THE LAHONTAN REGION

HU No.	HYDROLOGIC UNIT/SUBUNIT DRAINAGE FEATURE	WATERBODY CLASS MODIFIER	BENEFICIAL USES																					RECEIVING WATER
			MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
628.41	**GRASS VALLEY HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X			X	X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.42	**HARPER VALLEY HYDROLOGIC SUBAREA**																								
	BIRD SPRINGS	SPRINGS	X	X			X				X	X			X	X		X					X		HARPER VALLEY GROUNDWATER
	HARPER LAKE	ALKALI LAKE	X	X			X				X	X			X	X		X							INTERNALLY DRAINED LAKE
	OPAL MTN. SPRINGS	SPRINGS																					X		
	HARPER LAKE WETLANDS	WETLANDS	X	X			X				X	X			X	X		X					X	X	HARPER LAKE
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.50	**LOWER MOJAVE HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.60	**NEWBERRY SPRINGS HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.61	**KANE WASH HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.62	**TROY VALLEY HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.70	**AFTON HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.71	**CAVES HYDROLOGIC SUBAREA**																								
	MOJAVE RIVER		X	X			X				X	X			X	X		X							MOJAVE R. FORKS RESERVOIR
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.72	**CRONESE HYDROLOGIC SUBAREA**																								
	BITTER SPRINGS	WETLANDS	X	X			X				X	X			X	X		X					X	X	CRONESE VALLEY GW
	CRONESE LAKES (EAST AND WEST)	WETLANDS	X	X			X				X	X			X	X		X					X	X	CRONESE LAKES
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.73	**LANGFORD HYDROLOGIC SUBAREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.80	**BAKER HYDROLOGIC AREA**																								
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.81	**SILVER LAKE HYDROLOGIC SUBAREA**																								
	SILVER LAKE	ALKALI LAKE	X	X			X				X	X			X	X	X	X							INTRNL DRN LK/SILVER LK HSA GW
	HALLORAN SPRING	SPRING/EMERGENT	X	X			X				X	X			X	X		X							SILVER LAKE
	INDIAN SPRING	SPRING	X	X			X	X			X	X			X	X		X							SILVER LAKE
	CANE SPRING	SPRING	X	X			X	X			X	X			X	X		X							SILVER LAKE
	GRANITE SPRING	SPRING	X	X			X	X			X	X			X	X		X							SILVER LAKE
	HENRY SPRING	SPRING	X	X			X	X			X	X			X	X		X							SILVER LAKE
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.82	**SODA LAKE HYDROLOGIC SUBAREA**																								
	SODA LAKE	ALKALI LAKE	X	X			X				X	X	X		X	X		X					X		INTERNALLY DRAINED LAKE
	PAIUTE SPRING	SPRING/EMERGENT	X	X			X	X			X	X	X		X	X		X	X	X		X	X		PAIUTE WASH/PAIUTE VALLEY GW
	MOJAVE RIVER		X	X							X	X			X	X		X							MOJAVE RIVER
	MESQUITE SPRINGS	SPRINGS	X	X			X				X	X			X	X		X					X		MOJAVE RIVER SINK
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
628.90	**KELSO HYDROLOGIC AREA**																								
	TOUGH NUT SPRING	SPRING/EMERGENT	X	X			X	X			X	X	X		X	X		X					X		CEDAR WASH
	MARL SPRING	SPRING/EMERGENT	X	X			X	X			X	X	X		X	X		X					X		KELSO WASH
	MINOR SURFACE WATERS		X	X			X				X	X			X	X		X							
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X		X			X	X	
629.00	**BROADWELL HYDROLOGIC UNIT**																								
	MINOR WETLANDS	WETLANDS	X	X			X	X			X	X			X	X		X					X	X	
	MINOR SURFACE WATERS		X	X			X				X	X	X		X	X		X							

A summary of beneficial uses for water bodies identified in the Nevada Administrative Code are listed at: <http://ndep.nv.gov/bwqp/file/uses.pdf> and are attached.

Summary of Beneficial Uses for Waterbodies Identified in the Nevada Administrative Code

NAC	Name	Description	Beneficial Uses											Aquatic species of concern
			IRR	STOCK	REC-1	REC-2	IND	MUN	WILD	AQUATIC	AESTHETIC	ENHANCE	MARSH	
CLASS A WATERS														
445A.124	Various waterbodies		X	X	X	X		A	X	X				
CLASS B WATERS														
445A.125	Various waterbodies		X	X	X	X	X	B	X	X				
CLASS C WATERS														
445A.126	Various waterbodies		X	X	X	X	X	C	X	X				
CLASS D WATERS														
445A.127	Various waterbodies		X	X		X	X		X	X				
CARSON RIVER BASIN														
445A.147	West Fork Carson River	At stateline	X	X	X	X	X	X	X	X				rainbow trout, brown trout
445A.148	Bryant Creek	At stateline	X	X	X	X	X	X	X	X				rainbow trout, brown trout
445A.149	East Fork Carson River	At stateline	X	X	X	X	X	X	X	X				rainbow trout, brown trout
445A.150	East Fork Carson River	Stateline to Highway 395	X	X	X	X	X	X	X	X				rainbow trout, brown trout
445A.151	East Fork Carson River	Highway 395 to Muller Lane	X	X	X	X	X	X	X	X				rainbow trout, brown trout
445A.152	EF/WF & Carson River	EF at Muller to Genoa Lane & WF at stateline to Genoa Lane	X	X	X	X	X	X	X	X				catfish, rainbow trout, brown trout
445A.153	Carson River	Genoa Lane to Cradlebaugh Bridge	X	X	X	X	X	X	X	X				catfish, rainbow trout, brown trout
445A.154	Carson River	Cradlebaugh Bridge to Mexican Ditch Gage	X	X	X	X	X	X	X	X				rainbow trout, brown trout
445A.155	Carson River	Mexican Ditch Gage to New Empire	X	X	X	X	X	X	X	X				smallmouth bass, rainbow trout, brown trout
445A.156	Carson River	New Empire to Dayton Bridge	X	X	X	X	X	X	X	X				walleye, channel catfish, white bass
445A.157	Carson River	Dayton Bridge to Weeks Bridge	X	X	X	X	X	X	X	X				walleye, channel catfish, white bass
445A.158	Carson River	Weeks Bridge to Lahontan Dam	X	X	X	X	X	X	X	X				walleye, channel catfish, white bass
WALKER RIVER BASIN														
445A.160	West Walker River	At stateline	X	X	X	X	X	X	X	X				mountain whitefish, rainbow trout, brown trout
445A.161	Topaz Lake	Various points in Topaz Lake	X	X	X	X	X	X	X	X				rainbow trout, brown trout, cutthroat trout, kokone salmon, silver salmon
445A.162	West Walker River	CA stateline to Wellington	X	X	X	X	X	X	X	X				mountain whitefish, rainbow trout, brown trout
445A.163	West Walker River	Wellington to confluence with East Walker River	X	X	X	X	X	X	X	X				rainbow trout, brown trout
445A.164	Sweetwater Creek	CA stateline to the East Walker River	X	X	X	X	X	X	X	X				mountain whitefish, brown trout, brook trout, rainbow trout
445A.165	East Walker River	At stateline	X	X	X	X	X	X	X	X				mountain white fish, rainbow trout, brown trout
445A.1655	East Walker River	Stateline to Bridge B-1475	X	X	X	X	X	X	X	X				mountain white fish, rainbow trout, brown trout
445A.166	East Walker River	Bridge B-1475 to East/West Walker confluence	X	X	X	X	X	X	X	X				brown trout, rainbow trout
445A.167	Walker River	East/West Walker confluence to Weber Reservoir Inlet	X	X	X	X	X	X	X	X				channel catfish, largemouth bass
445A.168	Walker River	Weber Reservoir to Walker Lake	State standards do not apply on tribal lands											
445A.169	Desert Creek	CA stateline to the West Walker River	X	X	X	X	X	X	X	X				brown trout, brook trout, rainbow trout

Summary of Beneficial Uses for Waterbodies Identified in the Nevada Administrative Code

NAC	Name	Description	Beneficial Uses											Aquatic species of concern
			IRR	STOCK	REC-1	REC-2	IND	MUN	WILD	AQUATIC	AESTHETIC	ENHANCE	MARSH	
445A.1696	Walker Lake	Walker Lake			X	X			X	X				tui chub, Tahoe sucker, and adult and juvenile Lahontan cutthroat trout
CENTRAL REGION														
445A.171	Chiatovich Creek	Above highway maintenance station	X	X	X	X	X	X	X	X				
445A.172	Indian Creek	Above center of Section 9, T2S, R34E	X	X	X	X	X	X	X	X				
445A.173	Leidy Creek	Above hydroelectric plant	X	X	X	X	X	X	X	X				
COLORADO RIVER BASIN														
445A.175	Virgin River	AZ stateline to Mesquite	X	X		X	X		X	X				
445A.176	Virgin River	At stateline	X	X		X	X		X	X				
445A.177	Virgin River	Mesquite to river mouth at Lake Mead	X	X		X	X		X	X				
445A.178	Beaver Dam Wash	Above Schroeder Reservoir	X	X	X	X	X	X	X	X				
445A.192	Colorado River	Lake Mohave Inlet to CA stateline	X	X	X	X	X	X	X	X				
445A.193	Colorado River	Hoover Dam to Lake Mohave Inlet	X	X	X	X	X	X	X	X				
445A.195	Lake Mead	Excluding area covered by NAC 445A.197	X	X	X	X	X	X	X	X				warmwater fishery
445A.197	Lake Mead	West boundary of Las Vegas Bay campground to confluence of Las Vegas Wash	X	X		X	X		X	X				warmwater fishery
445A.199	Las Vegas Wash	Confluence of discharges from City of Las Vegas and Clark County wastewater treatment plants to Telephone Road	X	X		X			X	X			X	excluding fish
445A.201	Las Vegas Wash	Telephone Road to Lake Mead	X	X		X			X	X			X	excluding fish
445A.210	Muddy River	River source to Glendale	X	X		X	X	X	X	X				
445A.211	Muddy River	Glendale to Lake Mead	X	X		X	X		X	X				
445A.212	Meadow Valley Wash	Bridge above Rox to Muddy River	X	X		X	X		X	X				
GREAT SALT LAKE BASIN														
445A.179	Snake Creek	Above fish hatchery	X	X	X	X	X	X	X	X				
WESTERN REGION														
445A.180	Smoke Creek	No description given	No beneficial uses defined											
TRUCKEE RIVER BASIN														
445A.181	Bronco Creek	No description given	No beneficial uses defined											
445A.182	Gray Creek	No description given	No beneficial uses defined											
445A.184	Truckee River	At stateline	X	X	X	X	X	X	X	X				all life stages of mountain whitefish, rainbow trout, brown trout
445A.185	Truckee River	CA stateline to Idlewild	X	X	X	X	X	X	X	X				all life stages of mountain whitefish, rainbow trout, brown trout
445A.186	Truckee River	Idlewild to East McCarran Blvd	X	X	X	X	X	X	X	X				all life stages of mountain whitefish, rainbow trout, brown trout
445A.187	Truckee River	East McCarran Blvd to Lockwood	X	X	X	X	X	X	X	X				juvenile and adult rainbow trout, juvenile and adult brown trout
445A.188	Truckee River	Lockwood to Derby Dam	X	X	X	X	X	X	X	X				juvenile and adult rainbow trout, juvenile and adult brown trout
445A.189	Truckee River	Derby Dam to Wadsworth	X	X	X	X	X	X	X	X				early spawning Lahontan cutthroat trout and their incubation, larvae, juveniles and migration

Summary of Beneficial Uses for Waterbodies Identified in the Nevada Administrative Code

NAC	Name	Description	Beneficial Uses											Aquatic species of concern
			IRR	STOCK	REC-1	REC-2	IND	MUN	WILD	AQUATIC	AESTHETIC	ENHANCE	MARSH	
445A.190	Truckee River	Wadsworth to Pyramid Lake	State standards do not apply on tribal lands											
445A.191	Lake Tahoe	Lake Tahoe	X	X	X	X	X	X	X	X	X			coldwater fishery
445A.1915	Tributaries to Lake Tahoe	All tributaries	X	X	X	X	X	X	X	X		X		coldwater fishery
HUMBOLDT RIVER BASIN														
445A.203	Humboldt River	Source to Osino	X	X	X	X	X	X	X	X				warmwater fishery
445A.204	Humboldt River	Osino to Palisade	X	X	X	X	X	X	X	X				warmwater fishery
445A.205	Humboldt River	Palisade to Battle Mountain	X	X	X	X	X	X	X	X				warmwater fishery
445A.206	Humboldt River	Battle Mountain to State Highway 789	X	X	X	X	X	X	X	X				warmwater fishery
445A.207	Humboldt River	Comus to Imlay	X	X	X	X	X	X	X	X				warmwater fishery
445A.208	Humboldt River	Imlay to Woosley	X	X	X	X	X	X	X	X				warmwater fishery
SNAKE RIVER BASIN														
445A.215	Big Goose Creek	Entire reach	X	X	X	X	X	X	X	X				
445A.216	Salmon Falls Creek	Entire reach	X	X	X	X	X	X	X	X				
445A.217	Shoshone Creek	Entire reach	X	X	X	X	X	X	X	X				
445A.218	EF Jarbidge River	Entire reach	X	X	X	X	X	X	X	X				
445A.219	Jarbidge River	Upstream from Jarbidge	X	X	X	X	X	X	X	X				
445A.220	Jarbidge River	Jarbidge to stateline	X	X	X	X	X	X	X	X				
445A.221	West Fork Bruneau River	Entire reach	X	X	X	X	X	X	X	X				
445A.222	East Fork Owyhee River	Wildhorse Reservoir to Mill Creek	X	X	X	X	X	X	X	X				
445A.223	East Fork Owyhee River	Mill Creek to New China Dam	X	X	X	X	X	X	X	X				
445A.224	East Fork Owyhee River	New China Dam to stateline	State standards do not apply on tribal lands											
445A.225	South Fork Owyhee River	Entire reach	X	X	X	X	X	X	X	X				

IRR Irrigation
STOCK Watering of livestock
REC-1 Recreation involving contact with the water
REC-2 Recreation notinvolving contact with the water
IND Industrial supply
MUN Municipal or domestic supply, or both

WILD Propagation of wildlife
AQUATIC Propagation of aquatic life
AESTHETIC Waters of extraordinary ecological or aesthetic value
ENHANCE Enhancement of water quality
MARSH Maintenance of a freshwater marsh

A With treatment by disinfection only
B With treatment by disinfection and filtration only
C With complete treatment