REVISED PROPOSED REGULATION OF THE

STATE ENVIRONMENTAL COMMISSION

LCB File No. R136-04

October 4, 2004

EXPLANATION – Matter in ***italics*** is new; matter in brackets **[**~~omitted material~~**]** is material to be omitted.

AUTHORITY: §§1-4, NRS 445A.425 and 445A.520.

A REGULATION relating to standards for water quality; making various changes relating to the standards for water quality for Lake Mead and Las Vegas Bay; and providing other matters properly relating thereto.

Section 1. NAC 445A.194 is hereby amended to read as follows:

445A.194 1. The requirements to maintain existing higher quality become effective when the existing water quality is higher than the water quality standard for beneficial uses, as determined by the Commission. Once the requirements to maintain existing higher quality become effective, the requirements are applicable thereafter. The requirements to maintain existing higher quality for the area of Lake Mead which is not covered by NAC 445A.197 are set forth in NAC 445A.195, and include, without limitation, requirements relating to temperature, pH, chlorophyll a, total dissolved solids, chloride, sulfate, total inorganic nitrogen, turbidity and color.

2. The water quality standards for beneficial uses for the area of Lake Mead which is not covered by NAC 445A.197 are set forth in NAC 445A.195, and include, without limitation, standards relating to temperature, pH, dissolved oxygen, **[**~~un-ionized~~**]** ***total*** ammonia, total dissolved solids, chloride, sulfate, suspended solids, nitrate, nitrite, turbidity, fecal coliform and E. coli. The beneficial uses for this area are:

(a) Irrigation;

(b) Watering of livestock;

(c) Recreation involving contact with the water;

(d) Recreation not involving contact with the water;

(e) Industrial supply;

(f) Municipal or domestic supply, or both;

(g) Propagation of wildlife; and

(h) Propagation of aquatic life, including, without limitation, a warm-water fishery.

Sec. 2. NAC 445A.195 is hereby amended to read as follows:

445A.195

Lake Mead

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY STANDARDS FOR BENEFICIAL USES	BENEFICIAL USES AS DESIGNATED IN NAC 445A.194 (Most Stringent Use Listed First)
Temperature Single Value	ΔT 0°C [a]	ΔT 2°C [a]	Propagation of aquatic life, including, without limitation, a warm-water fishery.
pH Single Value	95% of samples not to exceed 8.8 SU	Within Range 6.5-9.0 SU	Propagation of aquatic life, including, without limitation, a warm-water fishery, recreation involving contact with water, propagation of wildlife, municipal or domestic supply, or both, industrial supply, irrigation and watering of livestock.

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY STANDARDS FOR BENEFICIAL USES	BENEFICIAL USES AS DESIGNATED IN NAC 445A.194 (Most Stringent Use Listed First)
Dissolved Oxygen Single Value	—	≥5 mg/l in the epilimnion or average in water column during periods of nonstratification	Propagation of aquatic life, including, without limitation, a warm-water fishery, watering of livestock, recreation involving contact with water, recreation not involving contact with water, municipal or domestic supply, or both, and propagation of wildlife.
Chlorophyll a–µg/l	b		Recreation involving contact with water, propagation of aquatic life, including, without limitation, a warm-water fishery, recreation not involving contact with water and municipal or domestic supply, or both.
~~[Un-Ionized] Ammonia- mg/l]~~ ***Total Ammonia (as N)- mg/l***	—	c	Propagation of aquatic life, including, without limitation, a warm-water fishery.
Total Dissolved Solids Single Value	Flow Weighted Annual Average Concentration ≤723 mg/l measured below Hoover Dam[d] —	— ≤1000 mg/l	Municipal or domestic supply, or both, and irrigation.
Chloride Single Value	e	≤400 mg/l [e]	Municipal or domestic supply, or both, watering of livestock and propagation of wildlife.
Sulfate Single Value	e	≤500 mg/l [e]	Municipal or domestic water supply, or both.
Suspended Solids Single Value	—	≤25 mg/l	Propagation of aquatic life, including, without limitation, a warm-water fishery, and recreation not involving contact with water.
Nitrogen Species as N Single Value	Total Inorganic Nitrogen 95% of Samples ≤4.5 mg/l	Nitrate ≤ 10 mg/l Nitrite ≤1 mg/l	Municipal or domestic supply, or both, watering of livestock, propagation of aquatic life, including, without limitation, a warm-water fishery, and propagation of wildlife.

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY STANDARDS FOR BENEFICIAL USES	BENEFICIAL USES AS DESIGNATED IN NAC 445A.194 (Most Stringent Use Listed First)
Turbidity Single Value	f	≤25 NTU	Propagation of aquatic life, including, without limitation, a warm-water fishery, municipal or domestic supply, or both, recreation involving contact with water and recreation not involving contact with water.
Fecal Coliform		≤200/400[g] MF or MPN/100 ml	Recreation involving contact with water, irrigation, recreation not involving contact with water, municipal or domestic supply, or both, propagation of wildlife and watering of livestock.
E. Coli 30-day Log Mean Single Value	— —	≤126 MF/100 ml ≤235 MF/100 ml	Recreation involving contact with water, recreation not involving contact with water, municipal or domestic supply, or both, irrigation and watering of livestock.
Color-Pt-Co Units Single Value	h	—	Recreation not involving contact with water and municipal or domestic supply, or both.

a. Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone.

b. The requirements for chlorophyll a are:

(1) Not more than one monthly mean in a calendar year at Station ~~[3]~~ ***LMLVB 1.85*** may exceed 45µg/l. ***"Station LMLVB 1.85" is located at the center of the channel at a distance of 1.85 miles into Las Vegas Bay from the confluence of Las Vegas Wash with Lake Mead.***

(2) The mean for chlorophyll a in summer (July 1-September 30) must not exceed 40 µg/l at Station ~~[3,]~~ ***LMLVB 1.85,*** and the mean for 4 consecutive summer years must not exceed 30 µg/l. The sample must be collected from the center of the channel and must be representative of the top 5 meters of the channel. "Station ~~[3" means]~~ ***LMLVB 1.85" is located at*** the center of the channel at ~~[which the depth is from 16 to 18 meters.]~~ ***a distance of 1.85 miles into Las Vegas Bay from the confluence of Las Vegas Wash with Lake Mead.***

(3) The mean for chlorophyll a in the growing season (April 1-September 30) must not exceed 16 µg/l at ~~[LM4]~~ ***Station LMLVB 2.7*** and 9 µg/l at ~~[LM5. LM4]~~ ***Station LMLVB 3.5. "Station LMLVB 2.7"*** is located ~~[just outside of the]~~ ***at a distance of 2.7 miles into*** Las Vegas Bay ~~[launch ramp and marina, next to buoy RW "1." LM5]~~ ***from the confluence of Las Vegas Wash with Lake Mead. "Station LMLVB 3.5"*** is located ~~[next to buoy RW "A" with the southshore landmark of Cresent Island.]~~ ***at a distance of 3.5 miles into Las Vegas Bay from the confluence of Las Vegas Wash with Lake Mead.***

(4) The mean for chlorophyll a in the growing season (April 1-September 30) must not exceed 5 µg/l in the open water of Boulder Basin, Virgin Basin, Gregg Basin and Pierce Basin. The single value must not exceed 10 µg/l for more than 5 percent of the samples.

(5) Not less than two samples per month must be collected between the months of March and October. During the months when only one sample is available, that value must be used in place of the monthly mean.

c. ~~[See footnote b to NAC 445A.197.]~~ ***The requirement for water quality with regard to the concentration of total ammonia is provided pursuant to the provisions of NAC 445A.118.***

d. The details of this standard are set forth in the "1996 Review-Water Quality Standards for Salinity, Colorado River System" approved by the Commission on March 25, 1998.

e. The combination of this constituent with other constituents comprising TDS must not result in the violation of the TDS standards for Lake Mead and the Colorado River.
f. Turbidity must not exceed that characteristic of natural conditions by more than 10 Nephelometric Units.
g. Based on a minimum of not less than five samples taken over a 30-day period, the fecal coliform bacterial level must not exceed a log mean of 200 per 100 ml nor must more than 10 percent of the total samples taken during any 30-day period exceed 400 per 100 ml.
h. Color must not exceed that characteristic of natural conditions by more than 10 units Platinum-Cobalt Scale.
➥ The Commission recognizes that at entrances of tributaries to Lake Mead, localized violations of standards may occur.

Sec. 3. NAC 445A.196 is hereby amended to read as follows:

445A.196 1. The requirements to maintain existing higher quality become effective when the existing water quality is higher than the water quality standard for beneficial uses, as determined by the Commission. Once the requirements to maintain existing higher quality become effective, the requirements are applicable thereafter. For the area of Lake Mead from ~~[the western boundary of the]~~ ***a distance of 1.2 miles into*** Las Vegas Bay ~~[Campground to]~~ ***from*** the confluence of the Las Vegas Wash ~~[,]~~ ***with Lake Mead,*** the requirements to maintain existing higher quality are set forth in NAC 445A.197, and include, without limitation, requirements relating to temperature, pH, total inorganic nitrogen, total dissolved solids and turbidity.

2. The water quality standards for beneficial uses for Lake Mead from ~~[the western boundary of the]~~ ***a distance of 1.2 miles into*** Las Vegas Bay ~~[Campground to]~~ ***from*** the confluence of the Las Vegas Wash ***with Lake Mead*** are set forth in NAC 445A.197, and include, without limitation, standards relating to temperature, pH, dissolved oxygen, nitrate, nitrite, ~~[un-ionized]~~ ***total*** ammonia, total dissolved solids, suspended solids, turbidity and fecal coliform. The beneficial uses for this area are:

(a) Irrigation;

(b) Watering of livestock;

(c) Recreation not involving contact with the water;

(d) Industrial supply;

(e) Propagation of wildlife; and

(f) Propagation of aquatic life, including, without limitation, a warm-water fishery.

3. The goal of the requirements of subsection 1 and the standards of subsection 2 is to ensure that all of Lake Mead is fishable and swimable by the next triennial review required by the Clean Water Act, 33 U.S.C. §§ 1251 et seq.

Sec. 4. NAC 445A.197 is hereby amended to read as follows:

445A.197 Control point at ~~[the Western Boundary of the]~~ ***1.2 miles into*** Las Vegas Bay ~~[Campground.]~~ ***from the confluence of Las Vegas Wash with Lake Mead.***

Inner Las Vegas Bay

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY STANDARDS FOR BENEFICIAL USES	BENEFICIAL USES AS DESIGNATED IN NAC 445A.196 (Most Stringent Use Listed First)
Temperature Single Value	ΔT 0°C [a]	ΔT 2°C [a]	Propagation of aquatic life, including, without limitation, a warm-water fishery.
pH Single Value	95% of samples not to exceed 8.9 SU	Within Range 6.5-9.0 SU	Propagation of aquatic life, including, without limitation, a warm-water fishery, propagation of wildlife, irrigation, industrial supply and watering of livestock.
Dissolved Oxygen Single Value	—	≥5 mg/l	Propagation of aquatic life, including, without limitation, a warm-water fishery, watering of livestock, recreation not involving contact with water and propagation of wildlife.
Nitrogen Species as Single Value	Total Inorganic Nitrogen 95% of Samples ≤5.3 mg/l	Nitrate ≤90 mg/l Nitrite ≤5 mg/l	Propagation of aquatic life, including, without limitation, a warm-water fishery, watering of livestock and propagation of wildlife.
~~[Un-Ionized]~~ ***Total*** Ammonia ***(***as ~~[N mg/l]~~ ***N)-mg/l***	—	b	Propagation of aquatic life, including, without limitation, a warm-water fishery.

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY STANDARDS FOR BENEFICIAL USES	BENEFICIAL USES AS DESIGNATED IN NAC 445A.196 (Most Stringent Use Listed First)
Total Dissolved Solids Single Value	c	≤3000 mg/l	Watering of livestock and irrigation.
Suspended Solids Single Value	—	≤25 mg/l	Propagation of aquatic life, including, without limitation, a warm-water fishery and recreation not involving contact with water.
Turbidity Single Value	d	≤25 NTU	Propagation of aquatic life, including, without limitation, a warm-water fishery and recreation not involving contact with water.
Fecal Coliform MF or MPN/100 ml Single Value	—	e	Propagation of wildlife, recreation not involving contact with water, irrigation and watering of livestock.

a. Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone.

b. ~~[The 4-day average for the concentration of un-ionized ammonia in the vertical column of water and the four-sample rolling average for each interval sampled must not exceed 0.05 mg/l more often than once every 3 years. The daily value for this average must account for diurnal fluctuation.]~~ ***The requirement for water quality with regard to the concentration of total ammonia is provided pursuant to the provisions of NAC 445A.118.*** Data must be collected at Station ~~[2 from at least three locations between the surface and total depth. This standard is not applicable to the area between Station 2 and the confluence of the Las Vegas Wash. The single value must not exceed 0.45 mg/l more often than once every 3 years. "Station 2" means]~~ ***LMLVB 1.2. "Station LMLVB 1.2" is located at*** the center of the channel at ~~[which the depth is 10 meters.]~~ ***a distance of 1.2 miles into Las Vegas Bay from the confluence of Las Vegas Wash with Lake Mead.***

c. Any increase in total dissolved solids must not result in a violation of the standards set forth in "1996 Review-Water Quality Standards for Salinity, Colorado River System" approved by the Commission on March 25, 1998.

d. Turbidity must not exceed that characteristic of natural conditions by more than 10 Nephelometric Units.

e. Any discharge from a point source into Las Vegas Wash must not exceed a log mean of 200 per 100 ml based on a minimum of not less than five samples taken over a 30-day period nor may more than 10 percent of the total samples taken during any 30-day period exceed 400 per 100 ml.

The Commission recognizes that, because of discharges of tributaries, localized violations of standards may occur in the inner Las Vegas Bay.