




State Water Resources Control Board

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free

Gray Davis
Governor

Winston H. Hickox
Secretary for
Environmental
Protection

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The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.swrcb.ca.gov.

MAR 29 2002

Ms. Julie A. Conboy
Deputy City Attorney
Department of Water and Power
Legal Division
111 Hope Street, Suite 340
P.O. Box 51111
Los Angeles, CA 90051-0100

Dear Ms. Conboy:

PETITION OF CITY OF LOS ANGELES REGARDING ORDER CONCERNING HAIWEE RESERVOIR STUDY PLAN AND IMPLEMENTATION STUDY SCHEDULE, LAHONTAN REGION: DEFECTIVE PETITION

The petition you filed on behalf of the City of Los Angeles, which was received by the State Water Resources Control Board (State Board) on March 21, 2002, is defective. The petition appears to challenge several different "actions" by the Lahontan Regional Water Quality Control Board (Regional Board), most of which are not subject to review by petition pursuant to Water Code section 13320. For matters that are subject to review, the petition must include specific reference to all items listed in the petition regulations, at Title 23, California Code of Regulations (CCR) section 2050. In addition, a stay request must address and comply with all requirements in Title 23 CCR section 2053. For your convenience, instructions for filing petitions are available at http://www.swrcb.ca.gov/water_laws/cawtrcde/wqpetition_instr.html.

The actions discussed in the petition that concern basin planning and the 303(d) list, pursuant to Clean Water Act section 303(d), are not properly subject to review under section 13320. As with your prior "petition," I will forward this document to the staff members who are in the process of reviewing the 303(d) list. The Regional Board only provides a recommendation to the State Board, which is the agency that adopts the list. At least one item discussed in your petition is properly subject to review under section 13320. That is a letter issued by the Regional Board on February 21, 2002, pursuant to Water Code section 13267. Please clarify in your amended petition whether the petition is meant to seek review of that letter. If you contend that any other action is subject to review pursuant to Water Code section 13320, please explain the basis for your contention.

California Environmental Protection Agency

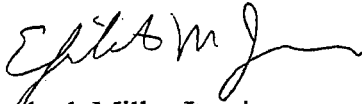
Ms. Julie A. Conboy

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MAR 29 2002

In order to be reviewed, the amended petition must be received at this office within 20 days of the date of this letter. If you have any questions about this letter, please contact me at (916) 341-5175.

Sincerely,



Elizabeth Miller Jennings
Senior Staff Counsel IV

cc: Mr. Harold J. Singer
Executive Officer
Lahontan Regional Water Quality
Control Board
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

bc: Steve Blum, OCC
Betsy Jennings, OCC
Debbie Matulis, OCC

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CHIEF ASSISTANT CITY ATTORNEY
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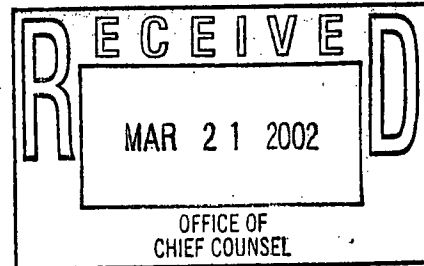
DEPARTMENT OF WATER AND POWER
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March 20, 2002

State Water Resources Control Board
Office of Chief Counsel
1001 "I" Street, 22nd Floor
Sacramento, CA 95814

Attn: Elizabeth Miller Jennings
Sr. Staff Counsel



Dear Ms. Jennings:

Enclosed please find the Appeal and Petition of the City of Los Angeles Concerning Lahontan Regional Water Quality Control Board's Order Implementing Haiwee Study Plan; Listing of Haiwee Reservoir as an Impaired Water of the U.S. Under the Federal Clean Water Act; Request to Consolidate Petitions; Request for Hearing; Memorandum of Points and Authorities and Declaration of Pankaj Parekh in Support Thereof. The City's Petition and all attachments are submitted in conformance with 23 CCR §2050 et seq. A self-addressed stamped envelope together with a copy of the first page of the Petition is enclosed herewith. Please conform the City's copy by date stamp and return same to the undersigned.

Your attention and cooperation in this matter is greatly appreciated. The people of Los Angeles look forward to a prompt resolution of these issues which greatly affect the quality of their drinking water.

If you have any questions in reference to this matter, please do not hesitate to contact the undersigned.

Very truly yours,


JULIE A. CONBOY
Deputy City Attorney

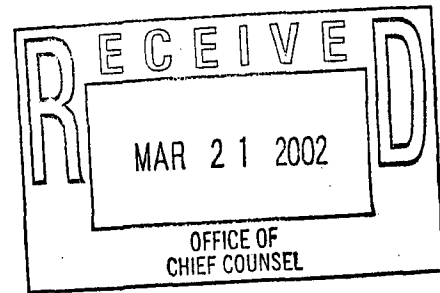
JAC:kr 84748
(213) 367-4591
Enclosures

c: Diana M. Bonta, R.N., Dr. P.H., Dept. of Health Services
Harold Singer, Lahontan Regional Water Quality Control Board

*done
seh*

ORIGINAL

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8
9 **BEFORE THE STATE WATER RESOURCES**
10 **CONTROL BOARD**

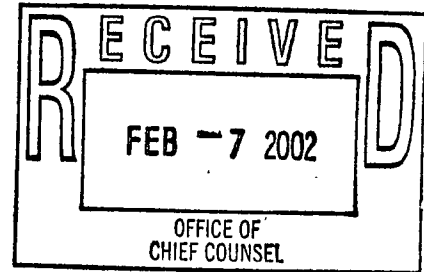
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12 IN RE ORDER CONCERNING HAIWEE
13 RESERVOIR STUDY PLAN AND
IMPLEMENTATION STUDY SCHEDULE

PETITION OF THE CITY OF LOS ANGELES
CONCERNING LAHONTAN REGIONAL
WATER QUALITY CONTROL BOARD'S
ORDER IMPLEMENTING HAIWEE STUDY
PLAN; LISTING OF HAIWEE RESERVOIR AS
AN IMPAIRED WATER OF THE UNITED
STATES UNDER THE FEDERAL CLEAN
WATER ACT; REQUEST TO CONSOLIDATE
PETITIONS; REQUEST FOR HEARING;
MEMORANDUM OF POINTS AND
AUTHORITIES and DECLARATION OF
PANKAJ PAREKH IN SUPPORT THEREOF

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19
20 The City of Los Angeles ("Los Angeles") hereby appeals from an order regarding the
21 implementation of a study plan schedule for effects of application of drinking water chemicals at
22 Haiwee Reservoir and a decision by the Lahontan Regional Water Quality Control Board
23 ("Lahontan") to continue to list Haiwee Reservoir as an impaired water body of the United States
24 under the federal Clean Water Act. Los Angeles further petitions this Board for an order removing
25 Haiwee Reservoir from California's list of impaired water bodies and requests that this petition
26 along with Los Angeles' petition in re Haiwee Reservoir filed February 13, 2002 be consolidated
27 for hearing before this Board. In support of its appeal and petition Los Angeles alleges as follows:
28

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8 **BEFORE THE STATE WATER RESOURCES**
9 **CONTROL BOARD**

10
11
12 IN RE HAIWEE RESERVOIR

PETITION OF THE CITY OF LOS ANGELES
CONCERNING LAHONTAN REGIONAL
WATER QUALITY CONTROL BOARD'S
LISTING OF HAIWEE RESERVOIR AS AN
IMPAIRED WATER OF THE UNITED STATES
UNDER THE FEDERAL CLEAN WATER ACT;
REQUEST FOR HEARING; MEMORANDUM
OF POINTS AND AUTHORITIES and DECLARATION OF PANKAJ PAREKH IN SUPPORT
THEREOF

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18
19 The City of Los Angeles ("Los Angeles") hereby appeals from a decision by the
20 Lahontan Regional Water Quality Control Board to continue to list Haiwee Reservoir as an
21 impaired water body of the United States under the federal Clean Water Act. Los Angeles
22 further petitions this Board for an order removing Haiwee Reservoir from California's list of
23 impaired water bodies. In support of its appeal and petition Los Angeles alleges as follows:

24
25 1. Los Angeles operates a 240-mile long aqueduct system from the Owens River in the
26 Eastern Sierra region of California to Los Angeles. After the point of diversion, the Los Angeles
27 Aqueduct ("LAA") is comprised solely of man-made channels and artificial reservoirs. For nearly
28

1 100 years the water diverted into LAA has been reasonably and beneficially used as drinking water
2 in Los Angeles. It currently serves the drinking water needs of approximately 3.8 million people
3 from Inyo County to Los Angeles.

4
5 2. Haiwee Reservoir is an artificial reservoir constructed in 1913 on a site that was
6 never part of any historical watercourse. Haiwee's two reservoirs have a surface area of
7 approximately 1400 acres, an average depth of about 28 feet and can store approximately 38,800
8 acre feet of drinking water. The natural course of the Owens River leads to Owens Lake and does
9 not lead to the land on which Haiwee is situated. Water is diverted into Haiwee as a part of LAA.
10 Haiwee is approximately five miles south of the southernmost point of Owens Lake, the natural
11 terminus of the Owens River. After water passes through the uncovered water storage facility at
12 Haiwee, it enters the covered aqueduct for delivery to Los Angeles, where it is ultimately consumed
13 by residents of the City. Water diverted to Haiwee does not reenter any natural body of water,
14 except as part of the municipal sewer system flow.

15
16 3. Once water leaves the domain of nature and is subject to private control rather than
17 purely natural processes, it has lost its status as waters of the United States. Haiwee's creation,
18 maintenance and continued existence is wholly subject to private control. Its waters have left the
19 domain of nature, having been converted into a municipal drinking water system. Since Haiwee
20 does not possess the characteristics of a "water of the United States," it does not fall under the
21 aegis of the Clean Water Act and the TMDL process. Jurisdictionally, this Board is without
22 authority to regulate Haiwee under the federal statute. The delisting of Haiwee is appropriate for
23 a water body that is not subject to the Clean Water Act and was mistakenly placed on the
24 "impaired" list at a time when the full extent of the Clean Water Act was not clear.

25
26 4. Under the terms of its permit to provide drinking water issued by the California
27 Department of Health Services ("DHS"), Los Angeles treats the water in Haiwee Reservoir for
28 algae with copper sulfate via aerial spraying when conditions mandate to prevent taste and odor

1 problems. In the drinking water industry, the application of copper sulfate is considered the best
2 management practice to control algae. The growth of algae in drinking water reservoirs must be
3 prevented in order to meet secondary water quality standards for odor and taste under both the
4 state and federal Safe Drinking Water Acts (42 U.S.C. § 300g; Cal. Health and Safety Code
5 §116275 et seq.). Copper sulfate is applied as needed to other water delivery systems such as
6 the California Aqueduct system and the San Francisco municipal water supply to control algae
7 growth. No alternative treatment mechanism exists within the LAA system which will suffice to
8 meet the terms of the permit issued by DHS and meet federal and state drinking water standards.

9
10 5. From its original construction until 1993, Haiwee was closed to the public. In 1993,
11 Los Angeles opened the reservoir to public fishing under the provisions of Article I, Section 25 of
12 the California Constitution. At that time, DHS restricted human contact with the water of Haiwee
13 and recognized that "the right to fish may be extinguished if it were to become incompatible with
14 the reservoir's function as a domestic water source." DHS acknowledged that application of
15 copper sulfate was used to treat algae blooms and prevent "significant taste and odor problems."
16 A copy of the DHS Permit Amendment No. 04-93-000 and Engineering Report is attached
17 herewith as Exhibit 1 incorporated by reference.

18
19 6. In 1992, the California Regional Water Quality Control Board, Lahontan Region
20 ("Lahontan") first listed Haiwee Reservoir as an impaired water body pursuant to the federal Clean
21 Water Act ("CWA") and its delegated authority. This Board accepted Lahontan's recommendation
22 and Haiwee was included on the state list sent to the Environmental Protection Agency. The basis
23 for listing Haiwee as impaired was the presence of copper sulfate in the water and studies
24 performed by the California Department of Fish and Game ("DFG") which showed elevated levels
25 of copper in the non-native species they tested. These DFG studies were used by Lahontan as
26 a basis for a Clean Up and Abatement Order ("CAO") issued in 1995, which Lahontan's Executive
27 Director rescinded on December 3, 1998 on the condition that Los Angeles continue to perform
28 tests and monitor the water conditions. The current Lahontan Basin Plan prohibits the presence

1 of any measurable levels of copper sulfate in Haiwee Reservoir, even if its application is necessary
2 to prevent taste and odor problems in drinking water or otherwise required by DHS.

3
4 7. In November of 2001, Lahontan released its staff recommendations for the 2003
5 303(d) list of impaired waters and invited public comment. A copy of that report is attached
6 herewith as Exhibit 2 and incorporated by reference. Los Angeles responded to that request with
7 a letter detailing its objections to the inclusion of Haiwee Reservoir on that list. A copy of Los
8 Angeles' response is attached as Exhibit 3 and incorporated by reference. A representative of Los
9 Angeles attended the January 9, 2002 meeting of the Lahontan Regional Board and argued
10 against including Haiwee on the 303(d) list.

11
12 8. On January 9, 2002, the Lahontan Regional Board approved a list of waters of the
13 United States it considered "polluted" and therefor subject to the federal Clean Water Act's 303(d)
14 list. Included on that list was Haiwee Reservoir, which was listed for impairment by copper. In
15 compliance with 23 California Code of Regulations §2050, Los Angeles has requested from
16 Lahontan copies of the resolution of that action, the preparation of the administrative record and
17 a list of interested persons.¹ Lahontan staff has represented that those documents are being
18 prepared and are forthcoming. The only applications of copper made by Los Angeles are those
19 necessary to prevent algae blooms and only in those amounts prescribed by the labels approved
20 by the Environmental Protection Agency ("EPA"). The failure to treat algae blooms and other
21 aquatic plants within Haiwee Reservoir with copper sulfate can produce algal toxins in Los Angeles'
22 drinking water supply, resulting in violations of the state and federal drinking water standards.
23 (Declaration of Pankaj Parekh, attached.)

24
25 9. Haiwee Reservoir supplies drinking water to the City of Los Angeles and, thus it is
26 part of a drinking water supply as defined and regulated by the federal Safe Drinking Water Act
27

28 ¹ See Exhibits 4 and 5.

1 (42 U.S.C. § 300f, et seq., ("SDWA")) The United States Congress has mandated that the safety
2 of drinking water be given the highest priority in its legislative enactments:

3 "The Congress finds that safe drinking water is essential to the protection of public health."

4 (Congressional findings on amendment of 42 U.S.C. §300f on August 6, 1996.)

5 Congress including drinking water supplies, as defined in the Safe Drinking Water Act, as
6 deserving of protection in the Comprehensive Environmental Response Compensation and Liability
7 Act ((CERCLA) 42 U.S.C. § 9601 subd. (7)) and further mandated in 42 U.S.C. § 9620 that:

8 "Each department, agency, and instrumentality of the United States (including the
9 executive, legislative and judicial branches of government) shall be subject to and comply
10 with, this Act in the same manner and to the same extent, both procedurally and
11 substantively, as any nongovernmental entity, including liability under section 107 of this
12 Act. (42 U.S.C. § 9607.)

13 The language of 42 USC §300i-1 makes it illegal for anyone "to otherwise interfere with the
14 operation of a public water system with the intention of harming persons." Any state-imposed
15 limitation on the application of copper sulfate as an algacide in Haiwee Reservoir will have a direct
16 and immediate harmful impact on the health of the millions of people who rely upon it for their
17 drinking water supply.

18
19 10. Los Angeles is now confronted with contradictory directives from two state agencies.
20 DHS requires Los Angeles to comply with primary and secondary drinking water standards of the
21 SDWA in order to maintain its permit to provide drinking water. Lahontan has issued a draft TMDL
22 that allows no copper sulfate applications to Haiwee Reservoir and is in the process of ordering
23 Los Angeles to perform more than \$500,000 in studies on the effect of copper sulfate in Haiwee
24 Reservoir. The end and aim of the TMDL process is to limit or prohibit Los Angeles from treating
25 its drinking water with the algacide on an as-needed basis.

26 //

27 //

28 //

1 WHEREFORE, Los Angeles hereby requests this Board to issue relief as follows:

2
3 1. That Haiwee Reservoir be designated as a drinking water reservoir and found to not
4 have the status of a water of the United States;

5 2. That Haiwee Reservoir be removed from the 303(d) list of California's impaired water
6 bodies;

7 3. That it be determined that the federal and state Safe Drinking Water Acts require the
8 application of copper sulfate to Haiwee Reservoir as an algacide in order to meet secondary
9 drinking water standards prescribed by those laws; and,

10 4. That it be determined that Haiwee Reservoir is not be subject to any TMDL process
11 because it is not a water of the United States and that the application of drinking water chemicals
12 to the reservoir is required by the Department of Health Services as well as the laws of the United
13 States and California .

14
15 Dated: February 6, 2002

ROCKARD J. DELGADILLO, City Attorney
PHILIP SHINER, Chief Assistant
City Attorney for Water and Power

16
17
18 By 

19 S. DAVID HOTCHKISS
20 Assistant City Attorney

21 Attorneys for Petitioner/Appellant
22 CITY OF LOS ANGELES
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1 **MEMORANDUM OF POINTS AND AUTHORITIES**

2
3 I. HAIWEE RESERVOIR IS NOT A WATER OF THE UNITED STATES AND THUS, IS NOT
4 SUBJECT TO THE FEDERAL CLEAN WATER ACT.

5
6 The Clean Water Act, also known as the Federal Water Pollution Control Act (33 U.S.C.
7 Sec. 1251 et seq.), as amended, provides for permit systems to regulate the discharge of
8 pollutants into the navigable waters of the United States and authorizes states to implement
9 provisions of that act. (Water Code, section 13370). The State of California's definition of terms
10 such as "navigable waters" shall have the same meaning as in the federal act. (Water Code,
11 section 13373).²

12
13 ²For purposes of the Clean Water Act, the federal government defines "waters of the
14 United States as:

15 *"(1) All waters which are currently used, or were used in the past, or may be susceptible*
16 *to use in interstate or foreign commerce, including all waters which are subject to the ebb and*
17 *flow of the tide;*

18 *(2) All interstate waters including interstate wetlands;*

19 *(3) All other waters such as intrastate lakes, rivers streams (including intermittent*
20 *streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes,*
21 *or natural ponds, the use degradation or destruction of which could affect interstate or foreign*
22 *commerce including any such waters:*

23 *(i) Which are or could be used by interstate or foreign travelers for recreational or other*
24 *purposes; or*

25 *(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign*
26 *commerce;*

27 *(iii) Which are used or could be used for industrial purposes by industries in interstate*
28 *commerce;*

Waters of the United States do not include prior converted cropland. Notwithstanding the
determination of an area's status as prior converted cropland by any other federal agency, for
the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction
remains with EPA.

(4) All impoundment of waters otherwise defined as waters of the United States under
this definition;

(5) Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;

(6) The territorial sea;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands)
identified in paragraphs (s)(1) through (6) of this section, waste treatment systems, including
treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling

1 The United States First Circuit has found that once "water leaves the domain of nature and
2 is subject to private control rather than purely natural processes . . . [it] has lost its status as waters
3 of the United States." *Dubois v. U.S. Dept. of Agriculture* (1st Cir. 1996) 102 F.3d 1273, 1297.
4 Haiwee's creation, maintenance and continued existence is wholly subject to private control. Its
5 waters have left the domain of nature, having been converted into a municipal drinking water
6 system. Since Haiwee does not possess the characteristics of a "water of the United States," it
7 does not fall under the aegis of the Clean Water Act and the TMDL process. Jurisdictionally,
8 Lahontan is without authority to regulate Haiwee under the federal statute. The delisting of Haiwee
9 is appropriate for a water body that is not subject to the Clean Water Act and was mistakenly
10 placed on the "impaired" list at a time when the full extent of the Clean Water Act was not clear.

11 While the EPA has published a broad definition of the waters over which it claims
12 jurisdiction, the United States Supreme Court recently ruled that the Clean Water Act does not
13 extend to EPA's published boundaries. In *Solid Waste Agency of Northern Cook County v. U.S.*
14 *Army Corps of Engineers*, 531 U.S. 159; 121 S.Ct. 675 (2001) ("SWANCC"), the U.S. Army Corps
15 of Engineers asserted jurisdiction over a scattering of permanent and seasonal ponds of varying
16 size (from under one-tenth of an acre to several acres) and depth (from several inches to several
17 feet) in an abandoned gravel pit in Northern Illinois. Various municipalities intended to use the
18 abandoned pit for solid waste disposal. The Corps noted that migratory birds used the site, a
19 factor which the Corps had decided was significant in establishing a relationship to interstate or
20 foreign commerce in its "Migratory Bird Rule" announced in 1986 (51 Fed.Reg. 41217.) The Corps
21 refused to issue a permit for the discharge of fill material at the gravel pit, and the municipalities
22 sued.

23 The Corps argued that it had authority to define the reach of the CWA in the broadest

24 ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not
25 waters of the United States.

26 (t) The term wetlands means those areas that are inundated or saturated by surface or
27 ground water at a frequency and duration sufficient to support, and that under normal
28 circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil
conditions. Wetlands generally include swamps, marshes, bogs and similar areas." (40 CFR
230.3)

1 possible terms. The Supreme Court disagreed. It noted that the term "navigable waters" could
2 be applied to some waters that were not traditionally navigable under the classical understanding
3 of the term (531 U.S. 159 @ 167), but declined to allow the Corps to apply it in such a way that the
4 word "navigable" in the CWA would have no independent significance. (531 U.S. 159 @ 172.)

5 While the Supreme Court did not declare that the Corps' definition of "waters of the United
6 States" in 33 CFR 328.3(a)(3) was invalid, it did rule that such a definition could not be used to
7 bring the waters of the abandoned sand and gravel pit in Northern Illinois within the scope of the
8 CWA's requirement that a permit be obtained to dredge and fill discharge into navigable waters.
9 Nonetheless, it is clear that the Corps' (and other government agencies') inclusion of non-
10 navigable, isolated, and intrastate waters within the definition of waters of the United States cannot
11 stand.

12 In SWANCC, the Court rejected arguments by the Corps that Congress had implicitly
13 validated the Corps' definition, and suggested, that Congress might not be able to do so without
14 exceeding its Constitutional authority: "Twice in the past six years we have reaffirmed the
15 proposition that the grant of authority to Congress under the Commerce Clause, though broad, is
16 not unlimited . . . [The Corps] argue[s] that the "Migratory Bird Rule" falls within Congress' power
17 to regulate intrastate activities that "substantially affect" interstate commerce. . . . These arguments
18 raise significant constitutional questions." To date, the present Congress has not chosen to ignore
19 the Court's admonition and the CWA has not been amended to include non-navigable, isolated,
20 and intrastate waters, such as Haiwee Reservoir.

21 At the January 9 meeting, the legal counsel for the Lahontan Board cited a recent case
22 decided by the 9th Circuit as further justification for retaining Haiwee on the list of impaired waters
23 of the United States although it is manmade. While she did not mention a case name during the
24 meeting, we understand that the attorney was referring to the case of *Headwaters, Inc. v. Talent*
25 *Irrigation District*, 243 F.3d 526 (2001). In that case, which was argued prior to the release of the
26 SWANCC decision, the court reversed the district court's grant of summary judgment in favor of
27 the defendant and dismissal of its case, remanded for entry of partial summary judgment in favor
28 of plaintiff and for further proceedings on damages and injunctive relief. Plaintiffs had argued that

1 the irrigation district had violated the CWA by applying an aquatic herbicide to its canals without
2 obtaining a National Pollutant Discharge Elimination System (NPDES) permit. The Court
3 concluded that the irrigation canals were "waters of the United States" because they are "tributaries
4 to the natural streams with which they exchange water." (243 F.3d 526 @ 533.) In reaching this
5 decision, the court noted that the defendants admitted that the canals exchanged water with a
6 number of natural streams and at least one lake, which were indisputably waters of the United
7 States. The Ninth Circuit's finding that these canals were subject to the CWA was a fact-specific
8 analysis and is easily distinguishable from Haiwee. While the irrigation canals in *Talent* received
9 water from and diverted water to the natural streams and creeks in its vicinity, Haiwee Reservoir
10 only receives water from the aqueduct and never diverts it to a water of the United States.
11 Therefore, Haiwee is closer to the isolated water body that was excluded from the "navigable"
12 definition under SWANCC and should not be regulated under the CWA.³

13

14 II. ESTABLISHING A TMDL FOR COPPER SULFATE AT HAIWEE WOULD REQUIRE LOS
15 ANGELES TO VIOLATE THE TERMS OF ITS PERMIT ISSUED BY THE CALIFORNIA
16 DEPARTMENT OF HEALTH SERVICES.

17

18 Under the terms of the Water Reclamation Act, the existing powers of the DHS are
19 specifically protected from interference or claims of supremacy from the State Water Resources
20 Quality Control Board. (Water Code, Section 13528). While this Act addresses the discrete issue
21 of the use of reclaimed or recycled water, the intent of the Legislature is clear throughout the Water
22 Code and its establishment of state agencies. DHS is responsible for establishing requirements
23 for the delivery of safe, potable water. On November 16, 1993, DHS issued Permit Amendment
24 No. 04-93-000 to System No. 1910067. In that amendment, DHS acknowledged that Haiwee has
25 a "history of blue-green algal blooms that can produce significant taste and odor problems" and
26

27

28 ³Los Angeles' permit from DHS forbids boating or human contact on the water at
Haiwee Reservoir. (See Exhibit 1.)

1 Asiatic clams. It noted that copper sulfate could control these problems and detailed the copper
2 sulfate treatment facilities that existed at the time and the treatment levels that were used. (Exhibit
3 1.) Since that time, Los Angeles has evolved with the drinking water industry and changed its
4 method of treatment from on-site tanks to aerial spraying. This change was done in 1995 and
5 there is no evidence of fish kills or harm to any of the other beneficial designations listed for
6 Haiwee Reservoir in the Lahontan Basin Plan. The beneficial designations the Lahontan Basin
7 Plan has assigned to Haiwee Reservoir are: Municipal and Domestic Supply; Cold Freshwater
8 Habitat; Agricultural Supply; Industrial Service Supply; Groundwater Recharge; Water Contact
9 Recreation; Commercial and Sportfishing; Wildlife Habitat; Rare, Threatened or Endangered
10 Species; Spawning, Reproduction and Development.

11 The amendment to the permit was granted to allow fishing in the reservoir. The California
12 Constitution provides for a right to fish on lands previously owned by the State. This right,
13 however, is not absolute. Both the California Supreme Court and the Attorney General have
14 envisioned scenarios where fishing must cede to the need to provide safe drinking water.

15 In a San Luis Obispo case, the California Supreme Court ruled that the right to fish cannot
16 exist in a vacuum. The Court examined the ballot argument presented to the voters when they
17 approved the constitutional amendment in 1910, and concluded that the framers and electorate
18 did not intend the right to fish to apply to formerly state-owned lands when they are used for a
19 governmental purpose that is incompatible with the use by the public for fishing. *State of California*
20 *v. San Luis Obispo Sportsman's Association, et al.* (1978) 22 Cal. 3d 440 at 447. The ballot
21 arguments in favor of the amendment aimed at protecting the continuation of public fishing on
22 waters of the state as the lands surrounding them were sold off and developed. At the time those
23 ballot arguments were drafted, no fishing was possible on the dry, high desert land that was
24 destined to become the Haiwee Reservoir because it had not yet been constructed.

25 The California Attorney General, in a seminal opinion regarding the importance of safe
26 drinking water, opined that in the event of conflict between the right to fish on waters impounded
27 by a dam and the threat to public domestic water supply, the protection of the municipal water
28 supply must prevail. (25 Ops. Cal. Atty. Gen. 246 (1955)). The State of California has determined

1 that the provision of safe drinking water is of the highest priority. The Legislature has endowed the
2 Department of Health Services with expansive powers to ensure that the people of California
3 receive the best quality water available and to force water suppliers to use the best technology
4 available to meet state and federal standards. In prior correspondence and in conversations with
5 Regional Board staff, Department of Water and Power staff have encouraged Lahontan to consider
6 amending the Basin Plan to reflect the actual beneficial uses of Haiwee and not those which are
7 unattainable and those which did not exist on the effective date of the Clean Water Act, such as
8 fishing. These requests have been given little or no consideration.

9 Currently, the Lahontan Basin Plan allows for the presence of no copper sulfate in any of
10 the waters in its jurisdiction. This outright ban is inconsistent with the explicit recognition by the
11 DHS that copper sulfate is necessary to control the growth of algae. Since both agencies are
12 ostensibly speaking for the State of California, the City of Los Angeles is left with conflicting orders.

13
14 III. LAHONTAN IGNORED GUIDANCE ESTABLISHED BY THE ENVIRONMENTAL
15 PROTECTION AGENCY BY MAINTAINING HAIWEE ON ITS IMPAIRED WATER BODY LIST
16 WITHOUT FURTHER STUDIES.

17
18 Section 303(d) of the CWA requires states to identify surface water bodies which are not
19 attaining water quality standards and are not expected to do so even with legally required pollution
20 controls such as Best Management Practices and the use of technology-based effluent limitations.
21 In its announcement of its recommendations for the 303(d) list, Lahontan states it makes its
22 recommendations based on guidance from the EPA and discussions among State and Regional
23 Board Staff. Lahontan released a list of its considerations for listing and delisting when it
24 announced its recommendations for inclusion on the 303(d) list. After reviewing these
25 considerations, however, it is unclear as to why the staff has not recommended delisting for the
26 Haiwee Reservoir. Application of the delisting criteria to the current listing of Haiwee shows that
27 this water body should be considered a prime candidate for delisting under the Lahontan staff's
28 standards.

1 *Consideration 2: "The Basin Plan is revised to remove a designated beneficial use in*
2 *accordance with the circumstances set forth in federal water quality standards regulations and*
3 *USEPA guidance, and the non-support issue is thereby eliminated. (USEPA regulations prohibit*
4 *the removal of designated uses under certain circumstances.)*

5 As noted above, Haiwee was built in 1913 as a drinking water reservoir. The outflow of lower
6 Haiwee is also used for a hydroelectric power plant. In 1991, the Department of Water and Power
7 applied to the Department of Health Services for an amendment to its drinking water permit to
8 allow fishing in the reservoir. However, the right to fish is not absolute, and as the primary
9 beneficial use of Haiwee is to provide drinking water, the Basin Plan should reflect that reality. The
10 "non-support issue" could easily be eliminated if the Basin Plan were revised to fit with the present
11 circumstances. The amendment of the Basin Plan is preferable to conducting intensive and
12 expensive studies to prove that copper sulfate does prevent the growth of algae, as it is intended.

13 *Consideration 3: Faulty data led to the initial listing. Faulty data include, but are not limited*
14 *to, typographical errors, improper quality/assurance/quality control (QA/QC) procedures, or*
15 *limitations in the analytical methods that would lead to an inaccurate conclusion regarding the*
16 *status of the water body.*

17 Lahontan first listed Haiwee as an impaired water body on its 1992 list, based on the results
18 of limited fish tissue data showing elevated copper. The State Regional Water Quality Control
19 Board subsequently discredited fish tissue data as unreliable and directed regional boards not to
20 use that as the basis for listing water bodies. Therefore, Lahontan based its later listing decisions
21 solely on alleged fish kills in 1991 and 1994. In its 1998 listing of Haiwee as an impaired water
22 body, Lahontan relied on the fact that it had previously issued a Clean Up and Abatement Order
23 (CAO) in 1995. The CAO was intended to prevent Los Angeles from applying copper sulfate from
24 a fixed source. DWP changed the method of application to aerial spraying and continued to apply
25 the pesticide only on an as-needed basis. The CAO relied heavily on data from the California
26 Department of Fish and Game ("DFG"). This DFG information consisted of:

27 1. A July 24, 1991 DFG lab report containing the total copper concentration results of
28 only five water samples, all collected on June 28, 1991 within the aqueduct or within the mixing

1 zone of the aqueduct.

2 2. An October 1, 1991 lab report on two trout fish gill samples. This lab report indicates
3 the samples were received on September 12, 1991 for fish collected in August. However, the only
4 fish kills that occurred in 1991 took place in June. The DFG warden reported having collected five
5 dead fish (3 carp and 2 trout) on June 28, 1991. Therefore, the fish samples received by the lab
6 had been collected two months beforehand. Additionally, the lab reports noted receiving fish gill
7 tissue samples, as opposed to whole fish samples for dissection in the lab, indicating the possibility
8 for sample contamination. Serious quality control and sample chain of custody issues exist.

9 3. Anecdotal, qualitative, and subjective opinions from DFG biologists as to the lack of
10 biodiversity in the reservoir based on the contents of a limited sample set of trout fish stomachs.
11 The collection of these trout were for a wholly disparate reason unrelated to the review of stomach
12 contents to assess biodiversity.

13 4. A reference to eight sediment samples collected by DFG on May 4, 1992.

14
15 It is clear from the CAO administrative record, both from DWP's comments and those from
16 the state's expert scientist, that the integrity and quality of the underlying scientific information was
17 suspect. Los Angeles, in its petition for review of the CAO, challenged the quality, integrity, and
18 validity of this data. Those comments in their entirety are incorporated by reference. In short, Los
19 Angeles asserted:

20 1. The DFG trout stomach data set was small and not fully representative of the
21 reservoir since the electroshock survey was performed for a wholly different reason. The
22 conclusions drawn were qualitative and not scientifically supportable.

23 2. The fish samples were subjected to post-mortem contamination, thus invalidating
24 their results.

25 3. The fish necropsies were biased towards copper in that no other fact finding was
26 performed.

27 4. Improper collection and possible contamination of field water samples occurred.
28 Clean sampling and analytical techniques were not used.

1 5. Improper sediment sample collection techniques as noted in the declarations made
2 by Los Angeles scientific experts in our response to the CAO.

3 In Lahontan's response to Los Angeles' Petition, its expert scientist from University of
4 California, Berkeley, Tom L. Dudley, Ph.D., stated on several occasions throughout his declaration
5 that he concurred about the flaws in the data and called for the need to perform additional studies.
6 Referring to the water and fish samples collected by DFG, Dr. Dudley declared in relevant part:

7 "There is general agreement that DFG sampling methods were highly compromised by
8 reverse order of sample acquisition, dependence on anecdotal, non-quantitative information, lack
9 of replication or collection of control samples of animal tissues, and possibly other non-rigorous
10 sampling protocols . . . [T]hese inadequacies do not negate the linkage between copper sulfate
11 addition [and] fishkills . . . In my opinion, they do provide justification of suspicion, and these poor-
12 quality data provide a basis for requesting further investigation and interim modification of
13 procedures." Dudley declaration at p. 7.⁴

14 While Dr. Dudley states that one cannot negate copper as a causative factor in Haiwee fish
15 kills, more studies are clearly needed. It should be noted that since Los Angeles began applying
16 copper sulfate via aircraft, no fish kill has been reported for Haiwee.

17 The CAO was rescinded in 1998 on the condition that Los Angeles continue to perform
18 studies to determine whether the reservoir's ecology and overall health had been adversely
19 impacted by copper sulfate applications. Los Angeles has continued in good faith to pursue those
20 studies, but the need for such studies is questioned since the application of copper sulfate occurs
21 only to ensure that Haiwee Reservoir is a safe drinking water source.

22 Consideration 6: *There are control measures in place which will result in attainment of*
23 *standards, including protection of beneficial uses, by the next listing cycle (in 2004). Control*
24 *measures include permits, cleanup and abatement orders and Basin Plan requirements which are*
25 *enforceable and include a time schedule (see 40 CFR 130.7(b)(1)iii).*

27 ⁴Dr. Dudley's declaration was attached to an October 25, 1995 letter from Lahontan
28 Senior Engineer Ken Carter to Bruce Kuebler of Los Angeles as Enclosure 4.

1 This consideration is tailor-made for a water body like Haiwee, even if it were considered
2 a "water of the United States." As stated earlier, Haiwee's primary function is to serve as a
3 drinking water reservoir for Los Angeles' main supply. There is no plan to change the use of this
4 reservoir; moreover, its drinking water supply permit issued by DHS requires the continued addition
5 of copper sulfate to combat algae.

6 The data collected for the initial Clean Up and Abatement Order and the basis upon which
7 the 1994 and 1996 303(d) lists were established is reflective of copper application procedures
8 which are no longer used. In 1995, the Los Angeles Department of Water and Power changed the
9 method of application of copper sulfate from a single pipe point source to aerial spraying. All
10 applications follow label directions and are in full compliance with the State Department of
11 Pesticide Regulation and the County Agricultural Commissioner who oversees application
12 compliance.

13 It is well documented that drinking water obtained from Haiwee Reservoir meets state and
14 federal standards and there is no reliable data showing that any other beneficial uses are impaired
15 based on the applications of copper sulfate required by the DHS permit. Haiwee Reservoir serves
16 as the direct domestic water source for the six employee housing units located at the reservoir.
17 Moreover, water from the reservoir is consumed by employees at San Francisquito Power Plants,
18 Numbers 1 and 2, located south of Haiwee Reservoir and above the Los Angeles Filtration Plant.
19 To ensure that drinking water standards are maintained, no reduction in the application of copper
20 as an algacide is permissible under state or federal law.

21
22 IV. THE SAFE DRINKING WATER ACT CREATES A MINIMUM STANDARD FOR WATER
23 QUALITY BELOW WHICH NO STATE AGENCY MAY DEVIATE
24

25 In 1974, Congress enacted the federal Safe Drinking Water Act (federal SDWA) (42 U.S.C.
26 § 300f et seq.), which prohibits states from enacting drinking water laws less stringent than those
27 established by the EPA. (42 U.S.C. § 300g.) "Congress occupied the field of public drinking
28

1 water regulation with its enactment of the [federal] SDWA. 'The purpose of the [federal SDWA]
2 is to assure that water supply systems serving the public meet minimum national standards for
3 protection of public health.' [Citation.] With minor exceptions, the SDWA applies 'to each public
4 water system in each State.' 42 U.S.C. § 300g. . . . Although the primary responsibility for
5 enforcement remains with the States, the Administrator is empowered to enforce State
6 compliance. Id. §§ 300g-2, 300g-3." (*Mattoon v. City of Pittsfield* (1st Cir. 1992) 980 F.2d 1, 4.)
7 Accordingly, the federal SDWA grants states primary authority to implement the provisions of the
8 federal standards and allows states to set stricter water quality standards than those of the
9 federal government. (42 U.S.C. § 300g-2(a); see 42 U.S.C. § 300g-1(b).) Although the federal
10 SDWA preempts federal common law nuisance actions (*Mattoon v. City of Pittsfield*, supra, 980
11 F.2d at p. 4), state common law is not preempted. (*United States v. Hooker Chemical & Plastics*
12 *Corp.* (W.D.N.Y. 1985) 607 F. Supp. 1052, 1055, fn. 3.)" (*Hartwell Corp., v. Superior Court*
13 (2002) __ Cal. 4th __, 2002 DJDAR 1295, 1298 (*Hartwell*).) Hence, any public water system in
14 California may be sued for damages for failure to enforce minimum water quality standards.
15 (Hartwell at p. 1301.)

16
17 In 1976, the Legislature enacted the state Safe Drinking Water Act (state SDWA). (Stats.
18 1976, ch. 1087, § 2.5, pp. 4918-4929, adding Health & Saf. Code, former § 4010 et seq.,
19 currently codified at Health & Saf. Code, § 116275 et seq.) When the Legislature enacted the
20 state SDWA, it assumed the primary authority to administer the federal act. The state SDWA,
21 administered by the Department of Health Services (DHS), establishes standards at least as
22 stringent as the federal SDWA and is intended to be "more protective of public health" than the
23 minimum federal standards. (Health & Saf. Code, §§ 116270, subd. (f), 116325.)

24 In *Paredes v. County of Fresno* (1988) 203 Cal. App. 3d 1 (*Paredes*) the Court of Appeal
25 described in some detail the California SDWA, in addressing the regulation of water
26 contaminated with DBCP, a toxic substance not specifically in issue in this matter. "The California
27 Legislature has declared water delivered by public water systems in this state should be at all
28

1 times pure, wholesome, and potable. It has adopted procedures to be followed in an effort to
2 accomplish this objective in [Health and Safety Code] sections 4010.1 through 4039.5. ([Health
3 & Saf. Code,] § 4010.) These sections [which have since been amended and moved to Health
4 and Safety Code sections 116275 through 117130 (Stats. 1995, ch. 415, § 6)] describe the
5 permit process for the operation of a public water system ([Health & Saf. Code,] art. 1, §§ 4011-
6 4022), the regulation of the quality of the water supply of a public water system ([id.,] art. 2, §§
7 4023.5-4030.7), violations ([id.,] art. 3, § 4031), remedies ([id.,] art. 4, §§ 4032-4036.5), judicial
8 review ([id.,] art. 4.5, § 4037), and applicable crimes and penalties ([id.,] art. 5, §§ 4037.5-
9 4039.5)."

10 "Any person who operates a public water system must: comply with primary and secondary
11 drinking water standards; ensure the system will not be subject to backflow under normal
12 operating conditions; and provide a reliable and adequate supply of pure, wholesome, healthful,
13 and potable water. ([Health & Saf. Code,] § 4017.) Primary drinking water standards specify
14 maximum levels of contaminants, which, in the judgment of the DHS director, may have an
15 adverse effect on the health of persons. ([id.,] §4010.1, subd. (b)(1).) Secondary drinking water
16 standards specify maximum contaminant levels which, in the judgment of the director, are
17 necessary to protect public welfare. Secondary drinking water standards may apply to any
18 drinking water contaminant which may: (1) adversely affect the odor or appearance of such water
19 and cause a substantial number of persons served by the public water system to discontinue its
20 use; or (2) otherwise adversely affect the public welfare. ([id.,] § 4010.1, subd. (b)(2).) Maximum
21 contaminant level means the maximum permissible level of a contaminant in water. ([id.,] §
22 4010.1, subd. (c).) The regulations establishing primary and secondary drinking water standards
23 for public water systems are contained in title 22 of California Code of Regulations, section
24 64401 et seq. (Cal. Code Regs., tit. 22, @ 64401, subd. (a).) Those drinking water standards are
25 based upon the national interim primary and secondary drinking water regulations contained in
26 the Code of Federal Regulations. " (*Paredes*, supra, 203 Cal. App. 3d at p. 5; fn. and internal
27
28

1 quotations omitted; cited with approval in *Hartwell* at p. 1298.)

2 The application of copper sulfate to Haiwee Reservoir is required by DHS to eliminate taste
3 and odor problems associated with algae growth and to meet secondary drinking water
4 regulations of the state and federal SDWA. (See Exhibit 1.) No other mechanism is presently
5 available to achieve drinking water standards and to avoid the health and welfare problems
6 which will directly result from uncontrolled algae growth in Haiwee. (Parekh Declaration, para.
7 4-9.)⁵ The imposition of any restriction on copper sulfate applications in Haiwee by the
8 Department of Water Resources or any other agency of this state will have a direct and
9 significant effect upon public health and safety because the resulting water conditions will violate
10 secondary drinking water regulations. Uncontrolled algae blooms will result in taste and odor
11 problems as well as the creation of algal toxins, i.e. drinking water contaminants. (Cf. *Hartwell*,
12 *supra*, p. 1299.) Treatment in Haiwee is the only practicable way to control the algae blooms.
13 (Parekh Declaration, para. 2, 3.)
14

15
16 V. CONCLUSION AND PRAYER FOR RELIEF
17

18 Placing Haiwee Reservoir on the 303d list as an impaired water body because of Los
19 Angeles' application of copper sulfate as a drinking water chemical places the city in an
20 untenable position. Los Angeles cannot be required to choose between meeting drinking water
21 standards and restricting copper sulfate applications as part of the TMDL process in order to
22 make Haiwee Reservoir more fish friendly. As the Supreme Court noted in *State of California v.*
23 *San Luis Obispo, supra*, the right to fish under the California Constitution "must yield in
24 appropriate factual situations to the reasonable exercise of the state's inherent police power to
25

26 ⁵ Consideration of the Declaration of Dr. Parekh is appropriate under 22 CCR §2050
27 subd. (b) because the California Supreme Court had not ruled in the *Hartwell* case at the time
28 of the Lahontan ruling in this matter. Accordingly, Los Angeles requests a hearing for
consideration of Dr. Parekh's evidence.

1 protect public safety and welfare. [Citation.] " (22 Cal. 3d at p. 448.) There the Supreme Court
2 noted that the respondents appropriately did not contest "the need for regulation of fishing at the
3 reservoir in order to ensure against contamination of the water supplied from the reservoir for
4 domestic consumption." (*Id.*) The record here demonstrates Lahontan has placed Haiwee
5 Reservoir on the 303d list only because application of copper as a drinking water chemical is
6 deemed to be harmful to its fishery. California and federal SDWAs clearly mandate that Haiwee
7 Reservoir be removed from the 303d list. This is so because any resulting TMDL for copper
8 which is below the amount necessary to control algae blooms will be completely antithetical to
9 both the state and federal SDWAs. The need of millions of people for safe drinking water must
10 prevail over Lahontan's objection to the application of copper to this drinking water reservoir.

11 For the forgoing reasons, Los Angeles requests that the State Water Resources Control
12 Board remove Haiwee Reservoir from California's 303(d) list.

13
14 Dated: February 6, 2002

Respectfully submitted,

15
16 ROCKARD J. DELGADILLO, City Attorney
17 PHILIP SHINER, Chief Assistant
18 City Attorney for Water and Power

19 By 

20 S. DAVID HOTCHKISS
21 Assistant City Attorney

22 Attorneys for Petitioner/Appellant
23 CITY OF LOS ANGELES
24
25
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1
2
3 DECLARATION OF PANKAJ PAREKH

4 I, Pankaj Parekh, declare that I am the Director of Water Quality Compliance at the Los
5 Angeles Department of Water and Power (LADWP). In this capacity, I am responsible for
6 preparing the LADWP to meet current and future drinking water regulations, identifying
7 challenges and associated impacts in the process of meeting such regulations, and
8 recommending actions to mitigate the same. I am also charged with interpreting the intent of
9 drinking water laws, so as to provide the maximum protection to the water-consuming citizens
10 of the city of Los Angeles at an affordable cost to them. I am a public health engineer by training,
11 with a Bachelor degree in Science, a Master in Public Health, and a Doctorate in Environmental
12 Science and Engineering. I have over 20 years of professional working experience in the public
13 health and drinking water field. I have worked in both the international and national sectors of
14 public service. In my current position at the LADWP, I have, and continue to serve on several
15 national and state committees/workgroups, addressing complex drinking water issues, primarily
16 related to assessing or managing health related risks. If called as a witness in this matter, I could
17 and I would competently testify as follows:

18 1. LADWP has used copper sulfate in Owens Valley primarily to control the growth of
19 aquatic plants that are a nuisance in open reservoirs, channels and ditches. Aquatic plants of
20 all kinds can be operational impediments to the safety and reliability of water delivery to the
21 citizens of Los Angeles. These include some of the more advanced plants such as hydrophytes
22 (vascular plants), and some of the most primitive plants such as algae. Additionally, there is an
23 increasing concern with the biochemical nature of what certain algae may be imparting to the
24 water quality.

25 2. Aquatic vascular plant are a nuisance to water systems because they obstruct flows.
26 They generally propagate quickly and in the case of Potamogeton can completely cover the
27 bottom of shallow reservoirs, such as North Haiwee Reservoir, in a single season. Because
28

1 some species can generate whole new plants from pieces of broken stems, down-stream
2 seeding becomes inevitable. Vascular plants that grow unchecked would have to be removed
3 both manually and frequently. Placing facilities out of service for cleaning and repair when
4 necessitated results in temporary but serious supply management issues as well as costly
5 maintenance. I am aware of no other tested mechanism that would achieve the same results
6 as copper sulfate treatment. Supply issues can impact both drinking water demands and
7 hydroelectric power-plant generating capabilities. Also, an increase in aquatic plants in the raw
8 water, results in added monitoring and laboratory costs.

9 3. Algae, the most primitive form of plants, are of concern in a water system for many
10 reasons and are the main focus of our copper sulfate use. Copper sulfate treatment is
11 necessary to prevent taste and odor problems associated with algae in order to meet secondary
12 drinking water standards under both the state and federal Safe Drinking Water Acts. Algae are
13 a nuisance because they turn the water green and make the water look unpalatable. Some
14 species of algae, generate obnoxious odors and leave a disagreeable taste in the water. The
15 taste and odor causing agents are dissolved compounds, not particulates. Some of these
16 dissolved compounds oxidize very slowly so that chlorine has no practical effect and ozone has
17 a marginal effect at removal. Other species are known to obstruct the flow in open channels and
18 restrict flow through bar racks. Similarly, some algae are known to clog filters. When large
19 populations of algae (blooms) suddenly die-off, the dissolved oxygen concentration can decrease
20 significantly enough to result in fish fatalities. Algae can also be an indirect contributor to a health
21 threat because of the natural organic loading that results following an algae bloom. This is
22 because an increase in algal organics will subsequently increase the precursors that form
23 disinfection by-products (DBP), when they react with chlorine and ozone. Last but not least, is
24 the growing body of knowledge that identifies species of algae that produce compounds that
25 have been found to be toxic to some animals, and could potentially pose a similar hazard to
26 humans.
27
28

1 4 Without herbicides, algae populations would grow and die as nutrients and
2 competition dictated, resulting in large blooms and then die-offs. Nutrient controls do not prevent
3 algal growth; rather, they serve to reduce the peak level of growth. Dissolved oxygen levels,
4 which are vital to healthy fisheries, would fluctuate with changes in algal densities.
5 Decomposition of dead organisms can deplete oxygen supplies so intensely in lakes that they
6 can be reduced to or near anoxia.

7 5. One genus of cyanobacteria, or blue-green algae, that is common in Los Angeles'
8 aqueduct system and also quite controllable with copper sulfate is Anabaena. This cyanobacteria
9 generates a compound know as geosmin, which has an obnoxious odor that is detectable at
10 concentrations of 0.01ppb (that is 10 parts per trillion). Even unadvised high doses of chlorine
11 and ozone are not fully effective in removing this odor from drinking water.

12 6. Cladophora and other filamentous algae restrict flow in open channels and on bar
13 racks. Traveling screens at the Los Angles Aqueduct Filtration Plant (LAAFP) have a history of
14 becoming overburdened by these biofoulers, resulting in the spillage of water and considerable
15 costs from repairs. These troublesome episodes would only increase if copper sulfate was no
16 longer available for treatment. Likewise, without copper treatments, diatoms and many species
17 of green algae, which are also known to clog filters, would be more prevalent in raw waters.
18 Thus, creating a more difficult water environment to treat and manage, at a considerable greater
19 expense.

20 7. Increased algal densities in a reservoir environment, offer a potential harbor for and
21 promote the increased growth of bacteria and pathogens. When this scenario is combined with
22 the need to more frequently backwash the filters, we would increase the risk for the presence
23 of bacteria and pathogens in the post-filtered water.

24 8. Algae that produce toxins have not been an issue in our reservoirs primarily because
25 LADWP controls their growth. LADWP uses copper sulfate to control cyanobacteria that not only
26 produce obnoxious odors, but some of these same organisms are also capable of producing
27

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25 LADWP controls their growth. LADWP uses copper sulfate to control cyanobacteria that not only
26 produce obnoxious odors, but some of these same organisms are also capable of producing
27

28

1 toxins. There is documentation dating as far back as 1878, that blue-green algal blooms have
2 been responsible for the death of livestock and wild animals. In addition, current evidence
3 suggests low levels (a few parts per billion) of certain cyanobacteria toxins (e.g., microcystins
4 and nodularins) may be associated with non-lethal acute or chronic health effects in humans.
5 Limiting algae growth to prevent toxic blooms is far more responsible and efficient water quality
6 management than reacting to a toxic bloom after its creation. Our primary disinfectant, chlorine,
7 is not an effective oxidant that can break down algal toxins, and as such, these toxins can be
8 transported downstream to other waterbodies and even into the drinking water distribution
9 system. Dermal exposure to algal toxins can cause dermatitis to humans and animals, and oral
10 exposure (consumption) has been known to cause gastroenteritis. The knowledge of such
11 deleterious effects of algae is growing, and the drinking water regulatory arena is already
12 discussing the impending need to regulate algal toxins.

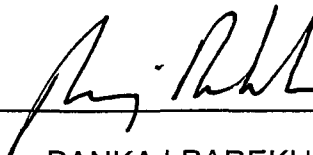
13
14 9. DBP are a concern throughout the water industry and a concerted effort is being
15 made to decrease their formation by minimizing their precursors and by modifying the uses of
16 disinfectants. Increased algae growth in the reservoirs will generate more compounds that are
17 precursors to DBPs. By controlling algae blooms, DBP precursors are minimized, and
18 disinfectant demands are reduced. Colored water resulting from algal blooms can also be
19 minimized by controlling algae growth - reducing the need to "bleach" out green colored water
20 with chlorine.

21 10. Although the primary use for copper sulfate is to control aquatic plants, it may also
22 be useful in minimizing the impact of Asiatic clam infestation. Asiatic clams are found in
23 abundance in Tinemaha and North Haiwee Reservoir and it has been suggested that they have
24 not spread downstream because of copper sulfate usage at the Haiwee reservoirs. There are
25 reports of Asiatic clam infestations where their densities occur by the thousands per square
26 meter, sometimes dominating the benthic community. The major significance of an Asiatic clam
27 infestation is biofouling, especially in power plants, canals and pipes. It also alters benthic
28

1 substrate, and competes with native species for limited resources. The impact of an Asiatic clam
2 infestation on DWP power plants and other facilities has not been determined, however,
3 Metropolitan Water District (MWD) has documented problems with flows in the Colorado River
4 Aqueduct due to an accumulation of clams. MWD is forced to remove the clams mechanically.

5 I declare under penalty of perjury that the foregoing is true and correct.

6 Executed this 6th day of February, 2002 at Los Angeles, California.

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10 PANKAJ PAREKH
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1 PROOF OF SERVICE

2
3 I am employed in the County of Los Angeles; I am over the age of eighteen years and am
4 not a party to the within entitled action; my business address is 111 North Hope Street, Suite
5 340, Los Angeles, California 90012-2694. On February 6, 2002, I served the within document:

6 PETITION OF THE CITY OF LOS ANGELES CONCERNING
7 LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD'S
8 LISTING OF HAIWEE RESERVOIR AS AN IMPAIRED WATER
9 OF THE UNITED STATES UNDER THE FEDERAL CLEAN
10 WATER ACT; REQUEST FOR HEARING; MEMORANDUM OF
11 POINTS AND AUTHORITIES and DECLARATION OF PANKAJ
12 PAREKH IN SUPPORT THEREOF

13

14 by transmitting via facsimile the document(s) listed above to the fax
15 number(s) set forth below on this date.

16

17 by placing the document(s) listed above in a sealed envelope with
18 postage thereon fully prepaid, in the United States mail at Los Angeles,
19 California addressed as set forth below.

20

21 by personally delivering the document(s) listed above to the person(s)
22 at the address(es) set forth below.

23 Harold J. Singer, Esecutive Officer
24 California Regional Water Quality Control Bd.
25 Lahontan Region
26 2092 Lake Tahoe Boulevard
27 South Lake Tahoe, California 96150

28 Diana M. Bonta, R.N., Dr. P.H.
Director, Calif. Department of Health Services
714 "P" Street, Room 1253
Sacramento, CA 95814

29 I am readily familiar with the firm's practice of collection and processing
30 correspondence for mailing. Under that practice it would be deposited with the U.S. Postal
31 Service on that same day with postage thereon fully prepaid in the ordinary course of business.

32 I declare under penalty of perjury under the laws of the State of California that the
33 above is true and correct.

34 Executed on February 6, 2002, at Los Angeles, California.

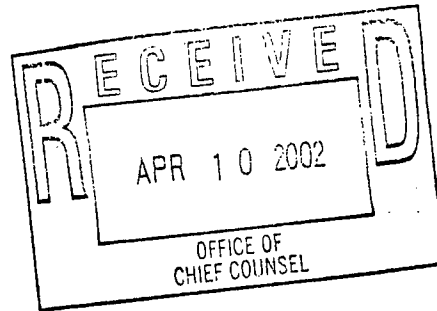
35 Karen L. Romano

36 Karen L. Romano

April 8, 2002

Via Federal Express

Mr. Michael Levy
State Water Resources Control Board
1001 I Street
Sacramento, California 95814



Charles M. Hungerford
chungerford@hewm.com
Direct (650) 324-7047
Main (650) 324-7000
Fax (650) 324-0638

17117-0002

Re: Update of Lahontan Region's Section 303(d) List

Dear Mr. Levy:

The purpose of this letter is to offer several suggestions for your consideration concerning the State's Section 303(d) list of impaired water bodies and priorities for development Total Maximum Daily Loads ("Section 303(d) list"). The suggestions are prompted by recent action by the California Regional Water Quality Control Board, Lahontan Region, concerning its recommended Section 303(d) List. This letter is submitted on behalf of IMC Chemicals Inc. (IMCC) which operates an in situ mineral extraction operation in Searles Lakebed.

At its public meeting on January 9, 2002, the Lahontan Regional Board adopted a resolution transmitting recommendations to the State Water Resources Control Board concerning additions and deletions to the Section 303(d) List for the Lahontan Region. Among the recommended changes were modifications affecting Searles Lake in Trona Hydrologic Unit 621.00. Specifically, the Lahontan Regional Board recommended that Searles Lake be removed from the Section 303(d) List based upon naturally-occurring salinity/TDS/Chlorides, but added to the Section 303(d) List for sheen.

The Lahontan Regional Board adopted staff's recommendation concerning the listing of Searles Dry Lake. This decision by the Regional Board focused upon whether Searles Dry Lake is an impaired water body, and what pollutant causes any impairment. IMCC does not believe that the action by the Regional Board to change the basis for listing Searles Dry Lake was also a determination that Searles Dry Lake is, in fact, a water of the United States. Neither the Regional Board nor its staff discussed the substantive criteria for determining whether a body of water is a water of the United States, or the application of the criteria to individual water bodies.

We interpret a recent decision by the United States Supreme Court, and subsequent decisions by lower courts, as supporting the conclusion that Searles Dry Lake is not a water

of the United States, and propose the following three suggestions for your consideration to address the issue of including waters that may not be waters of the U.S. on the Section 303(d) List. The three suggestions are:

- • Footnote or asterisk references to Searles Dry Lake (and similarly situated waters) and note that a determination whether or not the water is a "water of the U.S." will be made by the Regional Board during the basin planning process;
- • Include Searles Dry Lake (and similarly situated waters) on Part 4 of the Section 303(d) List for which TMDLs are not required under 40 CFR 130.27(a)(4); and/or
- • Submit the State's Section 303(d) List to Federal EPA with the explanation that the list covers both waters of the state and waters of the U.S.

The status of Searles Dry lake and an explanation of the three suggestions are discussed in more detail below.

Legal Status of Searles Dry Lake

Searles Dry Lake is located in the Mojave desert, and is a largely sub-surface water body with periodic ephemeral surface waters and permanent surface discharge ponds created by IMCC. Searles Dry Lake is a completely isolated water body. As recognized by the Waste Discharge Requirements issued to IMCC, "Searles lake is located in a closed structural basin filled with alluvium and non-marine evaporates". Lahontan Regional Board Orders No 6-00-53, 6-00-52, and 6-00-54 at page 4. As a closed basin, there are no known tributaries that leave Searles Dry Lake, either on the surface of the ground or beneath the surface. Considering these characteristics, it is not surprising that there is no historical evidence that the surface waters of Searles Dry Lake have been used to transport goods or people. The surface waters are not currently being used for these purposes, and it is reasonable to conclude that the surface waters will not be used for these purposes in the future.

Not only is Searles Dry Lake isolated from other surface and subsurface waters, it has no wetlands. A wetlands delineation was performed at Searles Dry Lake using the California Department of Fish and Game's definition of wetlands. The delineation concluded that "there are no Wetlands on or adjacent to Searles dry lake bed." May 31, 1998 Delineation at page 2, attached to the June 1, 1998 "Use Attainability Analysis for the Trona Hydrologic Unit".

In light of these factors, Searles Dry Lake is clearly not a water of the U.S., especially considering the U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County v. Army Corps of Eng'r*, 531 U.S. 159, 121 S. Ct. 675 (2001) ("SWANCC"). In the SWANCC decision, the Court rejected the presence of migratory birds as a valid basis for

finding that a water body is a "water of the U.S.", and thus subject to jurisdiction under the Clean Water Act ("CWA"). In its decision, the Court focused upon the concept of navigability. The Court rejected the argument that navigability was no longer relevant in identifying waters subject to the CWA, and determined that navigability was still a valid element in defining waters of the United States. As stated by the Court:

"[I]s one thing to give a word limited effect and quite another to give it no effect whatever. The term "navigable" has at least the import of showing us what Congress had in mind as its authority for enacting the CWA: its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made". 121 S.Ct. at 683.

By using the term "navigable in fact", the Court chose a term that connotes transportation. The cases cited by the Court in the SWANCC decision characterize navigability as waters capable of use as interstate highways. See for example *United States v. Appalachian Elec. Power Co.*, 311 U.S. 377 (1940).

In consideration of the SWANCC decision and other U.S. Supreme Court and Ninth Circuit Cases, a water body is a "water of the U.S." if it is:

- (1) Navigable in fact as a highway for commerce. See e.g., *United States v. Appalachian Elec. Power Co.*, cited above;
- (2) A tributary to navigable or interstate waters. See, e.g. *Headwaters, Inc. v Talent Irrigation District*, 243 F.3d 526, 533 (9th Cir. 2001); or
- (3) Wetlands adjacent to navigable or interstate waters (See, e.g. *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985).

A water body has also been found to be a water of the U.S. if it is interstate, or if it is subject to the ebb and flow of the tide. *Colvin v. United States*, 181 F.Supp 2d 1050 (C.D. Cal 2001).

Searles Dry Lake falls into none of these categories. As discussed above, Searles Lake is not navigable in fact, is not a tributary to navigable or interstate waters, and has no wetlands that are adjacent to navigable or interstate waters. Searles Dry Lake is also not an interstate water body, and is not subject to the ebb and flow of the tide.

Searles Dry Lake has some of the attributes of a vernal pool, and in at least one previous case, the government has conceded that SWANCC precludes federal authority over a vernal pool. *Borden Ranch v. Army Corps of Eng'r*, 261 F.3d 810, 816 (9th Cir. 2001). ("The government now concedes that Solid Waste precludes Corps' authority over the vernal pool in dispute and has formally withdrawn its enforcement claim with respect to the pool. We accordingly reverse the district court's findings of Clean Water Act violations in the

vernal pool"). The Ninth Circuit has also found that isolated waters are not waters of the U.S. under SWANCC. *Headwaters, Inc. v Talent Irrigation District*, at 533. ("The irrigation canals in this case are not "isolated waters" such as those that the Court concluded [in SWANCC] were outside the jurisdiction of the Clean Water Act".) Searles Dry Lake is isolated; it is located in a closed basin unconnected with other water bodies.

Even if the navigability requirement is set aside, Searles Dry Lake is not a water of the U.S. by virtue of IMCC's mineral extraction operation. The minerals are extracted from the sub-surface brine. EPA and the Corps of Engineers, as well as the Courts, all agree that groundwater is not a water of the U.S. See for example, *Village of Oconomowoc Lake v. Dayton Hudson Corp*, 24 F.3d 962 (7th Cir. 1994), certiorari denied 513 U.S. 930 (1994).

IMCC Suggestions for Reconciling the Status of Searles Dry Lake with Section 303(d) Listing

IMCC offers the following three suggestions for your consideration.

Suggestion 1

An appropriate time for the Regional Board to decide whether or not Searles Dry Lake is a water of the United States is during the Basin Planning process. The Lahontan Regional Board staff has issued a Notice of Preparation of a draft environmental document for proposed amendments to the Lahontan Basin Plan. A number of proposed amendments would impact Searles Dry Lake. It is during this process that the Lahontan staff and Regional Board, as well as the public, can consider on the status of Searles Dry Lake.

Therefore, IMCC suggests that the State Water Resources Control Board add a footnote or asterisk to any reference to Searles Dry Lake on the State's Section 303(d) List, and explain in a notation that inclusion of Searles Dry Lake on the Section 303(d) list does not reflect a determination that the lake is a water of the United States, and that this determination will be made during the basin planning process currently underway. This notation will enable the Section 303(d) process to proceed uninterrupted, while providing a coordinating link to the Basin Planning process that will address whether or not Searles Dry Lake is a water of the United States.

Suggestion 2

EPA regulations implementing Section 303(d) provide that a State's list of impaired waterbodies must include four parts. 40 CFR 130.27. Part 4 is to include waterbodies where water quality standards will be attained by the date of submission of the next Section 303(d) list as a result of implementation of technology-based effluent limitations or other controls

enforceable by State or federal law. A TMDL is not required for waterbodies on Part 4 of the Section 303(d) List. 40 CFR 130.27(a)(4).

The basin planning process described above, and the progress that has been made by IMCC in reducing the levels of non-native constituents in its discharge streams, especially when considered together, amply justify including Searles Dry Lake on Part 4 of the Section 303(d) List, if Searles Dry Lake is to be included on the Section 303(d) List. It is fully expected that water quality standards will be achieved at the conclusion of the basin planning process and completion of the time schedules contained in applicable Waste Discharge Requirements. In addition, a process focused upon establishing updated beneficial uses combined with intensive efforts to control discharges to Searles Dry Lake are more productive for this particular water body than development of TMDLs.

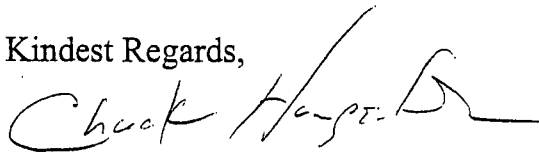
IMCC does not suggest use of this alternative alone, but in conjunction with Suggestions 1 and/or 3. The advantage of this Suggestion 2 is that it saves State resources from having to develop TMDLs for Searles Dry Lake because the Lake is expected to meet water quality standards.

Suggestion 3

The State of California is fully able to expand the Section 303(d) program to cover a broader category of waters. When submitting the Section 303(d) list to federal EPA, the State could indicate that the list covers "waters of the State" as well as "waters of the United States", with the understanding that federal EPA only has jurisdiction over waters of the United States.

Thank you for your consideration of this issue. If you have any questions or if you would like to discuss this issue in further detail, please telephone me at (650) 324-7047.

Kindest Regards,



Charles M. Hungerford

cc: Hisam Baqai
Steven Blum
Arzell Hale
Chuck Curtis
Darlene Ruiz
Shannon Smith
Judith Unsicker

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4/8/02 6:54 PM (17117.0002)

Department of Water and Power



the City of Los Angeles

JAMES K. HAHN
Mayor

Commission
KENNETH T. LOMBARD, *President*
DOMINICK W. RUBALCAVA, *Vice President*
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DAVID H. WIGGS, *General Manager*
FRANK SALAS, *Chief Operating Officer*

April 25, 2002

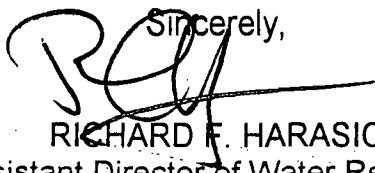
Mr. Craig J. Wilson, Chief
Monitoring and TDML Listing Unit
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento CA 95812-0100

Dear Mr. Wilson:

2002 Section 303(d) Proposed Delisting – Owens Lake

The City of Los Angeles Department of Water and Power (LADWP) has reviewed the draft Staff Report supporting the proposed delisting of Owens Lake from the Section 303(d) list of impaired water bodies. LADWP is in agreement with the rationale for, and is in support of, the proposed delisting.

If you have any questions or require additional information please contact Mr. Raymond Prittie at 213-367-1031.

Sincerely,


RICHARD F. HARASICK
Assistant Director of Water Resources

- c: Ms. Cindi Mitton, Lahontan RWQCB
- Mr. Matt Gordon/CH2MHILL
- Mr. Raymond Prittie

Water and Power Conservation ... a way of life

111 North Hope Street, Los Angeles, California Mailing address: Box 51111, Los Angeles 90051-0100
Telephone: (213) 367-4211 Cable address: DEWAPOLA FAX: (213) 367-3287

DRAFT

From: Harold Singer
To: Wilson, Craig J.
Date: 4/20/02 5:12PM
Subject: 303(d) List

Craig

I have been working with Michael Levy and Steven Blum on the issue raised by LADWP and IMC Chemicals asserting the Haiwee Reservoir and Searles Lake, respectively, are not Water of the US. Michael has asked me to clarify the RB's position when it included these water bodies on the list. The attached memo provides that clarification. I will send a signed copy of the memo on Monday 4/22.

call if you have questions

harold

CC: Blum, Steven; Levy, Michael

REGION 6



California Regional Water Quality Control Board

Lahontan Region



Winston H. Hickox
Secretary for
Environmental
Protection

2501 Lake Tahoe Boulevard, South Lake Tahoe, California 96150
Phone (530) 542-5400 • FAX (530) 544-2271

6.4

Gray Davis
Governor

TO: Craig J. Wilson
Division of Water Quality
State Water Resources Control Board

FROM: Harold J. Singer
Executive Officer
LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD

DATE: April 22, 2002

SUBJECT: STATE WATER RESOURCES CONTROL BOARD CONSIDERATION OF THE
303(d) LIST

State Water Resources Control Board (SWRCB) staff have advised me that Los Angeles Department of Water and Power and IMC Chemicals have asserted that Haiwee Reservoir and Searles Lake, respectively, are not "Waters of the United States" within the meaning of the Clean Water Act." SWRCB staff asked if I would clarify the position of the Regional Board with respect to this assertion.

Both of these water bodies were included on past 303(d) lists based on a belief that they were waters of the U. S. However, the U.S. Supreme Court ruling in *the Solid Waste Agencies of Northern Cook County v. U.S. Army Corp of Engineers (SWANCC)* raises a question as to whether these are or are not waters of the U.S. The Lahontan Regional Water Quality Control Board (Regional Board), in placing these water bodies on the proposed 303(d) list, did not make an affirmative finding that these two water bodies are waters of the U.S., post *SWANCC*. In fact, the Regional Board has indicated a desire to resolve this matter based on a technical and legal review of the facts. I will be scheduling this for late summer or early fall of this year.

I concur with the SWRCB staff proposal to keep these water bodies on the 303(d) list. In addition, it would make sense, as proposed by IMC Chemicals, to place a footnote by each of the disputed water bodies indicating that the Regional Board will make a formal determination as to whether these are or are not "Waters of the U.S."

If you have any questions, please call me at (530) 542-5412.

cc: Regional Board members
IMC Chemicals
Los Angeles Department of Water and Power

bc: Steven Blum, SWRCB OCC
Michael Levy, SWRCB OCC

California Environmental Protection Agency

DRAFT

Drafted by JEU, filename: T:/303d/sbcomments. State Memo Format, from Chuck Curtis to Craig J. Wilson, Division of Water Quality, SWRCB. Return document to JEU for filing at Annex.

COMMENTS ON STATE BOARD STAFF RECOMMENDATIONS FOR SECTION 303(D) LISTING AND DELISTING OF REGION 6 WATERS

State Board staff's April 2, 2002 recommendations for changes in the Section 303(d) listing status of Region 6 waters differ in several respects from the recommendations adopted by the Lahontan Regional Board in January 2002 (Resolution R6T-2002-0002). Some the differences appear to result from oversights or misinterpretation of the record of the Regional Board's list update process, and others from disagreement with the technical evidence summarized in Regional Board staff's waterbody fact sheets. We request that the following changes be made in State Board staff's draft recommendations for the Section 303(d) list update.

Mojave River. In November 2001, Region 6 staff released public draft recommendations for update of the Section 303(d) list including three new listings of the Mojave River, for total dissolved solids (TDS), sulfate, and chloride. After review of written public comments and further discussion, staff agreed that sample numbers were too small to support the proposed new listings for TDS, sulfate, and chloride. The revised staff recommendation at the January 2002 Board meeting was that the list update proposed in November 2001 should be approved except for the three new Mojave River listings. (See pages 682 and 691 of the administrative record.) The Regional Board approved this revised recommendation.

The State Board's draft staff report recommends delisting of the Mojave River for TDS, sulfate, and chloride. Since the river was never formally listed for these pollutants, delisting is not appropriate. These waterbody-pollutant combinations should be removed from the final listing/delisting recommendations to be considered by the State Board in September 2002. OK

West Fork Carson River. The Lahontan Regional Board recommended listing of three different segments of the West Fork Carson River for a variety of pollutants. Listing of the Woodfords to Paynesville segment was recommended due to violation of the water quality objective for Percent Sodium. This listing is not included with other recommended list additions for the West Fork on page 29 of 220 in Volume I of the State Board staff report, although it is included on page 104 of 306 in Volume III, and there is OK

a fact sheet on page 138 of 306. This waterbody-pollutant combination should be added to the recommended list in Volume I.

F.S.
TITLE
- SUBJECT
SHEET
RECOMMEND

The Lahontan Regional Board also recommended listing of the Woodfords to State Line segment of the West Fork Carson River for pathogens, due to violation of the narrative water quality objective for fecal coliform bacteria. Listing of this segment is not addressed at all in the State Board staff report. The oversight may have arisen from the limitations of the GeoWBS database. The Woodfords to State Line segment addressed in the Regional Board's resolution and fact sheet consists of two GeoWBS-mapped segments, Woodfords to Paynesville and Paynesville to State Line. The final proposal before the State Board should include listing for pathogens either for these two mapped segments or for the combined Woodfords to State Line segment. If there is disagreement on technical grounds with the Regional Board's proposed listing, it should be documented in the final State Board staff report.

Searles Lake. The Lahontan Regional Board recommended that Searles Lake be delisted for "Salinity/TDS/Chlorides" because the high salinity is due to natural sources. The State Board staff report (Volume 3, Summary of Recommendations page 6-8) states that there is insufficient information to delist. We disagree with this conclusion. Enclosed are data from sampling of natural waters and the brine ponds by Regional Board and Department of Fish and Game staff. They show that the salinity of the brine ponds is the same as, or less than that of the natural waters. Because of this relationship, salt related bird deaths should not be attributed to increased salt concentration in the industrial brine. We recommend that Searles Lake be delisted for Salinity/TDS/Chlorides.

OK

Heavenly Valley and Hidden Valley Creeks. The Lahontan Regional Board recommended listing Heavenly Valley and an unnamed stream, also known as "Hidden Valley Creek," for chloride and phosphorus, based on monitoring data collected by the U.S. Forest Service, Lake Tahoe Basin Management Unit. (Hidden Valley Creek, with an undisturbed watershed, is the reference stream for ongoing erosion control work in the watershed of Heavenly Valley Creek.) The Forest Service data showed that numerical water quality objectives were violated for both streams in 1997 and 1998. State Board staff recommended not listing both streams because major sources of chloride and phosphorus were believed to be natural. Regional Board staff agree that sources for Hidden Valley Creek are probably mostly natural, although atmospheric deposition of phosphorus from windblown dust or forest fire ash, and of chloride from road salt could be involved. However, Forest Service samples for Heavenly Valley Creek stations generally had higher phosphorus and chloride concentrations than those for Hidden Valley Creek during the same months. The Heavenly Valley Creek watershed probably has increased phosphorus loading from erosion due to watershed disturbance for ski resort development, and increased chloride loading due to salt use for snow melting around resort facilities and/or snow grooming on ski runs. We believe that Heavenly Valley Creek should be listed for both pollutants as recommended in Resolution R6T-2002-002.

← OK

The Regional Board's staff contact for the Section 303(d) list update process is Judith Unsicker. Please contact her at (530) 542-5462 or JUnsicker@rb6s.swrcb.ca.gov if you have any questions about the comments above.

Enclosures

B. RB/DFG Sampling Results

Sampling Location	Approximate Location	Sampled By	Specific Gravity	TDS mg/L	As $\mu\text{g/g}$
(Reporting Limit)			1	10	0.2
Searles Lake - North	Ephemeral Pond 14	RB/DFG	1.28	570,000	168
Searles Lake - North-East	Ephemeral Pond 3	RB/DFG	1.28	609,000	130
Searles Lake - Center	Ephemeral Pond 10	RB/DFG	1.25	523,000	115
Searles Lake - South-East	Ephemeral Pond 52	RB/DFG	1.27	718,000	68.5
Searles Lake - South-West	Ephemeral Pond 32	RB/DFG	1.29	806,000	129
Searles Lake - North-West	Ephemeral Pond 29 Seepage	RB/DFG	1.08	102,000	44.4

- Note: 1. Analyzed by the DFG Fish and Wildlife Water Pollution Control Lab. at Rancho Cordova.
 2. The ephemeral ponds were natural lake waters found in spring 2001.
 3. The pond number is for convenience to refer the sample locations.

Table 1. Searles Lake Ephemeral Water Studies Results (April 2001)

A. IMCC Sampling Results

Sampling Location	Approximate Location	Sample d By	Specific Gravity	TDS mg/L	As mg/L
Searles Lake - North	Ephemeral Pond 14	IMCC	1.30	440,000	156
Searles Lake - North-East	Ephemeral Pond 3	IMCC	1.26	391,000	133
Searles Lake - Center	Ephemeral Pond 10	IMCC	1.26	381,000	110
Searles Lake - South-East	Ephemeral Pond 52	IMCC	1.28	384,000	76.4
Searles Lake - South-West	Ephemeral Pond 32	IMCC	1.30	569,000	126
Searles Lake - North-West	Ephemeral Pond 29 Seepage	IMCC	1.03	97,200	33.4
Searles Lake - Center	Dredge Pond	IMCC	1.18	294,875	83.6
Searles Lake - Center	Percolation Pond	IMCC	1.20	292,700	102.89
Searles Lake - Center	Westend	IMCC	1.22	312,000	131.5

- Note: 1. Analyzed by the IMCC Special Lab and Truesdail Lab.
 2. The ephemeral ponds were natural lake waters found in spring 2001 sampling event.
 3. The pond number is for convenience to refer the sample locations.



California Regional Water Quality Control Board

Lahontan Region



Gray Davis
Governor

Winston H. Hickox
Secretary for
Environmental
Protection

2501 Lake Tahoe Boulevard, South Lake Tahoe, California 96150
Phone (530) 542-5400 • FAX (530) 544-2271

MEMORANDUM

TO: Craig J. Wilson
Division of Water Quality
SWRCB

FROM: *Harold*
Harold J. Singer
Executive Officer
Lahontan Regional Water Quality Control Board

DATE:

SUBJECT: COMMENTS ON STATE BOARD STAFF RECOMMENDATIONS FOR SECTION 303(D) LISTING AND DELISTING OF REGION 6 WATERS

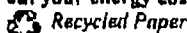
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The State Board's draft staff report recommends delisting of the Mojave River for TDS, sulfate, and chloride. Since the river was never formally listed for these pollutants, delisting is not appropriate. These waterbody-pollutant combinations should be removed from the final listing/delisting recommendations to be considered by the State Board in September 2002.

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at <http://www.swrcb.ca.gov>



Craig J. Wilson

-2-

West Fork Carson River. The Lahontan Regional Board recommended listing of three (3) different segments of the West Fork Carson River for a variety of pollutants. These segments are: (1) Headwaters to Woodfords, (2) Woodfords to Paynesville, and (3) Paynesville to State Line. State Board staff's recommendations agree with the Regional Board's recommendations for the first segment -Headwaters to Woodfords. However, the State Board staff report needs clarification in relation to Regional Board recommendations for the two lower segments of the river.

The Regional Board recommended listing of the Woodfords to Paynesville segment due to violation of the water quality objective for Percent Sodium. This listing is not included with other recommended list additions for the West Fork on page 29 of 220 in Volume I of the State Board staff report, although it is included on page 104 of 306 in Volume III, and there is a fact sheet on page 138 of 306. This waterbody-pollutant combination should be added to the recommended list in Volume I.

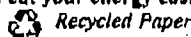
The Lahontan Regional Board also recommended listing of the Woodfords to State Line segment of the West Fork Carson River for pathogens, due to violation of the narrative water quality objective for fecal coliform bacteria. Listing of this segment is not addressed at all in the State Board staff report. The oversight may have arisen from the limitations of the GeoWBS database. The Woodfords to State Line segment addressed in the Regional Board's resolution and fact sheet consists of two GeoWBS-mapped segments, Woodfords to Paynesville and Paynesville to State Line. The final proposal before the State Board should include listing for pathogens either for these two mapped segments or for the combined Woodfords to State Line segment. If there is disagreement on technical grounds with the Regional Board's proposed listing, it should be documented in the final State Board staff report.

Searles Lake. The Lahontan Regional Board recommended that Searles Lake be delisted for "Salinity/TDS/Chlorides" because the high salinity is due to natural sources. The State Board staff report (Volume 3, Summary of Recommendations page 6-8) states that there is insufficient information to delist. We disagree with this conclusion. Enclosed are data from sampling of natural waters and the brine ponds by Regional Board and Department of Fish and Game staff. They show that the salinity of the brine ponds is the same as, or less than that of the natural waters. Based on this information it is clear that the salinity of the natural waters is very high and that controllable sources are not causing an increase in the salinity level. We recommend that Searles Lake be delisted for Salinity/TDS/Chlorides.

Heavenly Valley and Hidden Valley Creeks. The Lahontan Regional Board recommended listing Heavenly Valley and an unnamed stream, also known as "Hidden Valley Creek," for chloride and phosphorus, based on monitoring data collected by the U.S. Forest Service, Lake Tahoe Basin Management Unit. (Hidden Valley Creek is a relatively undisturbed watershed and is the reference stream for ongoing erosion control work in the watershed of Heavenly Valley

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Craig J. Wilson

-3-

Creek.) The Forest Service data showed that numerical water quality objectives were violated for both streams in 1997 and 1998. State Board staff recommended not listing both streams because major sources of chloride and phosphorus were believed to be natural. Regional Board staff agree that sources for Hidden Valley Creek are probably mostly natural, although atmospheric deposition of phosphorus from windblown dust or forest fire ash, and of chloride from road salt could be involved. However, Forest Service samples for Heavenly Valley Creek stations generally had higher phosphorus and chloride concentrations than those for Hidden Valley Creek during the same months. The Heavenly Valley Creek watershed probably has increased phosphorus loading from erosion due to watershed disturbance for ski resort development, and increased chloride loading due to salt use for snow melting around resort facilities and/or snow grooming on ski runs. We believe that Heavenly Valley Creek should be listed for both pollutants as recommended in Resolution R6T-2002-002. We concur that Hidden Valley Creek need not be listed because the sources are likely natural.

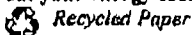
The Regional Board's staff contact for the Section 303(d) list update process is Judith Unsicker. Please contact her at (530) 542-5462 or JUnsicker@rb6s.swrcb.ca.gov if you have any questions about the comments above.

Enclosures: Table 1. Searles Lake Ephemeral Water Studies Results (April 2001)
Table B. RB/DFG Sampling Results

JEU/carT/303d/sbcomments

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34%
Fry RT = 13/26 CASES W/ TOXIC SODIUM / PATHOLOGICAL

6 - PATHOLOGICAL LESIONS

6 - UNKNOWN

13/25 W/ SERUM SODIUM \geq 2000 ppm
(TOXIC)

May 16, 2002

Via Federal Express

Craig J. Wilson, Chief
Monitoring and TMDL Listing Unit
Division of Water Quality
State Water Resources Control Board
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17117-0002

Re: Comments on the Proposed Section 303(d) List

Dear Mr. Wilson:

The purpose of this letter is to offer comments on behalf of IMC Chemicals Inc. ("IMCC") concerning the proposed Section 303(d) list of Impaired Water Bodies. The comments specifically address the State Water Resources Control Board staff's recommendations for Searles Lake. As discussed in more detail below, we believe the data indicate that Searles Lake should be listed for neither of the two pollutants recommended by the State Water Board staff: petroleum hydrocarbons and salinity/TDS/Chlorides. ✓

Background

In November, 2001, the California Regional Water Quality Control Board, Lahontan Region (Lahontan Regional Board), recommended changes to its Section 303(d) list of impaired water bodies. Among those changes, the Lahontan Regional Board recommended that petroleum hydrocarbons be added as an impairment pollutant based upon "documented bird kills from industrial pollutants", and that Salinity/TDS/Chlorides be removed as a pollutant because the impairment is natural and thus is not a "pollutant". See Staff Report on "Recommended Changes to Lahontan Region's Section 303(d) List of Impaired Surface Water Bodies".

On December 19, 2001, IMCC submitted comments on the recommendations of the Lahontan Regional Board. IMCC's comments supported removal of Salinity/TDS/Chlorides and provided information supporting the conclusion that these constituents were naturally occurring in Searles Lake brine. IMCC also provided necropsy reports prepared on deceased birds found at Searles Lake. The necropsies did not detect petroleum hydrocarbons in any of the deceased birds. Based upon this evidence, IMCC requested that petroleum hydrocarbons ✓

not be listed as a cause for impairment of Searles Lake. A copy of the December 19, 2001 comment letter, and its attachments, is enclosed.

In this next phase of the Section 303(d) listing procedure, the State Water Board staff has reviewed the recommendations of the various Regional Boards, and has prepared a draft proposal entitled "Revision of the Clean Water Act Section 303(d) List of Water Quality Limited Segments", dated April 2002. Volume III of the draft staff report summarizes the proposals for water bodies within the area served by the Lahontan Regional Board, among other regions. The comments set out below apply to the State Water Board staff's proposal for Searles Lake.

The additional material submitted with this letter to substantiate the comments set out below either address a new issue raised by the State Water Board staff (does IMCC add Salinity/TDS/Chlorides to Searles Lake) or consists of analyses developed subsequent to submission of comments to the Lahontan Regional Board (Dr. Fry's evaluation of the cause of waterfowl mortality). For these reasons, the additional information was not included in IMCC's December 19, 2001 comments.

Searles Lake should be delisted for Salinity, TDS, Chlorides

The State Water Board staff rejects the Regional Board's recommendation and proposes to retain Salinity/ TDS/ Chlorides as impairment pollutants for Searles Lake. It is initially important to note that there is an inaccuracy in the State staff's characterization of Searles Lake. In the Summary of Recommendations on page 6-8 of Volume III and in the more detailed explanation on page 6-65 of the same volume, the beneficial use for Searles Lake is identified as "Drinking". However, the Water Quality Control Plan for the Lahontan Region does not designate either the surface water or the groundwater under Searles Lake as a source of drinking water. See Table 2-1 concerning surface waters and Table 2-2 concerning groundwater. In fact, Table 2-2 specifically indicates in a note that MUN does not apply to ground water under Searles Lake. Thus, the salinity, TDS, and Chlorides present in Searles Lake brine should not be evaluated against the use of the brine as drinking water. ✓

The first reason provided by State staff for its recommendation is given as follows:

"Insufficient information to Delist. No monitoring data provided to show that discharges of brine from IMCC do not elevate brine concentration above already high natural levels." Volume III, page 6-8

Such data do exist.

IMCC removes brine from the subsurface of Searles Lake, and pumps the brine to its in situ mineral extraction facilities where various minerals, primarily salts, are removed. After this removal process, the partially depleted brine is discharged to the surface of Searles Lake where it collects in two ponds, identified as the dredge pond and percolation pond, or is injected into the subsurface brine under permits issued by U.S. EPA. Logic would indicate that IMCC removes rather than adds to the salinity, TDS, and chloride levels in the Searles Lake. Data support this conclusion.

On June 15, 2001, Kennedy/Jenks Consultants, on behalf of IMCC, submitted to the Lahontan Regional Board the results of a study that compared the salinity of the depleted brine ponds with the salinity of the ephemeral waters that appear on the surface of Searles Lake. The study found that the concentration of TDS, chloride, sodium and other minerals were higher in the ephemeral waters than in the depleted brine ponds. A copy of the report is attached. (See "Report of Comparison of Searles Dry Lake Ephemeral and Process Brine Composition" dated June 15, 2001, also referred to herein as the Ephemeral Waters Report). Thus, the brine that IMCC discharges to Searles Lake (as measured in the discharge ponds) contains lower levels of salinity, TDS and chlorides than the levels in the naturally occurring ephemeral waters on the surface of the lake. This is consistent with the fact that IMCC's operations remove salts from the brine.

The levels of salinity, TDS, and chlorides in the brine discharged from IMCC are also less than the levels found in the subsurface brine. On November 2, 2001, Kennedy/Jenks Consultants, on behalf of IMCC, submitted to the Lahontan Regional Board a report that evaluated the difficulties of applying analytical methods to Searles Lake brine. The TDS, chloride and sodium levels of the brine in the upper and lower structures of the subsurface brine is provided in Table 1 of this report. A comparison of this Table I with the information in Tables 8 and 10 of the Ephemeral Waters Report discussed above demonstrates that the concentrations of salinity, TDS, and chlorides in the IMCC discharge ponds (in particular, the dredge pond) is less than the concentrations found in the subsurface brine. A copy of Table I is enclosed. (See Table 1; "Typical brine composition of major constituents" from the Supplemental Analytical Study Report dated November 2, 2001).

The second reason provided for State staff's proposal is that there is:

"Insufficient information to show that waterfowl deaths are caused solely by petroleum hydrocarbons and not affected by elevated brine levels."

Such information does exist.

On March 1, 2002, IMCC submitted a report to the Lahontan Regional Board entitled "Report on the Mortality of Birds at Searles Dry Lake Bed, and Evaluation of Searles Lake Bed as Avian Habitat". A copy of the report is enclosed. The report is based upon an

extensive review of clinical case reports, pathology reports and toxicological data concerning deceased birds collected at Searles Lake. The California Animal Health and Food Safety Laboratory (CAHFS) at UC Davis performed gross necropsy and histo-pathological analysis. Toxicological analysis was performed by the CAHFS laboratory and the California Department of Fish and Game Water Pollution Control Laboratory in Rancho Cordova, California. Dr. Fry found that 54% of the birds died from either dehydration or salt intoxication, and that the much more likely cause of death was dehydration. In an experiment performed in New Mexico, birds exposed to brine initially dipped their bills into the brine as if to drink, but immediately flicked their heads in an apparent effort to shake the brine out of their mouths. "This was a good indication that the ducks recognized brine as unpalatable, and they avoided it". Dr. Fry Report at page 4.

In addition, Dr. Fry compared the levels of trace metals in deceased birds with the levels found in Searles Lake brine. The salt mixtures in the brines at Searles Lake are distinctive and can provide an indication as to whether birds drink the brine. Dr. Fry found that the trace minerals in liver samples collected from deceased birds found at Searles Lake were very different from the ratios in the brine. Dr. Fry concluded:

"Given the difference in the ratios of trace elements relative to sodium, and the fact that Searles Valley has no fresh water, it is reasonable to conclude that many of the birds dying in the process ponds have succumbed to dehydration from water deprivation in the hot, dry, environment." Dr. Fry report at page 7.

Thus, the weight of the evidence indicates that the deceased birds found at Searles Lake died of dehydration and not from drinking the brine.

Moreover, as discussed in the enclosed Ephemeral Waters Report, the IMCC discharge ponds are not the only source of surface brine at Searles Lake. Ephemeral waters occur at other locations of the lake and provide naturally-occurring surface water during at least part of the year.

There is an additional consideration that is independent of the comments expressed above concerning the affect of the brine on birds. As documented by comments submitted previously to the Lahontan Regional Board, the salinity, TDS, and chlorides in the brine are naturally occurring. There are numerous examples in Volume III where the State Water Board staff has taken the position that salinity should be delisted because the salinity is due to natural causes. See, for example, the thirteen water bodies identified on page 6-2 of Volume III that where salinity is proposed for delisting because "...exceedence of standards is due to natural causes. TMDL is not applicable". Searles Lake should be treated no differently.

Searles Lake should not be listed for Petroleum Hydrocarbons

The State Water Board staff's proposal found a link between oil at Searles Lake and waterfowl mortality. See Volume III, page 6-6. However, the enclosed report from Dr. Fry demonstrates that his link is not present.

Of the birds collected from Searles Valley and examined by the California Department of Fish and Game for the presence of hydrocarbons, only one bird had detectable hydrocarbons on feathers or in stomach contents. (This bird was collected and studied after IMCC's comments were submitted to the Regional Board in December, 2001.) This particular bird (a grebe) took extraordinary measures to reach oil. It crawled underneath fixed netting covering one of the skimmer channels in an attempt to reach water. The skimmers are used to collect oil from the brine before the brine is discharged to the ponds. Collected oil is manually removed from the skimmer. The grebe became immersed in the hydrocarbons that had been collected by the skimmer. As noted by Dr. Fry:

"This is quite remarkable, as grebes cannot walk on land, and this bird had to land on the ground, which is highly unusual for a grebe, shuffle under the pipe holding the netting, and crawl into the skimmer channel to become exposed. This bird was obviously desperate for water, and managed to circumvent a well-constructed netting barrier to get into the channel." Dr. Fry's Report at page 5.

As also noted by Dr. Fry, IMCC has worked to close any access points through the skimmer netting. See Dr. Fry's report at page 8.

As concluded by Dr. Fry:

The hydrocarbon tests conducted by DF&G on carcasses of the birds demonstrate that IMCC has successfully eliminated the hydrocarbon exposure hazard from the surface of the dredge and percolation ponds. No birds, other than the grebe that crawled under the net into the skimmer channel, had any hydrocarbon contamination. In my opinion, these process ponds no longer pose a surface hydrocarbon exposure hazard to water birds. Dr. Fry Report at page 8.

Conclusion

Data is available, and provided with this letter, to fill the gaps identified by the State Water Board staff regarding the listing of Searles Lake. The Ephemeral Waters Report and the report from Dr. Fry supply ample evidence to support removal of salinity/TDS/Chlorides as constituents that impair the beneficial uses of Searles lake. (In performing this evaluation,

the Water Board staff should note that drinking water is not a beneficial use designated for Searles Lake):

- There is considerable data showing that IMCC does not add salinity, TDS or chlorides to the brine. In fact, the data shows that the depleted brine discharged from IMCC has a lower concentration of these constituents than either the ephemeral surface water or the groundwater.
- The data also indicates that the most likely cause of bird mortality at Searles Lake is dehydration. There is simply very little fresh water for birds to drink in the very hot and dry environment on the lake bed and surrounding areas.
- There is extensive data indicating that the salinity, TDS, and chlorides in the Searles Lake brine are naturally occurring. Both the Regional and State Board staffs have recognized that naturally occurring constituents should not be the basis for listing under Section 303(d).

In addition, the report from Dr. Fry provides ample evidence that hydrocarbons are not the cause of bird mortality:

- Of all the deceased birds examined, only one had detectable levels of hydrocarbons on feathers or in stomach contents. This bird crawled into a pollutant abatement device. ✓
Such access has been removed.
- In the opinion of Dr. Fry, the process ponds no longer pose a surface hydrocarbon exposure hazard to water birds. ✓

If the State Water Board keeps Searles Lake on the Section 303(d) list for one or both of the constituents discussed above, IMCC repeats the request made to Mr. Michael Levy that a footnote or asterisk be added to any reference to Searles Lake. An accompanying note would explain that inclusion of Searles Lake does not reflect a determination that the lake is a water of the United States, and that this determination will be made during the basin planning process currently underway. See enclosed letter to Mr. Michael Levy, dated April 8, 2002.

Thank you for your consideration of our comments. If you have any questions or wish additional information, please contact me at (650) 324-7047.

Very truly yours,



Charles M. Hungerford

Enclosures

cc: Arzell Hale, IMCC (w/out enc.)
Darlene Ruiz, Hunter Ruiz (w/out enc.)
Steven Blum, State Water Board (w/out enc.)
Hisam Baqai, Lahontan Regional Board (w/out enc.)
Judith Unsicker, Lahontan Regional Board (w/out enc.)

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**Assessment of Natural Resource Injuries
to Birds at Searles Lake
1998 to 2001
San Bernardino County, CA**

Prepared by:

Steve Hampton, Ph.D.,
Julie Yamamoto, Ph.D.,

California Department of Fish and Game - Office of Spill Prevention and Response
Denyse Racine

California Department of Fish and Game – Eastern Sierra and Inland Deserts Region

Prepared on behalf of the California Department of Fish and Game

April 9, 2002

A. INTRODUCTION AND SCOPE OF THIS ASSESSMENT

At Searles Lake in San Bernardino County, California, IMC Chemicals (IMCC) conducts mining of the brine solution that constitutes the groundwater under the lake bed. As part of the mining process, IMCC discharges approximately 20 million gallons of this water per day, some of it mixed with other constituents, onto the surface of the lake bed. The resulting ponds cover over 1,000 acres, or approximately two square miles. These hypersaline waters measure over 110 degrees Fahrenheit in places, and contain over 600 parts per thousand (ppt) salt. For comparison, sea water contains 35.5 ppt sodium, and Mono Lake (California) contains 78 ppt salt. Since the California Department of Fish and Game (DFG) began investigating in January of 2000, we have become aware of on-going mortality to grebes, ducks, and other birds that are attracted to the open water bodies. Since that time, over 600 dead and dying birds, representing at least 35 different species, have been collected. Analysis of the dead birds suggests that some of the causes of death have been salt toxicosis, salt encrustation, and oiling. Based on analyses of water samples taken by CDFG from IMCC ponds, potential contaminants of concern include nonylphenol, petroleum hydrocarbons (e.g., lube oil, kerosene, diesel, PAHs), arsenic, and sodium. Formaldehyde is also believed to be a potential component of the effluent from mining operations.

This report details an assessment of the natural resource injuries that have occurred at Searles Lake in the years 1998, 1999, 2000, and 2001, as well as those injuries that are presumed to occur through the end of 2001. This report focuses only on the injuries to birds and the habitat value of Searles Lake to birds.

B. NATURAL RESOURCE INJURIES

On maps and in most geographical references, Searles Lake is referred to as a dry lake. Because the lake bed has been used for mining purposes for over 100 years, its surface has been significantly altered through the construction of ponds and levees. This has resulted in permanent ponds of substantial size. The Percolation Pond covers approximately 1,000 acres, while the Dredge Pond occupies over 200 acres. Other ponds are more ephemeral and depend upon both climatic conditions and industrial operations.

1. Bird usage and natural mortality

The ponds at Searles Lake are seemingly attractive to birds in migration. Intensive bird surveys by Eremico Biological Services were conducted from September 2000 through September 2001 (LaBerteaux, 2001b). The surveys were conducted twice a week in migration and once a week during other times of the year. The surveyed area included all of the main ponds and many of the side ponds. The aim of each survey was to count every bird possible. The results provide a good understanding of bird use at Searles Lake through the year.

The birds that visit Searles Lake may be divided into two categories: at-risk migrants and

that the odds of dying on any one day is 1 in 1,460.

We must then assess the number of days a migrating bird would spend at Searles Lake. Given the lack of food resources for waterfowl, as well as the toxic condition of the water, it is unlikely that a bird would stay longer than two days. With 2,229 birds passing through the area each year, and each staying 2 days, there would be 4,458 bird-days of visits. If the odds of a bird dying under normal natural probabilities is 1 in 1,460, then we would expect 3 birds per year to die of natural causes while they are passing through Searles Lake.

Given the fact that these birds are migrating over the desert, it is reasonable to assume that natural mortality would be higher than average. Even assuming a natural mortality rate five times greater than average, only 15 birds per year would die of natural causes at Searles Lake. This represents a very small number relative to the total number of dead birds collected at the lake.

Comparison of bird mortalities at other more natural saline desert lakes suggest that mortality at Searles Lake is highly elevated. For example, at Badwater in Death Valley, only one dead salt encrusted duck has ever been found.

2. Observed impacts to birds

Response crews began collecting birds on January 18, 2000. During the course of the year, search effort for birds increased, resulting in the discovery of many dead and dying birds. Simultaneously, IMCC began implementing hazing and bird rehabilitation, which prevented some bird deaths. From January 18, 2000 through September 30, 2001, 642 birds (alive and dead) were collected from the ponds and adjacent areas. 505 of those were alive or are assumed to have been relatively fresh at the time of collection. The remaining 137 are assumed to have been old carcasses that may pre-date the response period and are thus not useful for estimating annual mortality. Of the 505 fresh birds collected, 254 were found dead and 251 were collected alive and transferred to rehabilitation. Of the 251 birds collected alive, at least 100 of those died later. This amounts to a total of 354 fresh dead birds over the period. Appendix A lists all the birds by species along with the number collected alive and dead.

These birds are primarily ducks and grebes. The most common species impacted, in order of the number recovered, are Mallard, American Coot, Blue-winged and Cinnamon Teal (combined), Redhead, Lesser Scaup, Western and Pied-billed Grebe (tied), and Eared Grebe. It is supposed that these birds were attempting to use Searles Lake as a migratory resting stop. These birds likely come from various wetland complexes in the Great Basin region, as well as from points farther north. They likely winter at the Salton Sea, along the southern California coast, and in Mexico. Figure 1 shows the location of Searles Lake relative to important wetland areas for waterfowl. The concentric circles highlight the distance that a duck or grebe, flying at 40 mph, could fly in four hours and eight hours. Most of the areas to the north are breeding grounds for waterfowl, while most of the areas to the south are used primarily as wintering grounds. Thus, Searles Lake is well within the normal migration corridor for species utilizing these wetlands.

is not applied to the birds collected alive and released to unknown fates. This implies an assumption that 100% of live birds on the water are found by bird rescue crews. The calculation of total bird mortality can be expressed as:

$$\text{Total bird mortality} = (\# \text{ of birds found dead} \times 2.86) + \# \text{ of birds that die in rehab.}$$

Inserting the actual numbers of birds, we have:

$$826 = (254 \times 2.86) + 100.$$

These numbers reflect the period January 18, 2000 to September 30, 2001, a period of 621 days. The next step is to put this mortality estimate into annual terms. Adjusted to one year, this results in a total mortality of 486 birds per year. Appendix A lists the estimated annual kill by species.

IMCC has taken several steps to reduce bird mortality. Some passive bird hazing devices (e.g., noise-making devices) have been set up around the ponds. Also, in an effort to lure birds away from the pond and to provide them with water for rehydration, IMCC has constructed a "rinse pond" using brackish water. This pond, however, is only one acre in size, and is thus not as attractive from the air as the 1000-acre Percolation Pond. The data suggest that approximately 8% of the at-risk waterbirds do find the Rinse Pond and use it. As a whole, annual mortality did decline slightly as a result of these measures. However, the decline was relatively small and may simply be a function of natural variation. Given that there are only two years of data to compare, it is not clear that these measures have been successful.

4. Toxicological Investigations

Previous toxicological analyses

In June, 2000, CDFG submitted carcasses of ducks collected from IMCC ponds to the USGS National Wildlife Health Center (Madison, Wisconsin) for pathological analyses. The brains of six ducks were analyzed for sodium concentrations, all of which were found to contain elevated sodium concentrations consistent with toxicity and lethality. Normal concentrations of sodium in the brain are cited in the National Wildlife Health Center report as ranging from 1,200-1,400 parts per million (ppm). The sodium concentrations in the six duck brains ranged from 1,850 to 2,940 ppm. These ducks represented samples from three sites at IMCC: the Dredge Pond, Percolation Pond, and Outflow Area. Other diagnostic tests included cholinesterase analyses, infectious diseases (botulism type C, avian cholera), and parasites; none of these were identified

Lake as a migratory resting spot. Of the birds that arrive at night and die at the lake, 25% of them are discovered by response crews. Of the birds that arrive in the day, 75% are found by response crews. This assumption is based on our knowledge of the site characteristics, our experience in other contexts, the time it takes birds to die, and anecdotal observations of search efficiency by response crews. These assumptions, taken together, imply a multiplier of 2.86.

sodium in the brain to diagnose sodium toxicosis in submitted birds. Discussions between CDFG Senior Toxicologist Julie Yamamoto and CAHFS veterinary staff indicate that this threshold is “somewhat arbitrary” and based on a small amount of data, primarily from captive domestic poultry. Given these uncertainties, CDFG used relevant studies from the literature to inform interpretations of brain sodium concentrations (Meteyer et al 1997; Gordus et al. 2002). Another source of uncertainty results from the fact that some submitted birds (found alive) were treated with supportive fluids by bird rescue staff prior to dying or being euthanized; according to CAHFS veterinarians, such treatment is likely to confound the use of brain sodium as a diagnostic tool.

Of the 28 birds submitted for analyses, brain sodium concentrations were measured for 26. Of the 26, 16 exhibited brain sodium concentrations (range 1,780-5,310) consistent with salt toxicosis, based on previous studies of wild birds (Meteyer et al 1997; Gordus et al. 2002). Ten of these were found with salt-encrusted feathers, and three were visibly oiled (i.e., having a black substance adhering to feathers or having feathers that were wetted and coated with a film). In addition, two of these were passerines (dove species), suggesting a sodium exposure pathway for terrestrial, as well as aquatic, birds at the IMCC facility.

Of the remaining ten birds, five had elevated brain sodium concentrations, based on those reported for control captive ducks given fresh drinking water (1,305 and 1,413 ppm; Meteyer et al. 1997). All of these birds had been found alive and treated with fluids prior to euthanasia, such that it is possible that brain sodium in these birds was higher prior to fluid treatment. As indicated above, this treatment while the birds were alive renders post-mortem measurements of brain sodium difficult to interpret with respect to sodium toxicity. One of the five was assigned a presumptive cause of mortality (renal gout) by the CAHFS veterinarian, whereas the other four had inconclusive diagnoses. Three of these five birds were found with salt-encrusted feathers.

The remaining five birds had brain sodium concentrations exceeding those measured in wild ducks collected from a freshwater wetland in California (1,150 ppm; Gordus et al. 2002). All five birds had also been treated prior to euthanasia, and none were found to exhibit pathological signs indicative of a cause of mortality. Two of these five birds were visibly oiled.

In summary, CAHFS analyses suggest that the majority of birds submitted had abnormally high levels of brain sodium that likely contributed to morbidity and mortality of these birds. This finding is supported by previous veterinary diagnoses (National Wildlife Health Center and CDFG Wildlife Veterinary Care and Research Center) of birds collected at IMCC. Given the extreme hypersaline conditions at IMCC ponds, and the relatively rapid onset of sodium toxicosis and accumulation in the brain of birds exposed to these types of conditions (Meteyer et al. 1997), it is reasonable to conclude that salt toxicosis observed in birds collected on IMCC ponds results from the direct exposure to high levels of sodium in pond waters.

Regarding contaminant analyses of a subset of submitted birds, CDFG’s final assessment of their contribution to bird injury, if any, will be addressed elsewhere. Based on preliminary review of

flooded when precipitation is high. Water typically runs off adjacent mountain ranges and collects in these alkali playas. Seeds, spores, eggs, estivating adult invertebrates, phytoplankton, and algae can remain dormant under the playa surface for as long as 15 years, awaiting adequate moisture. When these sites receive adequate flooding, these typically dry playa lakes can become attractive to migrating waterfowl and shorebirds. As the temporary lake dries, the water becomes saltier and saltier and the playa community retreats into the mud to wait for the next storm. Often when playa lakes stay dry for many years, the salts, which were brought to the surface as the lake evaporated, are blown away. If the surface remains dry for a long enough period of time to allow most of the salts to erode away, it will begin again as a fresh or brackish water lake when it is again flooded.

It is likely that Searles Lake functioned as many other alkali playas within the Great Basin and Mojave Deserts prior to commencement of the existing mining operation. Due to the scarcity of freshwater sources around the margins of the lake, it is probable that the playa remained dry in most years. However, during years of heavy rainfall, or during severe storms, it is likely that water did collect on the surface of Searles Lake, for short periods of time. This pattern is seen today at other nearby playa lakes such as Panamint Lake, and in Death Valley. When water collects on these lakes, they become attractive to waterfowl and migratory shorebirds looking for a stopover point. At these other locations, the invertebrate and plankton communities may still become active when the playa is flooded under the proper circumstances. It is likely that with the years of manipulation at Searles Lake, the invertebrate and planktonic community that likely did exist at some point in the past is no longer present. However, the presence of surface brine at Searles Lake does present an attractive nuisance to waterfowl, who likely perceive it as a suitable stopover point. It is probable that in historic times, when the Searles Lake playa was dry, waterfowl passed it by during their migrations, just as they pass by Panamint Lake and other desert playa lakes today when no water is present. Today, surface brine is present year round at Searles Lake. Additionally, the fluid that is present on the surface of Searles Lake is a highly concentrated brine which would not be found on the surface under natural circumstances

2. Breeding and migrating shorebirds

Playa lakes are important breeding areas for the inland population of Snowy Plover, a migratory shorebird species. Owens Lake, Mono Lake, and Great Salt Lake all have high concentrations of nesting Snowy Plovers. Smaller numbers of breeding Snowy Plovers are typically found at other playa lakes throughout the region, such as at Deep Springs Lake, and Saline Valley. Extensive surveys for Snowy Plovers conducted during the 2001 breeding season concluded that 14 breeding adults were present at Searles Lake (LaBerteaux, 2001a). Surveys this year (2002) have determined the presence of nests and broods of Snowy Plovers at Searles Lake (Joyce Schlachter, BLM, personal communication). This species depends on the presence of brine flies found at brackish water locations on alkali playas. This species breeds both along the coast and at inland locations, where it depends on its cryptic coloration to hide from predators. It nests on bare substrate, with little to no vegetation, and lays its well-camouflaged eggs in a scrape in the sand or alkali playa surface. Other breeding shorebird species found at Searles Lake are also typically

Appendix A: Table of Birds Recovered and Total Estimated Kill

This table lists all birds recovered from June 18, 2000 through September 30, 2001 (a period of 621 days). The total estimated kill is 2.86 times the number found dead, plus the number that died in rehabilitation. The estimated annual kill adjusts the 621-day period to 365 days.

species	found dead	found alive:		TOTAL FOUND	Estimated	Estimated
		died later	alive in rehab*		TOTAL KILL	ANNUAL KILL
COMMON LOON	1		2	3	2.9	1.7
PIED-BILLED GREBE	11	6	8	25	37.5	22.0
EARED GREBE	5	7	9	21	21.3	12.5
WESTERN GREBE	1	5	19	25	7.9	4.6
CLARK'S GREBE			2	2	0.0	0.0
GREBE, SP.	4	3	1	8	14.4	8.5
DOUBLE-CR. CORMORANT	1		5	6	2.9	1.7
SNOWY EGRET	1			1	2.9	1.7
CANADA GOOSE	1			1	2.9	1.7
WHITE-FRONTED GOOSE	2	1		3	6.7	3.9
WOOD DUCK	1			1	2.9	1.7
GREEN-WINGED TEAL	4	1	1	6	12.4	7.3
MALLARD	56	22	17	95	182.2	107.1
NORTHERN PINTAIL	1	3	2	6	5.9	3.4
BLUE-WINGED TEAL	21	6	7	34	66.1	38.8
CINNAMON TEAL	5	3	1	9	17.3	10.2
TEAL, SP.	11	3	1	15	34.5	20.3
NORTHERN SHOVELER	5	3	6	14	17.3	10.2
GADWALL	10	1	5	16	29.6	17.4
AMERICAN WIGEON		2	5	7	2.0	1.2
CANVASBACK	1			1	2.9	1.7
REDHEAD	23	10	6	39	75.8	44.5
RING-NECKED DUCK	1			1	2.9	1.7
LESSER SCAUP	6	1	21	28	18.2	10.7
SURF SCOTER			1	1	0.0	0.0
BUFFLEHEAD	7	3	5	15	23.0	13.5
HOODED MERGANSER	1			1	2.9	1.7
COMMON MERGANSER			1	1	0.0	0.0
MERGANSER, SP.	1			1	2.9	1.7
RUDDY DUCK	9		8	17	25.7	15.1
AMERICAN COOT	33	20	16	69	114.4	67.2
DUCK, SP.	10			10	28.6	16.8
AMERICAN AVOCET	2			2	5.7	3.4
RED-NECKED PHALAROPE	1			1	2.9	1.7
SANDPIPER, SP.	1			1	2.9	1.7
CALIFORNIA GULL			2	2	0.0	0.0
NORTHERN FLICKER	1			1	2.9	1.7
BIRD, SP.	13			13	37.2	21.9
SWALLOW, SP.	1			1	2.9	1.7
FINCH, SP.	2			2	5.7	3.4
TOTAL	254	100	151	505	826	486

M e m o r a n d u m



6.7

To: Diane Beaulaurier
Division of Water Quality
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Date: June 13, 2002

From: Steve Hampton 
Office of Spill Prevention and Response
Department of Fish and Game

Subject: 2002 Update of the 303(d) List of Impaired Waters

The Department of Fish and Game wishes to comment on the 2002 Update of the 303(d) List of Impaired Waters. Specifically, the Department of Fish and Game believes that the wastewater ponds constructed at Searles Lake are an on-going threat to wildlife. We have documented hundreds of bird deaths at these ponds. Furthermore, the mortality is on-going. The vast majority of the bird deaths are due to the hypersaline conditions (e.g. salt toxicosis and salt encrustation). We have enclosed our report, **Assessment of Natural Resource Injuries to Birds at Searles Lake, 1998 to 2001**, which details the on-going bird mortality and our efforts to study the problem. This report was prepared for the Lahontan Regional Water Quality Control Board and presented to them on April 10, 2002.

Under historic natural conditions, Searles Lake offered little to no habitat for loons, grebes, and ducks (the primary species impacted). Gale (1914) describes the area as a "salt-incrusted valley floor" He further describes it as

"a dry lake basin, superficially much like many other desert basins of the western arid region of the United States. These names, as generally applied, refer to the broad, flat, salt-incrusted surface in the center of the desert basin, although, except as it is intermittently flooded by shallow waters, the region strictly does not contain a lake at all." (*ibid*, p. 265)

These water events are described in greater detail:

"In unusually wet seasons surface drainage from the surrounding country sometimes floods the salt surface to a depth of a few inches. Not uncommonly a thin sheet of water, flooded out upon the flat by some local storm, is swept across the surface by the force of the wind, so that perhaps nearly the whole mass of the water is moved from one side of the basin to the other." (*ibid*, p. 272)

During most of the year, the wettest part of the "lake" is described as "soft ground". Additionally, detailed survey notes from the 1930s describe the wettest areas as "muddy". Most accounts, dating back to 1873, simply describe the lakebed as "dry".

In short, it seems doubtful that ducks and grebes would have had even enough water to float on. Historically, it is likely that very little mortality occurred simply because birds did not stop there. This stands in stark contrast to the current situation, where the

Diane Beaulaurier
June 13, 2002
Page 2

groundwater under the lakebed is pumped above ground and used for industrial purposes. It is then discharged into the constructed brine effluent ponds, which offer sufficiently deep water year round to attract large numbers of migrating birds. Unfortunately, the salinity level (up to 600 ppt) is such it kills many of the birds that are attracted to it.

Enclosure


6.7

Memorandum



To: Diane Beaulaurier
 Division of Water Quality
 State Water Resources Control Board
 1001 I Street
 Sacramento, CA 95814

Date: June 13, 2002

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June 13, 2002

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Enclosure

6.7.02

**Assessment of Natural Resource Injuries
to Birds at Searles Lake**
1998 to 2001
San Bernardino County, CA

Prepared by:

Steve Hampton, Ph.D.,

Julie Yamamoto, Ph.D.,

California Department of Fish and Game - Office of Spill Prevention and Response

Denyse Racine

California Department of Fish and Game – Eastern Sierra and Inland Deserts Region

Prepared on behalf of the California Department of Fish and Game

April 9, 2002

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A. INTRODUCTION AND SCOPE OF THIS ASSESSMENT

At Searles Lake in San Bernardino County, California, IMC Chemicals (IMCC) conducts mining of the brine solution that constitutes the groundwater under the lake bed. As part of the mining process, IMCC discharges approximately 20 million gallons of this water per day, some of it mixed with other constituents, onto the surface of the lake bed. The resulting ponds cover over 1,000 acres, or approximately two square miles. These hypersaline waters measure over 110 degrees Fahrenheit in places, and contain over 600 parts per thousand (ppt) salt. For comparison, sea water contains 35.5 ppt sodium, and Mono Lake (California) contains 78 ppt salt. Since the California Department of Fish and Game (DFG) began investigating in January of 2000, we have become aware of on-going mortality to grebes, ducks, and other birds that are attracted to the open water bodies. Since that time, over 600 dead and dying birds, representing at least 35 different species, have been collected. Analysis of the dead birds suggests that some of the causes of death have been salt toxicosis, salt encrustation, and oiling. Based on analyses of water samples taken by CDFG from IMCC ponds, potential contaminants of concern include nonylphenol, petroleum hydrocarbons (e.g., lube oil, kerosene, diesel, PAHs), arsenic, and sodium. Formaldehyde is also believed to be a potential component of the effluent from mining operations.

This report details an assessment of the natural resource injuries that have occurred at Searles Lake in the years 1998, 1999, 2000, and 2001, as well as those injuries that are presumed to occur through the end of 2001. This report focuses only on the injuries to birds and the habitat value of Searles Lake to birds.

B. NATURAL RESOURCE INJURIES

On maps and in most geographical references, Searles Lake is referred to as a dry lake. Because the lake bed has been used for mining purposes for over 100 years, its surface has been significantly altered through the construction of ponds and levees. This has resulted in permanent ponds of substantial size. The Percolation Pond covers approximately 1,000 acres, while the Dredge Pond occupies over 200 acres. Other ponds are more ephemeral and depend upon both climatic conditions and industrial operations.

1. Bird usage and natural mortality

The ponds at Searles Lake are seemingly attractive to birds in migration. Intensive bird surveys by Eremico Biological Services were conducted from September 2000 through September 2001 (LaBerteaux, 2001b). The surveys were conducted twice a week in migration and once a week during other times of the year. The surveyed area included all of the main ponds and many of the side ponds. The aim of each survey was to count every bird possible. The results provide a good understanding of bird use at Searles Lake through the year.

The birds that visit Searles Lake may be divided into two categories: at-risk migrants and

resident or low-risk species. Loons, grebes, cormorants, and waterfowl migrate through the area and represent nearly all of the dead birds; these are the at-risk species. Shorebirds (including nesting Snowy Plovers and American Avocets, as well as various other species in migration) are seemingly at low risk. These birds tend to congregate at relatively clean water outflows and have not experienced the high mortality rates of the other species. Ravens are also common at the ponds throughout the year, scavenging on the dead birds.

The Eremico surveys provide an estimate of the number of birds by species for each day. We have taken the birds/per day estimates for each day that surveys were conducted and extrapolated that estimate to the rest of the month. We have then evaluated the monthly usage by species. Focusing on the at-risk species, the surveys suggest that over 2,000 waterbirds use the ponds each year. Table 1 below summarizes the data.

Table 1: Estimated Number of Birds Using Searles Lake Each Month

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Eared Grebe	0	0	0	117	12	15	0	0	0	357	8	0	507
Blue-winged & Cinnamon Teal	0	0	0	3	58	20	19	175	132	0	45	39	491
Mallard	0	0	0	3	0	30	74	14	60	20	30	0	231
Am. Wigeon	0	0	0	0	12	0	0	0	60	58	0	0	130
Gadwall	0	0	0	0	0	10	0	0	8	97	8	0	122
Canvasback	0	0	0	3	0	0	0	48	49	0	15	0	115
Duck, sp./other	0	42	0	33	23	15	43	62	49	167	179	15	632
TOTAL	0	42	0	160	105	90	136	299	358	699	285	54	2229

These surveys show that a wide variety of species frequent the lake, primarily in spring and fall migration. Eared Grebes dominate among the spring migrants, while ducks in post-breeding dispersal and fall migration account for most of the rest of the birds.

These surveys imply that approximately 2,229 birds (i.e. loons, grebes, ducks) pass through Searles Lake each year. Note that these are bird user-days. However, given that the surveys are conducted three to seven days apart, it is likely that very few of these birds were counted twice.

This information allows us to estimate the potential rate of natural mortality at Searles Lake. For most of these species, the life expectancy of birds in their first or even second year is around 2.5 years. Conservatively, assume that life expectancy is 2 years.¹ If birds have an equal probability of dying on any given day, some would die tomorrow and some would die in 4 years, with the average life expectancy being death in 2 years. There are 1,460 days in four years. This implies

¹ In reality, a Leslie matrix using demographic parameters for a Mallard suggest that life expectancy is 1.95 years for juveniles and 2.50 years for adults.

that the odds of dying on any one day is 1 in 1,460.

We must then assess the number of days a migrating bird would spend at Searles Lake. Given the lack of food resources for waterfowl, as well as the toxic condition of the water, it is unlikely that a bird would stay longer than two days. With 2,229 birds passing through the area each year, and each staying 2 days, there would be 4,458 bird-days of visits. If the odds of a bird dying under normal natural probabilities is 1 in 1,460, then we would expect 3 birds per year to die of natural causes while they are passing through Searles Lake.

Given the fact that these birds are migrating over the desert, it is reasonable to assume that natural mortality would be higher than average. Even assuming a natural mortality rate five times greater than average, only 15 birds per year would die of natural causes at Searles Lake. This represents a very small number relative to the total number of dead birds collected at the lake.

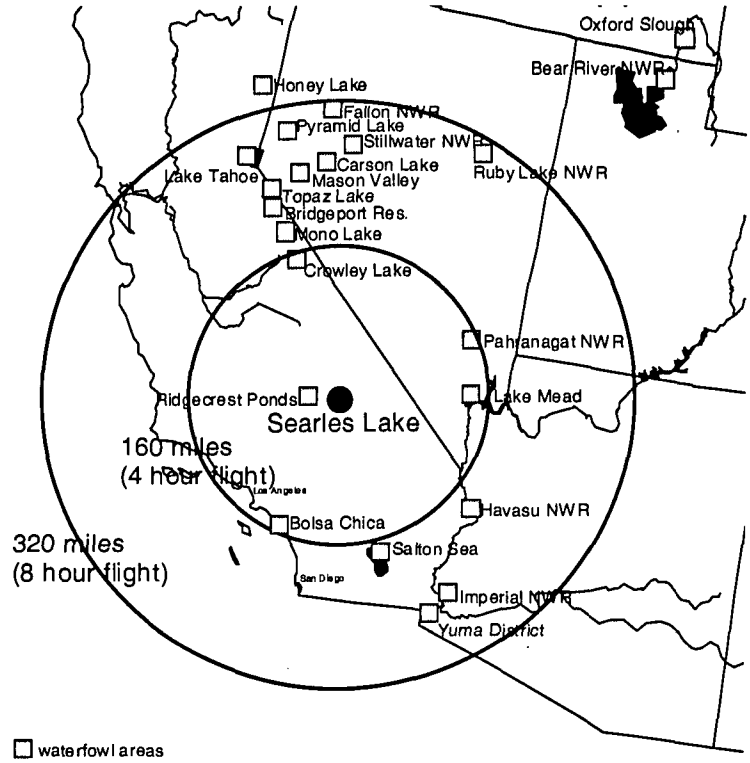
Comparison of bird mortalities at other more natural saline desert lakes suggest that mortality at Searles Lake is highly elevated. For example, at Badwater in Death Valley, only one dead salt encrusted duck has ever been found.

2. Observed impacts to birds

Response crews began collecting birds on January 18, 2000. During the course of the year, search effort for birds increased, resulting in the discovery of many dead and dying birds. Simultaneously, IMCC began implementing hazing and bird rehabilitation, which prevented some bird deaths. From January 18, 2000 through September 30, 2001, 642 birds (alive and dead) were collected from the ponds and adjacent areas. 505 of those were alive or are assumed to have been relatively fresh at the time of collection. The remaining 137 are assumed to have been old carcasses that may pre-date the response period and are thus not useful for estimating annual mortality. Of the 505 fresh birds collected, 254 were found dead and 251 were collected alive and transferred to rehabilitation. Of the 251 birds collected alive, at least 100 of those died later. This amounts to a total of 354 fresh dead birds over the period. Appendix A lists all the birds by species along with the number collected alive and dead.

These birds are primarily ducks and grebes. The most common species impacted, in order of the number recovered, are Mallard, American Coot, Blue-winged and Cinnamon Teal (combined), Redhead, Lesser Scaup, Western and Pied-billed Grebe (tied), and Eared Grebe. It is supposed that these birds were attempting to use Searles Lake as a migratory resting stop. These birds likely come from various wetland complexes in the Great Basin region, as well as from points farther north. They likely winter at the Salton Sea, along the southern California coast, and in Mexico. Figure 1 shows the location of Searles Lake relative to important wetland areas for waterfowl. The concentric circles highlight the distance that a duck or grebe, flying at 40 mph, could fly in four hours and eight hours. Most of the areas to the north are breeding grounds for waterfowl, while most of the areas to the south are used primarily as wintering grounds. Thus, Searles Lake is well within the normal migration corridor for species utilizing these wetlands.

Figure 1: Searles Lake Location Relative to Wetlands in the Migration Corridor



0

3. Total impacts to birds

The Trustees believe that many of the birds that die at Searles Lake are never discovered by response crews. Many factors play a role in this: 1) coyotes and ravens are common in the area and scavenge the birds before crews can find them;² 2) birds that are not scavenged may hide in the rocks or die in remote areas and thus be missed by searchers; 3) salt encrusted birds may sink and not be discovered.

The Trustees have estimated the actual mortality as a function of the number of birds found by response crews. This use of a multiplier is commonly employed in estimating wildlife mortality due to pollution events (see Page et al. 1990). For the sake of this injury assessment, we assume that the multiplier is 2.86; that is, that the true number of dead birds is 2.86 times the number of dead birds found at the site, plus the number of birds that die in rehab.³ Note that the multiplier

2. Note also that Eared Grebes, while they visit the ponds in the largest numbers, are collected rather infrequently. This is likely due to their rather small size, which makes them difficult to see once beach and, more importantly, possible for a raven to carry to another location.

3. This multiplier was derived based on the following assumptions: 80% of the birds that die arrive at Searles Lake at night, while 20% of those that die arrive in the day. This assumption is driven by our knowledge that these birds are primarily nocturnal migrants attempting to use Searles

is not applied to the birds collected alive and released to unknown fates. This implies an assumption that 100% of live birds on the water are found by bird rescue crews. The calculation of total bird mortality can be expressed as:

$$\text{Total bird mortality} = (\# \text{ of birds found dead} \times 2.86) + \# \text{ of birds that die in rehab.}$$

Inserting the actual numbers of birds, we have:

$$826 = (254 \times 2.86) + 100.$$

These numbers reflect the period January 18, 2000 to September 30, 2001, a period of 621 days. The next step is to put this mortality estimate into annual terms. Adjusted to one year, this results in a total mortality of 486 birds per year. Appendix A lists the estimated annual kill by species.

IMCC has taken several steps to reduce bird mortality. Some passive bird hazing devices (e.g., noise-making devices) have been set up around the ponds. Also, in an effort to lure birds away from the pond and to provide them with water for rehydration, IMCC has constructed a "rinse pond" using brackish water. This pond, however, is only one acre in size, and is thus not as attractive from the air as the 1000-acre Percolation Pond. The data suggest that approximately 8% of the at-risk waterbirds do find the Rinse Pond and use it. As a whole, annual mortality did decline slightly as a result of these measures. However, the decline was relatively small and may simply be a function of natural variation. Given that there are only two years of data to compare, it is not clear that these measures have been successful.

4. Toxicological Investigations

Previous toxicological analyses

In June, 2000, CDFG submitted carcasses of ducks collected from IMCC ponds to the USGS National Wildlife Health Center (Madison, Wisconsin) for pathological analyses. The brains of six ducks were analyzed for sodium concentrations, all of which were found to contain elevated sodium concentrations consistent with toxicity and lethality. Normal concentrations of sodium in the brain are cited in the National Wildlife Health Center report as ranging from 1,200-1,400 parts per million (ppm). The sodium concentrations in the six duck brains ranged from 1,850 to 2,940 ppm. These ducks represented samples from three sites at IMCC: the Dredge Pond, Percolation Pond, and Outflow Area. Other diagnostic tests included cholinesterase analyses, infectious diseases (botulism type C, avian cholera), and parasites; none of these were identified

Lake as a migratory resting spot. Of the birds that arrive at night and die at the lake, 25% of them are discovered by response crews. Of the birds that arrive in the day, 75% are found by response crews. This assumption is based on our knowledge of the site characteristics, our experience in other contexts, the time it takes birds to die, and anecdotal observations of search efficiency by response crews. These assumptions, taken together, imply a multiplier of 2.86.

as being possible contributing factors to mortality.

During approximately the same period (August, 2000), ten waterfowl (representing 7 species) collected at IMCC were also examined by a CDFG veterinary pathologist (M.A. Chechowitz, DVM; Marine Wildlife Veterinary Care and Research Center). Seven of the ten birds appeared visibly oiled (i.e., having tarry substances on feathers or wetted, slimy feathers), and four of these were later confirmed to have petroleum hydrocarbons on feathers or in bile or stomach contents (test results for the remaining three visibly oiled birds are pending). Gross and microscopic findings were consistent with salt toxicosis as described by Meteyer et al. (1997). However, sodium concentrations in the brain were not measured in these specimens. Gross and histological examination did not suggest presence of infectious or chronic diseases in any specimen; this was consistent with the finding that all ten birds were in excellent nutritional condition with relatively high fat stores. Direct toxicity of salt, with petroleum as a contributing factor (e.g., causing birds to be trapped in the hypersaline water), as well as direct toxicity of petroleum, were suggested as being potential causes of mortality in these birds.

Finally, a recent study by the CDFG (Gordus et al. 2002) documented salt toxicosis in Ruddy Ducks wintering on agricultural evaporation ponds. These ponds exhibit hypersaline conditions (>70,000 umhos/cm; up to 39,000 ppm sodium in water) less extreme than those observed at Searles Lake. Ruddy Ducks found dead in these ponds during the winter were found to have 1,890 to 3,670 ppm sodium in their brains (n = 7), whereas control Ruddy Ducks collected from a freshwater wetland in California had brain concentrations of 988 to 1,150 ppm (n=5). The latter finding suggests that free-living ducks utilizing normal salinity freshwater wetlands can exhibit lower normal brain sodium concentrations than indicated in the National Wildlife Health Center report to CDFG. Gross and microscopic findings in Ruddy Ducks with high brain sodium concentrations included conjunctivitis, lens opacity with cataract formation, vascular congestion in various organs, and myocardial and skeletal muscle degeneration. Controls did not exhibit these lesions.

IMCC-CDFG Avian Analyses, 2001-2002

Beginning in the summer of 2001, CDFG and IMCC began cooperative analyses of birds that were found dead at the IMCC plant or that died/were euthanized during rehabilitation attempts. Assessment included veterinary pathology and contaminant analyses (feather and gastrointestinal tissues analyzed for petroleum hydrocarbons, liver and serum samples analyzed for inorganic compounds). To date, most of these analyses have been completed for 28 birds, although contaminant analyses have been completed for fewer birds (15 birds have been analyzed for petroleum hydrocarbons and nonylphenol, and 19 birds have been analyzed for inorganics).

Regarding veterinary assessment of submitted birds, veterinarians with the California Animal Health and Food Safety Laboratory (CAHFS; UC Davis, CA) conducted gross and microscopic necropsy, bacteriological cultures, and brain sodium analyses for each bird and submitted individual necropsy reports. As a standard practice, CAHFS uses a threshold of 2000 ppm

sodium in the brain to diagnose sodium toxicosis in submitted birds. Discussions between CDFG Senior Toxicologist Julie Yamamoto and CAHFS veterinary staff indicate that this threshold is “somewhat arbitrary” and based on a small amount of data, primarily from captive domestic poultry. Given these uncertainties, CDFG used relevant studies from the literature to inform interpretations of brain sodium concentrations (Meteyer et al 1997; Gordus et al. 2002). Another source of uncertainty results from the fact that some submitted birds (found alive) were treated with supportive fluids by bird rescue staff prior to dying or being euthanized; according to CAHFS veterinarians, such treatment is likely to confound the use of brain sodium as a diagnostic tool.

Of the 28 birds submitted for analyses, brain sodium concentrations were measured for 26. Of the 26, 16 exhibited brain sodium concentrations (range 1,780-5,310) consistent with salt toxicosis, based on previous studies of wild birds (Meteyer et al 1997; Gordus et al. 2002). Ten of these were found with salt-encrusted feathers, and three were visibly oiled (i.e., having a black substance adhering to feathers or having feathers that were wetted and coated with a film). In addition, two of these were passerines (dove species), suggesting a sodium exposure pathway for terrestrial, as well as aquatic, birds at the IMCC facility.

Of the remaining ten birds, five had elevated brain sodium concentrations, based on those reported for control captive ducks given fresh drinking water (1,305 and 1,413 ppm; Meteyer et al. 1997). All of these birds had been found alive and treated with fluids prior to euthanasia, such that it is possible that brain sodium in these birds was higher prior to fluid treatment. As indicated above, this treatment while the birds were alive renders post-mortem measurements of brain sodium difficult to interpret with respect to sodium toxicity. One of the five was assigned a presumptive cause of mortality (renal gout) by the CAHFS veterinarian, whereas the other four had inconclusive diagnoses. Three of these five birds were found with salt-encrusted feathers.

The remaining five birds had brain sodium concentrations exceeding those measured in wild ducks collected from a freshwater wetland in California (1,150 ppm; Gordus et al. 2002). All five birds had also been treated prior to euthanasia, and none were found to exhibit pathological signs indicative of a cause of mortality. Two of these five birds were visibly oiled.

In summary, CAHFS analyses suggest that the majority of birds submitted had abnormally high levels of brain sodium that likely contributed to morbidity and mortality of these birds. This finding is supported by previous veterinary diagnoses (National Wildlife Health Center and CDFG Wildlife Veterinary Care and Research Center) of birds collected at IMCC. Given the extreme hypersaline conditions at IMCC ponds, and the relatively rapid onset of sodium toxicosis and accumulation in the brain of birds exposed to these types of conditions (Meteyer et al. 1997), it is reasonable to conclude that salt toxicosis observed in birds collected on IMCC ponds results from the direct exposure to high levels of sodium in pond waters.

Regarding contaminant analyses of a subset of submitted birds, CDFG’s final assessment of their contribution to bird injury, if any, will be addressed elsewhere. Based on preliminary review of

the data, CDFG does not believe at this time that concentrations of organic or inorganic compounds, other than sodium, measured in tissues of submitted birds reflect lethal concentrations. This finding may change, pending further assessment of the analytical data by CDFG.

The visible oiling of five of 26 submitted birds indicates that oil exposure of birds may still be occurring at IMCC. On October 1, 2001, an oiled and moribund Sabine's Gull was observed at the ponds by CDFG staff (S. Hampton), and a visibly oiled grebe was collected by IBRRC as recently as December 4, 2001. Since the oiling of birds was identified as a potentially significant problem in 2000, IMCC has taken steps to reduce the amount of oil discharged in the ponds. These steps have included the use of booms and skimmers to collect oil, complete netting of the discharge channels on the north side of the Dredge Pond where many of the oiled birds had been collected, and measures at the plants to reduce discharges of oil. As a result, the number of oiled birds has fallen.

E. HABITAT VALUE OF SEARLES LAKE

1. Migrating loons, grebes, and waterfowl

Alkali lakes and playas in the Great Basin Desert support dense concentrations of waterbirds. These species are accustomed to migrating long distances, often over arid regions. Saline lakes provide stopovers for hundreds of thousands of phalaropes and Eared Grebes. Walker Lake (Nevada) supports one of the largest concentrations of migrating Common Loons during spring in western North America with peaks of more than 1000 birds. Up to one million Eared Grebes congregate at Mono Lake in winter and fall to molt. Searles Lake is centrally located within the flyway and would be a logical stopover point for any of these birds. In overland migration, Eared Grebes rely on stopover sites such as lakes and rivers to rest and rehydrate. Eared Grebes often take advantage of artificial environments such as settling ponds and landfill ponds. Eared Grebes are also attracted to ground lights. During a severe snowstorm in Nevada, thousands of migrating Eared Grebes landed one night, likely drawn by the lights of town, and were unable to take off again. Waterfowl are more likely to utilize saline areas during nonbreeding periods because adults have salt glands which allow them to excrete salt. These salt glands are not developed in young waterfowl. Stopover locations can change over time with changing water conditions. Areas can be abandoned by waterfowl during droughts and re-occupied when water returns.

Dabbling ducks (mallards, teal) and other species typically migrate at night. High altitude (1000'-5000') migration is common. These traits, as well as other physiological traits, allow birds to migrate long distances under arid conditions. Several migration corridors cross the Great Basin and Mojave Deserts. Concentrations of water birds are found at other sites located in arid regions such as at the Salton Sea, Owens Lake, Mono Lake, Walker Lake, and Great Salt Lake.

Throughout the Great Basin and northern Mojave Desert, dry lakebeds become seasonally

flooded when precipitation is high. Water typically runs off adjacent mountain ranges and collects in these alkali playas. Seeds, spores, eggs, estivating adult invertebrates, phytoplankton, and algae can remain dormant under the playa surface for as long as 15 years, awaiting adequate moisture. When these sites receive adequate flooding, these typically dry playa lakes can become attractive to migrating waterfowl and shorebirds. As the temporary lake dries, the water becomes saltier and saltier and the playa community retreats into the mud to wait for the next storm. Often when playa lakes stay dry for many years, the salts, which were brought to the surface as the lake evaporated, are blown away. If the surface remains dry for a long enough period of time to allow most of the salts to erode away, it will begin again as a fresh or brackish water lake when it is again flooded.

It is likely that Searles Lake functioned as many other alkali playas within the Great Basin and Mojave Deserts prior to commencement of the existing mining operation. Due to the scarcity of freshwater sources around the margins of the lake, it is probable that the playa remained dry in most years. However, during years of heavy rainfall, or during severe storms, it is likely that water did collect on the surface of Searles Lake, for short periods of time. This pattern is seen today at other nearby playa lakes such as Panamint Lake, and in Death Valley. When water collects on these lakes, they become attractive to waterfowl and migratory shorebirds looking for a stopover point. At these other locations, the invertebrate and plankton communities may still become active when the playa is flooded under the proper circumstances. It is likely that with the years of manipulation at Searles Lake, the invertebrate and planktonic community that likely did exist at some point in the past is no longer present. However, the presence of surface brine at Searles Lake does present an attractive nuisance to waterfowl, who likely perceive it as a suitable stopover point. It is probable that in historic times, when the Searles Lake playa was dry, waterfowl passed it by during their migrations, just as they pass by Panamint Lake and other desert playa lakes today when no water is present. Today, surface brine is present year round at Searles Lake. Additionally, the fluid that is present on the surface of Searles Lake is a highly concentrated brine which would not be found on the surface under natural circumstances

2. Breeding and migrating shorebirds

Playa lakes are important breeding areas for the inland population of Snowy Plover, a migratory shorebird species. Owens Lake, Mono Lake, and Great Salt Lake all have high concentrations of nesting Snowy Plovers. Smaller numbers of breeding Snowy Plovers are typically found at other playa lakes throughout the region, such as at Deep Springs Lake, and Saline Valley. Extensive surveys for Snowy Plovers conducted during the 2001 breeding season concluded that 14 breeding adults were present at Searles Lake (LaBerteaux, 2001a). Surveys this year (2002) have determined the presence of nests and broods of Snowy Plovers at Searles Lake (Joyce Schlachter, BLM, personal communication). This species depends on the presence of brine flies found at brackish water locations on alkali playas. This species breeds both along the coast and at inland locations, where it depends on its cryptic coloration to hide from predators. It nests on bare substrate, with little to no vegetation, and lays its well-camouflaged eggs in a scrape in the sand or alkali playa surface. Other breeding shorebird species found at Searles Lake are also typically

found at other alkali playas in the Great Basin and Mojave Deserts. American Avocets also nest on bare substrate, and often nest on dikes and roads adjacent to wetland sites. The presence of brine flies at the brackish water outflows at Searles Lake is necessary for the successful breeding of avocets, plovers, and other nesting shorebirds.

F. CONCLUSIONS

The wastewater ponds at Searles Lake pose a serious risk to migrating loons, grebes, and waterfowl, as well as other water-dependent species that migrate through the area. These ponds, occupying over 1,000 acres, are attractive to these birds. It is estimated that over 2,000 individuals of these species stop at the ponds each year. The water in the ponds is hypersaline and contains various potentially harmful chemicals including oil. We estimate that approximately 25% of the birds (close to 500 birds) die each year as a result of the water quality in the ponds. The most impacted species are dabbling ducks and grebes.

The ponds also include a few brackish water outflows. These areas provide foraging habitat for migrating and nesting shorebirds, including the Snowy Plover. The shorebirds seemingly avoid the more toxic wastewater ponds and do not appear to experience the mortality levels of other species.

References

Gordus, A.G., H.L. Shivaprasad, and P.K. Swift. 2002. **Salt toxicosis in ruddy ducks that winter on an agricultural evaporation basin in California.** *J. Wildl. Dis.* 38(1):124-131.

LaBerteaux, D. 2001a. **Snowy plover surveys at Searles Lake, San Bernardino County, California.** Report prepared for Bureau of Land Management. 20 August, 2001.

LaBerteaux, D. 2001b. **Bird surveys at Searles Lake, San Bernardino County, California. Final Report.** Report prepared for IMC Chemicals, Inc. 31 October, 2001.

Meteyer, C.U., R.R. Dubielzig, F. Joshua Dein, L.A. Baeten, M.K. Moore, J.R. Jehl, Jr, and K. Wesenberg. 1997. **Toxicity and pathology associated with exposure of waterfowl to hypersaline playa lakes of southeast New Mexico.** *J. Vet. Diagn. Invest.* 9:269-280.

Page, G.W., H.R. Carter, and R.G. Ford. 1990. **Numbers of seabirds killed or debilitated in the 1986 Apex Houston oil spill in central California.** *Studies in Avian Biology* 14:164-174.

Appendix A: Table of Birds Recovered and Total Estimated Kill

This table lists all birds recovered from June 18, 2000 through September 30, 2001 (a period of 621 days). The total estimated kill is 2.86 times the number found dead, plus the number that died in rehabilitation. The estimated annual kill adjusts the 621-day period to 365 days.

species	found dead	found alive:		TOTAL FOUND	Estimated	Estimated
		died later	alive in rehab*		TOTAL KILL	ANNUAL KILL
COMMON LOON	1		2	3	2.9	1.7
PIED-BILLED GREBE	11	6	8	25	37.5	22.0
EARED GREBE	5	7	9	21	21.3	12.5
WESTERN GREBE	1	5	19	25	7.9	4.6
CLARK'S GREBE			2	2	0.0	0.0
GREBE, SP.	4	3	1	8	14.4	8.5
DOUBLE-CR. CORMORANT	1		5	6	2.9	1.7
SNOWY EGRET	1			1	2.9	1.7
CANADA GOOSE	1			1	2.9	1.7
WHITE-FRONTED GOOSE	2	1		3	6.7	3.9
WOOD DUCK	1			1	2.9	1.7
GREEN-WINGED TEAL	4	1	1	6	12.4	7.3
MALLARD	56	22	17	95	182.2	107.1
NORTHERN PINTAIL	1	3	2	6	5.9	3.4
BLUE-WINGED TEAL	21	6	7	34	66.1	38.8
CINNAMON TEAL	5	3	1	9	17.3	10.2
TEAL, SP.	11	3	1	15	34.5	20.3
NORTHERN SHOVELER	5	3	6	14	17.3	10.2
GADWALL	10	1	5	16	29.6	17.4
AMERICAN WIGEON		2	5	7	2.0	1.2
CANVASBACK	1			1	2.9	1.7
REDHEAD	23	10	6	39	75.8	44.5
RING-NECKED DUCK	1			1	2.9	1.7
LESSER SCAUP	6	1	21	28	18.2	10.7
SURF SCOTER			1	1	0.0	0.0
BUFFLEHEAD	7	3	5	15	23.0	13.5
HOODED MERGANSER	1			1	2.9	1.7
COMMON MERGANSER			1	1	0.0	0.0
MERGANSER, SP.	1			1	2.9	1.7
RUDDY DUCK	9		8	17	25.7	15.1
AMERICAN COOT	33	20	16	69	114.4	67.2
DUCK, SP.	10			10	28.6	16.8
AMERICAN AVOCET	2			2	5.7	3.4
RED-NECKED PHALAROPE	1			1	2.9	1.7
SANDPIPER, SP.	1			1	2.9	1.7
CALIFORNIA GULL			2	2	0.0	0.0
NORTHERN FLICKER	1			1	2.9	1.7
BIRD, SP.	13			13	37.2	21.9
SWALLOW, SP.	1			1	2.9	1.7
FINCH, SP.	2			2	5.7	3.4
TOTAL	254	100	151	505	826	486

6, 8

CENTENNIAL LIVESTOCK

25366 W. Dorris
Coalinga, CA 93210

Respond to:
William J. Thomas
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Sacramento, CA 95814

June 14, 2002

VIA HAND DELIVERY

Craig J. Wilson, Chief
Monitoring and TMDL Listing Unit
Division of Water Quality
State Water Resources Control Board
1001 I Street, 15th Floor
Sacramento, CA 95812-0100

**Re: Comments on April 2002 Staff Report: Revision of the Clean Water Act
Section 303(d) List of Water Quality Limited Segments – Lahontan Regional
Water Quality Control Board**

Dear Mr. Wilson:

I submit these written remarks to supplement our oral testimony presented at the State Water Resources Control Board (SWRCB) hearing in Sacramento on May 24. These comments are submitted on behalf of Centennial Livestock. These comments are made in accordance to the "Notice of Public Hearing" dated April 2, 2002, and "Notice of Extended Solicitation" dated May 15, 2002, which allowed until June 15, 2002, for submittal of written comments.

1) We understand the importance of maintaining water quality.

Centennial Livestock is very concerned with maintaining water quality and implementing good management practices in respect to the use of agricultural water. I sit on the State's AB 982 PAG Committee as a representative of nonpoint source agricultural dischargers and, therefore, I am very aware of the Clean Water Act (CWA) and the necessary processes and criteria required to list water bodies as section 303(d) impaired.

I also chair the California Cattlemen's Association's Water Quality and Environmental Standing Committee, which is very involved in water quality issues. In our other eastern Sierra (Mono County) ranches a few miles south of Bridgeport at Mammoth Lakes, we have instituted one of the largest riparian restoration projects in the West. That project was commenced over 12 years ago. On the Mammoth Ranches, we have fenced each Mammoth Creek, Convict Creek and McGee Creek so that the stream areas are fenced into riparian pastures that bisect the streams into three segments from their outfall from the Sierra to their termination into Crowley Lake. We only use one of those three stream segments on each creek each year. Therefore, each riparian segment gets used only once every third year and in the year of use, use is limited to grazing only 50% of the utilization. This water quality and riparian restoration project has received acclaim from the Society of Range Management, has been given Regional and National recognition and awards from the National Cattlemen's Beef Association for habitat stewardship and has been the model of other projects in the West. This project was also given CalTrout's Golden Trout award a few years ago.

Our intention is to invoke a similar riparian system of fencing and management structure on the Centennial Ranch which will encompass each Buckeye and Robinson Creeks, which the Lahontan Board has recommended be listed as 303(d) impaired water bodies and also the East Walker River, where it flows through the Centennial Ranch. Doing such riparian restoration designed for stream protection and water quality improvement are classical examples of implementation of voluntary best management practices, which are applications of tier 1 management as called for, and is consistent with the SWRCB's nonpoint source plan to regulate agricultural discharge. More regulatory activity is not required, nor is not called for, nor is it supportable.

2) Criteria to list water bodies.

I will commence with a brief preliminary discussion concerning the criteria necessary to list water bodies. Pursuant to the CWA, water body segments should be listed if data demonstrates that they are violative of applicable water quality standards. For administrative actions by the SWRCB to withstand legal challenge, such action must be supported by substantial evidence in the record. Therefore, as we discuss the particular proposed listings of concern, we should keep in mind that in order to be sustained, the SWRCB must have been relying on reliable substantial evidence in the record that these water bodies violate water quality standards. Also, we should evaluate whether there is some compelling purpose in listing and thereby commence a process to create regulatory TMDLs, particularly in light of the SWRCB's nonpoint source policy, whereby agricultural drainage is to be controlled by the three-tier program.

3) The type of data required to support listing.

We next look to direction from the Environmental Protection Agency (EPA) to give us guidance as to what sort of data should be analyzed in order to support a classification of impairment. In that regard, EPA's guidance references each qualitative assessments, chemical analysis, bioassays, and biomonitoring rather than simple chemical monitoring. We stress the importance of the Regional Board and SWRCB to commence focusing on bioassay and biomonitoring. This is clearly the trend in water quality monitoring and assessment of particular water bodies, and underscores that mere chemical analysis, without more, only reflects a single type of data and is becoming disfavored as an overly simplistic approach to evaluation of the quality of water.

4) The National Academy of Sciences recently called for better data regarding water quality to support regulatory decisions.

The National Academy of Sciences/National Research Council Committee (NAS/NRC) recently released an evaluation of water quality testing. They indicated that the old method of chemical testing should be set aside and replaced by review of biological communities tested in their natural environment, whereby all stressors of such communities can be evaluated. The NAS indicated that such tests are far better than mere chemical measures which do not hold up to the rigors of science as compared to monitoring benthic invertebrates as part of their natural biological communities.

The NAS recommended that we should "link environmental stressors to biological responses." In summary, they suggested the "wider use of biocriteria monitoring at the State level because bio-criteria are better indicators than our chemical criteria." These recommendations by the NAS are revising the approaches to water quality monitoring throughout the nation. California should not lag behind cutting science.

5) Standards.

The fecal coliform, nitrate and phosphate standards are exceedingly low as advanced by the Lahontan Regional Board and should be brought into harmony with other regional boards. These low standards were developed in this region to reflect the extraordinarily high water quality of Lake Tahoe and should not be made applicable to all other water bodies in the Basin that do not flow into Lake Tahoe. In fact, Buckeye and Robinson Creeks flow off our ranch into Bridgeport Reservoir then flow into the East

Walker River and only remain in California a few miles where they go into Nevada and flow to their fateful termination into Walker Lake.

Applying drinking water standards to these creeks, which flow into Bridgeport Reservoir, and immediately on to Nevada is a misclassification of the beneficial use of these waters.

6) Challenge to specific recommended listings.

a. Robinson Creek: Nitrates

Robinson Creek is being proposed to be listed for nitrates. The water quality objective for nitrates is a mean of 0.8 mg/L. The back door use of this criteria is by also listing segments that do not meet the mean water quality objectives, but if 10% of the samples exceed 90% of the water quality objective (0.8 mg/L), they will also recommend listing. By this way, the Regional Board lowers the standard by 10% and ignores the fact that the average complies with the standard. The Regional Board asserts that its basis for listing is that only 6 samples were reported to be taken on Robinson Creek. The water quality objective was not exceeded. Only 1 of those 6 samples exceeded the 90% of the 0.8 mg/L level, however, because that one sample of 6 represents 16% of the samples, it was conveniently determined that this exceeded 10% of the samples which were above 90% of the standard. It was on this rationale and single data point that the Regional board seeks a listing. This certainly does not reflect the type of substantial evidence on the record required to withstand a challenge to such listing.

There was also more and better data which refutes a listing.

In 1999, the University of California, Davis, Department of Range Science conducted water quality monitoring in the Mono County area, specifically, including Buckeye (3 locations) and Robison Creek (3 locations.) Samples were taken biweekly from April to October. This data has been officially submitted to the Regional Board and was not reflected in their analysis. Had the Regional Board done so, it would have demonstrated that these creeks do not meet the listing criteria. (See Attachment A*)

* Staff at the Lahontan Regional Water Quality Control Board and the University of California, Study Director, Linda Vance, have each indicated that this report and data is filed and on hand with the Regional Board. My cover is a multiple fax copy and of poor quality for duplication. I am attaching the study report cover page, table of contents and a re-type of the Buckeye Creek phosphorus and Robinson Creek nitrate data charts.

On Robison Creek, the University monitored for Nitrogen/Nitrate levels: a) upstream of the ranch; b) at mid-ranch at US 395; and c) downstream prior to Robinson Creek flowing into Bridgeport Reservoir. Samples were taken every three weeks from Spring to late fall. A total of 34 samples were taken/reported. Of the 12 samples taken above the ranch, 2 were above the detection limit at 0.06 mg/L, well below the very low water quality objective level of 0.8 mg/L.

At the mid-ranch station (US 395), of the 12 samples, only the first sample of the season (April 16), had a significant level. It measured 0.19 mg/L, and was collected during early snow melt and prior to any cattle being on the ranch. The specific sampling location at the US 395 site is on the downstream side of where Robinson Creek passes under the highway bridge. The University, on two dates (including April 16), sampled also on the upstream side of the bridge. The reason for doing so was the high number of nesting swallows under the bridge. On April 16, the only day of significant nitrate levels downstream of the bridge (0.19 mg/L) the nitrate levels above the bridge was merely 0.06 mg/L. Therefore, it is apparent that the swallows under one small bridge were contributing a level of nitrate that would at least temporarily contribute measurable concentrations. This underscores a few points: a) the very low level water quality objective; b) the ability to negatively influence single samples; and c) that ranching/livestock can easily be blamed when they make no contribution at all.

On the downstream site, prior to Bridgeport Reservoir, there were 8 samples taken. Seven were non-detectable and 1 sample (September 11) was at 0.17 mg/L, still far below the water quality objective (and below the level the swallows contributed in April).

On balance, there were 34 samples. The average (mean) is 0.0197 mg/L or only 2.5% of the water quality objective. If you only use the 22 samples from sites on the ranch, the average nitrate is 0.023 mg/L, which is only 3% of the water quality objective. None of the single samples exceed either the water quality objective level of 0.8 mg/L or the 90% of the level.

In contrast to the University data, the Regional Board advanced only 6 data points listed as from "unknown locations" as their basis for their recommendation to list. It is abundantly clear that there is not adequate data to support the listing or inclusion of Robison Creek on the impaired water segment list, nor is there sufficient data to support it even being on the watch list.

In 1999, the University of California, Davis, Department of Range Science conducted water quality monitoring in the Mono County area, specifically, including Buckeye Creek (3 locations) and Robison Creek (3 locations.) Samples were taken biweekly from April to October. This data has been officially submitted to the Regional Board and was not reflected in their analysis. Had the Regional Board done so, it would have demonstrated that these creeks do not meet the listing criteria. 4

b. Buckeye Creek: Phosphates

Buckeye Creek is proposed to be listed for phosphates. The water quality objective is an average in excess of 0.06 mg/L, which is an exceedingly low level of phosphate. Again, the Regional Board proposes a secondary backdoor means of listing if 10% of the samples exceed 90% of the 0.06 mg/L level.

On Buckeye Creek, only 9 samples were taken and only 1 of those 9 exceeded the 90% level. Across all 9 samples, the actual measured average was 0.029 mg/L, which is less than half of the water quality objective, however, because 1 of 9 samples exceeded the 90% level, and 1 sample equals 11%, thereby technically exceeding 10%, the Regional Board proposes to list Buckeye Creek. The listing chart (page 6-2) states, "Annual mean values did not exceed annual mean water quality objectives." It also stated that the Regional Board indicated that natural sources were largely responsible for the phosphate load. Once again, there was better data which supports not listing. 5

In 1999, the University of California, Davis, Department of Range Science conducted water quality monitoring in the Mono County area, specifically, including Buckeye Creek (3 locations) and Robison Creek (3 locations). Samples were taken biweekly from April to October. This data has been officially submitted to the Regional Board and was not reflected in their analysis or recommended to the SWRCB. Had the Regional Board done so, it would have demonstrated that these creeks do not meet the listing criteria. (See Attachment A*)

* Staff at the Lahontan Regional Water Quality Control Board and the University of California, Study Director, Linda Vance, have each indicated that this report and data is filed and on hand with the Regional Board. My cover is a multiple fax copy and of poor quality for duplication. I am attaching the study report cover page, table of contents and a re-type of the Buckeye Creek phosphorus and Robinson Creek nitrate data charts.

Buckeye was sampled at: a) the outfall from the Sierras, upstream of reaching our ranch property; b) at US 395, midway on its course across the Bridgeport Valley to the Reservoir; and c) once again prior to reaching Bridgeport Reservoir.

This totaled 32 samples. (This compares to only 9 samples reported by the Regional Board, and where they state the sampling locations of their samples were unknown.)

All samples taken at mid-ranch (US 395) were below the water quality objectives and below the 0.05 mg/L detection level. Of the 8 samples taken below the ranch near the Reservoir, 7 samples showed no results above 0.05 mg/L and only 1 showed measurable results at 0.12 mg/L. Of the 32 samples on the entire Creek, the average would be 0.00375 mg/L. The 20 samples taken on or below the ranch, averaged 0.006 mg/L. Such averages are 100 orders of magnitude below the water quality objective. Even the 1 positive sample of 0.12 mg/L is only 5% of the samples, which is also below even the back-door rationale of listing.

Clearly, the most recent and more thorough monitoring shows that a listing of Buckeye Creek cannot be supported.

c. Buckeye Creek: Pathogens

The Regional Board also proposes to list Buckeye Creek for pathogens. The fecal coliform standards in the Lahontan Regional Board are again exceedingly low at 20 colonies/100 mg over a designated period. Most Regional Boards have far higher fecal standards. Only half of the dozen or so samples exceeded this level, however, there is no indication as to the location of the samples and no definitive information regarding causation sources. Moreover, the samples do not indicate whether they were taken so as to meet the time period sequence required. This again, is insufficient data to result in the listing of an impaired water body. We will, however, assert that this might be sufficient to indicate that there is need for further testing, so perhaps it should go on a watch list, but no more.

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7) **Best management practices.**

On the Centennial Ranch, we are concluding the creation of a conservation easement, which we have fully and completely negotiated with the American Land Conservancy and which will go before the next meeting of the Wildlife Conservation Board. The terms of the conservation easement have been finalized, signed and the project has had great embrace by the Department of Fish & Game. In section 6, entitled Resource Stewardship, the easement states:


“Resource Stewardship. In order to protect the Conservation Values, Landowner agrees to conduct all ranching and farming operations in accordance with good management practices with respect to soil and water conservation, erosion control, pest management, nutrient management, and habitat protection. Landowner shall manage the riparian habitat areas along Buckeye Creek, Robinson Creek, and the east Walker River, within the Easement Area, to preserve that habitat in support of the dependent fish and wildlife resources in accordance with good ranch management practices. Landowner shall, within 5 years, establish riparian pastures along these stream reaches. Within the riparian areas, the grazing of livestock shall be in accordance with management plans which shall be developed to protect the riparian habitat. Landowner shall utilize fencing in connection with the riparian restoration areas; such fencing shall be of a design that allows reasonable wildlife movement (e.g., deer and sage grouse) through the riparian pastures. Landowner may, from time to time, retain the services of a Certified Rangeland Manager to assist in the evaluation of riparian habitat management on the Easement Area”

It is clear from the foregoing that Best Management Practices are being employed, specifically on these stream reaches. This is fully an application of tier 1 management, consistent with the SWRCB's nonpoint source plan and no further regulatory effort should be invoked. Moreover, there is absolutely no purpose in listing these water bodies where the best management practice fix is already being invoked, therefore, there is no need to take additional regulatory action to compel the Regional Board and SWRCB to develop TMDLs.

8) **Conclusion.**

Buckeye Creek and Robinson Creek should not be listed as impaired.

Respectfully submitted,


WILLIAM J. THOMAS
Centennial Livestock

WJT:ad

ATTACHMENT A

TABLE 3. Results by Site

Site Name	Date	NO3-N
Buckeye US	04/16/99	<0.05
Buckeye US	05/01/99	<0.05
Buckeye US	05/06/99	<0.05
Buckeye US	05/14/99	<0.05
Buckeye US	05/21/99	<0.05
Buckeye US	05/29/99	<0.05
Buckeye US	06/06/99	<0.05
Buckeye US	06/18/99	<0.05
Buckeye US	07/16/99	<0.05
Buckeye US	08/14/99	<0.05
Buckeye US	09/11/99	<0.05
Buckeye US	10/16/99	0.09

Site Name	Date	NO3-N
Buckeye @ 395	04/16/99	0.16
Buckeye @ 395	05/01/99	<0.05
Buckeye @ 395	05/06/99	<0.05
Buckeye @ 395	05/14/99	<0.05
Buckeye @ 395	05/21/99	<0.05
Buckeye @ 395	05/29/99	<0.05
Buckeye @ 395	06/06/99	<0.05
Buckeye @ 395	06/18/99	<0.05
Buckeye @ 395	07/16/99	0.07
Buckeye @ 395	08/14/99	0.13
Buckeye @ 395	09/11/99	0.10
Buckeye @ 395	10/16/99	0.10

Site Name	Date	NO3-N
Buckeye DS (WRID)	05/29/99	<0.05
Buckeye DS (WRID)	06/05/99	<0.05
Buckeye DS (WRID)	06/18/99	<0.05
Buckeye DS (WRID)	07/16/99	<0.05
Buckeye DS(ASCUA))	08/14/99	<0.05
Buckeye DS(ASCUA))	09/11/99	0.19
Buckeye DS (WRID)	09/11/99	0.08
Buckeye DS (WRID)	10/16/99	<0.05

*Average for Buckeye DS Include only the highest value for the two sampling sites on 9/11

TABLE 3. Results by Site

Site Name	Date	P mg/L
Robinson US	04/16/99	<0.05
Robinson US	05/01/99	<0.05
Robinson US	05/06/99	<0.05
Robinson US	05/14/99	<0.05
Robinson US	05/21/99	<0.05
Robinson US	05/29/99	<0.05
Robinson US	06/06/99	<0.05
Robinson US	06/18/99	<0.05
Robinson US	07/16/99	<0.05
Robinson US	08/14/99	<0.05
Robinson US	09/11/99	<0.05
Robinson US	10/16/99	<0.05
Site Name	Date	P mg/L
Robinson (N) @ 395	04/16/99	<0.05
Robinson (N) @ 395	05/01/99	<0.05
Robinson (N) @ 395	05/06/99	<0.05
Robinson (N) @ 395	05/14/99	<0.05
Robinson (N) @ 395	05/21/99	<0.05
Robinson (N) @ 395	05/29/99	<0.05
Robinson (N) @ 395	06/06/99	<0.05
Robinson (N) @ 395	06/18/99	<0.05
Robinson (N) @ 395	07/16/99	<0.05
Robinson (N) @ 395	08/14/99	<0.05
Robinson (N) @ 395	09/11/99	<0.05
Robinson (N) @ 395	10/16/99	<0.05
Site Name	Date	P mg/L
Robinson (S) @ 395	04/16/99	<0.05
Robinson (S) @ 395	05/01/99	<0.05

*Average for Buckeye DS Include only the highest value for the two sampling sites on 9/11

TABLE 3. Results by Site

Site Name	Date	P mg/L
Robinson DS (WRID)	05/29/99	<0.05
Robinson DS(WRID)	06/05/99	<0.05
Robinson DS(WRID)	06/18/99	<0.05
Robinson DS(WRID)	07/15/99	<0.05
Robinson DS(ASCUA)	08/14/99	<0.05
Robinson DS(WRID)	09/11/99	<0.05
Robinson DS(ASCUA)	09/11/99	<0.05
Robinson DS(WRID)	10/16/99	<0.05

*Average for Buckeye DS Include only the highest value for the two sampling sites on 9/11

6.9



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14 June 1992

Craig J. Wilson, Chief
Monitoring and TDML Listing Unit
Division of Water Quality
State Water Resources Control Board
PO Box 100
Sacramento, CA 95812-0100

Re: Public Solicitation for Water Quality Data and Information

Dear Mr. Wilson:

Per the State Water Resources Control Board notice dated 15 May 2002, please consider this letter as responding to the board's request for information regarding water quality conditions in California's surface waters.

Specifically, this letter focuses on two surface waters situated in the area administered by the Lahontan Regional Water Quality Control Board: Martis Creek Reservoir and Martis Creek. Although data is scarce, there is reason to believe that Martis Creek Reservoir is suffering impaired water quality that is leading to its degradation as an important recreational and ecological resource.

Why Martis Creek Reservoir Needs Protection

Martis Creek Reservoir has the historical significance of being the first stillwater designated by the California Fish and Game Commission for Wild Trout management. Only four lakes in California have been awarded the Wild Trout designation. By conferring this status on Martis Creek Reservoir more than two decades ago, the state recognized its significance as a sportfishery, and has subsequently applied to it special regulations intended to enhance the angling experience. Given the reservoir's location within the Truckee/Tahoe region, it undoubtedly will become increasingly important among vacationers and residents as a recreational resource.

Martis Creek Reservoir and its primary tributary, Martis Creek, also supply a number of other beneficial uses aside from recreation. These beneficial uses have been identified in the *Water Quality Control Plan for the Lahontan Region*, and include: Cold Freshwater Habitat; Rare, Threatened, or Endangered Species; Spawning, Reproduction, and Development; Wildlife Habitat; and Migration of Aquatic Organisms.

Evidence of Degradation

At this time, no public agency or private organization is engaged in the long-term monitoring of water quality and ecological conditions in Martis Creek Reservoir and its tributaries. Anecdotal evidence, such as a report published in the *Sierra Sun* in early June, 2002 (see Attachment 1), implies the reservoir's trout fishery is at a twenty-year low (this perception can be corroborated through discussion with anglers familiar with the lake). Angler survey data collected by the Department of Fish and Game between 1996 and 2001 indicate the number of trout of all species reported caught at Martis Creek Reservoir has fallen dramatically (see Attachment 2). Angling harvest, by the way, is not a significant cause in depressing trout populations at Martis Creek Reservoir, as the state requires all sport-caught fish there to be released.

Similarly, fish kills are not unknown at Martis Creek Reservoir; one such event in the autumn of 1997 lead to a Fish Pathologist Report prepared by the California Department of Fish and Game (see Attachment 3). Although the copy of the report provided here may be hard to read, it opens with: "Fish loss ongoing for approximately 1 month.... On examination fish were found in an emaciated condition and appear to have been 'off feed' for several weeks." No conclusion as to the cause of this loss, however, was presented.

The few water-quality indices available for Martis Creek imply the reservoir is undergoing nutrient loading from sources upstream. Attachment 4 presents the results of water samples taken at stations within

cold & warm / fresh & salt / north & south

Letter to Craig J. Wilson
14 June 2002
Page 2

→ the Lahontan residential and golf course project, which is situated on the main stem of Martis Creek. The data collected for total Kjeldahl nitrogen (TKN), total phosphorus (TP), and total dissolved solids (TDS) shows that biostimulatory nutrients are flowing through and possibly from the Lahontan development. These nutrients presumably end up in Martis Creek Reservoir, which is approximately two miles downstream.

→ Although the data presented in Attachment 4 indicate that, with the exception of total phosphorus, water quality standards developed by the LRWQCB are not being violated at the stations used for sampling, please note that Martis Creek's water quality standards are, in general, considerably *less* stringent than those used for other streams along the Truckee River (see Attachment 5). As explicated in chapter 4 of the *Water Quality Control Plan for the Lahontan Region*, the Martis Creek standards were developed to take into consideration discharge from the wastewater treatment plant operated by the Truckee-Tahoe Sanitation Agency, which is located downstream from Martis Creek Reservoir. These standards do not seem intended to protect the beneficial uses provided by the reservoir and its tributaries.

Threats to Water Quality in Martis Creek Reservoir and Its Tributaries

→ Clearly, one of the problems facing Martis Creek Reservoir and Martis Creek is regulatory laxity: water quality standards applied to both by the LRWQCB could well be causing the degradation of each. At present, no agency is monitoring in any systematic manner ecological conditions in the reservoir or the creek.

Water quality in both the impoundment and its tributaries can be expected to worsen over the next two decades, as Martis Valley upstream from the reservoir continues to develop. The Martis Valley Community Plan, currently being formulated by Placer County, would allow an additional 6,000-plus dwelling units and at least three more golf courses in the Martis Creek Reservoir watershed. No agency has been tasked with monitoring changes in water quality likely to result from the myriad activities associated with future land development.

Summary

→ Anecdotal evidence strongly implies Martis Creek Reservoir is suffering degradation of the beneficial uses it provides to the public. These beneficial uses are likely to continue to be harmed rather than protected through the lax water quality standards now applied to the impoundment and its tributaries. Accordingly, the SWRCB and the LRWQCB should immediately initiate a monitoring program to track water quality in the reservoir and its tributaries, and should immediately initiate a study to examine the ecological health of the reservoir, using trout as the primary indicator species, and develop ways to restore this health and also protect the lake from future degradation.

Please keep me informed of any SWRCB decisions regarding Martis Creek Reservoir and Martis Creek.

Cordially yours



Richard Anderson
Publisher and Editor
California Fly Fisher magazine

cc: Judith Unsicker, LRWQCB

needs to be protected

ic at best and is not being by an outside agency.

While some independent monitoring is being done, without some good initial benchmark data, there is no telling what is happening.

With the potential Placer County Martis Valley Draft Environmental Impact Report scheduled to come on, anglers are certain to be concerned over the impact of additional housing, commercial development, and more courses would bring to this piece of water.

This is, after all, the first trout lake in the state of California. This is something that could certainly be protected by not adding to what happened to the lake last season. The amount of vegetation already here this year, it is what we are in for another

unpleasant year. Something is happening here and there is a need to find out just what.

Last week I was talking about the train derailment on the Upper Sacramento River and the devastation

to the fish and the impact that

Methylam Sodium, a fumigant used in agriculture, had on the river. During my research into the chemical

Methylam

Sodium, I discovered that there is a link to the decline on the Russian River populations of salmon and steelhead. Apparently, this same chemical used in vineyards to prevent disease. What has happened is that this stuff leached into the soil and

was being released into the river during runoff, or through the aquifer itself. Any chemical, particularly those used for agriculture or gardening purposes, can certainly pass into the aquifer.

The result is that the streams, the main bodies of water, could show little increases in chemicals.

The bad stuff could leach into the aquifer and show up

through

underground water migration directly into the lake. Remember, this was a huge issue with the population at Davis Lake when the Department of Fish and Game chemically treated the lake. There, they were legitimately concerned that the

chemicals would show up in their wells because of movement through the aquifer.

One of the things that is sorely needed is an ongoing water quality analysis in both Martis Creek tributaries and the lake itself. With all the potential development projected in the Martis Valley, this should be a fundamental issue when considering the Draft Environmental Impact Report on the Martis Valley General Plan being proposed by Placer County.

Martis Lake is a significant piece of water not only for its historic significance, but also for the tremendous recreational opportunity it affords local and visiting anglers. It needs to be protected.

■ "Last year, [Martis Lake] was so covered with weeds that fishing was virtually impossible. In the 20-plus years that I have been fishing here, it was the worst that I have personally seen it."

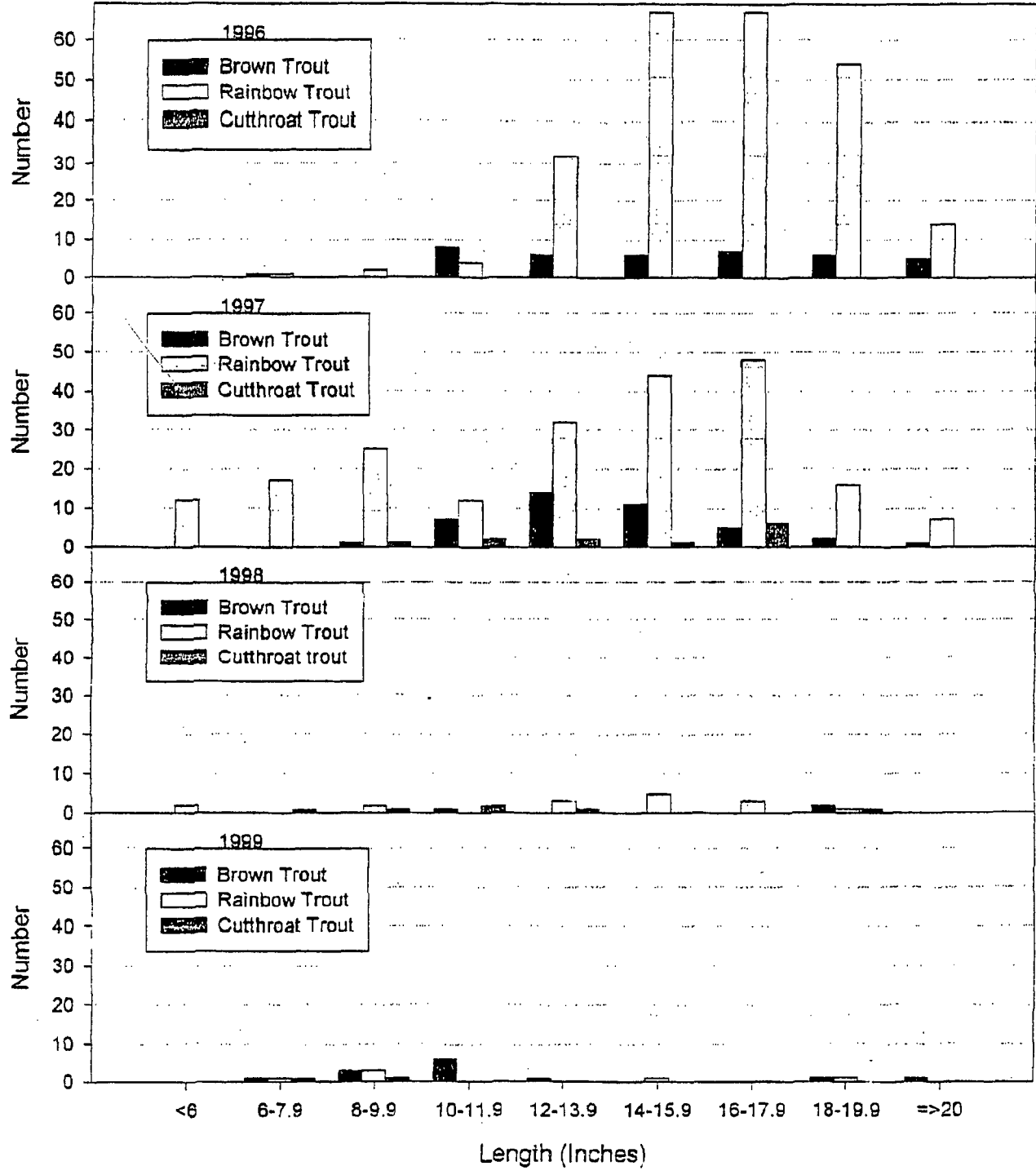
"Gone Fishin'" is sponsored by

Longs Drugs

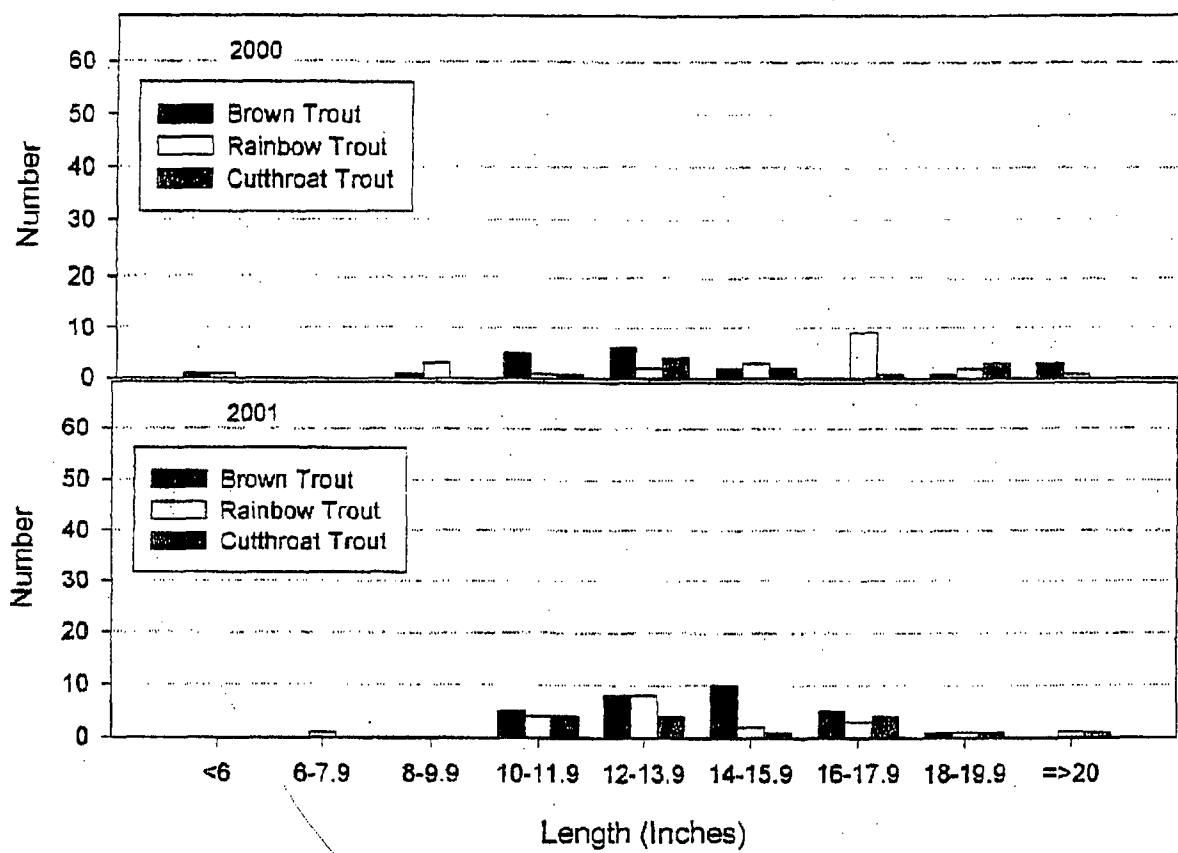
Martis Lake: 1996 - 1999

Number by Species

(Angler Survey Box Data)



Martis Lake: 1996 - 2001 Number by Species (Angler Survey Box Data)



STATE OF CALIFORNIA—RESOURCES AGENCY

DEPARTMENT OF FISH AND GAME



FISH PATHOLOGIST REPORT

Location

Mart's Lake

Date

1-Oct-97

Species and Size

Lisa Colter 5877005

Holding Facility

RT Domestic = 17"

Below Mart's L. Dam

Parasites and Disease Condition (External and Internal)

Fish loss ongoing for approximately 1 month. Samples taken were lethargic and dark in appearance. On examination fish were found in an emaciated condition and appear to have been "off food" for several weeks.

Recommendations

Externally only a very light *B. g. rodolus* infestation could be found. This parasite is not problematic in this mortality.

Internal examination of viscera found what is believed to be a moderate to heavy *Chloromyxum* infection of the gall bladder. A heavy *Chloromyxum* infection may be responsible for this problem.

Comments

Tissue samples will be taken to UCD for confirmation of this parasite.

There are no known control measures for this suspect parasite.

Submitted by:

John Maden

Justine Pell
916 358 2830

December 2000
FOURTH QUARTER
MONITORING
REPORT

for
Lahontan Development Project
Placer County, California

Prepared for:

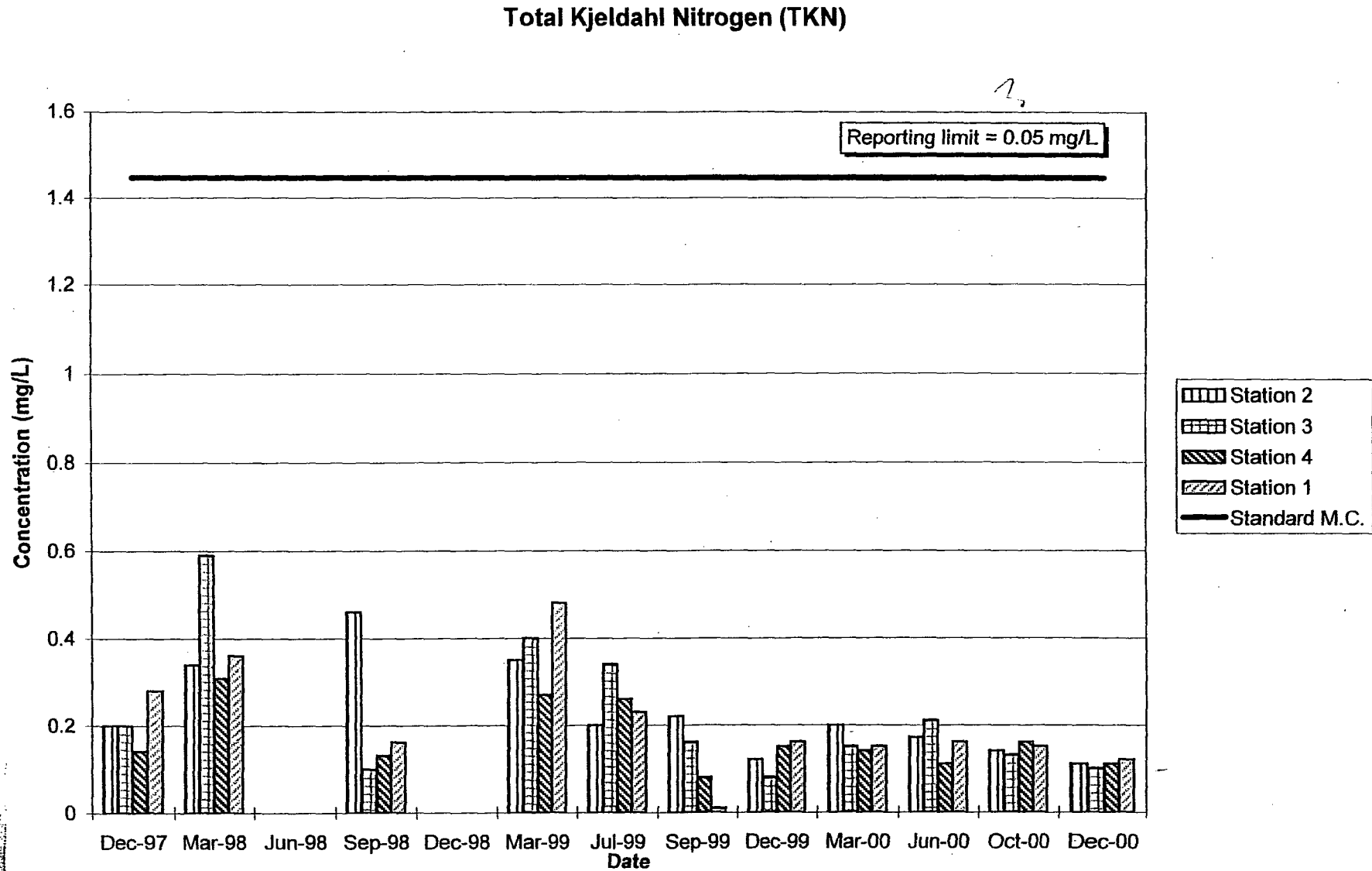
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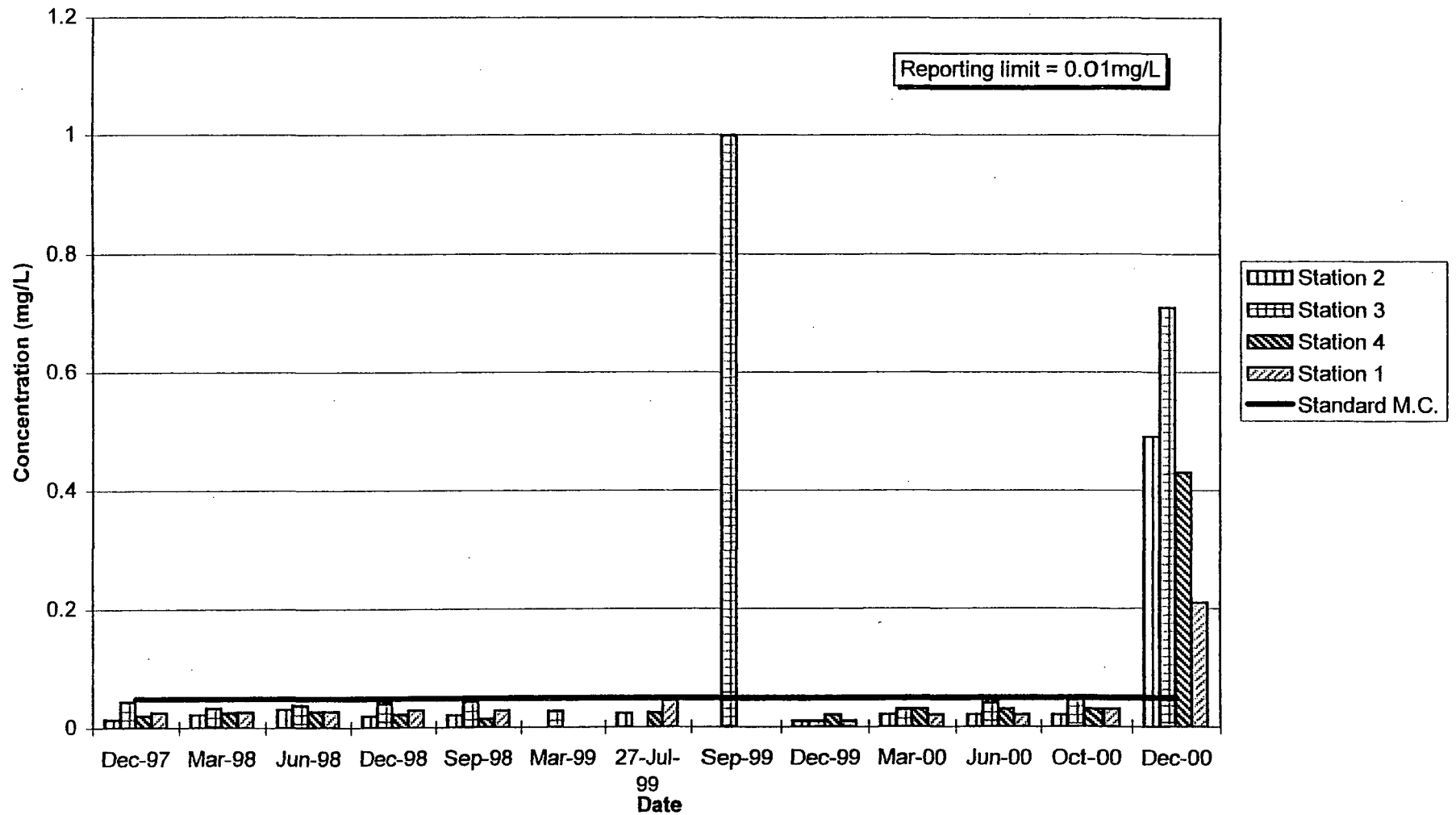
January 2001

Graph 1. Total Kjeldahl nitrogen (mg/L) for select water quality monitoring stations, Lahontan Project, 1997 to 2000.



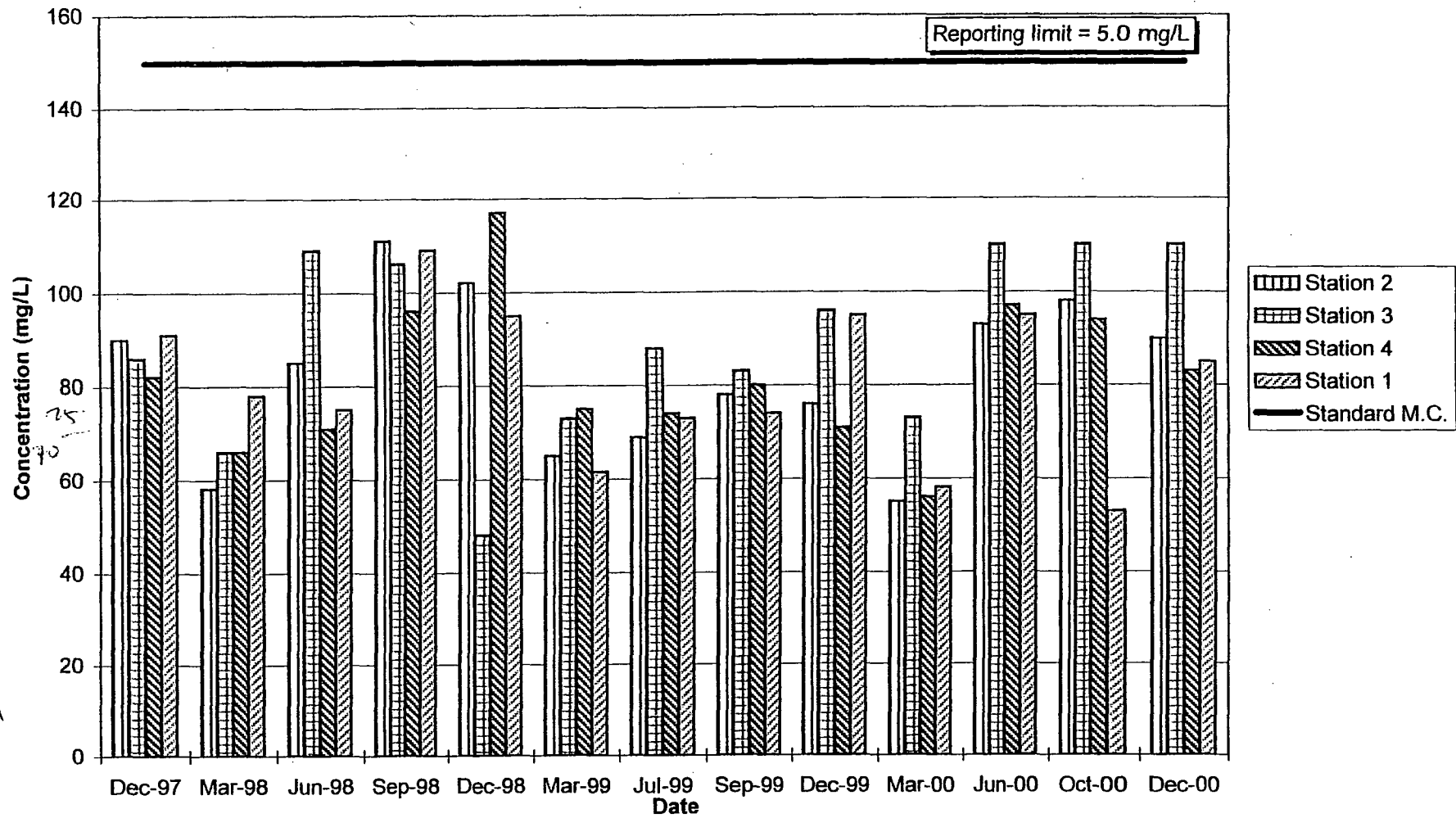
Graph 2. Total Phosphorous (mg/L) for select water quality monitoring stations, Lahontan Project, 1997 to 2000.

Total Phosphorous (TP)



Graph 5. Total Dissolved Solids (mg/L) for select water quality monitoring stations, Lahontan Project, 1997 to 2000.

Total Dissolved Solids (TDS)



**Table 3-11
WATER QUALITY OBJECTIVES FOR CERTAIN WATER BODIES
TRUCKEE RIVER HYDROLOGIC UNIT**

See Fig. 3-5	Surface Waters	Objective (mg/L except as noted) ^{1,2}								
		TDS	Cl	SO ₄	P	B	NO ₃ -N	N	TKN	Fe
1	Truckee River at Stateline	75	8.0	5.0	0.05	1.0	0.08	0.40	0.32	0.30
2	Truckee River below Little Truckee River	75	9.0	5.0	0.05	-	0.10	0.40	0.30	0.30
3	Truckee River below Prosser Creek	75	10.0	5.0	0.05	-	0.14	0.40	0.26	0.30
4	Truckee River below Martis Creek	80	10.0	5.0	0.05	-	0.20	0.40	0.20	0.29
5	Truckee River below Donner Creek	70	3.0	3.5	0.05	-	0.06	0.41	0.35	0.29
6	Martis Creek at Mouth	150	25.0	8.0	0.05	-	1.00	1.45	0.45	0.40
7	Trout Creek at Mouth	70	3.0	3.5	0.04	-	0.05	0.15	0.10	0.18
8	Squaw Creek at Mouth	85	3.0	25.0	0.02	-	0.05	0.18	0.13	0.13
9	Truckee River above Squaw Creek	65	2.0	2.0	0.03	-	0.06	0.22	0.16	0.13
10	Truckee River below Bear Cr.	65	2.0	2.0	0.03	-	0.05	0.21	0.16	0.13
11	Bear Creek at Mouth	65	2.0	2.0	0.02	-	0.05	0.15	0.10	0.10
	continued...									

June 13, 2002

Via Federal Express

Mr. Craig J. Wilson, Chief
Monitoring and TMDL Listing Unit
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812-0100

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17117-0002

Re: Proposed Section 303(d) List

Dear Mr. Wilson:

The purpose of this letter is to submit on behalf of IMC Chemicals Inc ("IMCC") additional information concerning the recommended changes to California's list of impaired surface water bodies under Section 303(d) of the federal Clean Water Act. The letter is in response to the May 15, 2002 notice from the State Water Resources Control Board extending the period of time to submit such information to June 15, 2002. This letter is also in response to suggestions made by State Water Board Chair Arthur Baggett at the May 24, 2002 workshop held in Sacramento.

IMCC has previously submitted comments concerning the recommended changes to the Section 303(d) list that would affect Searles Dry Lake. On December 19, 2001, IMCC submitted comments to the Lahontan Regional Water Quality Control Board. The comments supported Regional Board staff's recommended removal of salinity, TDS, and chlorides as constituents impairing Searles Dry Lake, and submitted information indicating that petroleum hydrocarbons should not be added as impairing Searles Dry Lake. On May 16, 2002, IMCC submitted comments on the State Water Resources Control Board staff's recommended changes to the Section 303(d) list. The comments submitted information indicating that Searles Dry Lake should not be listed for salinity, TDS and chlorides, or for petroleum hydrocarbons. On April 8, 2002, IMCC submitted a letter to the State Water Control Board staff outlining why Searles Dry Lake is a "water of the State" and not a "water of the United States". IMCC requests that the State Board consider the information provided in the prior correspondence, as well as the information provided by this letter, when considering the final list of impaired water bodies in California.

In addition to the submissions of written comments and documentation, IMCC participated in a May 24, 2002 public workshop during which the State Water Board received

comments on the proposed revisions to the Section 303(d) list. State Board Chair Arthur Baggett presided over the workshop. At the conclusion of IMCC's presentation, Chairman Baggett asked IMCC to submit information on whether there are other regulatory mechanisms for addressing petroleum hydrocarbons at Searles Dry Lake as alternatives to the Section 303(d) process. He also asked that IMCC discuss the issue of petroleum hydrocarbons in the context of other existing regulatory programs.

This letter is intended to respond to Chairman Baggett's request. As discussed in more detail below, the issue of petroleum hydrocarbons is being addressed successfully by revisions to Waste Discharge Requirements, a prior Cease and Desist Order, and an on-going Clean up and Abatement Order. In addition, actions taken by the California Department of Fish and Game and IMCC have addressed wildlife issues at Searles Dry Lake. These actions by the Lahontan Regional Board, the Department of Fish and Game, and IMCC have resulted in reduced hydrocarbon concentrations in the discharge brine, improved wildlife protection measures, and a clearer understanding of the lack of a connection between petroleum hydrocarbons and impacts on wildlife. Since the State regulatory structure is successfully addressing the issues raised at Searles Dry Lake, action under Section 303(d) and the development of TMDLs is not necessary. Moreover, Searles Dry Lake is not a "water of the U.S.", and thus it is inappropriate to address Searles Dry Lake under Section 303(d) or the other programs established by the federal Clean Water Act.

This letter describes Searles Dry Lake, discusses how the California regulatory program is being used to resolve issues that impact Searles Dry Lake, and outlines why it would be inappropriate to regulate Searles Dry Lake under the federal program as a "water of the U.S."

I. Basin Description

Searles Valley is a remote, hyper-saline playa mineral deposit located in the high desert of southern California. The brine-saturated deposit is owned by IMC Chemicals (IMCC) and the U.S. Bureau of Land Management (BLM). For over 100 years, the saline mineral resource has been mined by IMCC and prior owners for various minerals, including soda ash, sodium sulfate, boron, and sodium chloride. Ephemeral brines occupy portions of the valley surface for 6 months or more each year. IMCC has located a percolation pond on the saturated salt bed to enhance recharge of ground waters (brines) necessary for solution mining and to replace brine lost to evaporation. Brine make-up is provided by brackish water wells located outside the resource hydrologic unit, assuring continuous availability of extraction brines which support mineral processing and the BLM lease conditions. Process effluent brines returned to the percolation pond have been shown to have lower concentrations of minerals than natural basin brines which saturate the valley deposit. IMCC also maintains a conditioning pond on the salt bed to provide surge capacity for brine feed to IMCC's process operations. The natural ephemeral brines are roughly twice the surface area

of the process ponds during a normal wet season. Rainfall in Searles Valley averages just over 4 inches per year.


II. Basin Planning


The Water Quality Control Plan for the Lahontan Region ("Lahontan Basin Plan") identifies three subunits within the Trona Hydrologic Unit: (1) the Searles Dry Lake Bed (classified in the Basin Plan as a saline lake); (2) Minor surface waters; and (3) Minor Wetlands. The vast majority of the Trona Hydrologic unit is made up of the Searles Dry Lakebed subunit. The Lahontan Basin Plan identifies the following beneficial uses for the surface waters on this subunit: Industrial, Rec-1, Rec-2, Saline, and Wildlife. The groundwater below the lake bed is only designated for industrial beneficial use.

At the direction of the Lahontan Regional Board, Regional Board staff is reviewing whether changes should be made to these designated beneficial uses. On February 4, 2002, Regional Board staff issued a Notice of Preparation of a draft Environmental Document for proposed amendments to the Lahontan Basin Plan, including proposed amendments to the beneficial uses designated for the Searles Dry Lake Bed.

Thus, Searles Dry Lake is specifically addressed by the Lahontan Basin Plan. The designated beneficial uses, along with the narrative standards established by the Lahontan Basin Plan, form the basic foundation for regulating discharges to Searles Dry Lake. These are not static requirements, but are under current review by the Lahontan Regional Board staff. As related to the question posed by Chairman Baggett, and as discussed immediately below, this regulatory structure has proven to be very effective in addressing discharges to Searles Dry Lake. Reliance on the federal system is neither needed nor appropriate.

California Department of Fish and Game

In 2000, the California Department of Fish and Game (DFG) observed bird mortalities in the Searles Valley basin. DFG presumed that the deaths were a result of activities conducted by IMCC, and alleged that IMCC was responsible for the illegal taking of migratory birds due to the hyper-saline nature of the mineral brine and releases of trace hydrocarbons into the percolation pond from IMCC. DFG issued several "Response Objectives" to IMCC which resulted in IMCC implementation of a number of measures designed to keep birds from landing on Searles Dry Lake surface waters, and to retrieve and rehabilitate birds that did manage to land and become distressed. These measures have proven to be very effective in reducing waterfowl mortality at Searles Dry Lake. 

In addition, DFG and IMCC are negotiating an agreement under the California Fish and Game Code that will authorize the "take" of a certain number of birds in exchange for IMCC's agreement to contribute towards an off-site project designed to increase waterfowl 

habitat. In summary, actions taken by the DFG and IMCC under State law address bird mortality at Searles Dry Lake.

As discussed in IMCC's previously submitted comments, necropsies performed on the birds by UC Davis and DFG showed that approximately half the mortalities were due to natural causes and the other half were likely due to dehydration. A single bird death may have resulted from petroleum contact when a bird managed to crawl into a netted emergency skimmer. No other bird mortalities have been documented as occurring from petroleum contact in the process ponds. Enclosed is a copy of the February 27, 2002 report from Dr. Michael Fry that discusses the necropsy results in greater detail. The necropsy results are included at the conclusion of Dr. Fry's report.

III. Lahontan Regional Board

The Lahontan Regional Board has also acted to address bird mortality at Searles Lake. On June 14, 2000, the Lahontan Regional Board issued revised Waste Discharge Requirements for the three IMCC facilities that discharge brine to Searles Dry Lake. The revised WDRs established interim and final effluent limitations that are more stringent than the superceded WDRs. The revised WDRs were amended on April 11, 2001, and again on October 10, 2001. The revisions further tightened the numerical discharge limitations, and committed IMCC to an ambitious program to investigate the constituents in its discharge brine, and to explore state-of-the-art methods for minimizing the presence of non-native constituents. Through these efforts, IMCC has substantially reduced the levels of petroleum hydrocarbons in its discharge brine.

The Lahontan Regional Board also issued a Cease and Desist Order ("CDO") to IMCC on June 14, 2000. The CDO established tightened effluent limitations consistent with the revised WDRs and committed IMCC to time schedules for implementing additional control measures. The CDO was amended on April 11, 2001 to conform to the revised WDRs. The CDO was rescinded by the Lahontan Regional Board on October 11, 2001.

In addition, the Lahontan Regional Board issued a Cleanup and Abatement Order to IMCC on July 7, 2000. The CAO requires submittal and implementation of a cleanup work plan. The CAO was subsequently amended on May 8, 2001 and on October 11, 2001. IMCC has submitted a work plan in accordance with the CAO and is currently implementing the work plan.

Finally, settlement of Administrative Civil Liability (ACL) was approved by the Lahontan Regional Board on April 10, 2002. The ACL, among other things, commits IMCC to implementing control measures above and beyond those required by existing law.

Copies of the WDRs, CDO, and CAO, and their amendments are enclosed, as well as a copy of the ACL. Also enclosed is a copy of the April 2002 monitoring data for the IMCC discharge brine. The data was submitted to the Lahontan Regional Board on May 14, 2002 as part of the IMCC monthly report under the WDRs.

Regulatory Programs

The Lahontan Basin Plan, Waste Discharge Requirements, and Cleanup and Abatement Order are the primary regulatory instruments that assure proper oversight, continued improvement, and verification of compliance of IMCC operations. These State mechanisms, among other things, establish effluent limitations, require the development of analytical methods to deal with the unique chemical characteristics of Searles Valley brines, direct the characterization of all IMCC effluents, and require specific cleanup activities in and around the basin. They are effectively addressing the issues raised at Searles Dry Lake.

Because of the effectiveness of the State program, regulation of IMCC under the federal program is not needed. In addition, as discussed in prior IMCC comments on the proposed Section 303(d) list, regulation of Searles Dry Lake under the federal program is inappropriate.

The Lahontan Regional Water Quality Control Board is planning to conduct a hearing later in the year to decide whether ephemeral brines saturating the Searles salt deposit should be considered a "waters of the U.S." and therefore subject to the U.S. Clean Water Act, or alternatively to declare Searles Valley brines as solely "waters of the state" and allow existing and ongoing State water quality management strategies to properly regulate the basin. Pending formal resolution of this issue by the Lahontan Regional Board, IMCC has suggested in prior comments that Searles Dry Lake be listed under 303(d) with a footnote stating the "waters of the U.S." question will be answered in a late summer or autumn 2002 hearing to be conducted by Lahontan Regional Board.

Searles Dry Lake is not a "water of the United States". In consideration of the U.S. Supreme Court's decision in *Solid Waste Agency of Northern Cook County v. Army Corps of Eng'r*, 531 U.S. 159, 121 S. Ct. 675 (2001) ("SWANCC"), and other U.S. Supreme Court and Ninth Circuit Cases, a water body is a "water of the U.S." if it is:

- (1) Navigable in fact as a highway for commerce. See e.g., *United States v. Appalachian Elec. Power Co.*, cited above;
- (2) A tributary to navigable or interstate waters. See, e.g. *Headwaters, Inc. v Talent Irrigation District*, 243 F.3d 526, 533 (9th Cir. 2001); or
- (3) Wetlands adjacent to navigable or interstate waters (See, e.g. *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985).

A water body has also been found to be a water of the U.S. if it is interstate, or if it is subject to the ebb and flow of the tide. *Colvin v. United States*, 181 F.Supp 2d 1050 (C.D. Cal 2001).

With regard to the first criteria, Searles Dry Lake is located in the Mojave desert, and is a largely sub-surface water body with periodic ephemeral surface waters and permanent surface discharge ponds created by IMCC. There is no historical evidence that the surface waters of Searles Dry Lake have been used to transport goods or people. The surface waters are not currently being used for these purposes, and it is reasonable to conclude that the surface waters will not be used for these purposes in the future.

With regard to the second criteria, Searles Dry Lake is not connected to other bodies of water. As recited in the enclosed revised WDRs, "Searles Lake is located in a closed structural basin..." See Board Order No 6-00-53, page 4. The staff summary accompanying recommendation to approve the April 11, 2001 amendments to the revised WDRs states that "Searles Lake is a hydraulically 'closed' basin meaning that there is no natural outlet for surface or ground water." The staff summary is enclosed with the April 11, 2001 amendments to the WDRs.

With regard to the third criteria, a wetlands delineation was performed in 1998 and the results recorded in a May 31, 1998 report. The report concludes that "there are no Wetlands on or adjacent to Searles dry lake bed". A copy of the report is enclosed. The delineation was performed by Lisa Kegarice, of Tom Dodson & Associates, a private consulting company retained by IMCC.

Finally, Searles Dry Lake is clearly not interstate, nor is it subject to the ebb and flow of the tide.

In addition to the judicial interpretations of what qualifies as a "water of the U.S.", the U.S. Environmental Protection Agency has adopted regulations that define such waters. While the continuing validity of these regulations has been called into serious question by the SWANCC decision, it is instructive to consider the application of the regulation to Searles Dry Lake. The provisions of 40 CFR 122.2, provides that "waters of the United States" include:

"All other waters such as . . . playa lakes . . . the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

- (1) Which are or could be used by interstate for foreign travelers for recreational or other purposes;
- (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

- (3) Which are used or could be used for industrial purposes by industries in interstate commerce”

Subsection (c)(1) of the definition of “water of the United States” refers to waters “which are or could be used by interstate or foreign travelers for recreational or other purposes”. The brine that occasionally exists on the surface of Searles Dry Lake contains high concentrations of naturally occurring arsenic, is caustic, and is extremely saline. The nature of the brine, even when mixed with rainwater, makes it incompatible with recreational use by humans. The revised WDRs and their amendments recite the extremely high levels of salinity, and the presence of arsenic, that naturally occur in the brines at Searles Dry Lake. In addition, the Tentative Amended Waste Discharge Requirements for the Trona, Argus, and Westend facilities released for public comment on July 25, 2001 contain the finding that “Ground waters beneath the lakebed consist of highly mineralized brine containing high levels of total dissolved solids (TDS) that exceed 350,000 mg/L. (Ocean water is typically found to contain TDS levels of approximately 35,000 mg/L).” See page 3 of the Tentative Amended WDRs. A copy of the notice is enclosed. (The findings also conclude on page 3 of the Tentative Amended WDRs that “Searles Dry Lakebed is an enclosed (undrained) wet playa lake.”)

Subsection (c)(2) refers to waters “from which fish or shellfish are or could be taken and sold in interstate or foreign commerce”. The toxic and caustic nature of the brine prevents fish or shellfish from living in the occasional surface waters. In 1992, Ecological Research Associates conducted a study of the biological conditions of Searles Dry Lake. The study did not detect the presence of any traditional aquatic organisms such as zooplankton, benthic invertebrates, fish or shellfish. Searles Dry Lake has no fish or shellfish. A copy of the report is enclosed.

Subsection (c)(3) refers to waters “which are used or could be used for industrial purposes by industries in interstate commerce”. The surface water that occasionally exists at Searles Dry Lake is not used for industrial purposes by industries in interstate commerce. IMCC does not channel this surface water to its extraction facilities, and does not otherwise use the surface water in its facilities. IMCC only uses the subsurface brine in its mineral extraction operation. As stated by the enclosed revised WDRs, IMCC “withdraws a highly mineralized brine from the ground waters of Searles Dry Lake”. See page 2 or Board Order No. 6-00-53. This method of operation is also recognized by the June 14, 2000 CDO: “Presently, the facility is continuing to process brine pumped from beneath Searles Lake.” See page 1 of CDO No. 6-00-61.

The fact that minerals are extracted only from subsurface brine is important because EPA and the Corps of Engineers, as well as the Courts, all agree that isolated groundwater is not a water of the U.S. See for example, *Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962 (7th Cir. 1994), certiorari denied 513 U.S. 930 (1994).

→ The water that occasionally exists at the surface of Searles Dry Lake simply evaporates or percolates below the surface. There is also no foreseeable use of the occasional surface brine and pooled rainwater in interstate commerce. It is economically and technically impracticable to mine the surface water because of its intermittent nature and very shallow depth.

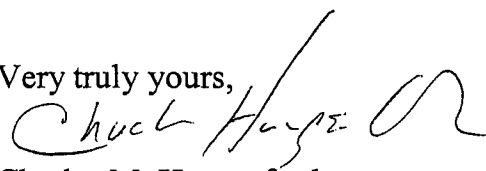
Therefore, the occasional surface water at Searles Dry Lake does not meet the criteria of Subsection (c)(3). Discharges to this water are not discharges to water of the United States.

IV. Conclusion

The State regulatory programs are successfully addressing the issues raised at Searles Dry Lake, including effluent characterization, necessary controls, and compliance verification needs. The 303(d) and TMDL processes would be of limited, if any, value to this ongoing process, now in its advanced stages. Nor are the 303(d) and other federal programs appropriately applied to Searles Dry Lake. Searles Dry Lake is a "water of the State", but not a "water of the United States."

If you have any questions or wish to discuss this matter in further detail, please telephone me at (650) 324-7047.

Very truly yours,


Charles M. Hungerford

Enclosure

cc: Hisam Baqai w/encs.
Steven Blum w/encs
Jim Jackson w/encs.
Darlene Ruiz w/encs.

Enclosures:

1. June 14, 2000 Revised Waste Discharge Requirements for the IMCC Trona, Argus, and Westend facilities and April 11, 2001 and October 10, 2001 amendments to the WDRs.
2. June 14, 2000 Cease and Desist Order for the Trona and Argus facilities, the April 11, 2001 amendment to the CDO, and the October 10, 2001 rescission of the CDO
3. July 7, 2000 Cleanup and Abatement Order issued to the Trona, Argus and Westend facilities and the May 8, 2001 amendment to the CAO
4. Administrative Civil Liability Order for the Trona, Argus, and Westend facilities, April 10, 2002
5. Daily Analytical Data for Argus Effluent, Trona Effluent, and Argus/Trona Channel Confluence, submitted to the Lahontan Regional Board on May 14, 2002.
6. "Report on the Mortality of Birds at Searles Dry Lake Bed, and Evaluation of Searles Lake Bed as Avian Habitat, Dr. Michael Fry, February 27, 2002
7. Review of Wetlands on Searles Dry Lake, Lisa Kegarice, May 31, 1998
8. July 25, 2001 notice of Tentative Amended Waste Discharge Requirements for the Trona, Argus, and Westend facilities
9. "Bioenvironmental Monitoring Program for Searles Dry Lake Percolation Pond", Ecological research Associates, October 25, 1994